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A project of Volunteers in Asia

Field Directors' Handbook

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F I E L D D I R E C T O R S ' H A N D B O O K

c o m p r i s i n g :

OBJECTIVES AND PROCEDURES	white pages
AGRICULTURE	blue pages
HEALTH	pink pages
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HUMANITARIAN	buff pages
DISASTER RELIEF	green pages

third edition
February 1980

revised
May 1981

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EDITOR'S INTRODUCTION

This Handbook aims to summarise Oxfam's objectives and strategies which Oxfam field staff may need in assessing projects, and to provide advice based on project experience for the information of field staff, project holders and others. In producing a new Edition of many of its Sections, the Editor has had to resist pressure to include more technical information in the interests of keeping the book reasonably concise. The policy that has begun to emerge is of subjects for which detailed information is regularly needed should be covered in supplementary booklets. These can be given away to projects as well as being consulted by field staff. Oxfam has already produced the following booklets, which should be used as complementary material to the Handbook Sections indicated:

Memorandum on Tuberculosis in Developing Countries (Section 25)

Memorandum on Leprosy Control (Section 25)

Saveway Clubs (Section 37)

Oxfam Disaster Procedures (Section 50)

Safe Drinking Water (Section 52)

Plastic Sheeting (Section 52)

Skills Acquisition for Women, based on studies in rural Zaire and Upper Volta (Section 34)

In Oxfam/ITDC series on Socially Appropriate Technology:

No. 1: Hand-Pump Maintenance for Community Wells Projects (Section 12)

No. 2: Gardening for Better Nutrition (Section 16, 34)

The Poor Man's Wisdom on Technology and the Very Poor (Section 4)

Land for People on land tenure (Section 10)

A Picture of Poverty (Section 3)

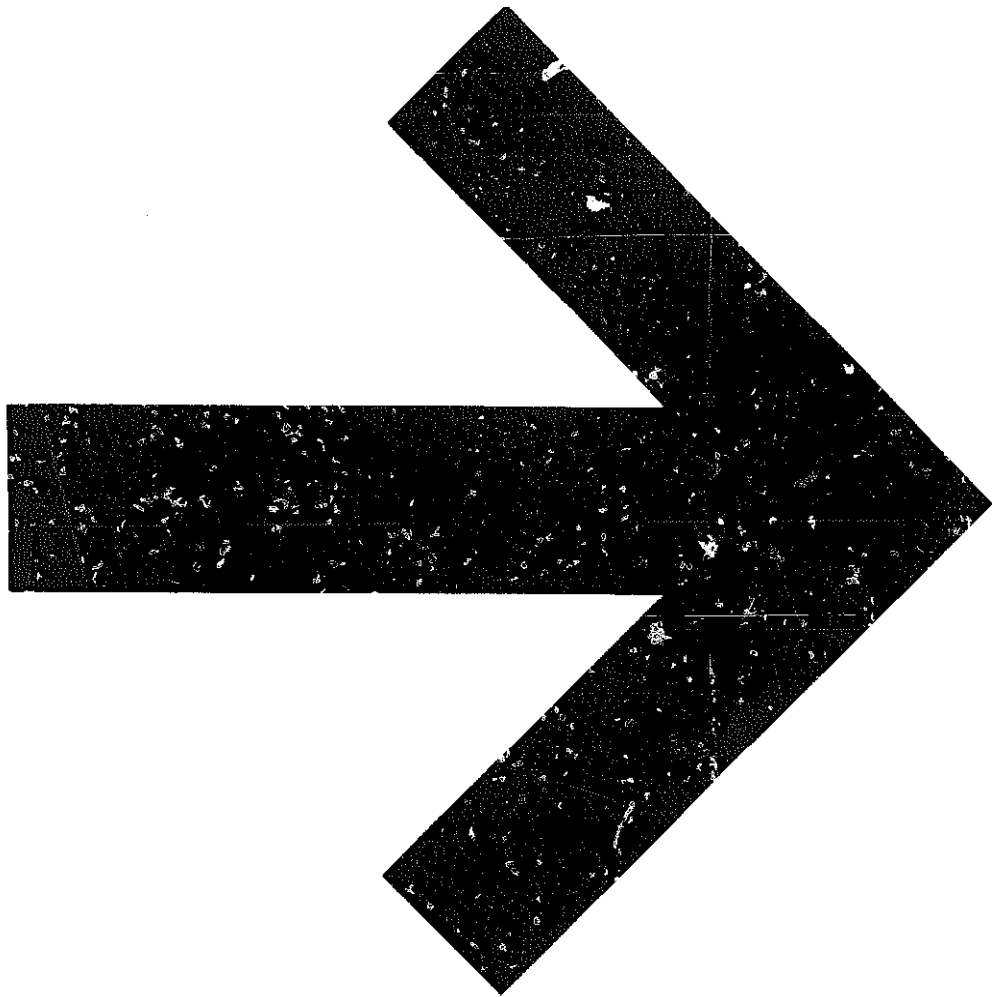
Selective Feeding Procedures for use in disasters (Section 51)

The full List of Oxfam's Publications is available from the Publications Officer. Additionally detailed bibliographies of relevant books, manuals and journals are given at the end of most Sections.

This Edition of the Handbook has been very substantially revised. The revisions include a complete re-orientation and up-dating of the Agricultural and Health Guidelines, an expanded Section on Objectives and Strategies (3), and new Sections on Project Design and Assessment (8), Communication (31) and Legal Aid (39). Major amendments have been made to the Sections on: Appropriate Technology (4), Women's Programmes (34), Physical Infrastructure (36), Cooperatives, Credit and Savings (37), and Land Settlement Schemes (38).

Sincere and grateful acknowledgment is due to so many whose willing assistance and expertise has been integral to this revision. Any detailed list of names would be invidious in its inclusion of some and exclusion of others. Nonetheless particular mention must be made of the kind endeavours of: the Working Party from the Rural Development Panel in preparing Section 3, of Dr. Doug Thornton and Mary Cherry with the new Agricultural Guidelines, and the Medical Panel with the new Health Guidelines.

Jeff Alderson.
Editor.



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METRIC AND BRITISH UNITS OF MEASUREMENT

British or Imperial Units (American units with the same names are often slightly different)	Metric Unit	Abbreviation for metric unit	To convert from British units to metric, multiply by:
LENGTH & DISTANCE			
inch	millimetre	mm	25.4
foot	metre	m	0.305
yard	metre	m	0.914
mile	kilometre	km	1.61
AREA			
square foot	square metre	m ²	0.093
acre	hectare	ha	0.405
VOLUME & CAPACITY			
fluid ounce	(cubic centimetre (millilitre	cc) ml)	28.4
pint	litre	l	0.568
gallon	litre	l	4.55
gallon	cubic metre	m ³	0.00455
cubic foot	cubic metre	m ³	0.028
WEIGHT			
ounce	gramme	g	28.4
pound	kilogramme	kg	0.453
ton	tonne	t	1.016
CROP YIELD			
pounds per acre	kg per hectare	(kg ha ⁻¹ (kg/ha	1.118
POWER			
horsepower	kilowatt	kw	0.746

To use this table:

If you have a figure expressed in British units (e.g. 3 inches), multiply by the factor in the last column of the table (25.4) and you will obtain the corresponding figure in metric units (76 mm).

If you have a figure in metric units (e.g. 4 hectares) which you want to express in British units, divide by the factor from the table (0.405) and you will obtain the British equivalent (8.9 acres).

for completion by Oxfam field staff
and other Handbook users.

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NOTIFICATION OF AMENDMENTS NEEDED IN THE FIELD DIRECTORS' HANDBOOK

1. MISTAKES. (a) The following points in the Handbook Section no. _____
are in error/misleading:

(b) The correct version should read as follows:
(Could you suggest new phrasing for the relevant
Section, continuing overleaf if necessary?)

2. OMISSIONS. There is nothing (or not enough) in the Handbook on
the subject of _____

I suggest that the following points should be made:

(Please give as much detail as possible, especially where new
or unusual information is being referred to. Continue over-
leaf if necessary. Please mention the source of this information
- the book or magazine from which you got it, the person who
told you, or if it is your own experience. Information and
references in languages other than English are particularly
welcome).

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Section 1 : OXFAM - AN INTERPRETATION

1. Introduction

As it was several years since the Objectives of Oxfam - contained in its Articles of Association - were last revised, and in view of the great changes which have occurred both on the world scene and in our understanding and approach to poverty and aid, the Council of Management approved the following Interpretation in 1975.

It is not a definite statement of policy, nor the only interpretation possible. But the Council felt that it expressed well the ethos and purposes of Oxfam in the mid-1970s by expanding informally on the objectives of Oxfam as set out in the Articles of Association: 'To relieve poverty, distress and suffering in any part of the world... in particular:

- (i) to provide food, healing, clothing, shelter, training and education
- (ii) to promote research ... and publication of the results thereof'

It is reproduced here as a general guide to Oxfam field staff; its implications for Oxfam's overseas programme are discussed below in Section 3 and in the guidelines in the following Sections on different functional activities.

2. The Interpretation of Oxfam's Legal Objectives

Oxfam believes in the essential dignity of people and their capacity to overcome the problems and pressures which can crush or exploit them. These may be rooted in climate and geography, or in the more complex areas of economics, politics and social conditions.

Oxfam is a partnership of people who share this belief; people who, regardless of race, sex, religion or politics, work together for the basic human rights of food, shelter and reasonable conditions of life. We believe that, if shared equitably, there are sufficient material resources in the world to enable all people to find a measure of fulfilment and to meet their basic human needs.

We are committed, therefore, to a process of development by peaceful means which aims to help people, especially the poor and underprivileged overseas. This development will sometimes generate conflicts of choice both for us at home and for our partners overseas; but it must be a commitment to a process which encourages people to recognise and develop their potential and to decide their own values and priorities.

Oxfam's contribution is modest within the restraints of our limited resources. But we have learned that we can serve as a small-scale catalyst; helping small groups to become self-reliant and to combat the oppressive factors in their environment.

If we are to be effective, Oxfam staff, volunteers and supporters must function as an integrated movement. In our fund-raising and trading activities, in the stewardship of our resources, in our patterns of consumption both personal and corporate, should be reflected the same aims for which we work in our overseas development programme.

Our public opinion forming and educational work should be rooted in the lessons learned from our overseas programme. We also recognise our responsibility as citizens to influence, where appropriate, the organisations and institutions in this country that are involved in the wider aspects of our relationships with the poor countries.

In all this we are aware that we live in a changing world. Our own organisation and the policies we pursue must keep pace, therefore, with new insights as they develop. We must be sensitive to the need to change ourselves.

All people, whether they be rich or poor, strong or weak, privileged or deprived, are interdependent and should share in the common task of seeking to achieve mankind's full potential. Oxfam provides people in the United Kingdom as well as overseas with the opportunity of playing a small part in a much larger struggle to eliminate poverty and to help mankind develop in a spirit of partnership and brotherhood.

Section 2 : A PARTNERSHIP OF PEOPLE

1. The Reality of Partnership

'Oxfam is a partnership of people ... who work together for the basic human rights of food, shelter and reasonable conditions of life' (Section 1). It is a partnership of people in Britain; people in other industrialised countries joined to us through the other Oxfams there and through many less formal links; and the people in the Third World with whom we work. For people in Britain, this partnership means:

- (a) an opportunity to play a part in the endeavour to eliminate poverty by working in Oxfam's shops and offices
- (b) a source of inspiration - because in an affluent world which seems to have lost its way, the struggle for development provides a real sense of purpose and direction which is lacking in our own society. The work of the Education and Youth Departments, the thinking about lifestyles and alternative technology in the UK, all reflect this. Here is part of the reality in the world 'partnership' - we can gain in these ways as much as we can give.
- (c) there is real partnership too in the ideals of the Bridge scheme, which splits its dividend between Third World producers and British consumers. (See Appendix I to this Section)
- (d) and through the 'Group of Six' voluntary agencies, there is partnership with others who fight poverty in Britain. (See Appendix II to this Section).

2. How Oxfam Field Staff Help Make the Partnership Work

The Oxfam staff overseas are clearly one of the key communications links between the two parts of this partnership. They make sure that information and photographs from overseas projects are available to the British partners, at the same time channelling money, information and skills to our Third World partners. They have discussions with Oxfam groups in Britain between overseas tours, and play a crucial role in enabling groups of Oxfam's U.K. staff to see some of the project work during their periodic travels overseas. Arranging such tours for U.K. staff is often a considerable problem for the field staff because it can be a major addition to their normal work load, but it is important that Oxfam's fund-raisers and others on the 'home front' should have the inspiration of seeing at first-hand what the struggle for development means.

3. Reports and Information

Besides securing reports from projects which contain the data needed for proper monitoring, field staff should ask projects about individual people and how they have been assisted by the work which Oxfam supports.

Human interest stories of this kind, dealing with named individuals are of far more use in helping the British public to understand Oxfam's work and appreciate what the process of development and social change means. It is useful to give actual quotations of what people say about their lives and their hopes and fears.

4. Photographs

The Visual Aids Department in Oxfam House likes to have any good photographs of projects which field staff take. Suitable cameras have been tested and evaluated by the Department, and advice and training in their use is available at Oxfam House. Thus the field staff can get help in choosing the most effective camera for their work.

Colour slides are needed for illustrating talks and lectures; black-and-white prints for exhibitions and the press. Captions explaining the pictures are obviously needed, and where individual people figure prominently, their names should be recorded. Oxfam cares about people, and has no wish to treat them as anonymous project fodder.

5. The Stamp Unit

Oxfam now receives a useful contribution to its income from the sale of used postage stamps to collectors and dealers. Field Directors can help by collecting the stamps from their own mail, or encouraging groups of collectors who may have a chance to acquire stamps which are relatively rare in Britain. Alternatively, projects may wish to collect and sell postage stamps as part of their own independent fund-raising work, in which case the Stamp Unit in Oxford can offer advice and sometimes direct assistance in selling stamps to dealers. The stamps of some countries fetch good prices and have potential for fund-raising, while other countries, notably India, have stamps which do not find so ready a market. Leaflets about this scheme are available in English, French, Spanish and Swahili from the Stamp Unit, Oxfam, Oxford, U.K.

6. Book Token Scheme - or Oxfam Free Book Service

The scheme was set up prompted by the widely held concern that there is a dearth of relevant literature on development available to local project staff and others in the developing countries. This situation contrasts with foreign agencies who generally ensure that their offices are well supplied.

Tokens listing a selection of books and manuals are distributed by Oxfam field staff at their discretion to those with whom they are in contact and who have need of such material. The latter can select publications they require up to a specified total; the token is then forwarded to I.T. Publications Ltd. in London, who in turn send the material to the recipient and their account to Oxfam.

This scheme has met with a rapid and appreciative response not only from those who otherwise could not afford the books, but particularly in countries where there are strict foreign exchange controls, and as in most areas project staff just would not be aware of these publications due to the lack of local distribution outlets.

The scheme now operates for publications in English, French and Spanish. It is hoped to extend it into other languages including Hindi and Swahili.

7. Publications

Oxfam publishes a large variety of material, much of it for fund-raising and publicity purposes, as well as for development education, within the UK.

An increasing number of manuals and case studies are being produced based directly on the experience gained from projects Oxfam is supporting. This is intended especially for use by project staff and other development workers. Again some of this is available in translation.

Details of all these are included in the 'List of Oxfam Publications' available from the Publications Officer, Oxfam, Oxford, UK.

NOTE

For the guidance of readers of this Handbook who are not familiar with Oxfam, we should point out that:

- (i) Oxfam field staff is used when referring to all Oxfam's employees overseas. This includes for instance the growing number of local Field Officers who are working to community groups as in India.

The Field Director is the person in charge of each Oxfam field office, and for instance has certain discretionary grant-making responsibilities.

- (ii) The letters and number in brackets refer to the country and number of an Oxfam project, eg (KEN 123) refers to project no. 123 in Kenya.
- (iii) Detailed information on individual projects is not normally available except to Oxfam staff. However many projects have been written up on the Project Information Sheets. A current list of these is included as Appendix III to this Section.

Also details of the experience of some projects is included in the six papers on Themes in Development. The papers in the series present some of the major problems of poverty and development, and their inter-relationship as this occurs in Oxfam's work. The current series include:

Health: Prevention is Better than Cure
 Health: Poor Nutrition Means Poor Health
 Earning a Living from the Land
 Earning a Living Without Enough Land
 Appropriate Education
 Help When Disaster Strikes

Copies of the Project Information Sheets and of the Themes papers are available from the Information Department, Oxfam, Oxford, UK.

- (iv) Overseas Division Index A comprehensive Index based on the categories in the Handbook has recently been set up at Oxfam House. This provides a readily accessible means for recording and retrieving information on development experience relevant to Oxfam's work. The information is drawn from the experience of the projects with which both Oxfam and other agencies are working, and from the development literature including journals.

Information retrieval: those requiring information from this Index should address their requests to Resources Officer, Overseas Division.

It should be noted that information can be readily obtained from the Substantial Documentation Centres maintained by: IDS, University of Sussex, and University of Reading (at 16 London Road, Reading).

Appendix I : OXFAM TRADING - BRIDGE

Under English Charity law, Oxfam is not allowed to trade, which is defined as buying and selling, so a wholly owned subsidiary Company (Oxfam Activities Ltd.) has been formed which has to comply with all regulations under the Companies Acts. The Company covenants all its profits back to Oxfam to avoid tax; thus it has no reserves or working capital. Oxfam Activities Ltd. covers various aspects of trading eg. Wastesaver and sale of such things as the Sanitation Units, but by far the largest part is Oxfam Trading which is regarded as a Division of Oxfam Activities Ltd and has its own Board of Management.

Oxfam Trading buys goods in developing countries per Bridge, and also from charities for the handicapped in the U.K. Good Neighbours and from commercial sources, and sells them in Oxfam's 600 shops (about 77%), by mail order (about 17%) and wholesale (about 6%). Bridge is the most important element and constituted 45% of sales in 1978/79. The Council of Oxfam are anxious that Bridge, in particular, should be expanded and made more efficient and should work in co-operation with the Overseas Division and the field staff. The long-term estimates call for an increase in Bridge operations to about 55% of total sales and, as Oxfam Trading will also be expanding in other fields, the estimated Bridge sales should be about £2 million in the year 1981/82.

OXFAM POLICY ON BRIDGE

The Oxfam Council reviewed Oxfam Trading policies in 1979 and paid particular attention to Bridge, and how the large increase called for was to be achieved, and extracts from the policy statement agreed are as follows:-

- (a) A main function of Bridge is the promotion of handcraft production that is efficient and viable. The provision of employment overseas is a prime factor but it is essential that the enterprises are in time effective with good quality goods being made at a profit to the producer - with fair wages being paid - and that they are in a position to sell to a changing market at a competitive price.
- (b) This situation cannot be reached quickly by every producer and it is a Bridge function to help them achieve it. Producers must, perhaps after an initial period, be able to stand on their own feet according to the realities of the market. For this and other reasons Oxfam Trading should avoid the situation wherein a producer sells to Oxfam alone. If it becomes clear after a few years that a producer cannot attain viability, then Oxfam support should be phased out. This Producer Assistance function is important and not the same as the commercial function.
- (c) The Commercial function of Bridge is to purchase suitable items and sell them in the U.K. at a profit to Oxfam. The profits so created should be ploughed back into helping new or developing producers (by Producer Assistance or grants/loans), or devoted to Oxfam's work generally, as may be determined from time to time. The financial gain to Oxfam represented by this work is not just that directly attributable to Bridge; the Oxfam shops in the U.K. will also benefit by sales, and attractive items will bring customers into the shops and help the sales of donated goods.

- (d) In carrying out the Commercial function in (c), it is necessary for Bridge to ensure that quality is satisfactory and that design, packaging, transport and documentation are correct. In carrying out the Producer Assistance work in (b), it is necessary to help producers acquire these necessary techniques; and also to help them to handle accounts, set up co-operatives, etc. This requires the employment of people within Bridge with these skills.
- (e) Under the work described under (c), new producers will come into existence, and existing producers expand. At present a substantial amount is made available as normal working capital and to help producers to buy raw materials by means of advance payments with orders - and the need for this will expand.
- (f) Independent producers or co-operatives are regarded as usually being preferable to State-organised bodies because not all these latter are efficient, and because it is sometimes difficult to be satisfied that fair wages are being paid. However particularly in places where there are few producers other than State-organised bodies, it will often be right to take supplies from them and encourage them to be efficient and pay fair wages. Oxfam Trading have not usually bought from independent entrepreneur producers but the Council see no objection in principle to such suppliers provided the Oxfam field staff and Bridge are fully satisfied about the work done and the attitude to employees. Further, action may be taken in conjunction with other buying agencies where this is appropriate. It is thought that Oxfam Trading should seek a greater proportion of utility - as opposed to luxury - items as the former remain saleable for longer periods and the latter are of less interest in times of economic hardship. Though Bridge must be most concerned with volume production, it seems right also to take smaller quantities of non-standard works of art for sale at high prices though there can only be a limited amount in the short-term. Clothing is a difficult area because of quality problems and fashion changes, and Oxfam Trading will need to move carefully but it is an area to try and develop slowly. Food and spices are another area of difficulty, margins are low and there are problems such as infestation. But, again, some new lines might be developed such as spices, coffee, dried foods and honey.
- (g) Records will be maintained indicating the number of jobs in existence, and created, as a direct result of Bridge activity, with an estimate of the number of indirect jobs involved. At present it is estimated that about 10,000 people benefit.
- (h) The organisation of Bridge is as follows:-

At Bicester Warehouse, near Oxford - Merchandise Controller responsible for Bridge
Two Bridge Managers - one Overseas Buyer and one Producer Assistance.
These three senior staff will spend quite a proportion of their time overseas.

In the Indian sub-continent
Within two years, three full-time people - from the U.K. or India
- with offices adjacent to Oxfam field staff

In the Far East
One full-time person - U.K. or local national

Africa and Latin America

No full-time people for the time being at least. These continents should have lower priority than Asia for some time. Such producers as are bought from - broadly a continuation of the present pattern - will be dealt with by visits or correspondence from Bicester.

Local Agents - In all places where there are a number of producers not too far apart, Bridge will seek part-time Local Agents to be the local 'eyes and ears' of the full-time staff, to help with Producer Assistance and to ensure commercial effectiveness - eg in quality, production, finance, packaging, transport and documentation. A Local Agent might be a recognised agency, or a person with another job who could give part-time help, or one efficient producer who might be able to help other producers in the locality. It will take some time to build up such agencies and the selection will be done in full consultation with the Oxfam field staff.

- (i) Bridge must work closely with the Oxfam field staff on the choice of producers, using their extensive local knowledge and trying to introduce Bridge schemes in places where the Overseas Division are involved in social development work (which now amounts to 42% of overseas expenditure). With field staff, Oxfam Trading must bear in mind the rival claims of the urban and rural populations, taking into account where there are craftsmen who can do good work.
- (j) At present, the Oxfam policy is that such profits as Bridge makes are to be split into 25% producer dividend (for both effective and ineffective producers) for social work of their choice, 5% for publicity and education in the UK, and the remaining 70% for job-creation schemes overseas though these schemes will not necessarily be for Bridge products.
- (k) Field staff are not expected to be involved in the detail of Bridge operations, this must be carried out by the Overseas Bridge Representative, Local Agency or Bicester personnel. The field staff in Asia will be in touch with the Overseas Bridge Representatives there but not with the Agencies. In Latin America and Africa, they will normally be in touch with Bicester, as necessary; but, until Overseas Bridge Representatives are appointed, certain contacts with Agencies will be desirable and will be mutually agreed. The field staff are not expected to refer any Bridge matters to Oxfam House. However, if the field staff and Overseas Bridge Representative have serious differences or problems they should write jointly or separately to the Overseas Director and Managing Director of Oxfam Trading.
- (l) It will be appreciated that the above sets out intentions and what has been agreed. But Bridge have only one Overseas Bridge Representative (in Delhi) and no Local Agencies at the moment, and new staff are being appointed at Bicester, so that in some cases these are aims to be achieved rather than items for immediate application. Oxfam Trading aim to move as fast as possible in setting up their new organisation and procedures but ask for forbearance of Oxfam field staff in the meantime.

Appendix II: THE GROUP OF SIX

Members of the Group are Oxfam, Shelter, Child Poverty Action, United Nations Association, Help the Aged and War on Want.

It was set up in 1975 to explore and develop the unity of purpose between poverty overseas and poverty in the United Kingdom and to communicate that unity of purpose effectively to the UK Government in particular.

In 1976/77 it engaged in high level talks with the Prime Minister, Sir Harold Wilson, and senior Cabinet ministers and Treasury officials on the subject of economic growth and the needs of the Third World in relation to British industry. Oxfam's Director General represents Oxfam on the group and the Head of the Public Affairs Unit helps to service the group and is also a member.

In 1977 the group reaffirmed its purposes and continued its talks with the Callaghan administration.

In 1979 it is reassessing its role, but will continue its work.

Appendix III : INDEX TO PROJECT INFORMATION SHEETSHEALTH

Mother and Child Health Care: Bangladesh 20, Brazil 28, Kenya 105, Tamil Nadu 2, Maharashtra 19, Kenya 127, Tanzania MCH, Zimbabwe 66.

Nutrition: Brazil 28, Dominican Republic 13, Guatemala 1 & 12, Guatemala 45, Peru 75, Orissa 28, Zimbabwe 66.

Village Health Workers/Paramedics: Bangladesh 20, Brazil 28, Brazil 57, Guatemala 1 and 12, Tamil Nadu 2, Yemen 15C, Maharashtra 19, Maharashtra 44, Orissa 28, Peru 75, Zimbabwe 66.

Leprosy: Brazil 2, Ethiopia 96 (part), India - Mother Teresa, Uganda 3

Family Planning: Bangladesh 20, Grenada 3, Maharashtra 19

Health Education: Bangladesh 53, Bangladesh 55, Bangladesh 76, Guatemala 1 & 12, Tamil Nadu 2, Maharashtra 19, Jordan 61, Kenya 127, Lesotho 7, Nepal 5, Peru 75, Rwanda 25, Zimbabwe 66.

Curative Care: Bangladesh 20c, Bolivia 33, Brazil 5, Brazil 208, Maharashtra 44, West Bengal 8, Lesotho 7, Nepal 5, Zimbabwe 66.

AGRICULTURE

Crops and Land Conservation: Bolivia 32, Guatemala 1 & 12, Guatemala 45, Jamaica 20, Nicaragua 20, Niger 24, Niger 35, Tanzania 88, Zaire 67B, Zimbabwe 8.

Livestock: Bangladesh 95, Gujarat 53, India 869/23, Buffalo dairying in Gujarat, Niger 35, Uganda 3, Zaire 165.

Storage: Upper Volta 31.

Water/Irrigation Wells: Gujarat 15C.

Vegetables: Bangladesh 55, Ethiopia 96, Maharashtra 44, Orissa 28, Kenya 123, Niger 24, Niger 35.

Extension Workers: Guatemala 1 & 12.

Training and Demonstration: Grenada 4, Kenya 16, Niger 35, Sri Lanka 37, Togo 2, Zimbabwe 8.

Fishing: Bangladesh 76, Tamil Nadu 2, Zaire 78.

SOCIAL DEVELOPMENT

Employment: Bangladesh 95, Brazil 208, Ghana 22, Maharashtra 35, Jamaica 3, Peru 147, Senegal 18, Sri Lanka 37.

Vocational Training: Brazil 208, Karnataka 30, Maharashtra 35, Jamaica 3, Sri Lanka 37.

Handicrafts: Tamil Nadu 25, Peru 86.

Community Development: Bangladesh 76, Bangladesh 20, Bolivia 32, Brazil 28, Brazil 141.

Water-Drinking: Ecuador 41, Indonesia 45, Rwanda 19

Housing and Settlement: Bolivia 32, Brazil 28, Brazil 141, Tamil Nadu 25

Cc-operatives: Jamaica 20, Bolivia 32, Guatemala 1 & 12, Tamil Nadu 2, India 869/23

Literacy/Education: Bangladesh 76, Delhi 3, Maharashtra 44, Togo 2

Appropriate Technology: Brazil 141, Ghana 22

HUMANITARIAN

Welfare: Brazil 5, Brazil 208, Delhi 3, Maharashtra 27, India - Mother Teresa

Disabled: Bangladesh 53, Maharashtra 35, Rwanda 25, St Lucia 8, Uganda 3

Old People: Brazil 5, India - Mother Teresa, Macao 1

Feeding: Macao 1, Orissa 28

Refugees: Macao 1, (See also Refugees in Africa information sheet)

EMERGENCY

Flood: Brazil 141. Earthquake: Guatemala 1 & 12

Feeding: Bangladesh 55, Maharashtra 19

Housing: Bangladesh 55, Brazil 141: Sanitation: Bangladesh 55

OTHER

Urban: Brazil 5, Brazil 28, Brazil 141, Brazil 208, Ethiopia 96, Delhi 3, West Bengal 8, Maharashtra 37, Senegal 18, Peru 75, Peru 147

Connected with Women: Bangladesh 55, Bangladesh 76, Bangladesh 95, Dominican Republic 13, Delhi 3, West Bengal 8, Tamil Nadu 2, Maharashtra 27, India 869/23, Togo 2.

Connected with Children: Bangladesh 55, Brazil 5, Brazil 28, Delhi 3, Maharashtra 27, India - Mother Teresa, Kenya 123, St Lucia 8, Tanzania 88

Case Histories: Karnataka 30, Gujarat 53, Upper Volta 31

Connected with Religious Groups: Roman Catholics - Bangladesh 55, Brazil 28, Brazil 106, Ethiopia 66, Tamil Nadu 2, Gujarat 53, India - Mother Teresa, Macao 1. Ecumenical - Bolivia 32.

Connected with Governments: Ethiopia 96, Niger 24, Tanzania 88 and MCH.

NB Copies of all these Project Information Sheets are available from the Information Department, Oxfam, Oxford, UK

Section 3: OBJECTIVES & STRATEGIES OF THE OVERSEAS PROGRAMME

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1. The Environment in which Oxfam is Working

- (i) Current trends in population and natural resources. The world is extremely diverse, as between continents and the countries, regions, districts and communities within them, but it is generally characterised by a high rate of population growth and a limited natural resource base. This problem is particularly serious in the Third World where low incomes predominate, though it varies widely; even where it is not always readily apparent. Thus, although sparse per unit of area, population pressure is as serious in the semi-arid sub-Saharan lands as in the fertile deltas of Southern Asia. The overall population growth trend is estimated to be around 2.5% per annum in the Third World as a whole.

It may have reached a peak, but this rate of growth will probably decline only slowly. Barring disasters on a regional or global scale, the result is likely to be an increasing number of mouths to feed stretching into the foreseeable future. A recent trend is the substantial migration to the towns, but even in Latin America which has

seen the largest levels of urbanisation, the population remaining in the rural areas is still increasing.

Although not everywhere has been fully explored for minerals, the natural resources on which immediate survival depends are fixed and it is costly to expand their use. Moreover, in many areas, improved access is more than outweighed by natural deterioration - through misuse or adverse climatic change (see Section 11).

(ii) The impact of new consumption patterns and production possibilities

With the progressive integration of the Third World into wider economic and cultural relationships has come a marked shift in consumption patterns and, above all, expectations towards those current in the industrialised world. These aspirations are now found not only in the rapidly growing cities but even in deep rural areas.

In many cases it must be doubted whether such patterns are feasible for more than a small minority of the population.

Similarly, the opening up of export markets, the availability of highly productive new technology and the provision of finance to combine the two, have all had a marked impact on development priorities as seen by Third World governments and this has affected the way that limited resources have been used.

(iii) Technological, institutional and political changes An additional set of difficulties plague the Third World. In some regions, especially Latin America, they may dominate the scene. These arise from the inequalities between individuals, families, communities and classes which in turn have come about as the result of human inter-action over time; inequalities which tend to be exacerbated as population pressure on natural resources and competition for their use, increases. As the world's middle classes, in which may be counted the urban rich of the poor countries, expand both naturally and through selective promotion from the lower classes, they appropriate increasingly the power to control the use of resources. As a result the poor find themselves further disadvantaged:

- (a) with regard to access to land and capital
- (b) with the neglect of technology appropriate to their circumstances
- (c) in political power to advance their own interests

The further tragedy of this situation, as many studies have shown, is that if the distribution of food and other resources could be arranged equitably, there need be no poverty on this scale or indeed at all. However in the real world, it seems that this is far from the minds of so many of those in positions of authority.

Added to this are the devastations caused by war and natural disasters, as respectively in Uganda and Kampuchea, and in Dominica and almost annually in parts of India. They may set back severely the progress of long term development work, not only in terms of the destruction of homes and communications and the disruption of supplies, but particularly where the local social institutions have disintegrated.

(iv) The growth of poverty The result is the continued growth of absolute poverty; that is to say, the number of people are increasing, particularly in the Third World, who have a level of consumption of food

and other necessary goods and services at or below a subsistence minimum and who do not have control of the resources to raise that level. The corollaries are semi-permanent hunger, squalid living conditions, endemic and periodically epidemic disease, infant mortality ten to twenty times that experienced in Europe, life-long physical and mental weakness, and premature death. The processes of impoverishment and increasing powerlessness are relentless. The victims tend to be dispersed geographically and throughout any one society, and therefore find it difficult to organise their own defence. Indeed many, through protracted deprivation, have reached a frame of mind in which to an outside observer they appear to be incapable of self-regeneration without some assistance. 'Fatalism', 'the culture of silence' are value judgements which these observers use to describe this state of mind; 'conscientization', or rediscovery of the will and confidence to fight back is regarded as a "sine qua non" for recovery.

- (v) The change process Societies are in a dynamic state of change and it is necessary to know by what processes and how fast the poverty groups are emerging. How far, for instance, they are the products of a 'squeeze' process whereby resource control and income are being progressively transferred to others, or how far they are a self-generating group. There is considerable evidence that in capitalistic societies and in others with elitist elements where resources and economic opportunities are restricted or shrinking relative to population growth, polarisation of wealth is creating an increasing residuum of poor people, to whom person initiative is denied and who have no prospect of even minimal support through national welfare programmes. Thus over time while a small number prosper, a larger proportion of society in the Third World is sinking through levels of increasing deprivation. The process is intensified by a combination of:
- (1) large families, not least among the poor themselves, to whom more children represent greater potential benefits in work and future security than do the costs of rearing.
 - (2) intervention by self-interested or well-intentioned foreign interests both private and public
 - (3) changing relationships under increasing stress within the communities in which people live, whether rural villages or urban "barrios".
 - (4) bad luck - resulting from accident, loss of family support, failure to breed sons, as well as personal ineptitude
 - (5) seasonal swings in nutrition and health, running counter to seasonal swings in the demand for physical and mental strength, which afflict most those without reserves, leaving them weaker after each wet season
 - (6) physical changes in the environment as a result of land exhaustion and erosion, due to a basic lack or poor management of the primary resources of soil, water and power. This can be remedied by technology, but unfortunately this is rarely available in appropriate form (see Sections 4 and 11).
 - (7) the chaos arising from political instability and armed conflict which is reinforced by increasing polarisation of wealth
 - (8) the random impact of earthquakes, cyclones and 'acts of God'.

All these forces conspire to increase human inequality in which the poor suffer the most.

- (vi) Types of poor people Statistics about poverty are difficult to obtain and even more difficult to grasp thoroughly. FAO's estimate of a world total of some 400 million people wholly undernourished, and perhaps 1,000 million malnourished in some significant respect, merely numbs the mind. There is a danger that the rest of the human family will come to accept these conditions as inevitable. It may be useful to list certain categories within this mass, in ascending order of powerlessness, which have significance for Oxfam work.

There are household heads who are:

- small entrepreneurs with inadequate resources - urban and rural tradesmen; farmers who have insufficient control over capital and land and who are frequently indebted and insecure because they are dominated by landowners or money lenders. They are caught up in a losing battle against appropriation of their assets, declining productivity of those assets and increasing competition for their products in the market place
- labourers with low wages - though in some cases theoretically protected by law against exploitation, they frequently face the choice between subsistence wages which are inadequate due to inflation and unemployment
- labourers not in regular employment - either casuals, whose number is continuously increasing as traditional patron-client relationships give way to uncommitted employer-employee patterns, or unemployed
- the physically and mentally handicapped

The majority of the poor still live in rural areas in spite of the recent high rates of migration to major cities.

However, it is not enough to identify poverty by the occupation of household heads, who are mostly male. Family structure may be such that some members suffer more than others, at least at times of maximum stress, either seasonally or in the most adverse periods of fluctuating existence. In most poor groups, women and children tend to be still further disadvantaged and depending on local customs, some may be particularly oppressed, like widows, barren wives and unwanted female children (see Section 34).

2. The Aims of Oxfam's Work Overseas

The main purpose of Oxfam's overseas work is to respond to the needs of men and women in the Third World, working with the poorest members of the human family.

The traditional aims of a voluntary society are to relieve the suffering caused by poverty and to reduce the total number of the poorest. Oxfam is doing this but it is also trying to do something more: namely, to encourage processes of change, and in such a way that the poorest can take charge of the improvement of their own living standards. In this way Oxfam seeks to reduce more permanently the bias against the poor in the development process. (See Oxfam's Articles of Association in Section 1). Note: It needs to be remembered that those who do 'respond to need' are not necessarily the poorest. The latter are probably illiterate and have no experience in articulating their needs, and are anyhow remotely situated whether in rural areas or slums, so a positive endeavour must be made to seek them

out and communicate with them.

This means that we are not just concerned with material improvement through rural and urban production and health programmes, but also with the manner in which material improvement is organised, ie with the social institutions and organisations that these programmes bring with them.

Oxfam projects are aimed at two targets. They are designed:

- (i) for the poorest to have more, particularly in terms of food and health, and control of a fair share of the world's resources
- (ii) for the poorest to be more in terms of confidence and ability to manage their own future, and their status in society at large

It is the primary purpose of this handbook to provide guidelines, grouped largely under the headings of agriculture, health, and social development, to show how these aims may be pursued. But however important such guidelines may be, and the development framework they imply, one must always remember that Oxfam exists to serve people, not to promote a set of ideas.

The first essential then is to respond to human need on the basis of compassion, and out of a sense of a natural kinship with those who suffer. The guidelines are necessary so that this humanitarian impulse is tempered with realism, so that it does not degenerate into mere sentimentality, but Oxfam field staff should be flexible and imaginative in interpreting the guidelines, and should respond to human need wherever there is a genuine opportunity to do so.

3. Strategic Considerations

- (i) The distinction between 'rescue' and 'development' aid It follows from the working environment described above that Oxfam will be faced with a variety of situations composed of one or other, or a combination of two components:

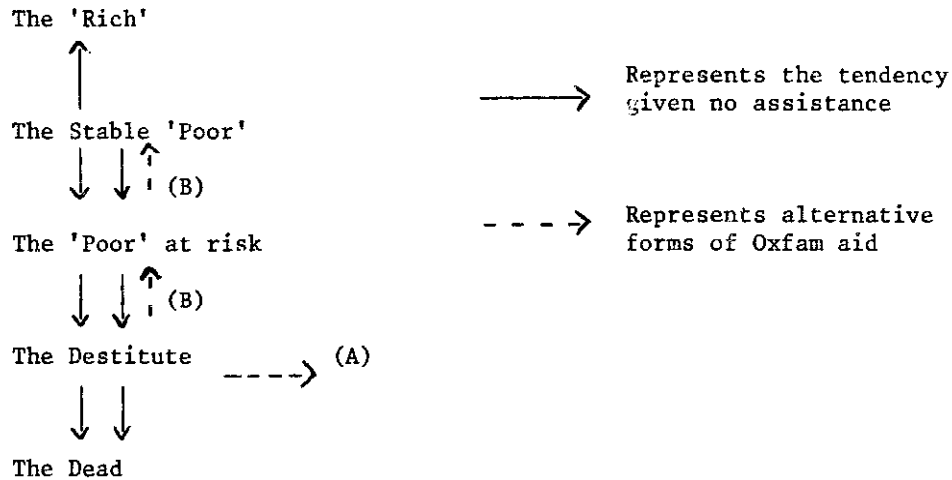
- (A) the urgent need to save the destitute from extreme deprivation and premature death
- (B) the need to arrest and reverse the process of decline towards destitution

To the extent that (A) predominates, Oxfam's response will be in terms of gifts in cash or kind, and will be a short-term measure until some more substantial change in the condition of the victims can be arranged. Thus, while Oxfam's main aim is to help people help themselves, 'welfare' projects should never be automatically excluded, especially when there are people who are not in a position to benefit from a development programme.

In situations where (B) predominates, it will be necessary first to understand not only the present conditions but the past and the future likely dynamics of change, second to seek a durable solution. This is one which results in the rehabilitation of the poor in such a way that there is a good chance of continued future improvement in living conditions beyond the end of Oxfam involvement; and in so doing:

- (a) to minimise the chances of assisting community members not in need
- (b) to so design the project that the causes of current oppression do not recur in the future

Though the distinction between (A) and (B) is not always clear-cut, it may help to depict them summarily as follows:



The alternative strategies available to Oxfam field staff, when set against the limited resources they command, serve to underline the dilemma they constantly face : between 'rescue' aid which saves lives in the short term but which may 'solve' nothing, and 'development' aid which in some cases may fail to achieve its objectives. Moreover, it can be argued that 'rescue' operations are relatively easy to appraise; all that is required is to fund the most cost-effective mode of delivery. The appraisal of development on the other hand is fraught with difficulty; the standard procedures of cost-benefit analysis give little help when there are so many unquantifiable elements and when the outcome is so uncertain.

In the last analysis Oxfam field staff have to work out their own priorities given all the facts and estimates at their disposal. Choices will perforce be subjective to some extent; moreover, as will become clear below, choices seldom come in the simple form of either (A) or (B); it is usually a spectrum of choices that face Oxfam field staff rather than a clear-cut dichotomy.

- (ii) Relief of the Destitute Although this Handbook is chiefly concerned with development strategy, it must be emphasised that the destitute who have no resources and little hope should receive assistance to ensure their survival.

First, disasters and emergencies present a challenge which Oxfam cannot ignore. The plight of people caught up in homelessness or sudden calamities, such as earthquakes, hurricanes, epidemics and forced migrations, evokes a response from the public which has provided much of the impetus for the growth of Oxfam. To do justice to the compassion felt by our supporters and by the public, it is essential that we continue to assist in times of emergency and disaster, and it is appropriate that we do so in partnership with the other members of the Oxfam International Disaster Unit. (Detailed guidelines on disaster support are given in Section 50.) Oxfam maintains a continuing contact, as well as at times of disaster, with organisations directly concerned with co-ordinating disaster appeals and relief, including: the Disasters

Emergency Committee (DEC) of which Oxfam is one of five members, the Disaster Units of ODA (the Overseas Development Administration of the British Foreign and Commonwealth Office) and UNDRO (the UN Disasters' Relief Office), and most recently with the International Disasters Institute.

NB The other four members of the DEC are: the British Red Cross Society, CAFOD, Christian Aid and Save the Children Fund. Additionally a 'steering committee for disasters' has been set up by a group of agencies known as LIPCROSS/VOLAGS consisting to date of: Catholic Relief Services, League of Red Cross Societies, Lutheran World Federation, Oxfam and the World Council of Churches; the office is at: P.O. Box 276, 1211 Geneva 19, Switzerland.

Second, there are communities which contain people in a state of chronic destitution and degradation for which no sort of development is possible, and there is sickness without the hope of recovery; here again compassion demands that Oxfam should assist.

Third, there are 'rescue' projects which have proved to be extendable with a 'development' component. Help for the disabled (Section 41) or training for the blind (Section 25), using an enlightened approach, can be exceedingly successful in helping people 'to be more'. Similarly, with a more flexible approach, apparently hopeless urban shanty towns can be redeemed both materially and socially (Section 36). Indeed Oxfam field staff may often have opportunity to build a bridge between what begins as a 'rescue' operation to what, with continuing association for instance through food-for-work, becomes a 'development' project, successfully lifting the community in question out of despair into a position of modest security. Alternatively, it may be timely intervention in an emergency, eg with food aid, that can help the recipients to avoid the selling of productive assets like land or bullocks, thus averting the decline into powerlessness and destitution.

- (iii) Aspects of development strategy If it is accepted that Oxfam is equally in business to arrest and reverse the processes that result in deprivation, the difficulties of designing effective programmes should not be underestimated. Neither the full understanding of current conditions and the reasons for them, nor the formulation and promotion of solutions, is easy. This is largely an uncharted field; unfortunately little can be learned from orthodox development programmes designed by governments and their aides for downward movement of technological and material stimulus. Indeed, it may be the unequal and unacceptable effects of just such programmes that Oxfam may be faced with countering.

Much however can be gleaned from the careful assessment of the experience of Oxfam and similar agencies; systematic analysis of this experience is now under way (Section 8). Intuition suggests that while every Oxfam programme will be unique taking all its aspects into account, some comparisons will be possible which will be vital in future strategy and policy decisions.

Institutional and political conditions, no less than population and resource relations, interact to create widely varying situations. What Oxfam can do depends not only on its own resources but on this working environment. As far as political conditions are concerned, Oxfam must largely accept them; although given persistence and tact, some progress may be possible in what appear to be the most intractable

situations. Offence to those in power must be avoided, but equally it may be that Oxfam can do much to encourage the weak and hesitant within the framework of the existing law. In many countries, particularly in remote rural areas Oxfam faces not so much an antipathetic officialdom as a bureaucratic vacuum, where its efforts are circumscribed by constraints other than political: Oxfam's operations are often tacitly welcomed by governments in such situations.

Institutional arrangements characteristic of long-established cultures may prove to be major stumbling blocks. Marriage rules and kinship structures between the sexes, rigid class and caste observance, and master/servant relations may have been tolerable in the past, and even contributed to personal security at the expense of freedom; but they have tended to outlive their usefulness in changing circumstances. It must be realised that the fortunate have now a vested interest in their own preservation, whereas the unfortunate have no power, or little understanding of how to change their condition. Oxfam with its innovative approach and knowledge can hope to influence such situations, if it follows sound principles of procedure. In particular, if people are 'to be more' they must participate fully in their own economic and social development; they must make their own choices and not become servants of an externally devised grand design. Within such participation, a helping-each-other approach is of crucial importance; the acid test is the extent to which the intended beneficiaries feel it is 'their' project. This implies an accent on social awareness and the identification by groups of common goals. These groups may, at least in the early stages of a project, be specifically selected for assistance, eg the ways in which women's work can be improved relative to the whole community may be particularly pertinent; and landless labourer or a particular group of craftsmen might be equally worthy of special attention. As mentioned in Sub-Sect.2 above, the poorest must be sought out, those who articulate their needs the loudest are probably not among the poorest.

(iv) Project choice While it may be difficult to choose between projects at the initial stage, it is possible to point to some principles which are likely to optimise the value of projects as a whole.

A. Approaches to project design The final form taken by any one project will be the result of a compromise between what the local people say they need and what Oxfam can provide.

What needs are expressed will depend on Oxfam's approach. First it is necessary to be informed as far as is possible about the poor: their numbers, distribution, the resources they control, the pressures to which they are currently subjected; and about the dynamic processes which produce more and more poor people in such disparate environments as Latin America, Africa, the Middle East, South and South-East Asia. While it is not within Oxfam's resources to carry out the global surveys required, Oxfam together with other voluntary agencies, is in an unusually strong position through experience to understand the process of deprivation. Much can be learned from the origin of requests for help and from continued contacts about the strength and interaction of the forces involved, and from the reaction of the people themselves. Similarly, by patient dialogue the best decisions possible can be made about the ranking of needs and the strategies which stand the greatest chance of success.

The circumstances in which a new project starts and the way in which the people are organised to tackle it may be of crucial

importance. The establishment of a successful beginning can have large multiplier and demonstration effects through the confidence it inspires. To bring about an increase in local food consumption might seem to be the most likely starting point, and it will frequently provide the key to successful projects. However isolated and fragmentary approaches tend to have only a marginal effect. Food is of little value for instance if intestinal infection is at such a level that no benefit is gained from the extra nutrient, or if increased consumption cannot be sustained throughout the year by improved food stores, or if access to food supplies cannot be ensured from year to year by long-term improvement of marketing or production. Ultimately then a healthy community, to be in a continuing equilibrium with its total environment, requires an assembly of projects stretching outward from short-term palliative to long-term stabilising measures such as soil-conservation, family planning and functional education.

While no two groups of prospective beneficiaries will need, or respond to, exactly the same collection or sequence of project themes, it is likely that certain questions will arise frequently. In later Sections of the Handbook, questions specific to projects related to agriculture, health and social development are suggested for the assistance of Oxfam field staff. It might be helpful to complete this introduction to development strategy by asking some general questions project planners will face:

- (1) Is the group sufficiently poor to need assistance but not so poor as to be classed as destitute? This will determine whether 'development' or 'rescue' aid is appropriate.
- (2) What is the innovation or group of innovations which above all others would make the crucial difference to their level of living?
- (3) Is the technology involved in the innovation(s) appropriate in the sense that: all the poor will benefit from its introduction, no external agencies will make major gains at the expense of the local people, and the technology itself, eg low-cost housing, sanitation, village water supplies and oil-extraction plant, will not lead to reliance on foreign materials and expertise, but rather will encourage the people to work together among themselves?
- (4) Does Oxfam have the funds and expertise to handle the situation at once? Are initial research studies required? (For Social Surveys, see Section 8)
- (5) Have we considered possibilities which will remove uncertainties and risks, eg dangers of crop failure, human disease, and social dislocation, as carefully as we have considered possibilities of raising average consumption levels?
- (6) Do the innovations we propose for the immediate introduction of quick benefits prejudice, or lead naturally to, longer-term improvements that may be possible as the people's time horizons and resources extend?

- (7) Do our plans allow for the increase in population that can be confidently predicted (and this will be further increased if our ameliorative measures result in longer life expectancy and a reduction in emigration)? If not, are there alternative employment opportunities here or elsewhere? Are we giving sufficient attention to population planning?
- (8) Is the group sufficiently homogeneous to be sympathetic to each other's problems and therefore potentially co-operative, yet showing signs of producing leaders who will be acceptable to the group for the organisation and management of change?
- (9) Are there external forces which are likely to upset the formulated plan in the foreseeable future? If so, can these be parried and even constrained in the long-term? For instance, can flash floods be diverted to groundwater reserves, can monopolist money-lenders be converted to reasonable and prudent bankers?

For analysis of Project Appraisal Systems, see Section 8.

- B. Inter-relationship of projects First, a concentrated and sustained project makes a bigger impact, the people from surrounding areas learn more from it about the possibilities which may also be open to them. The benefits of many small projects scattered over a wide area may be scarcely noticeable, except to the people directly involved, and so the wider educational effects may often be negligible. In addition of course the time and energy of Oxfam field staff can be put to better use if they are dealing with a few large projects or a large number of projects within a limited area.

Second, the integration of activities in the form of linked projects have many advantages, as already observed. The implications of this type of integration include:

- a diversity of objectives, eg increased production, greater employment opportunities and therefore more equitable income distribution and consumption, individual rights and freedoms
- a number of products, eg food, good health, adequate shelter, relevant education, surpluses for market exchange
- a range of effective institutions, eg for lending, saving, marketing, training, sharing and co-operating
- achievement of psychological advances, eg self-awareness, knowledge and understanding, confidence, security

Integration can also be applied geographically, as outlined on the previous paragraph under Concentration.

A third form of integration concerns the working together of different agencies. This can occur at various levels ranging from complete collaboration through co-ordination to informal discussions. However worthy and sensible in principle, experience has shown all too vividly and sometimes with disastrous results that this type of integration is very difficult to achieve successfully, such is the nature of governments and agencies both foreign and local. Nonetheless Oxfam should make every endeavour to achieve this at some level.

Third, it may be useful if projects can be replicated. Oxfam's structure and support is such that it has both the local freedom and technical back-up to be innovative in tackling problems of poverty. Its limited funds will have been used to the best advantage if it selects problems which are of widespread occurrence and then develops solutions that others can copy. This implies good monitoring and reporting so that Oxfam's experience can be widely known.

Fourth, cross-fertilisation between projects under Oxfam's care is likely to be highly productive, again implying an important role for the flow of information about progress through Oxfam House. Thus projects concerned with different themes might learn from one another about community development and management; equally, technical ideas may on occasion be usefully transferred and adapted. By drawing on information from a wide variety of projects, this Handbook is itself one vehicle for cross-fertilisation.

4. Changing Emphasis in Oxfam's Aid Policy

Oxfam intends to expand the scale of its aid in real terms over the coming years. How it deploys its funds therefore becomes of even greater importance.

Oxfam has traditionally had a bank-type function, helping to finance other agencies which are operating in the localities where we want to help. This bank-type function will remain important, though careful thought will be given to the type of agency we help to finance. In general Oxfam has preferred to work with voluntary bodies rather than government or international agencies, thereby avoiding formality and benefiting from person-to-person communication at the project level. It is important to avoid the excessively paternalistic kind of mission, to ensure that the benefits are open impartially to everybody irrespective of belief and to avoid the identification of Oxfam with purely sectarian or political aims. There is sometimes a feeling that too much aid is channelled through Christian missions but we have also worked successfully for example with Buddhists in Vietnam and Gandhians in India as well as with non-religious groups.

Local voluntary agencies, and their associations to which they sometimes belong, particularly lend themselves to the kind of assistance that Oxfam can provide. Local agencies give the best framework through which the people themselves can participate in their own development, so Oxfam field staff are encouraged to find, stimulate and help indigenous organisations, locally organised community development and adult literacy groups. Associations representing such voluntary agencies, occur in a number of countries, eg BRAC in Bangladesh, CADEC in the Caribbean, CDTF in Tanzania, CONGAT in Togo; these provide ready-made channels for Oxfam involvement.

In recent years Oxfam has begun to operate independently and to create its own field organisation. The first stage may be the identification of village groups who show promise of being able to analyse their problems, take the lead in formulating their own solutions and then act as a group to achieve their objectives. OXWOP in West Orissa is an example of such a pilot enterprise, which is staffed largely by carefully selected personnel. Such an approach has important implications for Oxfam's organisation. First, there is a higher proportion of funds being spent on staff of which local recruits are an increasingly important element. Second, the type of person that Oxfam employs and the back-up structure will tend to change. Some of these may be employed for their specialist skills, though perhaps even more important will be their ability:

- to understand in depth the nature of local situations

- to encourage patiently the emergence of ideas and the will to act and co-operate among the people within the project
- to weigh-up the local costs and returns of alternative projects

One major trend is apparent regardless of how Oxfam transmits its aid. This is the increasing importance of the formation and support of local socio-economic institutions among the community groups with which Oxfam is working, such as village meetings as in Tanzania, co-operatives, credit and savings groups, women's clubs, trade unions and "sindicatos". This is not to deny the value of technical knowledge, its transfer and the element of training at all levels that is implied. As Oxfam's operations expand, changes in its own structure and functions will be necessary.

- (i) In addition to learning from external sources, for instance by the employment of Consultants for specific tasks or Panels at Oxfam House to advise on specialist areas of activity, by far the most important need is that the flow of knowledge through the Oxfam organisation itself should be optimised. This requires an efficient collection and dissemination procedure at Oxfam House, drawing together, sifting and storing valuable experience gained in the field by Oxfam and others, which can then be passed on to others in the form of answers to specific questions, comments on project proposals, special subject bulletins and up-dated guidelines. Important by-products are the reports that can be periodically derived from this flow so as to keep donors informed and interested in Oxfam's work, and similarly the evidence that can be marshalled on occasion in order to influence the public mind and government decision on aid policy. Adequate resources for the expansion of this knowledge-flow system are essential, particularly a competent research facility which is working directly with and integral to this system.
- (ii) Systematic training in various forms for field staff and head office personnel may also represent an expanding sector. While the streamlining of procedures for the disbursement of aid can save funds and increase the amounts deployed, it is only through the assurance that those called upon to take decisions at all levels have adequate time and training to take these decisions that gives the confidence that the increased aid flow is being used to the best advantage.

5. Postscript

It may appear that Oxfam is hoping for Utopia, in its search for equity-oriented technologies and with its avowed objectives to save the destitute and increase the development capability of small community organisations. Yet we have seen in many countries what can be achieved by people helping each other when backed with small amounts of outside aid; we have seen fruitful partnerships between Third World agencies and Western organisations. We recognise that the problem of poverty is daily growing in scale and intensity relative to the levels of living of the well-endowed. Nevertheless we have seen much to give us hope that our aims are not impossibly high; we believe that giving is as good for those who give as those who receive. In a gloomy, threatening world, the approach Oxfam tries to follow offers a way forward to the poor, the deprived and those suffering discrimination.

6. Geographical PrioritiesAsia

In a paper dated July 1976, the following geographical priorities were determined by the Asia Committee. (FAS 29/76.) The Committee agreed that in addition to need, the criteria for deciding between countries should depend on:

- (a) the effective ability of Oxfam staff to supervise and visit
- (b) the channels available in the countries concerned

No grading of priority within each category is intended (FAS 29/76).

PRIORITY AREAS	LOWER PRIORITY	EXCLUDED
Bangladesh India Indonesia Pakistan Philippines Sri Lanka	Afghanistan Burma Cambodia Laos Macao Nepal Papua New Guinea Thailand Vietnam	All other Countries in the area (though this should not prevent possible Oxfam intervention in appropriate circumstances).

West Asia

In a paper dated April, 1976 and approved by the Committee in Minute ME 11/76, the following geographical priorities were determined:

PRIORITY AREAS	LOWER PRIORITY	EXCLUDED
Egypt Gaza Jordan (W. Bank) Lebanon Turkey (Eastern provinces) Yemen Arab Republic	Cyprus (Refugees) Israel Jordan (E. Bank) N. Africa Syria	Europe (except Cyprus and Turkey) Oil-rich countries

Africa

The geographical priorities for Africa were reviewed by the Field Committee at their meeting on 20th October 1976 and are at present as follows. It is proposed in future to concentrate the work of the Zaire Advisory Team more in the following provinces: Bas Zaire, Bandundu and the Kasais.

PRIORITY AREAS	LOWER PRIORITY	EXCLUDED
<u>East Africa</u>		
Burundi	Comoros Islands	
Ethiopia	Kenya (except as in	
Kenya - NE Province and	column 1)	
districts of the Rift	Malagasy	
Valley	Mauritius	
Rwanda	Seychelles	
Somalia		
Sudan		
Tanzania		
Uganda		
<u>Southern Africa</u>		
Angola	Botswana	Swaziland
Malawi	Lesotho	
Mozambique		
Namibia		
South Africa		
Zambia		
Zimbabwe		
<u>West Africa</u>		
Cape Verde Islands	Benin	Ivory Coast
Gambia	Sierra Leone	Liberia
Guinea Bissau	Southern Ghana	Nigeria
Mali		
Mauritania		
Niger		
Northern Ghana		
Senegal		
Togo		
Upper Volta		
<u>Zaire</u>		
Bandundu		All other regions
Bas Zaire		of Zaire
Kasais		
Kivu		

Latin America

PRIORITY AREAS	LOWER PRIORITY	EXCLUDED
<u>Caribbean</u>		
Dominican Republic Haiti Jamaica Windward Islands		Bahamas Barbados Cayman Islands Cuba Guyana Leeward Islands Trinidad Turks & Caicos U.S., French and Dutch territories
<u>Central America</u>		
Guatemala Honduras Nicaragua Salvador	Mexico	Belize Costa Rica Panama
<u>South America</u>		
Bolivia Brazil (N.E. Brazil and Amazonas) Ecuador Peru Chile (through TASC)	Argentina Colombia Paraguay	Uruguay Venezuela

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The NFE Exchange - information exchange service, published quarterly by Institute for International Studies, 513 Erickson Hall, Michigan State University, East Lansing, Michigan 48824, U.S.A.

Famille et Developpement (F & D): Sub-Sahara Africa's Self-Help Magazine - new quarterly 'self-help' magazine in French, for and about Africans, with a pioneering focus on the role of women in development. Subscription 500 to 750 F. cfa; BP 11007, CD Annexe, Dakar, Senegal.

New Internationalist - monthly. Subscription per year: \$17.00 airmail or \$11 surface mail. New Internationalist, Montague House, High Street, Huntingdon, PE18 6EP, U.K. Journal taking a progressive view on the issues of world poverty and social injustices, and focusing on the radical changes required if these are to be overcome.

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Section 4: INFORMATION DISSEMINATION AND TECHNICAL ASSISTANCE

1. Recent Evolution Within Oxfam's Programme

The increased amount of time that is being spent by Oxfam field staff on each project is accounted for partly by more thorough appraisal and monitoring. But there has also been an increase in the amount of time and effort being spent in helping projects plan their future work, in getting advice on technical matters and sometimes in community development activities of a general kind.

2. Five Ways of Helping Other than with Money

The activities of Oxfam field staff which fall outside their traditional grant-making and monitoring functions have sometimes been described as Oxfam's technical assistance role, or 'its non-money aid'. The work involved is much broader and less specialised than technical assistance, and includes also help with the organisation and planning of projects, running seminars and building up links between projects and local agencies. It involves dialogue with local groups, and not only or even primarily advice or assistance. Activities which come into this category can be roughly classified under five heads:

- (i) Talking through problems. Oxfam field staff contribute an immense amount simply by sitting down with people who are trying to promote development in their own locality and talking through their problems. Often people are highly competent in their own fields but lack key skills in management or accountancy, in which the field staff may be able to point out pitfalls which might otherwise be overlooked. Sometimes though the benefit is simply that a relatively isolated person has an opportunity to try out his ideas on somebody with a critical mind.
- (ii) Inter-project learning People often learn best, not from 'experts', but from people like themselves with similar problems. People from Oxfam projects can often be encouraged to visit one another or attend seminars together, the field staff providing the essential link. This is discussed in more detail in paragraph 4 below.
- (iii) Project organisation The field staff's experience of a wide variety of projects and awareness of the need for community or group involvement and relevant training is especially important. Many projects with technical, agricultural or medical content fail to achieve their objectives because these aspects are neglected. The field staff can contribute technically-minded project planners to be more aware of these needs. See Section 3 and the Social Development Guidelines, Sections 30 - 39.
- (iv) Mobilising local technical resources, where they exist, to provide the technical advice and support needed by Oxfam field staff and by projects. This is not only useful to the projects, but helps to keep local experts and institutions in touch with real as opposed to academic problems. The role of the field staff here is again that of a linking agent, bringing together local agencies which can help each other; and their activities may include:
 - (a) enlisting local consultants
 - (b) involving local research institutes or universities in the solution of technical problems

- (c) involving local agencies which possess expertise in community development, management or other social/organisational aspects of development
- (d) helping to build up local technical assistance centres, as in PATAC, Brazil (BRZ 141) and Kumasi Technology Consultancy Centre (GHA 22)
- (v) Introducing new ideas and techniques especially based on Oxfam's experience gained in other similar situations. Where these are technical innovations, they will often be in the guise of appropriate technology, but ideas about the way people can organise themselves to handle their own development are equally important such as the Saveway Clubs promoted by Oxfam (see Section 37). The information on subjects which field staff convey by word of mouth can often be backed up by leaving a booklet or leaflet, eg the Oxfam booklets on T.B. and leprosy, or the World Neighbours In Action leaflets, eg on soil conservation and rabbit keeping. The Oxfam book token scheme (Section 2) enables books and manuals to be distributed free of charge to those who lack the facilities or available foreign currency to purchase them; this scheme is now operating for material in English, French and Spanish and is being extended. Another way of introducing a new technological idea is to arrange for a field trial or demonstration, eg of a pedal-driven grain mill (SUD 21) or a wind-pump. Yet another source of ideas from outside the locality is the numerous technological agencies which now exist and which aim to tackle or solve technical problems - see paragraph 8 below for details of some technical agencies operating on an international basis.

3. Grass Roots Technical Assistance

Technical assistance and the broader, more socially-orientated work which must complement it, is carried on at two levels:

- (a) when expertise possessed by indigenous and external agencies, universities and consultants is used to help the local organisations which constitute Oxfam's projects.
- (b) when the knowledge and experience accumulated by the projects, ie by local organisations, is then used to help individual people - mothers, housewives, farmers, craftsmen, etc.

Discussions of technical assistance conventionally consider only the first of these categories. The second is clearly of equal importance, and is referred to here as 'grass roots technical assistance'. A major part of it consists of training programmes, but to be effective it must include much more than formal training and extension work. Maintenance and servicing facilities in rural areas are an aspect of this, or the provision of technicians to help villagers construct a water supply, sanitation system or grain silo.

For example, in a project for the building of local stores in Tanzania (TAN 107), the villagers receive the building materials but they are responsible for organising their own labour to construct the store. Where appropriate they are assisted by local craftsmen.

A similar approach, with technicians and villagers working together, could be used to improve the level of maintenance of some kinds of equipment.

Certainly agricultural implement repair services and pump maintenance are two other aspects of grass roots technical assistance which are all too often forgotten.

4. Inter-Project Learning

One of the best ways for people to learn about the organisation and management of projects is for them to meet people from other projects and exchange ideas, or for them to visit another project and spend long enough there to experience the problems and assess the solutions being tried. Oxfam field staff have reported on four kinds of inter-project learning which they have experienced:

- (i) Seminars In Brazil, people from several centres were brought together to discuss the use in social education work of a locally-made brick machine and allied self-help housing system (BRZ 141). In India, meetings have been held where people from several projects within a day's journey have come together to discuss common problems. Field staff comment that 'in our experience these are always of great value'.

The Oxfam field office in Central America has recently assisted in organising three seminars; for project managers, for "campesinos" (peasants) involved in projects, and for "campesinas" (peasant women). Based on this experience, guidelines have been drawn up which are included as Appendix I to this Section. A report is available on the second of these in Spanish "Oxfam: Transferencia de Tecnologia Básica a Campesinos" July 1978; available from Oxfam, Apartado 268, Antigua Guatemala, Guatemala.

- (ii) Short visits to other similar projects have been effective, eg in Zaire where such visits convinced a number of doubtful people about the feasibility of comprehensive public health programmes and showed them how such programmes were put together. The danger is that projects visited may be too successful or too sophisticated, so that the visitors are intimidated rather than encouraged. However it is best to take people to a project that has attained some kind of stability in its programme, rather than one which is still feeling its way. Visits can be arranged in various ways, such as:

- (a) just to make an initial contact and show people round
 (b) including a seminar as part of the visit

In an endeavour to avoid some of the pitfalls in arranging inter-project visits, a set of guidelines is included as Appendix II to this Section.

- (iii) Training Visits Examples are a project in Bolivia (BOL 28), which sent a doctor to Guatemala to learn from a project there; one in Malawi (MAL 28) where people were sent from Malawi to Zimbabwe to study savings clubs and rabbit projects; and a man from Upper Volta who was sent for three months to the Kumasi Technology Consultancy Centre in Ghana (GHA 22) to study appropriate technology.

Series of training courses have been run by the project staff at San Martin Jilotepeque, Guatemala (GUA 12) for development workers and "campesinos" from numerous other existing or prospective rural development programmes both in Guatemala and from other countries in Central America.

- (iv) Informal contacts It is often sufficient for field staff to refer to other projects in their area for contact to be established and informal learning processes to occur. In the Andean region, CESA in Ecuador (ECU 14) has provided two other projects with a model of how agricultural mechanisation should be organised after the field staff had shown the plans drawn up by CESA to the other groups. In Bolivia, there is growing and useful contact between three primary health projects (BOL 11, 25 and 28).

5. Intermediate Technology

It is wrong to separate the technological aspect of the field staff's advisory role from the help they can give on more vital organisational and planning matters, but 'intermediate technology' is now so prominently discussed that it deserves special mention.

Intermediate technology was a very much needed concept when it was introduced in the mid-1960s. It provided an explanation of the relative failure of much development work then being undertaken, based as the latter often was on semi-automated industry in the towns and on tractors in agriculture. Such advanced technology used scarce capital resources - especially foreign currency - too extravagantly, so that development could never be widespread within a poor country; it demanded skills and services which barely existed; it neglected the plentiful labour and local technical resources which did exist and it often led to unemployment; and it often resulted in dependency on external sources of funds, technology and expertise.

In contrast to this, intermediate technology would use intermediate or low amounts of capital, and employ people to do jobs which would otherwise be mechanised. This was an economist's argument about capital and labour resources, and it was extended to deal with energy resources as soon as shortages of these became apparent. Thus intermediate technology now stands for the use of wind and solar energy, and for energy conservation as well as for a more rational use of labour and capital.

6. Appropriate Technology

The terms appropriate technology and intermediate technology are often used as if they mean the same thing. This is wrong. Appropriate technology is based partly on the foregoing argument about the proper use of resources (paragraph 5 above), but adds to it a much broader social dimension to do with what kind of life people want and how they go about organising themselves to get it.

The intermediate technology argument by itself is dangerously incomplete because it fails to emphasise the role of people except as labour resources. The wind-pumps now being advocated by intermediate technologists will prove in many instances to be as much a disappointment as the tractor was a decade ago. The lesson has still not been learnt that the correct choice of equipment is not by itself the answer, if the people who are meant to benefit cannot organise themselves for its use, or do not want to organise themselves because their society is about something else. Wind-pumps do indeed have a future and ought to be encouraged, but only where structures exist which can maintain and operate them successfully.

Thus Oxfam does not use the concept implied by the terminology of intermediate technology, except in narrowly defined circumstances such as in the reference to labour intensity (see Section 35). Oxfam prefers instead the broader ideal of appropriate technology. Oxfam does not support the view that development follows

automatically from the use of suitable technology, but believes that technology must be used within a framework of social development.

Sometimes, as with some water supply (LES 16) and house-building schemes (BRZ 141), the experience of using a simple technology has an educative and stimulating effect on wider community activities, and is a catalyst for more rapid social development. But with these examples, and with almost all others, strengthened social organisation is what makes possible the subsequent success of appropriate technology. The development of savings groups, cooperatives, farmers' associations, or village development committees is usually the essential prerequisite for the introduction of improved technology.

This topic is discussed further in two Oxfam papers: Oxfam's View of the Use of Technology in the Third World and A Poor Man's Wisdom: Technology and the Very Poor. They are available from the Publication Officer, Oxfam, Oxford, U.K.

7. Equity-orientated Technology

The aim of this type of appropriate technology is to make a wide range of basic improvements available to the maximum number of people. For instance, the minimum medically acceptable standards for water supply may be lower than many other specialists would allow, because one of the most important benefits of an improved supply is not its purity but the opportunity it offers for better hygiene (Section 24). If this is so, the same money could be used to get a lower quality of water to more people.

Similarly the barefoot doctors of China can reach more people than expensively trained doctors in expensive hospitals. But some equity-orientated technology may take negative forms. For example the non-use of manufactured milk foods for babies; this basic technology is the most equity-orientated of all because even the poorest can afford breast-feeding, and by its use can reduce infant mortality.

In most developing countries, women do a great deal more of their share of the work needed for the basic subsistence of the community. They often spend many more hours of the day in manual labour than do men; Section 34 lists a number of ways in which appropriate kinds of technology can lighten this burden and give them more equality in their working lives.

8. Management Training

In view of the points made in almost all the preceding paragraphs about the importance of social factors and management skills in technically-orientated projects, Oxfam's recent discussions of how it could make a bigger contribution to the training of people in these skills seem very timely. The following suggestions have been made.

- (a) where good projects train their own staff, they should be encouraged to train some in excess of their own requirements who can then help projects in the area which lack such staff
- (b) Oxfam should support or provide suitable management training for development workers

See also Section 33.

9. Technical Enquiries, and a Guide to Appropriate Technology in this Handbook

The growth of interest in appropriate technology during recent years has led to the development of a number of specialist technological agencies, many of which operate technical enquiry services which projects should be encouraged to make use of, and which Oxfam field staff may also wish to use. A number of government technical agencies offer a similar service. Enquiries should be sent direct to these agencies, and not via Oxfam House, because the agencies usually prefer a direct contact with the enquirer; this is also quicker.

The main branches of appropriate technology with which Oxfam is involved, and the enquiry services relevant to each, are noted in the following list. All these aspects of appropriate technology are dealt with briefly in this Handbook, and relevant Section numbers are given under each heading:

- (i) Agricultural Equipment Section 14. For farm implements write to ITDG Water and Agricultural Office. For oxen and ox-drawn implements write to the Overseas Division, National Institute of Agricultural Engineering
- (ii) Crop Processing, Food Technology and Crop Storage Section 16. Write to Tropical Products Institute.
- (iii) Water Supply is considered in the Handbook from three points of view; agriculture including irrigation (Section 12), health (Section 24), and social development (Section 36). Write to ITDG Water and Agriculture Office, TOOL and VITA.
- (iv) Windmills are mainly relevant in developing countries as windpumps and so come into Section 12. Enquiries to ITDG Power Panel, TOOL, VITA and Brace Research Institute.
- (v) For Watermills and Turbines and Wave power write to VITA and the Hydraulics Research Station.
- (vi) Solar Energy may be relevant to providing hot water in hospitals or other institutes, or in distillation of salt water, but most other applications are still highly experimental. (Section 14) Enquiries to: Brace Research Institute and VITA.
- (vii) Medical Technology Sections 28 and 41. Write to ITDG Health Panel and AHRTAG.
- (viii) Sanitation Sections 24 and 52. Oxfam probably possesses as much expertise in this field as any comparable agency, so enquiries in this instance should be addressed to Oxfam's Technical Unit. See also bibliographies for Sections 24 and 52.
- (ix) Employment Generation and Small Industries Section 35. Small Industry Development Network and ITIS.
- (x) Low-cost Housing Section 36. Enquiries to Overseas Division, Building Research Station.
- (xi) Transportation Section 36. Enquiries to ITDG Transportation Panel and Overseas Division, Transport and Road Research Laboratory.
- (xii) Technical Training is dealt with in the Handbook in several places, but mainly in Section 33. Write to ORT Technical Services.

- (xiii) Institutions relevant to making improved technology effective including cooperatives, credit unions and savings groups are covered in Section 37.
- (xiv) Disaster Technology: shelter, water supply, sanitation. Section 52. Oxfam possesses as much expertise in this field as any comparable agency, so enquiries in this instance should be addressed to the Disaster Office at Oxfam, Oxford, U.K. See also the bibliography to Section 52.

Addresses of Technical Agencies

Appropriate Health Resources and Technologies Action Group Ltd.
(AHRTAG), 85 Marylebone High Street, London, W1M 3DE, U.K.

Brace Research Institute, Macdonald College of McGill University,
Ste Anne de Bellevue 800, Quebec, HOA 1C0, Canada.

Groupe de Recherche sur les Techniques Rurales (GRET), 34 rue Dumont
d'Urville, 75116 Paris, France.

Hydraulic Research Station, Wallingford, Berkshire, OX10 8BA, U.K.

Intermediate Technology Development Group (ITDG), Transport Panel

ITDG Health Panel

ITDG Power Panel

I T Publications Ltd. Publish 'Appropriate Technology', monthly.

all at: 9 King Street, London, WC2E 8HN, U.K.

ITDG Water and Agriculture Office, National College of Agricultural
Engineering, Silsoe, Bedford, MK45 4DT, U.K.

Intermediate Technology Industrial Services (ITIS), Mysan House,
Railway Terrace, Rugby, CV21 3HT, U.K.

ORT Technical Services, 12 Gloucester Place, London W1H 4EQ, U.K.

Overseas Division, Building Research Station, Garston, Hertfordshire, U.K.

Overseas Division, National Institute of Agricultural Engineering (NIAE),
Wrest Park, Silsoe, Bedford, MK45 4HS, U.K.

Overseas Division, Transport and Road Research Laboratory, Crowthorne,
Berkshire, U.K.

Rural Communication Services, South Petherton, Somerset, U.K. Publish
'Basics' monthly.

Small Industry Development Network, Engineering Experiment Station,
Georgia Institute of Technology, Atlanta, Georgia, 30332, U.S.A.

TOOL, Mauritskade 61a, Amsterdam, Netherlands.

Tropical Products Institute (T.P.I.), Culham, Abingdon, Oxfordshire OX14 3DA, U.K.

Volunteers in Technical Assistance (V.I.T.A.), 3706 Rhode Island Avenue,
Mt. Rainier, Maryland, 20822, U.S.A.

Bibliography

- Appropriate Technology Sourcebook Volunteers in Asia, 1977. A useful guide to practical plans and books for village and small community technology. Available in French and Spanish.
- Berg, Nimpuno and van Zwanenberg, Towards Village Industry: A Strategy for Development, IT Publications Ltd., 1978, £3.25. Based on experience in Tanzania.
- R.J. Congdon (ed) Introduction to Appropriate Technology, Rodale Press, 1977. Covers all aspects of the subject.
- Canadian Hunger Foundation. A manual for Appropriate Technology. \$11.00. Examines the theory behind appropriate technology, includes 12 case studies, and gives a catalogue of organisations doing work in this field. Also available in French.
- P. Dunn, Appropriate Technology: Technology with a Human Face, Macmillan, 1979.
- Instituto de Estudios Andinos Fichas de Tecnología Popular. Sheets on Appropriate Technology, 1978. Contains 15 bulletins in Spanish with simple and complete instructions. (Apartado Postal 289, Huancayo, Peru).
- Invention Intelligence Monthly magazine issued by the National Research Development Corporation of India. Includes articles on technology for the poor, rural-based industry, housing.
- Liklik Buk Rural development handbook catalogue for Papua New Guinea, 1977. Accepted worldwide as a valuable practical guide. (Liklik Buk Information Centre, P.O. Box 1920, Lae, P.N.G.).
- Nicolas Jéquier (ed) Appropriate Technology: Problems and Promises, OECD, 1978. Provides an excellent overview of the major policy issues that confront advocates of appropriate technology, together with a wide range of case studies.
- Adrian Moyes The Poor Man's Wisdom: Technology and the Very Poor, Oxfam, 1979. Includes case studies of Oxfam-assisted projects.
- Reading Rural Development Bulletin. No. 6, March, 1979. Issue given over to appropriate technology.
- UNICEF News No. 4, 1976. Issue on village technology.
- VITA Village Technology Handbook. Valuable guide to alternative technology, with simple technical plans. Available in French and Spanish.

Useful Directories:

- Nicolas Jéquier (ed) Appropriate Technology Directory, OECD, 1979, £11.00
- Commonwealth Secretariat Directory of Appropriate Technology in the Commonwealth, £1. (Marlborough House, Pall Mall, London SW1).
- A. Robinson (ed) Appropriate Technologies for Third World Development Macmillan, £20. Expensive 420-page volume, but a miniature library in itself to those who can afford it.

Appendix I: GUIDELINES FOR ORGANISING SEMINARS FOR PROJECT HOLDERS AND OTHERS

1. Allow yourself plenty of time. Start planning at least six months before the actual event.
2. Get some person or institution to organise it for you. They should be people with whom you have close contact and have confidence in. Those you employ to organise the seminar should be a competent professional body. Friendly persons and/or projects who offer to run it may be very good in certain respects, but it is difficult to demand things from them if they have a thousand and one other things to do and especially if they have volunteered to do it for you free. Better to pay and get the job done properly.
3. Limit the number of participants to a reasonable figure. About sixty is the very maximum. Forty would be better, less than twenty hardly worthwhile.
4. Live and eat together in one place, if at all possible. If the spot is some distance from the nearest town all the better. The accommodation should be modest but adequate, and similarly the food.
5. Try to ensure a majority grassroots participation. At least 50% of the participants should be peasants although this will vary according to the aim of the seminar.
6. See that the peasants are given the chance to put forward their views. The best thing is to call all other participants "observers" at least for the first day or two, ie until the peasants accept them and do not feel cowed by them. It may be necessary to keep them as "observers" all the time. The main purpose being to hear what the peasants, our clients so to speak, have to say and learn something from them.
7. Decide early on how much time is going to be spent in plenary sessions and how much in smaller workshops. The latter are more useful but should always report back to the general assembly for a plenary discussion on the conclusions of each workshop.
8. To keep costs down and give people an idea of the importance we attach to using our money well, all travel should be by bus or private car. Air fares are only paid to those who have to cross the ocean or have to travel from other very distant places.
9. Leave as much of the day to day organisation in the hands of the participants so that they can respond to people's needs as expressed in general sessions.
10. The institution you have employed to run the seminar for you should provide a competent person to control the general sessions but the participants might like to appoint someone from among their own number. The institution should also provide a rapporteur so that every evening the minutes of the various meetings including the points made by the workshops can be written up and be available for distribution the next morning.

11. All participants must be full-time attendants. It is no use allowing anyone to come who can only make it for part of the allotted time. (Apart from anything else it annoys the other participants.)
12. Get all participants to bring some examples of booklets, pamphlets, films, slides, and any other educational material they produce. If they can bring sufficient quantities to enable them to sell to anyone who wishes to buy all the better.
13. If anyone is being asked to make a presentation he should be told that at least a precis of what he is going to say must be sent to the organisers some weeks before the seminar starts so that they can prepare copies for distribution.
14. Group discussions following presentations should be structured: reporter, chairman, etc. These positions should rotate within the group. Groups should be representative of the participants. Rooms should be available for group meetings. Paper and pens should be available for notes. Time should be allocated specifically to leisure so people can have the opportunity to talk to whom they want, and if necessary can air views they feel they cannot put during the general meetings, and organise counter meetings if necessary. This is important when the participants include a proportion of peasants, especially if they are not in the majority.
15. The seminar should include at least one evening devoted to music, and other cultural activities.
16. Groups should be encouraged to visit each other's projects at Oxfam's expense if that is possible.
17. A full report of the seminar should be prepared immediately after the event by the institution engaged to run and organise it. This should be sent to all participants as soon as possible, with a copy to each person who attended, not just a copy to their organisation.
18. Write to participants six months to a year after the seminar and ask them what follow-up they did in their own countries as a result of what they had learnt.

Appendix II: INTER-PROJECT VISITS

Those who are visiting other projects usually divide into two main groups: project holders and peasants, though there may well be others interested. Inter-project visits can be expensive when long distances are involved and frontiers have to be crossed.

Lack of planning and of clear objectives can lead to problems such as:

- (i) if short notice is given, the visits to individual sites become more like a holiday tour. This is not appreciated by those at the sites visited.
- (ii) again, if insufficient notice is given, it is difficult to organise events that would be useful, together with translation facilities where required
- (iii) often those at the projects visited have little idea of the visitors' interests

In view therefore of the need for proper arrangements to be made, it is suggested that the following measures are applied:

- (i) visits should be planned several months in advance. The visitors should write direct to the project, and not through Oxfam, indicating:
 - their proposed programme
 - their special interests and qualifications/experience
 - their objectives of the visit
 - alternative dates
- (ii) a report should be prepared straightaway after the visit on:
 - activities observed at each of the sites visited
 - assessment of the project as a whole
 - lessons learnt from the project
- (iii) an approximate budget should have been worked out and submitted before the visit (this prevents Holiday Inn-style visiting). Public road transport should be the norm.
- (iv) the projects visited should also prepare a report on the visitor(s)
- (v) if possible, a return visit should be arranged so as to enhance the learning process. Where a return visit is envisaged, board and lodging may be provided at reduced rate, or even free, by those being visited.
- (vi) it may be possible to get the idea of inter-project visits included in the initial project planning and costed in the budget. This also has the advantage that the reporting on the project can be included in regular progress reports.

Section 5: GRANT-MAKING PROCEDURES AND PROJECT CATEGORISATION

Note: For details of Aid Categorisations, see Sub-Section beginning on 5-9

1. Introduction

The procedures referred to in this Section of the Handbook should be adhered to whenever it is practicable to do so, but Oxfam is an organisation which aims to provide the best overseas assistance as quickly as possible and there will be occasions when it would be right for the procedures to be modified so that those in urgent need may be helped urgently.

2. Definitions

- (i) Discretionary Grants These may be approved by a Field Director who has been authorised by the Overseas Director in writing to make such grants. See also 4(i).
- (ii) Sponsorship Grants are not a charge against the area budget. They arise when a member of the public or a group wishes to send a donation overseas to: a) a child, or b) a family, or c) a student.

The enquirer is recommended to sponsor a named child, family or student through a list of organisations approved by Oxfam. The donation must not be less than £40 a year. Each organisation on the Oxfam list should first be approved by the Sponsorship Department in consultation with the appropriate Field Director. The Sponsorship Department is responsible for obtaining the necessary reports and accounts.

- (iii) (a) Earmarked Grants These may be recommended for approval by a Field Secretary at Oxford when a donor asks Oxfam to transmit a cash donation to a project overseas and prefers to use Oxfam as a channel for sending his funds. Such a donation should not normally be accepted unless the project has already been supported by Oxfam in the past. The object of this procedure is to avoid the risk of involving Oxfam, even indirectly, with a project which has not been approved. A Field Director may be asked to advise on the recent progress of the project. If the project is one which is being supported by a current or recent Oxfam grant, the donor should be asked to make his donation as an offsetting (see (iv) below). Earmarked grants are not a charge against the area budget. If the donor wishes to tie his donation to a specific piece of equipment or budget item, the Field Director must confirm that in his view the donation is appropriate. Reporting and accounting for earmarked grants are the same as for normal grants.
- (b) Other Earmarked Funds These sums can be distinguished from earmarked grants by the following characteristics:
- the money comes officially but unsolicited from a bona fide voluntary agency known to us which wishes to use Oxfam only as a channel
 - reporting and accounting for the use of the funds - as opposed to their safe arrival - is not the responsibility of Oxfam
 - no earmarked grant is approved
 - publicity is not given to these transactions

Such funds may be handled either by the Field Director or by Oxford. They may be accepted by the Field Director from a "bona fide" voluntary agency and paid by him/her to a designated project acceptable to Oxfam. The entries should be shown on the imprest account, but no earmarked grant is made. Similarly, funds may be accepted in Oxford from such sources, and they will be credited to a suspense account for payment either by Oxford, or by the Field Director if so requested from the imprest.

- (iv) Offsets When a donor expresses a wish that his/her donation should be linked to a named type of aid or to a named country or to a named project, the staff in Oxfam House will send the donor a description of a suitable project which is being supported by an Oxfam grant. If a Field Director is offered (or hears about) a donation for a particular project he/she must refer the offer to Oxford in case the project named by the donor has already been offset by donors elsewhere. The staff also seek the joint funding of some projects by the Overseas Development Administration of the Foreign and Commonwealth Office and the co-financing of others by the Commission of the European Communities. Projects may also be offset by Trusts, Foundations, other Oxfams and other aid agencies which are known to be willing to make donations on the offsetting principle. If a project is joint-funded, co-financed or offset by a large donation, the Field Director is informed and must ensure that reporting standards are particularly good.
- (v) Catastrophe Grants The Overseas Director has a budget from which he allocates catastrophe grants. The Disasters' Officer may recommend that a grant should be approved under the Catastrophe Budget head instead of under the area budget. If disaster funds (see (vi) below) are available, there is no need for grants to be charged against the Catastrophe Budget.
- (vi) Disaster Funds When there has been a major disaster, eg cyclone in Andhra Pradesh, refugees from Indochina, there may be a special appeal for funds for that disaster. Grants made in connection with the disaster should then be charged by the Overseas Director against the Disaster Funds. Donations to the Disaster Funds are sometimes referred to as (for example) 'funds earmarked for Andhra Pradesh', not to be confused with earmarked grants (2.(iii) (a) and (b) above). If there has been a disaster but no special appeal has been made, donations received from people wishing their money to be used in the disaster area are treated as offsetting if grants have been approved, or as earmarked grants if no grants have been approved.
- (vii) Emergency One of the five major categories into which all grants are placed is 'emergency'. Grants within this category may be charged under the emergency procedure by the Overseas Director against either the area budget, the Catastrophe Budget or the appropriate Disaster Fund.
- (viii) World General Grants of a kind which are not suitable for charging against an area budget, the Catastrophe Budget or a Disaster Fund, may be charged by the Overseas Director against the World General budget.

3. Handling of requests for funding by Field Directors and Field Secretaries

Written requests for assistance come in many forms, ranging from a brief description of the project to a fully completed application based on the Oxfam guidelines. Field Directors should use their discretion when processing requests

for funds but the aim should be:

- (a) to visit the project unless there is a good reason not to
- (b) to consider during the visit whether the project should be encouraged to make a formal application if this has not been done already
- (c) if a Field Director considers that it would be appropriate to discourage the completion of a formal application because it is clear that it would have little chance of approval, he/she should make his/her views known to the project manager promptly and sympathetically. The Field Secretary should also be informed.

If a Field Director does not visit the project for which funds are requested, he/she should either send the project manager the application guidelines, or alternatively correspond with the project manager until it is clear whether an application should or should not be sent. In the latter instance the Field Secretary at Oxford should be informed, and the Field Director should inform the project manager clearly that the project is not appropriate for Oxfam assistance.

If a formal application is received, it must be referred to Oxford for a final decision if it exceeds the Field Director's discretionary limit, and a proper recommendation for action made.

A Field Secretary should not normally hand application guidelines to a project holder unless the Field Director has requested the Field Secretary to do so.

A Field Secretary must not recommend a grant without having received the Field Director's prior recommendation or having received the Overseas Director's authority to do so.

If the office wishes to act differently from the Field Director's recommendation, the latter has the opportunity to add such further comments as he/she may wish before the application is approved or rejected.

4. Processing of Grants

The following arrangements are incorporated in a paper 'Purpose and Structure of Field Committees' which was approved by Oxfam's Council in July 1979:

- (i) Discretionary Grants may be approved by the Field Director up to £2,000, with flexibility to a maximum of £2,500. The details are entered on the (yellow) project form and sent to the Field Secretary. The amount approved must be stated in the local currency and the Field Secretary will convert this figure to £ sterling when allocating the grant number. Payment may occasionally need in an emergency to be made by the Field Director from his/her imprest account, but normally the Field Secretary should arrange payment from Oxford. The Field Secretary may request that the discretionary grant be a charge against the Catastrophe Budget or the appropriate Disaster Fund, rather than against the area budget.
- (ii) Recommendations up to £7,500 may be approved by the Area Co-ordinators, provided the project fits clearly within existing procedures, guidelines and policies.

- (iii) Recommendations up to £15,000 may be approved by the Overseas Director. If no Consultant has been asked by the Overseas Division to advise, the grant can be approved immediately upon receipt of the Field Director's recommendation. A grant up to £15,000 may be approved by the Overseas Director against the Catastrophe Budget or an appropriate Disaster Fund, rather than against the area budget.
- (iv) Recommendations over £15,000 may be approved by the appropriate Field Committee at its next meeting or by the Between Committee procedure. This procedure is used for applications that fit into the existing guidelines and policies; applications falling outside these must be referred to the Field Committee. Field Directors should normally expect the Between Committee procedure to take two to three weeks, or sometimes longer if a Consultant has been asked by the Overseas Division to advise. Field Committees normally meet 3 - 4 times a year.
- (v) Recommendations over £15,000 which are for a grant against the Catastrophe Budget may be approved as an emergency procedure by the Overseas Director, the Director-General and the Grants Authoriser. Approval can often be obtained on the same day that the recommendation is received in Oxford. If the three signatories consider the recommendation is not urgent enough to warrant a grant from the Catastrophe Budget, the Between Committee procedure may then be followed.
- (vi) Recommendations over £15,000 for a grant against a Disaster Fund may be approved by the same procedure as for recommendations in (v) above for catastrophe grants, or by the Field Committee or by the Between Committee procedure, depending on the urgency of the application.
- (vii) Recommendations over £20,000. Any grant application in excess of £20,000, whether approved or rejected by any Field Committee, must be ratified by the Executive Committee. The Executive Committee meets every two months.

5. After a Grant has been Approved

- (i) Informing the project It is the responsibility of the Field Director to inform the project whether the application has been approved or not, and on what conditions.
- (ii) Purchase of Equipment Where it has been agreed between the project, Field Director and Field Secretary that equipment should be purchased by Oxfam outside the country of the project, then the Field Secretary and Oxfam's Supplies Officer will carry out the purchase and despatch of the equipment, if necessary seeking the prior advice of Oxfam's Purchasing Officer.
- (iii) Progress Reports It is the Field Director's responsibility to see that projects do in fact submit the reports on the correct Oxfam form on time. See Section 8 for guidelines on reporting.

6. Other International Oxfams

The procedure varies greatly for the handling of funds from the other Oxfams for projects in which they are interested. Each has established its own arrangements for co-ordination and liaison with Oxford as befits their own interests.

PROJECT CATEGORISATION

1. Aid Categorisation and Evaluation

The project categorisation system, which Oxfam field staff use in classifying every new application for a grant, is an important tool in Oxfam's assessment procedures. But unlike the methods described in Section 8, project categorisation has nothing to do with assessing individual projects, instead it is a system for monitoring Oxfam's overseas programme as a whole or in a particular region or country. Its purpose is to allow a check to be made on the flow of assistance to various kinds of project, which indicates to what extent grant-making coincides with Oxfam's priorities.

2. Major, purpose and input categories

The principle of the project categorisation scheme is that projects are first classified in terms of a major category covering the overall objectives of the work proposed in the grant application. There are five of these major categories, corresponding to the five main sub-divisions of this Handbook: agriculture, health, social development, humanitarian and disaster relief.

Projects are then classified in terms of one or more purpose categories, of which there are twenty, as listed in the table overleaf, and expenditure is further analysed according to input categories which distinguish between capital inputs, salaries, supplies, and other recurrent costs. Detailed instructions are provided in a paper of 20 February 1975 entitled Aid Categorisation which should be kept as an essential supplement to this Handbook.

As an example of how this works, we may consider a hospital which applies to Oxfam for a grant to set up a feeding programme and to provide water supply to one of its other departments. The major category for both projects is Health, but the purpose category is Nutrition in the first case and Water in the second. The money spent on the water supply goes entirely to provide Capital inputs. The nutrition application also asks for food supplies and the salary of a nutritionist during the first year of operation, so the inputs categories in this case are Supplies, Salaries and also Capital, and the proposed expenditure must be divided between these three.

3. Contents of the Handbook in Relation to Aid Categories

There is a Handbook article corresponding to each purpose category. In addition, some very broad categories, eg crop production and training are covered by several entries. The table below shows how the numbered Sections in the Handbook correspond with major categories and purpose categories.

There is of course considerable overlap between categories, and this is reflected in the way some entries cover material related to more than one purpose category. For example, Section 16, which includes the processing of crops after harvest relates mainly to the crop production category. However, it also describes processes which might be used within small industries which Oxfam could support in the interests of creating employment, and which come into the employment category, ie Section 35.

The categorisation of projects is further confused by the fact that any development project, if it is to meet Oxfam's criteria, will have a social development element. For example, an irrigation scheme will not be acceptable purely on its technical merits and the benefits they should bring; but consideration will also be given to the social structures involved and the consequences of the scheme on these and for the beneficiaries themselves in that community.

Accordingly any analysis based on this categorisation should take into account that the individual categories are not as clear cut as they may seem, especially when assessing Agriculture, Health and Social Development.

4. Table Showing the Relationship of Major and Purpose Categories

Numbers in the table refer to Handbook Sections.

<u>PURPOSE CATEGORIES</u>	MAJOR CATEGORIES				
	Agriculture	Health	Social Development	Humanitarian	Disaster Relief
General guidelines	10	20	30	40	50
NUTRITION		22			51
DOMESTIC SCIENCE		22			
SANITATION		24			52
PRIMARY HEALTH CARE		21			
SECONDARY HEALTH CARE					
FAMILY PLANNING		26			
ADMIN. STRUCTURE			30,37		
TRAINING	19	27	33		
WATER	12	24	36		52
CROP PRODUCTION	15,16				
ANIMAL PRODUCTION	17				
SETTLEMENT			38		
HOUSING			36		52
EMPLOYMENT (NON-AGRIC)			35		
PHYSICAL COMMUNICATIONS			36		
COOPS/SAVINGS, CREDIT			37		
SURVEYS, EVALUATIONS			8		
SOCIAL EDUCATION			30.31,32		
RELIEF				40	50
LEGAL AID			39		

Further explanation of the terminology used in the Aid Categorisation

Major Category

Health	All projects whose major objective is the maintenance and improvement of health including health education, family planning, preventive and curative medicine, sanitation, nutrition and the training of medical staff.
Agriculture	All projects whose major objective is the production of food (whether from crops, animals, fisheries, bee-keeping), or the use of land for the production of raw materials (fibres, hides, plant extracts, timber) including the protection and conservation of the resources used in these forms of production.
Social Development	All projects whose major objective is to enable people to lead a fuller and more satisfying life through the development of community organisation and facilities including employment creation, technical training, awareness creation, housing, roads and water supplies.
Humanitarian	Alleviating poverty, distress or suffering with no teaching or other developmental emphasis.
Disaster Relief	All projects whose major objective is a rapid response to conditions of hunger, poverty and distress following a natural or man made disaster; includes the replacement of housing material supplies or equipment as well as food-stuffs to meet famine conditions.

Purpose Category

Nutrition	Making food available, nutrition education, emergency feeding.
Domestic Science	Homecraft training, baby care, cooking, sewing, family budgeting.
Sanitation	Sewerage systems, latrines, washing facilities.
Primary Health Preventive	Health education, mother and child health, parasite/disease eradication.
Secondary Health Care	Treatment of illness or disease.
Family Planning	Supplies, advice, extension.
Training	Formal or informal teaching of skills on a recognised course basis, in-service training.
Water	Drinking, irrigation, water catchment, pumps, dams, wind pumps.
Crop Production	Food, cash, tree crops, land reclamation.
Animal Production	Livestock raising, fisheries, fodder production, bee-keeping.

Settlement	Settlement of virgin or unoccupied land for agricultural purposes.
Housing	Replacement, improvement or initial construction of family accommodation.
Employment (non-agric)	Wage/salary, self employed in industrial sector, handicraft production.
Physical Communications	Roads, bridges.
Cooperatives, Savings and Credit	Group action on formalised basis, thrift and loan societies, savings clubs.
Surveys, Evaluations	Geographical/social studies, project evaluation and investigations.
Social Education	Social awareness programmes combined with tangible productive activities.

Inputs Category

Capital Inputs	All forms of non consumable inputs including vehicles, boats, buildings, equipment, tools, plant, machinery, land and animal breeding stock.
Recurrents	On-going costs excluding salaries and identified supplies but including vehicle running costs, repairs to capital equipment, buildings, etc. Wages of daily paid, temporary or casual staff, administrative and office expenses.
Salaries	Remuneration of named individuals who are established staff members.
Supplies	All forms of identified consumable stores including drugs, vaccines, blankets, clothes, foodstuffs, seeds, fertiliser, insecticide, cement, timber, books.

Section 6: BUDGETING AND ACCOUNTANCY

PROJECT ACCOUNTS

1. Introduction

The aim of this article is to describe the types of accounts which should be used in small-scale development projects, and to indicate to Oxfam staff what they should look for in studying the accounts and proposed budgets of any project put forward for funding.

2. Types of Accounts Suitable for Small-Scale Projects

(i) For simple projects with a single main purpose or activity, and without much in the way of fixed assets, a simple receipts and payments account based on a cash book may suffice, or based on the procedures described in paragraph 4 below.

(ii) For projects involving several activities, proper income and expenditure accounts and balance sheets are necessary; books should be kept using double-entry book-keeping.

(iii) Some kind of visual presentation of accounts is always worthwhile, especially for cooperatives, savings banks, etc. For example, in Oxfam's annual reports, varying-sized piles of coins were at one time used to illustrate the way funds are apportioned for different purposes.

3. Balance Sheets

Balance sheets list fixed assets, valued in terms of the money actually spent less depreciation. The balance sheet should enable one to see whether a project is subsidising its current expenditure by using up its assets. For example, many projects fail to operate a depreciation fund for the replacement of vehicles and other capital equipment. A balance sheet would then show the value of equipment declining from year to year with no corresponding increase in financial reserves. Failure to build up a reserve means that there is more ready cash for day-to-day expenditure, but that ultimately, the worn-out equipment cannot be replaced.

4. Accounting for Funds on a Day-to-Day Basis

A self-help farming project (KEN 81) has produced clear and useful instructions as to how funds should be moved between current accounts and petty cash, etc. Funds were to be kept in the following four accounts:

- (a) current account
- (b) savings account for depreciation of equipment, eg tractor etc.
- (c) petty cash account
- (d) account for tractor running costs

All income, whether cash or cheque, is paid into the current account, and receipts are issued for all sums. Money is banked as frequently as possible, so that large sums are not left in the office for any length of time. The money deposited in the bank on each occasion must tally with a specified set of receipts. All expenses are paid from the current account either by cheque, or via the petty cash account if by cash.

The function of the savings account is to accumulate depreciation so that expensive equipment can be replaced when this becomes necessary. At the end of each

calendar month, money is transferred from the current account to the savings account. The amount will be a fixed sum each month for some items of equipment such as irrigation pumps; but for tractors, the depreciation payment is a fixed amount for each hour the tractor is used.

These savings must be deposited each month regardless of the financial position of the organisation, and even if it means that there is not enough money remaining to pay full member dividends.

The petty cash account is a revolving account of about £20 for cash payments of £2 or less. For each payment from this account, a receipt must be obtained and kept. When a purchase is made from a shop, a cash sale slip is usually provided as a receipt. In cases where no such slip is obtained, the treasurer should write the amount of the payment, the date and the expense on a piece of paper and sign it. These receipts are kept within the cash so that the total of cash and receipts always equals the original sum (£20 in this example). When it is necessary to replenish this account, add the amounts of all the receipts together and make out a cash cheque for the total. When the cash is then restored, the old receipts should be put together in an envelope and marked petty cash receipts with the date, the cheque number, and the total amount.

5. Depreciation

Eventually a pump, a plough or a building, reaches the end of its working life, and during this time it reduces in value each year. This yearly reduction in value is known as depreciation, and is therefore regarded as a cost of owning that particular piece of equipment.

For example, if an ox-drawn planter costs £40 and its working life is 5 years, the depreciation or fall in value over 5 years is £8 per annum. An annual depreciation charge of £8 is therefore made in the accounts for each year of its working life, this will appear on the expenses side of the profit and loss account of a farm. Buildings, plant and machinery and all farm implements should be subject to a depreciation charge, whether they are brand new or second-hand, until the full purchase price has been recovered.

Note: With inflation now endemic in most parts of the world, this approach by itself is inadequate. Depreciation charges based on the original cost of a piece of equipment will usually be quite insufficient to replace that item when its useful life has expired. As a rough guide, in most countries depreciation should be charged at twice the normal rate quoted above.

When Oxfam gives a project equipment, the usual policy is to insist that the project should set up a depreciation fund into which the annual or monthly depreciation charges are then paid. In theory the fund should allow the equipment to be replaced in due course. This is a good exercise for cooperatives and other organisations which have to survive in real market conditions.

Oxfam policy in the past has been that depreciation funds set up by medical and welfare projects should receive annual payments into those funds equal to 10% of the cost of the equipment. For all other projects, Oxfam has asked that a 15% payment should be made into the depreciation fund.

These are minimum rates, and even before current inflation began, it was recognised that a Land Rover would need to be depreciated at 25% of its initial cost each year. It was also recognised that depreciation payments at this rate are out of the question for many projects, so the setting up of these funds has not always been insisted on. If a fund could not be set up, the future budgets of the project would need to be considered in some other way when the time came, eg through another capital grant.

When assessing depreciation, the working life of equipment may be taken as the following:

(a)	land rovers/tractors, adverse conditions	- 4 years
(b)	land rovers/tractors, normal conditions	- 5 years
(c)	drilling rigs	- 5 years
(d)	planters, maize shellers, etc.	- 5 years
(e)	tractor-drawn farm implements, in general	- 8 years
(f)	ox-drawn planters	- 5 years
(g)	other ox-drawn equipment	-10 years

6. Audits

In assessing projects, Oxfam field staff should take care to note whether there has been a proper audit by a professional accountant. This ought to be an important feature, and should be insisted on in almost all cases. But where projects do present audited accounts, Oxfam staff should be willing to accept these, and not make further investigations except perhaps in matters of practical detail. Note that:

- (i) it is best if the accountant doing the audit can visit the project, though this is not absolutely necessary if all books and papers are taken to him.
- (ii) the audit will often reveal weaknesses in the financing of the project which may threaten its future. The auditor will not usually offer advice on this unless asked. Projects should therefore ask the auditor for his comments, and get him to say where the strengths and weaknesses of the scheme are.

7. Part-Financing of Projects

Oxfam often finances part of a project, leaving the people running it to find the remaining funds from other sources. The danger of this is that attractive parts of a project get offers of funds from several agencies, while essential but unexciting aspects of the work can only be paid for if the project managers divert funds from other purposes.

Oxfam should not give grants for part of a project without looking at the finances of the project as a whole. This would reveal whether, in fact, help with the running costs or in clearing a deficit or help with some relatively mundane work might be more urgently needed than the relatively spectacular capital works which may have been put forward as likely to attract a grant.

8. Budgets and Budgeting

Appraisal of a project for funding always involves studying estimates of future costs and sources of income to check that the project is viable. This may include analysing capital budgets or cash flows, the latter being essential for checking that the project can always meet its payments and other outgoings. Farmers can use a simple cash flow approach to estimate what loan or credit they may need to carry them through from the time when payments have to be made for seed and fertiliser until harvest when the return on the crops grown can be realised.

Budgets often go wrong because of over-optimistic assumptions, eg in tractor hire schemes, people have often budgeted on the basis that the tractors will each work 1,000 hours per year; whereas experience with this sort of project in developing countries is that 400 hours is as much as can be hoped for in most conditions.

Another common error in capital budgets for buildings is to include the costs of walls, roofs, windows and doors, but to forget that a building needs floor surfaces and furnishings. A budget is clearly no good if it is based on an inadequate bill of quantities.

For further information on the appraisal of projects, see Section 8.

Section 7: LOAN POLICY

OXFAM LOANS

1. Introduction

This article deals with instances where Oxfam provides money in the form of a loan instead of a grant, ie the money is due to be repaid to Oxfam.

A quite different situation exists where money is provided to set up a revolving loan fund. Here, Oxfam's support may take the form of a grant to set up a fund operated by the project. Loans are then made by the project, not by Oxfam, and are repaid to the project. For further information on this, see Section 37.

2. Oxfam Practice and Policy

It has been Oxfam's policy to make loans rather than grants to those projects which are involved in production, and which can therefore be expected to generate sufficient funds over a period of time to repay the loan.

Where a project is capable of repaying a loan, it obviously ought to be financed by a bank. However commercial banks will usually insist on some kind of collateral which the borrower must present as a guarantee. Many development projects in their early stages cannot do this and so they have great difficulty in obtaining funds. Oxfam policy has therefore been to provide loans only in cases where the project cannot meet the conditions laid down by commercial banks or government credit schemes. Sometimes also loans have been made to government or international agencies.

Between September 1966 and July 1974, Oxfam made 146 loans with a total value of £969,133, mainly in the agricultural sector. Of these, it is probable that only 40 - 50 will be fully repaid in the time allowed. It is clear that this percentage of loans fully recovered falls far below any acceptable standard. The weaknesses in the system of granting loans are varied, but basically the fault seems to be that individual requests are not studied to anywhere near the depth that is needed.

Apart from their money value, loans are useful for their educational value in encouraging project staff to examine their accounting policies and procedures; and this in turn can be a good preparation for dealing with banks and other financial institutions. While coping with credit and refunds can be time-consuming, and indeed seem an unnecessary nuisance to overworked project staff or village committees, the reality of the requirements of the financial sector are better faced up to sooner rather than later.

Nonetheless it has to be borne in mind that determining the financial feasibility of projects in terms of repayment of loans tends to be rather an unrealistic process, especially for small rural communities.

The borrowers' intention to repay a fixed instalment each year for projects will vary in the event according to market rates, rainfall and the incidence of disease. It is not surprising therefore that it is more frequently honoured in the breach than in the observance.

The majority of Oxfam loans have been for agricultural projects, but others have been made for industrial employment and training, and a few for medical

projects. The problems which have occurred in these three sectors are summarised in the following paragraphs.

3. Agricultural Loans

- (i) Anticipated returns Many loans made to the agricultural sector are seemingly based upon a rather naive assumption that anticipated yields or returns resulting from capital investments or improved seeds and fertilisers will automatically result in an increase in earnings; and will give the recipients both an actual increase in living standards and extra income to repay the loan. The managerial ability of the people using the loan fund should be carefully checked before such estimates are accepted, and their calculation of returns must be seriously examined.
- (ii) The loan repayment period is at times not realistic and little thought is given to factors outside the recipient's control, eg the weather, prices.
- (iii) The size of loans given to individual farmers is often on a scale beyond their managerial ability. Full consideration is not always given to the extra costs which farmers must incur if they are to take full advantage of a new facility. An irrigation scheme normally results in extra spending on seed, fertiliser, labour and fuel which the farmer probably does not have. A tractor requires a considerable amount of working capital to back it up. Cattle used for milk production have to receive supplementary feeding which normally has to be purchased. Beef animals only return their investment at the time of sale or slaughter. All of these factors must be considered.
- (iv) Communal crop storage projects demand working capital and a high level of management. The repayment of loans requires a sophisticated system of levying charges which are often beyond local ability. The recipients can only benefit from loans when price increases can be relied upon to justify the storage and the owners of the grain actually sell the grain rather than consuming it themselves.
- (v) The administrative costs of supervising small agricultural loans is always very high in relation to the actual amounts lent. The most efficient organisation dealing with a considerable number of individual farmers estimates its administrative costs at 12% on a total lending capacity of £130,000 with bad debts of only 2-3% per annum. Any interest charges Oxfam asks for must be added to the 12% so bringing the cost to the farmer up to an absolute minimum of 14%.

N.B. For further information on agricultural matters, see
Agricultural Guidelines, Sections 10 - 19.

4. Loans for Employment Generation and Training Schemes

These loans are usually intended to provide working capital for creating or boosting local employment opportunity through small industries, or for purchasing equipment for employment generation or technical training projects.

- (i) Effects of repayment Loans made to small industries tend to be at considerable risk unless the managerial ability of the project is high. There is very little information as to the effects of repaying the loans; in some cases it can be assumed that the growth rate which would otherwise be achieved is curtailed and fewer new jobs are created as a result.

- (ii) Profits Few small industries can readily predict what profit margins they will have and actual production costs are often miscalculated. This leads to repayment problems at a later date.
- (iii) Loans for housing The provision of loans to replace/repair domestic housing is a doubtful undertaking as the expenditure is not in itself income generating. The loans are frequently made at times of stress and no real relationship is possible between lender and borrower.

N.B. For further information on training and employment generation, see Sections 33 and 35 respectively.

5. Loans for Medical Projects

In general, loans to the medical sector are very rare as the provision of health facilities and services is a non-profit operation. The difficulties involved are reflected in the high percentage of bad loans, resulting in an anticipated 50% write-off factor. The purposes to which the loans have been put are very diverse but the majority are short-term loans made in anticipation of funds from other sources. Where Oxfam offers loans to set up production of cheaper sources of medical requirements, eg intravenous fluids in India, it is essential that realistic costings and potential markets are carefully analysed. Doctors are not usually good business men, and care must be taken.

N.B. For further information on health matters, see Health Guidelines Sections 20-28.

6. Guidelines

- (i) It is best not to offer loans where grants have been requested unless one is certain that this will not impose strains which ultimately will result in the conversion of a loan into a grant.
- (ii) Predicted profit margins, yields, etc., must be carefully checked, allowing for factors outside the project's control which can upset the repayment schedule. Having identified the risks involved, Oxfam field staff must either try to phase the payments over a longer period or turn down requests where the risks are unacceptable.
- (iii) An attempt should be made to anticipate the effect of the loan on the borrowers and identify the ancillary costs in time, labour or money that it will demand of them.
- (iv) The relationship between the borrower and the lenders should be assessed; also the presence of any stress which could encourage people to accept loans when it is obviously wrong for them to do so.
- (v) Loans should be advanced only if they will result in a rapid increase in income to the ultimate borrowers which will enable them to repay the loan as well as to better their standard of living. It is unrealistic to expect peasants to undertake investments which have a time-scale beyond their normal time-horizon.
- (vi) It must be accepted that the managerial ability in small-scale industries, the lack of working capital and the poor market research generally encountered, result in a very high risk factor. A training project for managers of such enterprises might in the long term be a better use of funds. See Management Training in Section 33, and the experience of management training courses for small-scale industries in Tanzania (TAN 119).

- (vii) It is an advantage if the recipients provide a proportion of the money they require so that there is a sense of involvement or risk sharing.
- (viii) The interest charges which Oxfam levies do not have any logical reasoning behind them. In theory, we should follow the formula that the greater the risk the higher the interest rate. As many of our loans are in the high risk category, interest rates should realistically be between 25% and 50% per annum, but this would not be acceptable either to the recipients or to Oxfam. It seems therefore that we should scrutinise loans much more carefully, thereby reducing our risk factor to a level where interest rates of 5% or 10% would be reasonable. Where the risk factors are very high, we should either make a grant or preferably turn down the request altogether.
- (ix) Increasingly Oxfam is acting as the guarantor for a bank loan rather than making the loan itself. This system has several advantages: for Oxfam in the obvious reduction in administrative follow up; more importantly for those concerned in that it encourages the use of the local financial markets that are available. This has often led to a mutual respect and further business, as compared to the previous ignorance and suspicion that existed previously which mitigated any approaches being made at all as between the financial institutions and those in the informal sector requiring funds.

Section 8: PROJECT DESIGN AND ASSESSMENT

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INTRODUCTION

1. General Context

Much of this Section is concerned with management issues, yet two points should always be kept in mind:

- (i) The objectives and strategy of projects should never be assumed in any monitoring and evaluation. The relevance and viability of these require continual reassessment, particularly in the circumstances of most development projects.
- (ii) Social change, even in tiny communities, is a complicated and infinitely varied process to which Oxfam through its project holders can usually only make a modest contribution. Oxfam can participate in social change, it certainly cannot manage it. The nature and extent of this contribution will depend on:
 - (a) a proper understanding of the social and economic forces affecting that community
 - (b) an adequate and viable strategy for influencing the direction and repercussions of these forces
 - (c) good organisation

Most of this Section is concerned with (c). The importance of the other two elements must never be overlooked ie. there is more to social change than qualified leadership and lists of data.

Above all, development is concerned with people; their aspirations, their lives, their problems. It is imperative to keep this always in mind when reading and applying to projects the criteria and analyses that are suggested in this Section. It cannot be stated too strongly that projects are conceived and implemented by and for people. They are no more than a vehicle for development, they are not themselves development, and people can and do exist without them. It is unfortunately all too easy to become blinkered by a project-orientation at the expense of taking into account the complete spectrum of the life and values of people and communities as they are. In summary, good systems and good managements are useful aids, but they are no substitute for a proper understanding and appreciation of communities and the people that make them up.

2. Oxfam Context

Oxfam's approach to development assistance has been stated in Section 1: 'it must be a commitment to a process which encourages people to recognise and develop their potential and to decide their own values and priorities.'

This needs to be reflected in the systems which Oxfam uses for project appraisal and evaluation. They should not be limited to a technocratic basis, as is the case with the assessment of so much aid at least until recently, but should incorporate a strong behaviourist emphasis. In short, Oxfam's concern is people and their welfare, an economic analysis by itself is not adequate. Suggested criteria and methodologies for facilitating this approach are outlined in the following pages.

For many of the projects Oxfam is supporting, these methodologies will be inappropriate as set out. The projects are too small to be amenable to sophisticated analysis, or they are of a nature to which its application would be inappropriate. Nonetheless Oxfam field staff will have to make an assessment of them; this should be based on a combination of an informal analysis drawing on the experience from using these methodologies and on individual intuition or 'gut reaction'.

The idea of trying to measure the social impact element is relatively new. Much of the work, especially at micro or village level, is at an experimental stage. In this approach, it is important to ensure the assessment includes the real significance of different project activities and their relation to:

- (i) the actual needs of the beneficiaries as expressed by them at the outset and as the project progresses.
- (ii) the project's objectives.

In many instances it may not be possible to work exclusively with the poorest or with all of them, even after they have been successfully identified and expressed the intention to participate. Oxfam field staff are likely to face difficult decisions on the permissible extent of involvement by the not-so-poor (but not necessarily rich), and of any spin-off effect this may have for the poorest.

It will be seen from the foregoing that the proper training of Oxfam's new field staff in the techniques of project appraisal is critical. They need to be conversant not only with the principles involved, but also readily able to apply them in practice before they take over their postings.

3. Administrative Background

This Section replaces the one in previous Editions of the Handbook which had the title Project Evaluation (though this should have been termed more correctly, Project Appraisal). Aid Categoriation remains as part of Section 5.

To assist in formulating a policy, views on the subject were solicited through discussions at Oxfam, Oxford, from Oxfam field staff and from experts in this field familiar with Oxfam's work. Oxfam's intentions in the assessment of its overseas programme are now encapsulated in the Evaluation Policy paper approved by Field Committees in the autumn of 1977. Subsequently a small Evaluation Panel has been set up to act in an advisory capacity.

Inevitably the work of the Panel, like that of the Evaluation Officer, tends to be looked upon as concerned primarily with time-specific evaluation studies of individual projects. Important as these studies are in their own context, they will necessarily be made of only a small proportion of projects as many project holders will not accept an evaluation and anyhow Oxfam itself is not able to cope with a large number. Other aspects of design and assessment are relevant to all projects, and it is with these that we should be principally involved. They include guidelines: for appraising projects at the proposal stage, for systems of monitoring and reporting, for self-evaluation, for evaluation frameworks, and for the analysis and dissemination of the results of the issues and experience gained.

This Section is accordingly sub-divided into:

Appraisal, Monitoring and Reporting, Evaluation.

APPRAISAL OF PROJECTS PRIOR TO MAKING GRANTS

1. Partnership

The idea of Oxfam as a partnership has already been sketched in Section 2, PARTNERSHIP OF PEOPLE.

It is hoped that Oxfam field staff in their dealings with project holders will attempt to adopt an approach based on a genuine two-way relationship. This

takes great sensitivity, understanding and perception. No amount of procedures and paperwork can substitute for mutual understanding and respect between project staff and Oxfam field staff. In this way it is hoped Oxfam may not be seen as 'just another funding agency'. Indeed many project holders admit that the advice given by Oxfam field staff based on their local contacts and access to information can be as valuable as that of actual funding by way of grants and loans. Nonetheless the constraints facing Oxfam field staff of time and travel difficulties may preclude the optimum visiting required.

It is appreciated that many larger well-established projects will be interested only in receiving further grants from Oxfam on the basis of a 'Give us the money and leave us to get on with it' attitude. They may not be willing to agree to any detailed assessment or to accept reporting stipulations. A similar response is likely to be met increasingly in some socialist countries and in those with authoritarian regimes. In these cases Oxfam may have to refuse to agree to funding. Note: As mentioned in Section 3, the poorest usually lack the ability or means to communicate their needs and therefore must be actively sought out.

2. Initial Discussions

From the outset when project proposals are received, there should be full consultation as far as circumstances permit. See also the following sub-Section No. 3. In particular, if the application is to be proceeded with, it is vital to try to ensure that the following are incorporated:

- (i) adequate basic (or baseline) data together with tangible objectives which are readily quantifiable. Some projects may have objectives that do not readily lend themselves to assessment by statistical methods, for example those concerned with social education especially in their early stages. In these instances, the written word can often be used as an adequate aid for assessment; and in any event numeracy by itself is no substitute for literacy. In general, a useful criterion to have in mind is that data are required not so much to increase knowledge as to avoid errors in decision-making; in other words how little does one need to know.

Control groups; if these are readily to hand, they should be included. Many projects have resulted in remarkable improvements, but sometimes neighbouring communities not exposed to the project have been found to have improved almost to the same extent. Thus the use of a control group gives a more modest and realistic impression of project returns.

- (ii) arrangements for regular reporting and monitoring; by whom, how often, what information is to be included, and how to implement any points which indicate that changes are required. (Section 8-13)
- (iii) provision for self-evaluation, and also for evaluation studies if these will be appropriate. (Section 8-22)

In both (ii) and (iii), it is important for all concerned to understand why these are required. For Oxfam's part they are to meet its obligations to donors, to obtain publicity material, and to assist in its own resource allocation and policy formulation. More importantly, they are a means by which the project can itself stimulate and improve its own management. There is no doubt that good management is one of the critical elements in successful projects; as a partner, Oxfam has a responsibility to the project beneficiaries to do all it can to encourage this.

Similarly it should be made clear at this stage to what extent grants paid by instalments will be subject to the receipt of satisfactory reports.

3. Checklists

- (i) Visiting prospective projects A detailed list of the points for Oxfam field staff to bear in mind when making initial site visits is included as Appendix I at the end of this Section (8-26)
- (ii) Individual categories Brief Checklists for the main characteristics of particular types of project are included at the end of the relevant Sections of the Handbook. These are intended as prompts and do not necessarily cover all the points that should be considered.
- (iii) Participation of women Although this Section is concerned with procedures rather than specific functions and groups, the part that women take in any project and its effect upon them, is of such fundamental importance that it requires mention here especially as it tends to be overlooked. Applications should be checked against the checklist included as Appendix II at the end of this Section. (8-30)

4. Grant Application Form

The guidelines set out in this form should normally be adhered to. Exceptions may include certain emergency applications and very small projects; it should however be followed for all development projects.

Certain questions from the guidelines may be deleted in specific instances at the discretion of the Oxfam field staff.

Supplementary questions are presently included for Agricultural and Medical projects. It is intended to add a similar supplementary list covering the Social Development aspects.

NB. The guidelines are now available in all the main languages.

5. Techniques for Project Appraisal

The Existing Approach

- A. Oxfam has assessed projects for approval mainly on the basis of:
 - (i) whether the project is wanted by the intended beneficiaries.
 - (ii) whether the objectives of the project fall within the scope of Oxfam's policies and terms of reference, eg. helping the poorest
 - (iii) whether the project is likely to be able to achieve its objectives, that is in terms of a risk assessment eg. feasibility of the project strategy to be employed, and local political support
 - (iv) whether the project is technically appropriate and economically viable
 - (v) whether the project will survive the test of time, eg. the situation 5 years after outside inputs have ceased.

The procedure for appraisal may be fairly elaborate, but a great deal is left to the intuition and judgement of the Oxfam field staff, and to the others directly involved in the decision-making process.

Some techniques for project appraisal

- B. The following might be used either to enlarge Oxfam's existing approach or to provide alternatives to it:
- (i) planning and the use of objectives
 - (ii) risk assessment
 - (iii) unit costs and cost effectiveness
 - (iv) simple cost-benefit analysis

Techniques (i) and (ii) were designed specifically for small-scale projects as are most of Oxfam's. The more sophisticated forms of social cost-benefit analysis and shadow pricing are not appropriate for small projects.

In detail:

(i) Planning and the use of objectives

It is obviously important to know a destination in order to plan a route. This statement illustrates the central importance of objectives in implementing or evaluating any project. Objectives or goals need to be specified at every stage, and should be used in planning projects in the following sequence:

- (a) define objectives
- (b) consider alternative ways of reaching objectives
- (c) choose the best or least costly alternative, taking due account of the resources that are both needed and available
- (d) plan expenditure - see below on project budgets
- (e) implement the project
- (f) assess the outcome and check against (a)

In any situation, a hierarchy of objectives exists in a sequence of means and ends. In some Oxfam material (application forms, etc.), the most immediate objectives are referred to as the project aim or purpose, and the term objective is used solely for the longer range goals toward which the project purpose is only a means.

At this stage it is useful to define the difference between an aim, an objective and a plan.

An aim is a broad goal, an expression of an ideal that motivates action. Examples of aims are better nutrition, more equal income distribution, higher rural incomes.

An objective is a more specific statement of a desired result to be achieved in a specific time. The precise nature of the statement of an objective enables us to take full account of: the resources required, the cultural and other constraints on communities and structures. Objectives can also include behavioural changes in communities, that indicate greater self-awareness on the part of a community, or the modification of a structural relationship that has been a major contributory cause of poverty.

A Plan is a whole group of objectives.

There are certain guidelines that enable us to plan by objectives:

- (a) An objective should have a realistic measure of time and quantity, also of quality and cost where appropriate. Without precision we are left with a vague statement of intent.
The discussion of these measures enables full consideration of constraints, inter-actions and resources.
- (b) The planning process must necessarily involve people. It is essential to plan with people rather than for them. Better quality planning decisions result from participation; similarly people's involvement generally results in a higher commitment on their part to implement the plan. It becomes their plan, not Oxfam's plan nor the project holder's plan.
- (c) There should be discussion of the resources required, not only financial and material inputs, but also of the numbers of people who need to be involved and the training and education inputs required to equip them with the necessary skills and attitudes.
- (d) There should be discussion too of methods for reviewing progress. Ideally this should be in the form of built in, continuous self-evaluation that enables strengths to be taken advantage of and difficulties explored and dealt with (Sec. 8). Methods of reviewing progress should be designed so as to stimulate and motivate groups, rather than to threaten them as is so often the case. In the longer term reporting on such discussions should contribute to Oxfam's important research function.

An illustration of the distinction between an aim and a plan presented in the form of a group of objectives is where the aim is to improve nutrition.

The resulting plan (the set of objectives) that contribute to the realisation of this broad aim, may involve a whole set of measurable statements relating to, for example

- (i) The number of goats required to provide the required milk yield for a given size of population.
- (ii) The number of wells required to bring marginal land into cultivation plus other inputs including measures to prevent seizure of improved land from tenants and sharecroppers.
- (iii) Irrigation and other inputs required to raise the yield sufficiently, with safeguards to ensure the avoidance of undesirable possible side-effects, eg an increase in water-borne diseases.

(ii) Risk Assessment

A project which has admirable objectives may still be refused a grant if it appears to have a poor chance of reaching its objectives. However, in cases of urgent need, Oxfam may be willing to take much greater risks than would otherwise be acceptable.

Assessing risk is very much a matter of intuition stemming from local experience. Questions such as the following may help in making this assessment.

- (a) To what extent is the project likely to be interfered with by the government or other elements of the existing power structure?
- (b) How confident are you of the managerial ability of the project staff?
- (c) In the long term,
 - what irreversible improvements should the project bring about?
 - to what extent should the project be replicable?
 - will the project have any adverse environmental effects?

Additionally, some basic physical questions should be asked. For instance, with agricultural projects:

- how will the results be affected by 'bad years' eg drought? Are these frequent? Will sufficient be produced to last the beneficiaries through such adverse times?
- what happens if prices of inputs and/or produce change substantially, and how likely is this?
- what is the supply position of key goods such as fertilisers, and what will be the consequences of late or non-delivery?

Note: a proforma incorporating a points system has been devised based on the first questions list. This is included as Appendix VI (8-43)

Project budgets and assessment of risk

A key part of the design of projects is the preparation of project budgets covering anticipated expenditure and revenue. The failure of the people who run Oxfam-funded projects to do this properly has often hidden large risks so that they are not recognised either by the project manager or by Oxfam. Field Directors are asked to pay close attention to project budgets, and check for any over-optimistic assumptions which they may contain.

The detailed issues raised by this are included in Section 6, BUDGETING AND ACCOUNTANCY.

(iii) Unit costs and cost effectiveness

One simple measure, used widely in the Handbook, for appraising a project is to estimate the cost per person; that is: divide the cost of the project by the number of people benefiting. Where it is required to reach a given objective by selecting from two or more methods, cost effectiveness of the alternatives on a cost-per-person basis may be the only appraisal exercise required.

This is a fairly crude measure however, applicable to small clear-cut objectives where there are only direct beneficiaries and all

benefit equally. Even seemingly simple objectives, like providing a meeting hall, a reliable drinking water supply or an ox-training school, may in practice turn out to be complicated. Some subjective adjustments to a straight costing calculation may well then be necessary to allow for indirect benefits, unequal benefits and risks of failure.

In choosing between alternatives, it is well to remember that the most effective innovations not only make an improvement but also remove a constraint, eg it may be worthwhile to increase the per capita cost of providing drinking water if, as well as improving health, it releases female labour from water carrying for other productive activities.

The greatest per capita expenditures are probably justified in projects which train some individuals to help others, eg extension workers or nutritionists as these projects have a multiplier effect. In general, projects which invest in buildings or capital equipment have a low multiplier effect compared with projects which train or educate people or add to their experience.

(iv) Cost Benefit Analysis and Investment Appraisal

The evaluation techniques of Cost Benefit Analysis (CBA) and Investment Appraisal (IA) are now so widely accepted and beneficial to their users that we should not ignore them when evaluating and appraising our overseas projects. Indeed failure to incorporate these extra tools in the process of evaluation could mean that relevant information highlighted in the planning stages of the project will remain hidden often until it is too late to act on it. CBA and IA techniques will complement concepts such as social appraisal.

The popular objections to the use of these techniques are -

- (a) that the mathematical complexities involved cannot be coped with or passed on to others.
- (b) that the tendency today is towards social appraisal rather than mathematical appraisal
- (c) that the existence of risk and uncertainty are so predominant that they could render any numerical analysis useless.
- (d) that the numerical conclusions are subsequently ignored or contradicted in reaching a conclusion.

The advantages of the techniques counter these objections in the following ways:-

- (a) Anything that involves the use of limited resources can benefit from this type of appraisal technique
- (b) If a project is financially non-viable, social benefits could be nil or even negative.
- (c) Qualitative techniques such as sensitivity analysis and risk premiums are available to cope with the problems of risk and uncertainty
- (d) Costly foreign inputs in particular should be subject to the

types of tests described, as failure to meet necessary criteria would be more damaging to villagers etc. than if the project had been locally based.

- (e) Careful itemisation of all relevant classes of costs and benefits, together with a full specification of the complete set of alternatives to the project, is an invaluable aid to decision making. It also permits an estimate to be made of the implicit money values that should be attached to non-monetary benefits and costs in order to justify a particular project.
- (f) At the very least the techniques enable us to consider whether calculated values fall within some range of reasonableness or are consistent with other decisions
- (g) The techniques are a means of making the best possible information available and of ensuring that relevant facts and figures are not ignored in considering whether or not a project should be supported.
- (h) As the effect of decisions are likely to be long lasting, the techniques emphasise this by ensuring that all relevant information is considered at the outset.
- (i) The essential quality of an investment is that it involves the commitment of resources in anticipation that some benefit will accrue at a future date to the community affected by the project.
- (j) Professionally compiled tables coupled with knowledge of the use of a simple type of calculator are the only working tools required; only the simplest personal knowledge of mathematics is necessary.

Whilst it is possible that CBA and IA techniques through concentrating upon monetary values could distort one's view of a project by becoming too involved in detail, this will not happen if the results are weighed up against and compared with the results of the other appraisal techniques.

In other words these techniques are not intended for use in isolation, nor are they supposed to be a substitute for judgement. They should be an integral part of the process of forming that judgement.

A brief description of the concepts involved

Put in its simplest terms, cost benefit analysis involves valuing or estimating before the start of a project all the costs of carrying out that project and all the benefits accruing from its use. Various factors emerge from that definition to assist us in carrying out the exercise:-

- (1) All relevant costs and benefits should be included whether direct or indirect, eg indirect cost of new industry might be the possible adverse effect on local craftsmen.
- (2) Conversely, costs and benefits which do not result from the project should not be included in the calculation. For example, if a piece of machinery, five years old, is to be transferred to the project, the original cost of that machinery is not relevant. What is relevant is the value lost elsewhere by using it in this project. ie the value it would have had to another project if used there, or the sales proceeds if it had been sold. This idea introduces the concept of opportunity cost into our exercise.

- (3) The economic climate in developing countries makes it especially necessary to use accounting or shadow prices for factors such as labour because of differences between market prices and social values. For example a popular method for calculating shadow wage rates is by reference to labour's marginal product in an alternative use, usually agriculture.
- (4) We may have to weight costs and benefits to reflect the preferences of the particular programme. For example valuing the costs and benefits accruing to the poorest one third of the community at twice their calculated value, and correspondingly the best-off third at half their calculated value, the middle third remaining unaltered.
- (5) We must consider the time value of money when comparing costs and benefits over a number of years. The prospect of a receipt of £100 immediately is considerably more pleasing than the prospect of receiving it in ten years' time. Having established a suitable discount rate over the time period, we can consult specially prepared tables to give the net present value of that future receipt of money.
- (6) In order to establish the suitable time discount rate referred to in (5) we must consider the term required rate of return. To get at this we should look at -
 - (a) the alternatives available to Oxfam, for example, funding other projects elsewhere. A guideline here is what other people would do with large sums of money, ie investing it. Hence the current interest rate on long term deposits is a good indicator.
 - (b) The opportunity cost of capital in the country in which the project is intended.
- (7) The impact of inflation. This can be effectively ignored only if the assumption that all relevant resources will be subject to the same rate of inflation is a realistic one. For example, if labour rates are expected to be subject to a different rate of inflation than the general inflation rates, then the different rates for the different factors must be brought into the calculation.
- (8) The treatment of risk and uncertainty. One way of dealing with this problem is to add an extra risk factor percentage to required rate of return mentioned in (6). That percentage will depend on the degree of certainty we place upon our estimates. Usually future costs will be less uncertain than future benefits and only the latter would need a risk factor percentage. Also benefits attributable to projects with long term effects will be more uncertain than those with short term effects.
- (9) The figures assembled as above for carrying out a Cost Benefit Analysis Study will enable us to calculate the project's rate of return - known as the internal rate of return. This rate of return as a percentage should then be compared with required rate of return described in (6). If the project's rate of return is markedly lower than the required value of return, this could lead to questions as to financial viability and further comparison with non-numerical results.

Once the total costs and total benefits have been adjusted by the factors mentioned above, the extent of the net benefits (ie total benefits less total costs) if any, should be compared with results of other appraisal techniques.

It is important that where CBA is appropriate and the project is unable to do the necessary calculations, the relevant figures are included in the project's proposal so that the Oxfam field staff can make these calculations.

It is not within the scope of this Handbook to give a complete working guide to the subject but formal instruction is available through the Training Department at Oxfam, Oxford, U.K. Regular one day seminars are held in Oxford and can be arranged at Field Directors' Conferences if necessary. Also an Oxfam manual on cost benefit analysis and investment appraisal will be available during 1980 on application to the Training Department.

Examples of the use of cost benefit analysis are included in Appendix VIII.

6. Consultants

Oxfam draws heavily on its consultants who give of their time and experience with great goodwill. It is not possible for Oxfam's field staff or staff at Oxfam House to be conversant with all the many topics that arise. It is in meeting this need that consultants are invaluable, both in supplying information on particular technical queries and in giving an expert opinion on project proposals.

Normally Oxfam field staff are expected to use their local contacts in these situations. There are instances however where it may be necessary to seek the opinion of consultants based in the U.K. A list of the latter is kept at Oxfam House, they are all experts in their particular field and understand and support Oxfam's approach to development.

The advantages of using consultants was set out by the Overseas Director in the memorandum of 25.1.79 to Field Directors.

7. Surveys

Oxfam field staff are unlikely to have to participate directly in surveys themselves. But they will frequently be concerned with advising or suggesting on setting them up and in interpreting their results, as in India (RAJ 12) and Indonesia (ID 49 and 72).

All too often one finds too much data has collected because the use of random sampling techniques was not understood. While rarely are assumptions and hypotheses tested in situations using unstructured interviews or 'casual discussions'.

Therefore it is important to know:

- (i) the types of situation where a survey is/is not needed
- (ii) where/how a group can get advice before it wastes time on the wrong kind of survey
- (iii) the different approaches to a survey: the anthropologists, participant observation, etc
- (iv) the main types of sampling and statistical analysis
- (v) whether a survey has been both properly designed and implemented.

As this is a subject on which once again so little simple relevant information is available, a detailed resumé of the salient points is included at Appendix VII.

MONITORING AND REPORTING

Both for Oxfam's partners and for Oxfam itself, the various forms of reporting can be the most useful method for the monitoring or on-going assessment of project activity.

Before looking at the different types of reporting, we should be clear: what should be reported, and why.

1. What is to be Reported? or What Constitutes an Adequate Report?

In an endeavour to provide tangible evidence of the successful progress of projects, Oxfam has been accused of being more interested in statistics than in people. This criticism is hard to take for an organisation which is at pains to emphasise its concern for the welfare of people above all other considerations. Yet it is an almost inevitable consequence of Oxfam's project-orientation that its main preoccupation should appear to be with the progress of projects at the expense of the impact of those projects on the communities and any resulting changes in social values and attitudes.

Of course in Latin America there is a great awareness both by indigenous agencies, such as DESMI and PDP in Mexico and FASE in Brazil, and by the communities themselves, of the problems and possibilities for social change and development. They philosophise persuasively at great length on the social process, but with little if any reference to statistics which to the European mentality are essential for the measurement of that process. In such instances, Oxfam field staff may validly be accused of 'being interested only in statistics' because this is what they are quite unable to obtain.

In general however, there has tended to be a marked imbalance in reporting both by project holders and by Oxfam, such that there is a wealth of descriptive and anecdotal information but a lack of real analysis of what has happened. All too rarely is there an attempt to set the project's progress in the context of its impact on the life of that community as a whole.

This is not to suggest that reports should be longer, indeed it is hoped that many can be shortened. The important factor is content, not length. If the example of a poultry co-operative is taken, reports tend to dwell on a detailed account of the operation of that co-operative, eg. its membership, how decisions are made, the election of the Committee, and similarly the number of hens purchased and their distribution to members, the number of eggs laid, the proportion sold and at what price etc. None of this gives any insight into how the scheme may have effected the members and their families through improved nutrition and increased income, whether as a result of belonging to a co-operative feelings of solidarity have grown up among members, or how the scheme relates to other activities in the community.

A further point arises, although its implications are not limited to those concerned with adequate reporting. This is the difficulty Oxfam faces in its endeavours to support largely unstructured community or action groups as in India, or social education activities in Latin America when at least in the initial stages they are concerned with increasing awareness which is not necessarily related to tangible project activity. Oxfam tends to be in a dilemma because it becomes a victim of its own project-orientation. If funds are given, there must be 'tangible evidence' of their effect. But often such groups are more in need of information, advice and sympathetic support than funds. How does one form a project out of these, let alone report on them? With Oxfam's increasing tendency to move away from giving assistance through the 'traditional', structured channels

to that of working on a partnership basis with informal community groups "de base", it has become a pressing need to rationalise this relationship for Oxfam's part and this includes amending its procedures into a more meaningful and relevant form. It arises especially from the recent appointments of Field Officers in India who are working with community groups in specified areas. It is a pattern which is also occurring elsewhere among Oxfam's field offices.

2. What is the Value of Reports? or Why Report?

For the project holder it is maintained that the preparation of reports is an important means for themselves of assessing the progress of their project against its objectives. The preparation of reports should thus become an integral part of their management procedures, rather than a burden enforced by a donor agency. And certainly due regard must be taken of the capability of project staff to complete reports.

However it is becoming increasingly apparent that projects understandably wish to make their own on-going assessments without reference necessarily to the reporting demands of donor agencies. This internal monitoring is discussed further under Participatory Evaluation (see Evaluation below).

For Oxfam's part, it is held that proper reporting is essential: in view of Oxfam's accountability to its donors, for publicity and educational purposes in the UK, to permit the recording and dissemination of useful lessons learnt, and so that staff at Oxfam House are fully informed. These have all tended to become 'sacred cows'. This is not to infer that reporting to Oxfam House should be abolished. However consideration does need to be given, not only to 'what is being reported' as in the previous paragraphs, but 'why is it being reported?' Succinct, analytical reports are important and valuable, they are rare. There is the prevailing tendency that everything must be reported; this results in masses of paper which because of its sheer volume is counter-productive and the limited staff available are unable to sift out that which is useful.

A related aspect, but not relevant to this Handbook, is to what extent is it really necessary for home-based staff to be fully informed on every minutiae of the overseas programme?

Note: The comments and suggestions from other agencies and from development workers reading the above two items will be greatly welcomed by Field Directors and by Oxfam House. This is a subject for a continuing dialogue. As one Field Director has said: 'Too often, reporting seeks to reassure rather than to educate. Reports simply state the volume of work being done with some examples to bring it alive.'

3. Types of Reports

(i) Progress Reports by project holders.

These should be prepared by the project holder on a frequency to be agreed at the time the grant application is made, usually every six months or annually. These arrangements should be confirmed when the first grant payment is made. A special form is available, which has been translated into several languages. It may not be convenient to use the form itself, but the questions listed on it should be followed.

An up-to-date Statement of Accounts should form part of the Progress Report. The details required are set out on the form; for further information, see Section 6 Budgeting and Accounting. It may be easier

for a project holder to supply figures relating to the whole project. This is perfectly acceptable as long as the figures indicate clearly how Oxfam's own funds have been used.

(ii) Tour Reports by Oxfam field staff

These are often the most detailed, reliable and objective type of reporting that is available. They should be set out in the form of an assessment of the project at the time of the field staff's visit, and not just a catalogue of who was met where.

With this in mind, reference to the Checklists already mentioned will provide useful guidelines, especially with unusual projects and for new members of staff. (See Appendix I on 8-26)

The overall value of these Tour Reports for Oxfam House and for Field Committees was confirmed in the Overseas Director's memorandum to Field Directors of 14.2.77.

(iii) Reports from visitors including other Oxfam staff

These again may be of great value, especially if the visitor can be fully briefed in advance about the project (and vice-versa), and accordingly can identify and assess the main factors that may require investigation.

It follows that visitors should subsequently report to the Field Office or, failing this, to Oxfam House.

(iv) Annual Reports by Field Directors

These fall into a different category, but are vital in setting the objectives of each field office in the context of the possibilities for activity in that area, and for analysing the actual accomplishments and future trends. Their merit once more lies in the measure of qualitative analysis, including successes and failures with the lessons learnt from these, and how such experience is being acted upon. Details of new developments and innovations are especially relevant. These points are set out in the Overseas Director's memorandum of 1.8.78 to Oxfam Field Directors.

EVALUATION

1. The Meaning of Evaluation for Oxfam

This sub-section is concerned with evaluation which is normally associated 'ex-post' studies (cf. appraisal as 'ex-ante').

Evaluation in industry has long since been a highly developed and integrated element of the production process. More recently among both the larger international development agencies such as the World Bank and the OECD, and in many government agencies such as USAID and ODM, it has become a well-documented science. However among voluntary agencies, evaluation has a tendency to be wrapped around with mystique to the exclusion of hard thinking and rationalised practice.

It is a truism, but nonetheless worth repeating, that Oxfam is concerned above all with people and their well-being. This involves much more than, say, measuring the increase in agricultural production of a project taken by itself. Oxfam is concerned with the surrounding infrastructure such as marketing and

credit possibilities, and above all with the social consequences to the immediate beneficiaries and to the local community as a whole. It is these considerations that render inappropriate the customary evaluation methods employed by the larger agencies which are based principally on financial and economic returns with little regard to their social impact. We need to look for an evaluation style that recognises the dignity and validity of the local community and that does them justice. It is a challenge for Oxfam to make a significant contribution in this field during the next few years. The literature on indicators for social change is rapidly growing, but as so often there is little that is relevant and intelligible to the practitioner working at the community level. In particular we should always be looking for better ways of evaluating the distributional effects of projects, by asking check questions such as:

- (i) has the project resulted in an increase in the incomes/prospects of the poorest?
- (ii) has the project raised the income of the poorest above a poverty datum line?
- (iii) has the range of income within the community been reduced?

It must be remembered that an evaluation study obtained in isolation is no cure for any ill unless based on a proper personal relationship between the project and Oxfam, together with adequate baseline data or quantifiable objectives that have been duly monitored. Evaluation can be an integral part of the whole process of development. In its proper context, it is vital; it should never be made to stand alone. It is not the function of evaluation to make decisions, but it can present information and identify alternatives which may facilitate the making of better decisions.

It is critical therefore from the outset that all concerned understand and accept

- for whom the evaluation is intended
- for what purpose.

2. Oxfam's Experience of Evaluation

From an examination of recent large-scale evaluation studies undertaken for Oxfam, it transpires that many have been: irrelevant in their conclusions, incomprehensible or plainly just too long, or have been received too late. Rarely have the results of a major study been brought together into concise, straightforward conclusions leading to realistic and action-orientated recommendations. In short, the cry of 'we must have an evaluation' has often resulted in delay in arriving at an inescapable decision which was eventually taken with little extra useful information from the evaluation. Such a situation is unsatisfactory for all concerned.

In contrast to these 'set piece' studies, the smaller evaluations undertaken have been for the most part analytical, objective and relevant. Some of these are listed below.

Examples:

- (i) Small-scale irrigation projects in N.E. Province of Kenya (KEN 81). More information was required on the social factors involved in work with destitute Somali nomads. This formed the basis for subsequent funding.

- (ii) Study of leprosy in the Sudan. This was essentially a general appraisal, but included an evaluation of the existing small leprosy project funded by Oxfam (SUD 3) which acted as a catalyst for the wider study.
- (iii) Large agricultural development project in Upper Volta (VOL 58) in which a closer working relationship with the expatriate project holders was established together with guidelines for future activity.
- (iv) Study of a flying doctor service in Lesotho (LES 7) which led to substantial improvements and re-vitalisation of the service.
- (v) A new drip irrigation project (JO 49) and an existing olive tree planting scheme (JO 44) in Jordan in which respectively designs for monitoring and future evaluation in the absence of baseline data were worked out with the project holders.
- (vi) In this case the project in Haiti (HAI 7) refused Oxfam's request for an evaluation before further funding was made. As a consequence of funds being cut off, substantial changes in the project's programme took place, and in retrospect the project director was grateful to Oxfam for stimulating these.
- (vii) This project in El Salvador (ELS 14) was the only one working in the area. Although the project organisation seemed poor, it was agreed to fund it followed by an evaluation. Otherwise the project holder would have sought funds elsewhere, in which case proper reporting might not have been insisted upon with the resulting absence of a stimulus to improved management.
- (viii) A large rural development project (GUA 12) where the evaluator's decision to have selective in-depth personal interviews, rather than using detailed questionnaires, gave him a deeper insight into the many aspects of the project. In particular it illustrated the importance of evaluating impact in addition to the usual assessment according to tangible objectives. One of the latter was increased agricultural production, and though this had doubled and even trebled in places, the increase in net income was low and in disposable income even less: nor had there been a significant improvement in health as was intended.
- (ix) The problems of handicraft production for export were admirably demonstrated in the brief study by Oxfam field staff of a handicraft co-operative in Haiti (HAI 44).

3. Objectives of Evaluation

These will be clearly discernible from the above examples, and have also been referred to earlier in this Section when analysing the Appraisal stage. They can be summarised as:

- (i) the success of the project in relation to its objectives, and the extent to which the intended beneficiaries have benefited
- (ii) a check on the use of Oxfam's funds, especially in view of Oxfam's responsibility to its donors
- (iii) a means of enhancing the work, both of other related development in that area and of Oxfam as a whole, through the dissemination of the lessons learnt from the experience of the project.

The optimum way of meeting the requirements of the project beneficiaries should always remain uppermost. How can an evaluation study serve their needs most effectively? So often an outside evaluator (-not necessarily expatriate) may prepare an excellent report which fully meets Oxfam's needs; but by failing to have full discussions with the project staff and beneficiaries during and especially on completion of the investigations, a feeling of distrust may arise. The sensitive evaluator should aim to enhance the balance that exists between donor agencies, project staff and beneficiaries. There can be no laid down rules on how to achieve this. The personality and experience of the evaluator will be critical. This puts a heavy responsibility on Oxfam on how it sets up an evaluation and who it selects to do it.

4. Criteria for Evaluation Studies

The following criteria on which to base a decision whether to hold an evaluation were proposed by the Evaluation Panel and subsequently endorsed by the Field Committees:

- (i) there are doubts about the operation of the project
- (ii) the large size of Oxfam's financial commitment, taken in the context of the geographical and functional circumstances of that project
- (iii) a request for further funding
- (iv) the pilot nature of the project
- (v) an appropriate stage in the project's development, eg at the end of a specific phase.

It is probable that more than one of the criteria will apply before a decision is made to have an evaluation, except in the case of pilot projects where by their nature evaluation should be automatic.

Notes

(i) The cost which will be incurred in obtaining information from an evaluation should always be set against the potential value which can be expected from it. To translate this into proportional terms can be misleading, but in general the cost of an evaluation should not be more than 5% of the total funding provided by Oxfam, and in many cases will be much less.

(ii) There is much to be said in favour of mid-term evaluations, ie part-way through a period of funding by Oxfam, as at this stage it is possible to assess the progress of the project against the original objectives, and to change these as may be appropriate. Additionally, there is not the inherent tension of an end-of-term evaluation when further funding may be at stake.

5. Methodologies

The development literature is filled with complex treatises on evaluation design and methodologies. Perhaps fortunately for those associated with Oxfam's work, much of this is inappropriate.

The methodologies listed below are among those that have been found to be relevant.

- A. A management study analysis has been developed by Oxfam's Medical Unit, though it can be applied equally to other types of project. The assessment is based on an analysis of:

- (i) the infrastructure, eg personnel, building, equipment
- (ii) the coverage - the number and range of beneficiaries
- (iii) the quality - of the project services provided
- (iv) the vital statistics - eg rates of infant mortality or cropping levels
- (v) unit costs
- (vi) significance - to the local community

A short paper is available expanding this approach 'Evaluation of Oxfam's Medical Work', prepared by Oxfam's Medical Adviser, of 6.11.78.

- B. Another method uses an analysis along the following lines:

- (i) effort - a measure of the activity that has occurred, ie of the inputs
- (ii) effect - the results of the effort
- (iii) adequacy of effect - degree to which the effect is adequate and suitable to the needs of the project. This is an area where many rural development programmes fall down as they do not meet the needs of the prospective beneficiaries.
- (iv) efficiency - optimum use of resources, and the alternatives that are/were open
- (v) importance - largely self-analysis, leading to ranking the priority order
- (vi) impact - on the local community

- C. A system has been developed for projects covering a number of activities. This arose from the problem of trying to evaluate such a diversity of activities over a large area in the limited time available to the evaluators.

It is based on forms prepared for each aspect of the project: on the left-hand side the objectives of that project are itemised and any other relevant factors, while the right-hand side is left blank for comments. These comments are written in at prescribed intervals by the project staff as a form of monitoring, and then analysed at the due time by the evaluator.

This type of assessment is only effective:

- (i) where good baseline data are available together with a clear statement of objectives
- (ii) where every project holder within the scheme does a complete appraisal before funding begins.

It is therefore essential that the data thus gathered are carefully preserved and kept readily available.

A major problem in this approach can be to persuade project staff to identify their activities and for them to appreciate that their work is itself definable with specific objectives. Only when this identification has been done is it possible to quantify the various inputs and outputs.

Many people responsible for running development projects are reluctant to sit back and think in these terms, yet some of them must have done this initially when preparing the grant application.

For further details, see Bibliography: J. Pilgrim, Crown Agents.

Note Whereas projects costs can - and should - normally be accurately recorded, benefits and dis-benefits are more difficult to assess as:

- (i) they should extend beyond the life of the project, and probably with a multiplier effect
- (ii) there may be demonstration effects on neighbouring communities
- (iii) many of these are not readily quantifiable

Nonetheless it is important to try to assess all these as they accrue to the people and to the environment for succeeding generations.

Also the comments in connection with the 'Preparation of a cost-benefit analysis' should be taken into account.

Measuring Independent Variables

The above methodologies are concerned for the most part with the measurement of activities directly related to project objectives. However more important in the context of Oxfam's concern for the overall social consequences of development assistance is the 'significance' (as in A vi) or 'impact' (as in B vi) that the project has had on the local community.

Appropriate social indicators based on the stock or flow of welfare are difficult to find; they have been developed to some extent with reference to the wider community (eg for UNRISD by Drewnowski and N. Baxter), but little has been done at the village level to date.

An experimental framework has recently been proposed for trial at a rural development project in India operating in villages at micro-level, and which - exceptionally - is managed by Oxfam's own staff (ORS 20). A copy of this framework is included as Appendix IV.

Useful background information on this kind of approach is set out in the report of a workshop on evaluation attended by American voluntary agencies 'Approaches to Appropriate Evaluation' April 1978 available from TAICH.

6. Evaluators

From all that has been mentioned, it will be clear that Oxfam gives every encouragement to the use of nationals to assist with evaluations. These may be experienced development workers or teams from local universities. While it can be useful to involve students in this kind of work so that they may obtain first-hand field experience as has been done in Indonesia (ID 49 and 72) and in India (RAJ 12), due regard must be given to the effect of their attitudes and influence on the project personnel and beneficiaries; they must be carefully selected and supervised.

Expatriate evaluators, especially from 'industrialised countries' should only be employed when suitably experienced nationals are not available, except for:

- (i) projects of major importance in view of their value for replication
- (ii) large-scale projects which appear to have 'gone astray'

Evaluators should have: experience of the types of activity involved in the project, a good knowledge of the country's culture including language, and an appreciation of Oxfam's approach to development. The normal run of evaluators are concerned chiefly with a statistical analysis of a profit-making activity. Consequently Oxfam tends to be in a specialist market when seeking evaluators; indeed it is almost having to create its own reserve of expertise.

When providing the terms of reference for evaluators, it should be agreed for whom their report is to be prepared, and who decides on its distribution.

7. Arrangements for an Evaluation

When agreeing the details for an evaluation which Oxfam is funding, Field Directors should ensure that the following points are covered:

- (i) why and by whom the evaluation has been requested
- (ii) the terms of reference
- (iii) arrangements for employing the evaluator(s)
- (iv) the budget for the evaluation
- (v) the methodology to be used, including the process by which the findings will be relayed back to the project staff and beneficiaries, and how these will be taken up by them
- (vi) the evaluation report: responsibility for its preparation and distribution
- (vii) payments to the evaluator. For example, this may be 50% when the evaluation starts, and the balance when a satisfactory report is received. Or if the evaluator(s) require payments to cover expenses during the course of the evaluation: 40% initially, 40% midway and 20% when the report is handed over.

Note Field Directors should advise the Evaluation Officer of all these points for each evaluation and obtain approval to them before the evaluation proceeds, as confirmed in the Overseas Director's memorandum of 7.9.1979.

8. Constraints on Ex-Post Evaluations

Following the preparation of an Evaluation Policy in 1977 as mentioned at the opening of this Section, and the rationalising of arrangements for evaluation studies, it has since become clear that it is not feasible or appropriate to undertake a comprehensive pattern of evaluations as had been envisaged. It has to be admitted that the opportunities for making such studies are becoming increasingly constrained. The reasons for this include:

- (i) the increasing resistance of projects to having outside evaluations
- (ii) the problem of finding evaluators who have the desired understanding and approach, who are acceptable to all the parties involved, and who are available when required

- (iii) the difficulty of feeding back the results to the project staff and beneficiaries, of obtaining an adequate report and of then making proper use of its findings
- (iv) additionally it is anyhow part of Oxfam's evaluation policy to try to reduce the overall number of ex-post evaluation studies.

As it is, most ex-post evaluation arrangements miss out completely on what is the key period when considering an aid intervention as part of the continuing social process of community life. This is the period from the time the agency closes its support and, say, five years later. The difference between the two situations would represent the value of the agency's intervention. Oxfam has yet to make such an assessment, though it was agreed by all the parties concerned at the time of the evaluation at the conclusion of a large rural development programme in Guatemala (GUA 12) in 1978 that there should be a further assessment made five years later. It remains to be seen if this will take place; if it does, the endeavour should be very worthwhile.

While there will still be a place for a limited number of this type of evaluation study, the emphasis now for Oxfam is on trying to draw up succinct and relevant guidelines for the use of Field Directors and development workers covering:

- (i) the collection of adequate baseline data against which objectives can be measured
- (ii) typologies for the various approaches to monitoring and self-evaluation
- (iii) the measurement of the social element of project activity, especially the consequences for communities and the changes in their social values and expectations.

Reference is made to (ii) in the following Sub-section. Two consultants are undertaking a research project based on Oxfam-supported projects concerned with social development which it is hoped will have considerable relevance to (iii), particularly in proposing both guidelines and indicators for assessing social impact.

Note The Evaluation Panel is actively concerned with co-ordinating the work on all these guidelines and indicators. It would welcome hearing of suggestions and experience in these fields from other agencies and from development workers.

9. Participatory or Self-Evaluation

Participatory or self-evaluation could be considered as a particular form of methodology. However it is become of such importance that it warrants discussion in its own right.

The merit of participatory evaluation is the improved understanding and consequent increase in morale that it can bring to project staff and beneficiaries alike.

Balanced against this is the fear that the result may be less satisfactory in terms of statistical analysis. However this should not suffer if adequate baseline data were recorded at the outset together with easily quantifiable objectives. Indeed regular monitoring in this way can encourage an improvement in basic administrative routine such as filing and data collection.

If Oxfam is concerned to assist the poor to do their own development ('to be more'), this internal assessment process should be built-in as a basic principle. Increasingly projects are seeking advice on this as they want to be able to look back on their own experience.

Also for Oxfam's part, the use of participatory evaluation reduces the possibility of it being accused of trying to impose its own organisational and cultural values.

One of the best recorded self-evaluations of this type in which Oxfam has been involved was of a community health project in Honduras (HON 3B). This had the advantage of having a highly motivated group of health promoters who had decided among themselves that they wanted such an evaluation. 95% of the final report was written by the promoters themselves. The expatriate retained remained more of an adviser during the course of the evaluation, and then added her comments to the final report.

This evaluation proved successful in terms of human factors, attitudes, motivation, etc.; the promoters being pleased that they could understand the evaluation and see more clearly the value of their work. It was perhaps less successful in its statistical analysis, though in fairness some of the hard data were not available.

Self-evaluation is being undertaken in many other Oxfam-funded projects such as Victoria Hospital outreach programme, Dichpalli (AP 3) and Kottar Social Service Society (TN 2) both in India, and in many village schemes in Tanzania.

This approach to evaluation is still largely in its infancy. However, such is the interest now shown in its use by projects, agencies and researchers, that two Appendices are included on the subject at the end of this Section. The first (Appendix III) is an outline of the main issues involved, and can be a useful reference for advising on the subject. The second (Appendix IV) is a detailed introduction to a particular approach to internal assessment as an aid to programme design that is attracting considerable interest. This draws on representatives from the local power structures and from local resource personnel to work as a team with representatives of the beneficiaries themselves.

Yet another variant of the self-evaluation process is the growing number of studies involving an advisory and training - or "acompaniamento"/ "appui technique" - element. In this the consultant works alongside the project for a period probably of several months, and returns at intervals to investigate and advise. Oxfam is currently supporting such studies of a community appropriate technology scheme in Brazil (BRZ 141), of village cereal banks (VOL 64) and a rural development project (VOL 58) in Upper Volta.

This arrangement has many advantages over the traditional ex-post evaluation study such as:

- (i) the consultant works with the project staff as compared to looking at them
- (ii) the findings can be fed back straight away
- (iii) it is an ongoing process and the consultant gains a close understanding of the project and the staff.

10. Assimilating and Disseminating Development Experience

It was stressed at the outset of this Section that the chief value of the appraisal and monitoring process should be for the benefit of the project staff and beneficiaries directly involved. Secondary to this is the value of the experience gained for the use both of development workers operating locally in similar fields and of Oxfam itself through its own staff and contacts elsewhere.

The collation of this information for Oxfam's part is the responsibility of the Field Directors within their own areas. Its dissemination to other Field Directors is the responsibility of those concerned at Oxfam, Oxford. It is hoped that the latter will be facilitated following the setting up of an Index at Oxfam House for recording lessons learnt from good as well as bad project experience, together with relevant items from journals, reports and other publications.

Having said this, it has to be asked:

- (i) to what extent is Oxfam learning from its diverse and often unique experience so as to make its response to the needs of the poorest more relevant and effective?
- (ii) to what extent are these insights and experiences being drawn together to influence its own policy-making and resource allocation, and similarly to inform other agencies and development workers of these experiences?

As a review of the previous edition of this Handbook pointed out: 'If there is one area of weakness, it is the absence of any coherent structure for collecting and assimilating field experience and relating it to policy goals'. It is hoped that the changing emphases in reporting and evaluation, as outlined in the preceding Sub-sections, will lead to an improvement in the quality of the information collected. As to its collation and distribution, a proposal has been put forward for an increased research facility within Oxfam House and this has been favourably received. Similarly, the Rural Development Panel are working on the feasibility of drawing up country reviews which would provide an on-going reference and discussion framework in which to set Oxfam's policies, strategies and project activity for each country (see also Section 3).

In summary, Oxfam has a largely unique access to the learning process at village and community level in vastly differing situations, yet it has not to date satisfactorily applied that learning process to its own organisation for the benefit of its operations and to pass on to others. It remains to be seen if the reviewer's criticism quoted above will still be as valid when this Section comes to be revised in 4 years' time. Therein lies a challenge.

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Appendix I : WHAT TO LOOK FOR WHEN VISITING PROJECTS

These can be divided into three parts:

- I General Remarks
- II Specific Points
- III Other Considerations

I General Remarks

- (i) We are working within guidelines and priorities for the area.
- (ii) We think it preferable to have had a period of 'getting to know and trust and believe in each other' before actually receiving an application from an agency. Important that we should have a similar philosophy of development etc.
- (iii) With the larger applications it is important that our visit of 'investigation' should last sufficient time for all the parties to be able to relax and for us to be considered friends and not just as persons with some power over Oxfam's money bags.
- (iv) The size of the project has some bearing on how we regard it. For example, a very small project might need to have contacts with a larger agency (in whom we trust) nearby who could help them with their evaluations etc. A larger project might be more attractive because the possible spin-offs to neighbouring communities/agencies could be considerable.

II Specific Points (Not all would be applicable to all projects).

A. Purposes and Objectives (Purposes = short term, eg more food production. Objectives = long term, eg better health, more cash income etc.)

- (i) Are they clear? Are they compatible? Are they reasonable and practical?
- (ii) Are they based on the results of study, experience and discussion?

B. Sound Design

- (i) Is the way the project is going to be run feasible?
- (ii) Does it take into consideration local traditions, customs and idiosyncrasies?
- (iii) Are they trying to do too much? Is there enough staff?
- (iv) Does the project design cater for dealing effectively with feedback?
- (v) Is the timing reasonable?
- (vi) Should they start with a pilot project first over a shorter period?

C. Involvement financially or otherwise in the project of the prospective beneficiaries

- (i) Have the people to be helped in the project got anything staked on it? Are they contributing in some way? eg financially, or with their time, with food, wood or anything else.
- (ii) How much more should be asked of them?

D. Educational Process

- (i) Are the people 'going through' a process of critical awareness building gradually so that they are seeing how they fit into the world around them?
- (ii) To what extent have they reached a stage where they are able to articulate their problems, their aspirations, their priorities etc?

- (iii) How exactly is this being done? Examine closely
- (iv) If this is still to be done, how is it being correlated to the rest of the programme presented for funding?

E. Practical Effects

- (i) Will the project improve the people's life economically? Will they have more cash, more produce, more animals etc?
- (ii) Compare this with the answers to the questions on the educational process. Both are required and must be complementary and parallel. Sometimes the economic progress helps build up the critical awareness; not necessarily the other way round. People will suddenly wake up to protect what they have achieved and their new standards of living.

F. Confidence in staff, promoters etc.

- (i) Are they reliable, realistic, capable and well motivated?
- (ii) Have they sufficient experience?
- (iii) Are they well qualified or do they need more training?
- (iv) Are the leaders strong? Do they respect the opinions of others?

G. Popular participation and decision-making

- (i) How was the application drawn up? Who was involved in the process?
- (ii) How far are the people ostensibly being helped going to be able to influence the course of the project? What mechanism is there for this? Has it already been working? Is it practical, efficient etc? Will it be used regularly and frequently?
- (iii) Is the feedback information being given sufficient weight?

H. Organisation and democratic procedures

- (i) What is the nature of the organisation? Has it any legal status? What does the legal status mean in practical terms?
- (ii) Are there clearly set out rules for running meetings, taking minutes, holding general assemblies, changing the committee/the leadership etc?
- (iii) How easy/difficult is it for the 'general membership' to upset a decision of the 'Committee'?
- (iv) Is there an education programme on organisation, procedures etc. for all, both members and committee? This is especially important for co-operatives and similar organisations.
- (v) If the organisation is just starting what safeguards are there for ensuring that the present leadership will be there for a minimum time? Could the organisation be easily taken over by a 'dissident' or by a 'power/elite' group?

I. Continuous monitoring and planning

- (i) Is there a built-in system for regular self-evaluation? If so, how are they carried out, who takes part in them?
- (ii) Are the conclusions arrived at used to change the purpose and objectives?
- (iii) Is the project design also changed to meet the new ideas and circumstances?
- (iv) Are any outside persons and/or agencies/institutions invited to help with the self-evaluation and planning?

J. Cost effectiveness, budget and previous aid

- (i) To what extent is the project as planned the cheapest solution to the 'problems'?
- (ii) Is the budget reasonable? How do salaries, for example, compare to the economic position of the persons being helped?
- (iii) What previous aid has the project received? Did it achieve anything? If not, why not?
- (iv) Is there a danger that further aid might do more harm than good?
- (v) Note that a project whose aim is to train people to teach others might not seem very cost effective but might well be so, if the multiplier effect is pretty well assured.

K. Measurability

- (i) Will it be possible to measure the progress of the project?
If so, how?
- (ii) Is this built into the project design?
- (iii) How often will this measuring be done - weekly, monthly, yearly?

L. Repeatability

- (i) If the project is successful, could it be repeated in the same area, country, another country etc?
- (ii) Could it be expanded in the same or a neighbouring area? If so, have any plans been proposed for this?

M. Continuity and irreversibility

- (i) When outside aid ceases, does it seem likely that the project will be able to continue on its own, financially and otherwise?
- (ii) Is the way the project is designed such that there is a good chance that it will be irreversible? For example, are the people who are being helped seeing themselves as having some obligation to other people in their community to pass on what they have been taught?

N. Organic link-up with other institutions

- (i) Is the project linked to a federation of co-operatives or similar agency, so that lessons learnt including the reasons for failures are being passed on for the benefit of all?
- (ii) Is the agency being helped influential, and able and willing to respond to requests for help from other bodies, whether they are linked to them or not?

O. Risk assessment

- (i) Seen against other applications for funds, how much risk is involved in helping this particular one?
- (ii) Which applications are the best bet, with the greatest possibility of achieving something, being able to expand and having some sort of multiplier effect?

III Other considerations

- (i) It is essential to talk not only to the 'staff' of the project but to the people who are to be helped by the project eg peasant groups, community committees, mothers and women generally.
- (ii) Before an application is presented it is sometimes useful to send groups of project staff and potential beneficiaries to visit other projects where the work they wish to engage in has already been undertaken successfully.
- (iii) It can also be useful to organise simple surveys or/and base line data collecting. This should be done by some agency with experience, and if at all possible the people from the area where the project is going to take place should be used to help in the process.
- (iv) Sometimes after visiting a group that is seeking funds, one is forced to consider whether in spite of their deficiencies the group show sufficient potential to merit giving them limited support, in the hope that - with time - their good points will eliminate their main faults. This requires much thought, tact and a good relationship with the group.
- (v) In certain cases where the needs of the community etc. are great and the prospects of a successful project seem minimal, it might be possible to advise giving a small donation coupled with a condition that an evaluation, internal or external, should be put in hand at once. If all goes well, a further application can be invited after this process has been completed.
- (vi) One should never try to impose forcibly one's own or one's agency's ideas or rules. Ultimately the applicants and the funding agency must feel that what they are undertaking they are both convinced about. An imbalance in this respect is not only to court disaster but also an insult to the applicant's intelligence and integrity. Hence the insistence that you can never spend enough time getting to know and understand each other.
- (vii) Funding agencies must be consistent in their behaviour. They can't say one thing and do another. This consistency is also important in the way agencies raise their money, deal with applications in their home office, alert their own nationals on the problems of the Third World, criticise their own Government's policies towards the developing world, stand up for human rights issues etc. Always try to explain to agencies seeking our help how Oxfam is run, where the money comes from, what we believe in, what we do at home in the way of educating the public on the Third World issues etc. It is all part of the process.
- (viii) Oxfam is prepared to receive applications from any group. This has its advantages and its disadvantages.
- (ix) We are now holding seminars bringing groups we work with together to discuss common problems. We take the opportunity in these meetings to try to arrange inter-project visits and also to invite criticisms of our relationships with the groups attending.

Appendix II : CHECK LIST ON ASPECTS OF THE PARTICIPATION OF WOMEN IN DEVELOPMENT PROJECTS

PROJECT OBJECTIVES

What are the objectives of the project?

Are women specifically mentioned as either agents or beneficiaries?

What, if any, are the stated benefits for women?

eg acquisition of skills
increased productivity
reduced workload
provision of amenities
opportunity to earn cash income etc.

What assumptions are made in believing that project inputs will lead to these benefits?

If women are not specifically mentioned as participants, would their actions be relevant to the objectives of the project? Would a component for women be a useful addition to the project?

PROJECT DESIGN AND PREPARATION

Has there been consultation with people whose lives will be affected by the project, and what attention has been given to women in this?

Are women involved at any level in the professional planning and implementation of this project?

Are women to be given access to the new opportunities and services which the project provides?

If not, what is the reason?

Are resources adequate to provide these services for women? eg are women extension staff available in sufficient numbers if approach by male staff is not culturally acceptable?

ANTICIPATED IMPACT

(i) How will the project affect women's allocation of time?

To what extent will their workload increase/decrease as a result of innovation or changes? eg

- new agricultural inputs and cropping patterns
- agricultural advice, nutritional or health teaching
- changes in distance to farms, workplaces, water supply, firewood supply, etc.

(ii) How will the project affect subsistence within the target group, and women's control over food supplies for the household?

Will any sources of food be removed or decreased?

To what extent will women be increasingly dependent on husband's cash income for household food and necessities? If so, will this income be sufficient to make good subsistence losses? (How subject is it to fluctuations according to world market, climatic conditions etc? Can it be assumed that male income

will 'trickle down' sufficiently to meet basic household needs?)

Will changes in labour allocation alter nutritional needs of any members of household? Are subsistence resources or increased cash incomes sufficient to meet them? If not, what are the probable consequences for women and children, especially if unequal food distribution patterns are customary?

- (iii) How will the project affect women's access to economic assets and cash incomes?

Will they gain/lose any of the following?

- access to land
- opportunity for paid employment or other income-earning activity
- assistance with economic activities from other members of household
- control over sale of product, etc.

- (iv) How do the implications of the project effect the social position of women in the household and in the local community?

How will the intra-family responsibilities in the home be effected?

To what extent will there be a change in the role of women, and with what consequences?

What possibilities will there be for increased participation by women as representatives in community organisations, and/or to set up their own groups for relevant functional activities?

- (v) To what extent is the project likely to have any adverse consequences for women within groups and categories not immediately affected?

- (vi) How will the timing, success and frequency of child-bearing be affected by the project?

EVALUATION

Is provision being made to monitor and evaluate the impact of the project on women?

Will base-line data be adequate for this purpose?

What factual indicators would be relevant?

Appendix III: NOTES ON PARTICIPATORY EVALUATIONIntroduction

In Participatory Evaluation ACTIVE participation is sought AT EACH STAGE of the evaluation, from its BEGINNING, during the SELECTION and APPLICATION of METHODS for COLLECTING various TYPES of DATA, through to ANALYSIS of data, to the CONCLUDING and IMPLEMENTATION of the FINDINGS.

1. WHAT ARE SOME OF THE IMPLICATIONS OF INVOLVING A PROJECT IN AN EVALUATION OF THIS TYPE?

Providing that patterns of constructive self-criticism have already been established in the project, the evaluation could indicate project strengths and weaknesses, show where changes are necessary, propose alternative strategies, increase mutual understanding between staff, project holders and beneficiaries, and perhaps boost morale.

2. HOW CAN THE WHOLE PROJECT PARTICIPATE IN THE EVALUATION?

The whole project is not expected to participate actively in every aspect of the evaluation. An existing team can be used to 'steer' the evaluation or a team can be specially selected for the task. A prerequisite for 'success' may be the existence of a unified project leadership capable of carrying out group decisions.

3. DOES IT MATTER WHO INITIATES THE IDEA OF HAVING AN EVALUATION?

Irrespective of the origin of the idea, unless there is general and genuine acceptance by the parties concerned regarding the necessity for the forms and objectives of the evaluation, it is useless proceeding. Acceptance may be related to the project's view of the evaluation objectives, ie. to demonstrate achievements, to ensure further funding, as an obligation to donors etc. Where there is agreement from the outset by agency and projects, alienation of 'evaluators' and 'evaluated' should be lessened, as both collaborate by mutual consent.

4. HOW ARE EVALUATION OBJECTIVES TO BE DETERMINED?

Participation is sought in identifying the objectives of the evaluation. There may be difficulties in identifying project objectives where they have been stated generally rather than specifically, or where objectives have 'evolved' over time.

Participants are helped to focus on particular problem areas, and to identify possible directions from which the solutions may be sought. Some problem areas will be studied in detail, others more generally. This kind of flexibility may allow the interrelationships of 'causes and effects' to be more clearly seen.

5. THE PROBLEMS OF DESIGNATING 'SUCCESS' or 'FAILURE'

Sometimes success can be demonstrated in quantitative terms. But there are also other criteria for 'success' which are less amenable to quantitative analysis. Some of these are related to attitudes, relationships, fears, motivations, communications channels, goal priorities, leadership quality and pattern, ie. the social consequences or "impacto social".

These also often determine 'success' or 'failure' and may be responsible for programme growth or decay. The evaluation is a vehicle for conflicts, tensions, but the ability to prevent the evaluation from floundering or being torn apart by these issues, will be related to the projects capacity for self-analysis and leadership skills.

6. BASELINE STUDIES AND MEASURING OF OBJECTIVES

Where few baseline studies exist it is harder to quantify achievements. During the initial stages of the evaluation, baseline measurements can be taken, thus establishing a baseline for subsequent stages evaluations. This process may well indicate the need for more tangible and easily quantifiable objectives.

There may be problems over obtaining national data such as census data and other reports which may have been designated 'confidential'.

7. MUST THE QUANTITY AND QUALITY OF STATISTICAL DATA BE LOW?

Employing this method of evaluation, it is unlikely that it is going to be of the intensity and complexity of other evaluation methods employing a higher level of technology and expertise.

But much depends on the project's own technical level and the capabilities of the participants, whether a baseline was established, the type and quality of record keeping employed etc.

Where technical tests are required, the technical expertise within the project itself should eventually be sufficient for the carrying out of these tests. A serious project is unlikely to try to fool itself.

8. WHAT IS THE ROLE OF EXTERNAL PERSONNEL? AND WHAT ABOUT FUTURE EVALUATIONS?

The role of external staff, advisers or researchers of various types is that of colleagues in a joint venture. Ideally leadership is determined not so much by professional status as by the nature of the presenting problem. Future evaluations may well require less or no outside input. Even where evaluation procedures are in-built, there will be a need for periodic evaluation studies to prevent over-accumulation of data, assess performance, increase morale, indicate future directions. Where there are no in-built evaluation procedures, these can be built in during the evaluation.

9. HOW LONG WILL IT TAKE AND HOW MUCH WILL IT COST?

The length of the evaluation will be related to factors such as evaluation objectives (large-scale or small-scale study), resources (of personnel, finance etc.) and need for reasonably fast results (for funding or policy making purposes).

Projects are generally on-going during the evaluation, but a slowing down may be necessary to accommodate the evaluation due to deployment of staff in coordinating the evaluation, collecting and assessing data etc.)

The pace of the evaluation should never outstrip the participants' ability to comprehend what is happening.

10. WHAT ABOUT THE USE OF FINDINGS AND FEEDBACK?

Good relationships are stressed from the outset of the evaluation. Feedback may be continuous as the evaluation progresses, with final feedback to participants in the form of a written report. Where the report is written in a

minority language, any translation procedures require to meet the assurance to participants that the translation has remained faithful to the original.

Regarding the dissemination of the findings, some may be confidential such as details of finance, policy etc.

The evaluation process also aims at increasing participants' ability in decision making, management skills and future evaluation expertise.

FINALLY - Beware of over-expectation of what evaluations can do.

It is no panacea.

It is most likely to:

- Demonstrate strengths and weaknesses
- Indicate the need for changes
- Propose alternative strategies

Enabling participants to evaluate and monitor their own progress is not only an essential feature of good project design, it also helps to maintain understanding and motivation.

Appendix IV : PARTICIPATORY EVALUATION : A PARTICULAR APPROACH

An educational process for communities and target groups involved in designing social development programmes.

1. Introduction

In that Oxfam gives priority to community-based projects, and where, ideally, those who should benefit, i.e. the target group, actually participate in defining, appraising, executing and monitoring programmes affecting them, Oxfam field staff should give serious consideration to the currently evolving concept of Participatory Evaluation. If Oxfam field staff can identify groups where this approach is apparent, or where the main principles might be introduced, it is likely that it could lead to authentic grassroots development action. It could facilitate the collection of baseline data in the early stages of a project where desirable, and not least it could facilitate regular reporting.

2. Purpose

It is a process which combines the elements of Development, Education, Evaluation and Participation (DEEP). Its purpose supports the premise, drawn from experience, that the more a target group i.e. villagers, farmers, women, unemployed youth, etc is convinced about, and involved in, the processes of change and development affecting them, and the more they feel themselves responsible participants with those who have wider knowledge, power and resources, the more likely they may be able to assist in initiating, implementing, and sustaining change in ways, and at a pace, most suited to their own context. Conversely, without opportunity for adequate participation, a target group may be less able to adjust internally to sustain more imposed environmental changes affecting them, and may exhibit symptoms accordingly, eg. hostility, passive resistance, deviance, depression, etc.

No matter how fine a development plan, innovatory idea, or research finding there may be judged by any external criteria, unless there is meaningful dialogue and shared conviction about it in the local beneficiary area which can lead to sustainable action, positive change may not take root in the community. It is possible that the opportunity for beneficiaries and local staff to take part in some form of participatory evaluation exercise may provide a useful linkage, and help to create a sustaining climate.

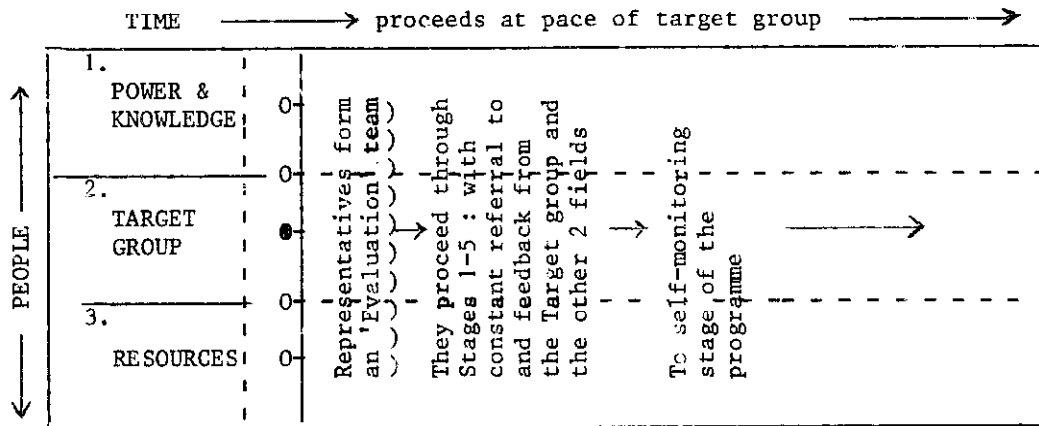
3. Participatory Evaluation Approach

In any given development situation there are usually three main elements - all interrelated, and often overlapping to some extent, depending on the context:

- (i) those with wider power and knowledge, such as administrators in the political, executive, and legal fields, and the expert technicians in research and training institutions
- (ii) the people of the target group(s) at field level
- (iii) the resources of the situation eg. financial, natural, technical, at village, urban, provincial, regional, national and international level

Projects and programmes proceed over time in a continuum from the point of problem awareness through some sort of appraisal and planning stages to action and monitoring, reappraisal, etc. Participatory Evaluation is based on the principle that the people of the target group should provide the central sounding

board throughout, and their representatives should be included from the outset as part of an overall evaluation team which would also include relevant representatives from the 'power and knowledge' field as well from the 'resources' field. The team should include one collaborator who understands the application and adaptation of appropriate evaluation skills and techniques, much in the same spirit as appropriate technology, and who is committed to the process of feedback and dialogue, as well as being sensitive to and encouraging of indications of local momentum and leadership.



NB. There is no one model, but a process which is adapted to context.

The approach can be seen as a sequence of stages, common to most change processes, but where evaluation skills can be applied/combined/adapted for use with the target group by the team which includes their representative(s). Thus it provides an educational forum for all the team members, recognising and respecting the different lay and expert areas of each one, and those they represent, through regular referral and debate. It is a learning process based on the best principles of adult education. The stages could be briefly defined as follows:

- (i) Awareness of problem(s), which may arise from any one of the three fields in the diagram, or a combination of two or all of them.
- (ii) Evaluation team is formed with representatives of all three fields, who listen and discuss problems in the community to learn their values, perceptions, priorities and resources, etc. Together
 - (a) they collect data/evidence, and the attitudes surrounding the problem: historical aspects, present practices and future aspirations. This in effect is baseline data.
 - (b) they evolve ways and means of analysing the data, integrating all the members of the team as much as possible
 - (c) they devise the most graphic and simple ways ie. comprehensible to laymen, to present the results back to the wider target group(s) and others concerned in the 'power and knowledge' and 'resources' fields. There is scope for imagination and experiment here.
- (iii) Period of reflection, possible further evaluation of certain aspects, debate about first-stage objectives, working guidelines, and criteria for measuring progress with the community.

- (iv) Trial action may be attempted over a suitable timespan, a forum established for continuing reflection and debate, reappraisal, redefining objectives in the light of experience, and programme adjustments made, all in consultation with the target group, using adapted evaluation skills. Areas of conflict can be anticipated.
- (v) Evolve towards self-monitoring stages based on the criteria decided by the group, whether (a) material/physical/economic aspects and/or (b) psycho-social aspects eg self-administration, collective spirit, democratic methods, etc, which may perhaps be measured at regular intervals by some rating method within meetings of the group.

If this process can be regularly recorded throughout, charted, or otherwise graphically portrayed in ways understood locally, and then debated, this increases knowledge and understanding within the target group and in the wider fields. It helps to objectify the group's impressions and to increase insight, which is the element for all real learning, maturation and growth in human terms. Should there be a request and an agreement for an outside evaluation later, such evaluators would have access to original baseline data and also regular records over the time of the programme.

Above all it helps to ensure that objectives can be adapted according to evolving needs at each stage, and thus minimises the chance of failure simply because original objectives and subsequent ones are decided by those directly affected by the programme. Most importantly the programme should proceed at the absorptive capacity of the target group, and not be artificially constrained by the secondary needs of the 'power and knowledge' or 'resources' fields, even though by the same token this very pace may respond to some outside constraints simply because there is good understanding and co-operation from the outset. Good relationships and respect hopefully facilitate compromise throughout.

4. Justification

Participatory Evaluation overcomes some of the criticisms of more orthodox external evaluations and researches. These tend to be:

- (i) more orthodox research methods may oversimplify social reality, eg questionnaires alone tend to give photographic static responses which may give little indication of historical experience, present perceptions, and future intentions
- (ii) it can be alienating, dominating or oppressive in character where evaluators remain separate/outside the experience within which change is sought, they may conceivably not be asking the right questions, and then attempt to design programmes at considerable distance - actual or metaphorical - from the objects of information
- (iii) external evaluation does not necessarily provide easy links to possible subsequent action
- (iv) social research methods are not always consistent with the principles of adult education in which adults articulate their own needs and devise strategies for meeting subsequently agreed objectives, etc. (1)

In preference, Participatory Evaluation has positive advantages, viz:

- (i) it can be of immediate and direct benefit to the community participating
- (ii) it should involve them right from the formulation of the problem(s), through the discussion of how to seek solutions, the interpretation of local and other data, to the planning and subsequent monitoring of action
- (iii) it increases awareness and commitment within the community
- (iv) it is a dialogue over time and not a static picture from one point in time
- (v) the object of the process should be the liberation of human creative potential and the mobilisation of human resources for the solution of social problems
- (vi) subjective and ideological elements can be taken account of more explicitly. ⁽¹⁾

Further, it can be justified on sound psycho-social, anthropological, and politically democratic grounds.

5. Specific Participatory Evaluation work

As yet, there is a dearth of documentation showing practical application of this methodology, though that does not mean it is not happening. In some programmes some of these principles are being applied, and there is much discussion in progress. The Participatory Research Project ⁽²⁾ is one current enterprise involving a network of some 100 researchers in various parts of the world who, over a period of some 18 months (from 1978), will be gathering information from their own regions about this approach. This will be useful to follow, and names and addresses can be supplied to any interested. Oxfam will be interested to hear from any who are aware of programmes adopting this approach, or who would like to consider it in greater detail, especially in relation to a given context.

6. References

- (1) HALL, Budd L.: "Breaking the Monopoly of Knowledge; Research Methods, Participation and Development". 'Adult Learning: A Design for Action' Ed. Hall, B.L. & Kidd, J.R. Pergamon Press. 1978. pp. 156-9, 161-3.
- (2) Ibid. pp. 160-1.

Appendix V : THE QUEST FOR A FIELD APPROACH TO EVALUATIONPrepared for Village Projects in Orissa, India assisted by OXWORP (ORS 20)SOCIO-ECONOMIC INDICES WHICH MAY CONSTITUTE INDEPENDENT
VARIABLES OF RURAL SOCIO-ECONOMIC CHANGE

- | | |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Child Nutritional Status (1-5) years) | Height, Weight, Arm Circumference (fixed norm), and Age. |
| 2. Literacy and schooling | Use a test card for functional or simple &/or numeracy skills, and note the level of schooling of each person. |
| 3. Housing | Area (sq.ft.) available per head/no. of rooms and type of roof. |
| 4. Ownership of productive assets: | Land: wet/dry, owned/rented. No. of bullocks, small machines & tools. |
| 5. Migration (unemployment) | No. of families with one (or more) members absent looking for work; type of work and length of delay before they found it. |
| 6. Formal & Informal Associations: | A typology of such groups would need to be made according to their purpose: social & religious/economic/political. Prevalence of these groups in the village & level of participation (membership/frequency of attendance/achievements) of the individuals in our samples. |

Possible additional variables:

- | | |
|-----------------------|--------------------------------------------------------------------------------------------------------|
| 7. Status of women | Average age at marriage, and ratio of surviving (post 5 years) female:male children. |
| 8. Economic disparity | The proportion of non-cultivating agricultural workers' households to total 'agricultural households'. |

A NOTE ON EXPERIMENTAL DESIGN AND SAMPLING

1. In cases where a literacy project has been funded, the literacy variable becomes a dependent variable, and could only be used as an independent variable of socio-economic change if it progressed after the project's termination.
2. The basic sampling unit will vary: although essentially we wish to sample the target group within the village. The matching process will however have to commence by matching the target village with a similar one according to the data given in the District Census Handbooks and the opinion of

the OXFAM Community Field Officer (C.F.O.), and the Block Development V.L.W. In some cases the village will constitute the unit, in others the individual child will be representing his household.

3. The question of causality will be examined by obtaining data which relates to OXWORP's assumed intervention (in the case of the experimental 'target groups' which are involved with specific sub-projects). In some cases 'control groups' may subsequently receive funding since it cannot be withheld purely in the interests of Evaluation. The time of research data collection will be:
 - (a) Before (or in some cases During)
 - (b) After (at the point where OXWORP has ceased to visit)
 - (c) Long After (ie. 5 years after the whole OXWORP programme has been terminated and withdrawn).
4. The 6 (or 8) groups of indicators outlined above should be objective, factual and relatively easy to collect as data. There will be difficulties with precision over age, and some details relying upon memory eg migration, and honesty eg land holding. These will be most apparent with the control groups with which we have no relationship, or which have expectations based on rumours about OXFAM. The problems mentioned above are common to most interview surveys as opposed to long-term observation, but it is argued that the marginal utility of effort to achieve greater precision would be unlikely to be justified in the prescriptive value of the results.

OTHER APPROACHES TO EVALUATING THE SUB-PROJECTS:

- A. Through an examination of the actual operation and direct results of the sub-projects.

The aim of this part of the evaluation is to compare the proposed sub-project objectives and methodology with what actually happened during the implementation.

A typology of both Sub-projects and Recipient groups would be useful for analysis.

The aim once again is to keep to accessible data and indices:

1. The number of modifications to the original proposals - qualitative/quantitative, and any explanatory/interpretative comments.
2. The achievement of measurable sub-project goals, ie dependent variables, such as: the repayment record of loans and revolving funds, the quantity and frequency of savings, the successful completion of structures.
3. Some socio-economic consequences of newly-created productive assets, eg the estimated additional income of individual participants, its pattern of social distribution, and the perceived pattern of expenditure - traditional/or any new elements such as pots, lamps, shoes, savings, newspapers, an increase or the appearance of which could be cross-checked with the vendors.

B. Through a process of participant self-evaluation and reflection.

This approach must precede the other two (based on independent and dependent variables) since it is based on asking the C.F.O. and groups of beneficiaries a few open-ended, general questions about their experiences living (or working) in the village at the time of the programme. There would need to be close study of how best to phrase these prompts in such a way that the answers would reflect the way the respondent saw the situation, and not the way we think we would have seen the situation if we were him/her.

EVALUATION OF THE WIDER OBJECTIVES OF OXWORP AS AN EXPERIMENTAL PROGRAMME

These are stated in the Statement of General Objectives. They must in particular be the subject of self-evaluation and reflection by the OXWORP staff themselves.

In general there might be considered to be four areas within the general objectives:

1. The internal functioning of OXWORP and its conceptual validity (Objectives 1, 2, 6).
2. In particular the goal of rural empowerment (Objectives 3,4,5,7)
3. The execution of useful sub-projects in villages (Objective 8)
4. Training of development personnel (Objectives 3 & 9).

Notes

- (i) A more thorough study of how these objectives can be assessed will be made on site. There might be some desk research on how other rural development projects are administered in cost-benefit terms, and the elements of self-evaluation and job satisfaction as expressed by the staff will be important.
- (ii) Indices of rural empowerment may require a second research plan, although it is unlikely that anything major could be justified. Basic indices could be:
 - the use of credit institutions and savings, and the indebtedness of target and control groups
 - the prevailing agricultural wage
 - the degree of representation of 'the poor' on panchayats or other decision-making bodies.
- (iii) The evaluation of the sub-projects has already been outlined above.
- (iv) The staff will be encouraged to develop their own indices and criteria, and OXWORP should follow their subsequent careers in development work.

OXFAM WEST ORISSA PROGRAMMEStatement of General Objectives:

(A document for internal use in conjunction with the First and Second Progress Reports)

1. To test the feasibility of a funding agency working directly with rural communities as against working through traditional intermediary voluntary agencies.
2. To test whether the resource of University-educated personnel can be trained and utilised to implement a professional approach to non-governmental rural development.
3. To evolve approaches and techniques of management, including appropriate technology, whereby the beneficiaries will control the course of their own development and make increasingly better use of available resources.
4. To evolve and encourage an 'educational action' approach which establishes the poor peoples right to resources while avoiding subservience to the prevailing mechanisms of distribution (including OXFAM).
5. To develop an approach to poorer groups in a community which in the initial stages, avoids the estrangement of other interests within the community.
6. Gradually to devolve OXWOP's functions over a three year period from May 1979 into new structures comprised of those communities and groups with which we have been working. Both success or failure in this objective imply a fixed termination date for the programme.
7. To promote local associations of small, marginal and newly-landed farmers thereby organising a way for effectively absorbing the services offered to them by existing agencies, as well as contributing to the wider pre-conditions for social change.
8. To build upon existing community initiatives and interest, and to participate in community and group action whose primary beneficiaries are the poor and the poorest people, thus enabling them better to fulfil their own self-defined objectives.
9. To use the programme facilities for the training of development workers, primarily through field placements.

Appendix VII : SOCIAL SURVEYS

Surveys are often useful at the planning stage or after completing a project to measure the need for the scheme or its effects. This information should be supplemented, if possible, by careful record-keeping and observation throughout the duration of the project. A word of warning: Survey results are only reliable to the extent that the data are competently collected and analysed. Running a survey is a more complex business than amateurs realise, and is best left to trained people. Beginners should only undertake a survey if a qualified adviser is willing to help. Many members of university sociology departments and a few lecturers in training colleges and secondary teachers have some experience in running surveys; as this is often part of training in the social sciences, lecturers may welcome a request for a small survey on some practical topic. Survey research centres can also be tried, though they tend to specialise in large scale, funded research and may find it difficult to fit a small, localised survey into their programme. Governments are becoming increasingly wary of surveys, so care must be taken that the necessary permissions, at every level, have been obtained. Specify clearly what information is wanted; discuss the work fully with whoever will supervise it, and ensure that close supervision will be maintained at every stage of the work.

I. Sources of Information

Before planning a new survey, it is best to find out what information is already available. Are there any local studies or reports on similar projects? What about ethnographic or community studies of the people and area concerned? Two major sources of information are local specialists and government reports.

1. Specialists Build up a range of contacts wherever possible, as researchers working in one department (of a university or of government) often have no knowledge of work going on in another department. Small studies which have not reached publication stage are often useful because they are more up to date than published work. Specialists will also know about reports which can be found in libraries or in their own collections. Occasional attendance at conferences is useful for making contacts with people; correspondence can lead to information on topics of special interest which otherwise cannot be readily obtained.
2. Government National censuses and regular or occasional statistics produced by government ministries are often useful sources of data on a specific area eg. composition of population, local leadership, development plans or topic eg. education, agriculture, transportation, migration, housing. The adequacy of government reports varies considerably from one country to another and over time; beware of their limitations. People often find it convenient to deliberately give inaccurate information, so the data on certain subjects can be suspect. Also surveys frequently only cover large aggregates, so there may not be enough detail for your needs.

II. Surveys

Whether you commission surveys or rely on those conducted for other purposes, you need to be aware of how the methods used and/or the assumptions of the supervisors may bias the results. As a consumer of survey research, ask:

- (i) Purpose What were the goals of this survey? What information did the author want? How were the major variables (income, aspirations, satisfaction) measured? Were the questions asked of the data meaningful in terms of the goals?

(ii) Sample Was the sample adequate?

- (a) Choice A sample should be large enough to permit comparison of subgroups, eg men and women, young and old, but a small, well chosen sample is much better than a large one which is largely accidental such as anyone met on the street is interviewed. Interviewers must not be free to choose respondents, and they should be closely supervised to ensure that they interview the people who have been selected. Given the chance, some may 'sit under a tree' and fill in the schedules out of their heads. The goal is a sample which is broadly representative of the population. Choice will depend on the availability of population lists and information on population composition which is often inadequate and the purpose of the study.
- (b) Generalisation from a sample How widely do the findings apply? Cultural, social, political and economic differences mean that findings in one place may not apply in another. A case study of one area or institution can provide useful information on some topics, such as community development or social relationships, but beware of claims that data are valid over a wide area. Data from several clusters eg villages, schools, neighbourhoods are usually more trustworthy than information from one place.
- (c) Response rates What proportion of the selected sample cooperated in the study? Were there some questions that almost no one answered? Low response rates, such as if below 80-90% were willing to be interviewed, make the data suspect even if the original sample was well chosen. A high number of refusals or 'don't knows' on individual questions often means poor interviewers, who may have biased the responses they did get.

(iii) Interviews Did the interviewers establish rapport with the respondents or was there continuing suspicion of the sponsorship and/or motivation of the research? What checks were there on deliberate deception and just making up answers which seemed to suit the occasion? Courtesy bias and the affirmation syndrome (being polite and saying 'yes') need to be watched for. Were the questions asked meaningful to the respondents? Were they clear? Were they within their competence and experience, so that answers were not merely guesswork or saying anything to satisfy a stranger? Were back-up questions used to find out what the respondent meant by a 'yes' or 'no' answer or by answers to other closed 'fixed answer' questions? Open questions are also useful as a check on interviewers as it is harder to make up the range of answers which should come in from open questions. Was a series of questions used for important topics so that it is not necessary to rely on a single answer? How were problems of language handled eg translation, the meaning of key words and concepts? How well were the interviewers trained and supervised? Who coded the data? Were the categories used for coding and analysis sharply defined and meaningful in terms of the respondents' answers?

(iv) Report As you read a report, constantly ask whether it makes sense. Do the data force me to this conclusion? How would I have gone about it? What if the data are looked at from another point of view?

- (a) Method How well does the report cover the material collected? Is it related to other studies in this field? To what extent are assumptions substituted for evidence? Are the tables clear, so

that they could stand without the text? Does the text summarise and analyse the tables rather than merely repeating them or ignoring them? What checks are there on accuracy and reliability?

- (b) Timing Is this information up to date? It often takes several years for a report to be written and published; readers many years later tend to take the report as an indication of present-day conditions, which are often quite different. New technology, new crops; migration and urbanisation; the spread of education, transportation and social services; changes in the national and local political and economic situation, mean that research done in the 1970s is often seriously out of date by the 1980s. We have to rely to some extent on what is available, but should be warned to check the date of the research as well as the date of publication, and try to work out these implications of changes over time.
- (v) Statistics This is a highly complex, specialist topic. Only an introduction to basic principles can be given here; these should help you to evaluate the results of the most commonly used measures. For more complicated statistics, it is usually better to ask someone who knows about them rather than try to work them out from a book. Complicated analyses are sometimes applied to data of doubtful reliability, and impassioned argument is sometimes completely unsupported by the data. It is best to be able to draw your own conclusions from the tables provided.
- (a) Percentages As a general principle, with a sample of about 200 respondents, it takes about 15% difference between A and B to be able to say that A and B are different, eg more As agree than Bs. The difference declines as the size of the sample increases; about 5% difference is likely to be significant if there are more than 2,000 cases. A smaller difference is needed the further the numbers are from 50%, eg 10% of As and 20% of Bs is more likely to be significant than 45% of As and 55% of Bs, given a sample of the same size. If the sample size and percent differences are small, there is probably no real difference, regardless of what the author says.
- (b) Mean and variance The mean (\bar{X}) is an average. The total of scores is divided by the number of cases. If some cases are way off at one extreme, the mean is pulled toward them and thus may be unrepresentative of the group eg a few wealthy households raise the mean income disproportionately. Thus, for some data, the median (the middle case, with half the people on each side) may be a better measure. The variance is the scattering around the mean. If most people are about the same, the variance is low. The standard deviation is the square root of the variance. Virtually everyone will be within three standard deviations above or below the mean; two thirds of cases will be within one standard deviation above or below the mean. The range tells the width of the spread; it is the distance between highest and lowest.
- (c) Significance The smaller the probability of error reported by a significance test, the better. $P < .001$ or $.01$ is very satisfactory. Tests which show a probability of more than $.05$ indicate that the relationship is very weak or nonexistent. Such a finding could have happened by chance 5 times in 100, when there was no real difference between the As and the Bs.

Significance means the likelihood of a real difference; it has nothing to do with the importance of the finding.

- (d) Correlations Correlations can be positive or negative. A negative correlation means that as one factor goes up, the other goes down; with a positive correlation, they both increase, though not necessarily at the same pace. Computer use has made correlation coefficients increasingly popular. The higher the correlation the better; less than .10 shows a negligible relationship between the two variables, .50 or above is considered substantial and 1.00 is perfect.

III Other Methods

Surveys are often best when they are combined with other methods, such as systematic records of progress, interviews with informants, structured or informal, and/or observation.

No survey may be necessary if the information wanted can be obtained by other means, but the reliability of this information should be assessed as rigorously as survey data.

1. Records Field workers should keep a record, daily or weekly, of what has happened. What objections have been made to the project? Who has supported it, and what is their position in the community? Who benefits most and who least from the project? What are its potential implications? Are these realised and talked about by all, or by only a few? How has the work been organised? Has enthusiasm grown or decreased as the project proceeded? Has it varied between groups? The act of keeping a record will encourage workers to be more aware of what is going on, and some difficulties can be handled before they become serious. When the project is finished, a summary of the record can be filed as a guide, for use when planning similar projects or other work in this area. However, if the report will be available to outsiders some consideration must be given to confidentiality. Unfavourable assessments of individuals which become common knowledge can seriously hamper the efforts of any outsiders who attempt to work in the area. If a report will be available to the public, names of people and places may need to be disguised.
2. Informants Considerable local information can be obtained by talking to local leaders like: the headteacher, imam or priest, chief or village headman, elders of the community. Their co-operation must be obtained for work in small communities; this is a good way for you to gain acceptance and credibility. In evaluating information supplied by informants, one should ask about their knowledge and goals.
 - (a) Knowledge Partly because admitting lack of knowledge decreases one's self-respect, we often consider ourselves more knowledgeable than we are. How does this person know what he/she is telling you? People in cities often know little about their neighbours, and elites often know little about ordinary people. Strong self-confidence is no substitute for experience. Watch for vague generalities and examples based on one case.
 - (b) Goals What goals of this informant are being filled by providing this information? Does he/she expect increased

power, prestige, access to resources, material reward? Is the interviewer seen as a representative of the government or as a neutral party? Communities are seldom homogeneous, and leaders are often affiliated to parties, which try to make their own views prevail. Contacts with one group tend to mean suspicion from other groups; thus, it may be easy to get one side of a story but hard to get the other side. Even if the community is united, their goal may be to keep strangers out or to mislead government agents; the informant may see his job as ensuring that the information wanted is not supplied.

3. Observation Observation can provide a depth of understanding to complement the breadth of a survey; inadequately done, it can be just as misleading. It is inherently a much slower method than a survey. Observers may be participants or outsiders. Participants get additional information through experience and identification with the community; the outsider finds it easier to remain neutral and thus examine the issues with less threat to him/herself. Most observation is casual and unsystematic, but one can train oneself to observe systematically, watching how people relate to each other and do their tasks, and recording findings in an organized way. Interviewers should also observe, as body positions, facial expressions and tone of voice can say as much as words. With practice, it becomes a habit. Getting started is the most difficult part of observation. Newcomers and strangers stand out, as they lack social contacts and a role which explains their presence in the community. The people need not know they are being observed if some acceptable role can be found, eg the observer appears to be doing something else. Taking a preliminary census, for instance of households, craftsmen, or anything which is visible from the street and found in reasonable numbers throughout the community, is a good way to get to know people, to watch daily activities and to talk about a planned project or survey.

IV. Bibliography NB. All but the last two are available in paperback.

- H.M. Blalock, Social Statistics, McGraw Hill, 1972. This text provides a rationale for understanding a wide variety of statistics, as well as instructions for computing them.
- J.A. Davis, Elementary Survey Analysis, Prentice-Hall, 1972. An easily readable explanation, with much good sense on the pitfalls of using data.
- G. Hoinville, et al, Survey Research Practice, Heinemann Educational Books, 1978. A practical explanation of how to do research; based on British experience, but with much that would apply elsewhere.
- M.J. Moroney, Facts from Figures, Penguin 1952. An introduction to statistics, rather out of date, written before the calculator revolution.
- C.A. Moser and G. Kalton, Survey Methods in Social Investigation, Heinemann Educational Books, 1979 (2nd edn.). This is a standard and widely available text, based on British practice; considerable coverage of sampling and many references to other sources of information on specific topics.
- M. Peil et al, Social Science Research Methods: An African Handbook, Hodder and Stoughton, 1981. Designed to provide all the practical details needed to conduct research in developing countries.
- M.D. Shipman, The Limitations of Social Research, Longman, 1972. A guide to pitfalls.
- J. Silvey, Deciphering Data, Longman, 1975. What to do with the data after collection.
- C. Selltitz, et al, Research Methods in Social Relations, Holt, Rinehart and Winston, 1976 (3rd edn.). This American text gives a full treatment to most phases of research, including the use of available data and ethical considerations.
- D.P. Warwick and S. Osherson (eds.), Comparative Research Methods, Prentice-Hall, 1973. A set of papers on the problems of research in developing countries and how they were handled.

Appendix VIII:

COST BENEFIT ANALYSIS

EXAMPLES of the issues arising from changes in agricultural practices:

1. Replacing sorghum with groundnuts, ie budgeting to substitute one crop by another.

Table	A	B
1.	<u>Revenue lost from sorghum</u>	1. <u>Revenue gained on groundnuts</u>
	Value of grain	Value of groundnuts
	Value of by-products	Value of by-products
2.	<u>Costs incurred on groundnuts</u>	2. <u>Costs saved on sorghum</u>
	Seed	Seed
	Hired labour	Hired labour
	Annual charge for tools	Annual charge for tools
	Fertiliser	Fertiliser
	Sprays	Sprays

If $B1 + 2$ is greater than $A1 + 2$, the change may be worthwhile but note:

- (i) If increased expenditure is involved there may be better ways of spending those funds.
 - (ii) The calculation assumes that other things, like the availability of unpaid family labour remain the same and that no opportunity cost is entailed in making the change.
 - (iii) No allowance is made for carry-over effects; in this example land fertility is likely to be higher after a legume like groundnuts than after sorghum (see Section 11).
 - (iv) If ex-farm prices are used even though the products are consumed at home, the differential contribution of the two crops to the dietary balance may be a factor influencing the choice.
2. Replacing bullocks by a tractor on a 10 ha farm, ie budgeting for a substitute form of tractive power where time is an important factor.

Table	A	B
1.	<u>Revenue lost on change from bullocks</u>	1. <u>Revenue gained on change to tractor</u>
	Custom work off-the-farm (net of concentrated feed and hired labour)	Custom work off-the-farm (net of running costs and hired labour)
	Fertiliser and fuel from dung	Net product from bullock-feeding land.

2. Costs incurred on tractors

Annual capital cost
 (purchase price less scrap value)
 ($\frac{\quad}{\text{life of tractor}}$)

Running costs
 Hired labour
 Annual capital) costs of
 Running) equipment

2. Costs saved on bullocks

Annual capital cost
 (purchase price less final sale price)
 ($\frac{\quad}{\text{life of bullocks}}$)

Concentrated feed purchased
 Hired labour
 Annual capital) costs of
 Running) equipment

If B1 + 2 is greater than A1 + 2 the change may be worthwhile, but note:

- (i) If increased expenditure is involved there may be better ways of using those funds.
- (ii) For such a complex technological change the method of calculation is crude, omitting
 - (a) effects on yields, which might arise from the greater timeliness of a tractor, damage to soil of a heavy vehicle, etc. (see Section 14)
 - (b) the financial costs of heavy initial capital investment in the tractor
 - (c) social losses and gains such as:

Social losses

Increase in unemployment

Polarisation of income
 distribution

Loss of community co-operation

Dependence on outside sources
 for spare parts

Dependence on small number of
 power units means higher risk
 of losing crops if machines
 break down.

Deeper and more intensive
 cultivating may lead to detri-
 mental effect on ecology and
 possible 'dustbowl' situation,
 as well as disrupting established
 rotation.

Social gains

Increase in leisure and decrease
 in drudgery

Increase in prestige of some
 individuals

EXAMPLE of the data required in a cost benefit analysis and the consequent calculations

Agricultural Development Programme, Guatemala

The Base Data

A. <u>Costs</u>	YEAR	Q 1	Q 2	Q 3	Q 4	Q 5
Salaries - Agricultural Director		975	975	975	975	975
Part time Teacher		520	780	780	780	520
2 ploughs		300				
Small tools (revenue)		200	200	200	150	50
Operating expenses		10,000	8,000	8,000	8,000	5,000

Notes (i) The 2 ploughs will have a joint residual value of £50 after 5 years.
(ii) Q = Quetzales, ie Guatemala currency

B. Benefits after 5 years

- (1) Overall corn production doubles (see note (i))
- (2) 30% of families with sloping fields will have made contour ditches which no longer allow rains to erode their fields - (see note ii)
- (3) 25% of families with fruit trees will have increased their production because of better pruning and insect control methods.

Notes (i) The population of the programme area is 20,000. The average family size is 5 and the average salary per family per annum is 100 Q.

The doubling of corn production will produce a 50% increase in salary by the end of 5 years and the benefits due to increased production per annum are shown in the following table.

Yr.	1	5 Q per family
2	14 Q	" "
3	25 Q	" "
4	38 Q	" "
5	50 Q	" "

- (ii) 80% of families have sloping fields and the percentage of those who will have made contour ditches, leading up to the 30%, and the money saved due to lack of erosion is shown by the following table

Yr.	1	3%	40 Q
2	7%	46 Q	
3	14%	55 Q	
4	22%	64 Q	
5	30%	73 Q	

- (iii) Half the families have fruit trees, and the increased production will give an extra 5 Q. Of those with fruit trees the following percentage will bear the extra fruit:-

Yr. 1 2%, Yr. 2 5%, Yr. 3 10%, Yr. 4 17%, Yr. 5 25%

C. Further Information

- (i) Inflation will be equal for all types of prices.
- (ii) As costs are relatively certain and benefits relatively uncertain, assume a risk premium for benefits of 5% per year.
- (iii) Costs fall at the beginning of the year, and benefits accrue at the end of each year.
- (iv) Assume a required rate of return of 10%.

D. Problem

Calculate the net present value of net benefits and weigh up the solution against other evaluation techniques.

THE CALCULATIONS

A. Costs	Year 1	2	3	4	5
Salaries a) Agricultural Director	975	975	975	975	975
b) Part-time teacher	520	780	780	780	520
2 ploughs	300				
Small tools	200	200	200	150	50
Operating (expenses)	10,000	8,000	8,000	8,000	5,000
	<hr/>				
TOTAL	11,995	9,955	9,955	9,905	6,545
Discount factor	1	0.91	0.83	0.75	0.68
	<hr/>				
Total NPV of costs	11,995+	9,059+	8,263+	7,429+	4,451
				=41197 Q	

B. Benefits Number of families in project area $\frac{20,000}{5}$ = 4,000

1. Corn Production - increase in salary

Year 1	5Q x 4,000	=	20,000Q
2	14Q x 4,000	=	56,000Q
3	25Q x 4,000	=	100,000Q
4	38Q x 4,000	=	152,000Q
5	50Q x 4,000	=	200,000Q

2. Cost of erosion saved

80% of 4,000 have sloping fields ie 3,200

Year 1	3% x 3,200 x 40Q	=	3,840Q
2	7% x 3,200 x 46Q	=	10,304Q
3	14% x 3,200 x 55Q	=	24,640Q
4	22% x 3,200 x 64Q	=	45,056Q
5	30% x 3,200 x 73Q	=	70,080Q

3. Increased sales of fruitNumber of families with fruit trees $\frac{4,000}{2} = 2,000Q$

Year 1	2% x 5Q x 2,000	=	200Q
2	5% x 5Q x 2,000	=	500Q
3	10% x 5Q x 2,000	=	1,000Q
4	17% x 5Q x 2,000	=	1,700Q
5	25% x 5Q x 2,000	=	2,500Q

TOTAL BENEFITS

	Q	Q	Q	Q	Q
Year	1	2	3	4	5
Production - Salary Increase	20,000	56,000	100,000	152,000	200,000
Cost of erosion saved	3,840	10,304	24,640	45,056	70,080
Increased Fruit Sales	200	500	1,000	1,700	2,500
Residual value of plough					50
	24,040	66,804	125,640	198,756	272,630

Total benefits discounted to present value

Year 1	$24,040 \times \frac{1}{1.15}$	=	20,904 Q
			+
2	$66,804 \times \frac{1}{(1.15)(1.2)}$	=	48,409 Q
			+
3	$125,640 \times \frac{1}{(1.15)(1.2)(1.25)}$	=	72,624 Q
			+
4	$198,756 \times \frac{1}{(1.15)(1.2)(1.25)(1.3)}$	=	88,336 Q
			+
5	$272,630 \times \frac{1}{(1.15)(1.2)(1.25)(1.3)(1.35)}$	=	89,977 Q
			<hr/>
Total net present value of benefits			320,250 Q
Less net present value of costs			41,197 Q
			<hr/>
Net Present Value of net benefits			279,053 Q
			<hr/> <hr/>

and this result should then be weighed up against other evaluation techniques.

Section 9: DIRECTORY OF OXFAM FIELD OFFICES AND OF OTHER AGENCIES
 For Index to this Section, see page 9-12

OXFAM FIELD OFFICES

<u>Area Covered</u>	<u>Address</u>	<u>Telex/Telephone</u>
<u>AFRICA</u>		
SOUTHERN AFRICA Lesotho, Namibia, Republic of South Africa.	P.O. Box 286, Maseru, Lesotho.	Tel: 0501 24376 Tx: 243 BB
Zimbabwe, Botswana, Angola, Mozambique.	P.O. Box 4590, Salisbury, Zimbabwe.	Tel: Salisbury 704077 Tx: 4608 RH
CENTRAL AFRICA Malawi, Zambia.	P.O. Box 35624, Lusaka, Zambia.	Tel: Lusaka 211319 Tx: EAGLE ZA 42670
Tanzania	P.O. Box 40, Arusha, Tanzania.	Tel: Arusha 3697 Tx: 42126 AIRSHIP
EAST AFRICA Ethiopia Djibouti.	P.O. Box 2333, Addis Ababa, Ethiopia.	Tel: Addis Ababa 111464 Tx: 21307 CRDA ADDIS
Rwanda Burundi, Kivu (Zaire).	B.P. 1298, Kigali, Rwanda.	Tel: Kigali 6340 Tx: TRAKIG 10 2004 RW
Kenya, Malagasy, Comores, Sudan, Mauritius.	P.O. Box 40680, Nairobi, Kenya.	Tel: Nairobi 744420 Tx: 22274 EXPRESS
Uganda	(Refer to Oxfam, Oxford)	
Somalia	P.O. Box 2808, Mogadiscio, Somalia.	Tx: 2004 UNDP MOG
WEST AFRICA Upper Volta, Niger, Mali, Togo, Benin, Ghana.	B.P. 489, Ouagadougou, Upper Volta.	Tel: Ouagadougou 364-69 Tx: BCTR 1111 UV
COASTAL WEST AFRICA Senegal, Gambia, Mauretania, Guinea Bissau, Cape Verde Islands, Guinea Conakry.	(Refer to Oxfam, Oxford)	
ZAIRE Kinshasa, Kikwit, Kananga.	B.P. 10362, Kinshasa I, Zaire.	Tel: Kinshasa 30082 Tx: 21008 DIA ZR

<u>Area Covered</u>	<u>Address</u>	<u>Telex/Telephone</u>
<u>ASIA</u>		
NORTH INDIA AND NEPAL	Flat No. 314, Mansarovar Building, 90 Nehru Place, New Delhi 110019.	Tel: New Delhi 681811 Tx: 313628 ASL IN
INDIA EAST	P112 Lake Terrace, P.O. Box 16247, Calcutta 700029.	
	Oxfam West Orissa Programme, P.O. Box 10, Khariar Road, Kalahandi District, Orissa 766104.	Tel: Khariar Road 8
INDIA SOUTH Karnataka, Andhra Pradesh, Kerala, Tamil Nadu.	59 Millers Road, Benson Town, Bangalore 560046.	Tx: 45226 MTIL IN
INDIA CENTRAL	P.O. Box 71, Nagpur, Maharashtra.	Tel: Nagpur 33737 Tx: 715230 TWNG IN
GUJARAT AND SOUTHERN RAJASTHAN	Hansol Dairy & Agricultural Farm, Sardarnagar, Sindhi Colony, Sindhi Colony P.O., Hansol-Ahmedabad 382475.	Tel: Ahmedabad 66373
BANGLADESH	House 70, Road 11a, Dhanmondi, Dacca.	Tel: Dacca 315386 Tx: INTERCON 808 DA
INDONESIA	Tromol Pos 214, Semarang, Central Java.	Tel: Semarang 312 638 Tx: 22286 PATRA SM
KAMPUCHEA	c/o Clew Enterprises Ltd., Suite 11/324, Merlin Plaza, Beach Road, Singapore.	Tel: 01065 12586877 Tx: RS 34753 CLEW
<u>WEST ASIA</u>		
Egypt, Lebanon, Yemen Arab Republic.	P.O. Box 31, Bab el Luq, Cairo, Egypt.	Tel: Cairo 754001 Tx: 92413 TCOOK UN (PRO DAMMERS OXFAM)
<u>LATIN AMERICA AND CARIBBEAN</u>		
CENTRAL AMERICA AND MEXICO Mexico, Guatemala, Honduras, El Salvador, Nicaragua.	Apartado Postal 61-114, Mexico 6 D.F., C.A.	Tx: 017 71036 BRITME (Address Telex to R. Lopez. tel.no.533-22-80, Apartamento 102)
NORTHERN ANDEAN REGION Colombia, Ecuador, Peru North.	Calle Santa Isabel 180, Miraflores. Lima 18, Peru.	Tel: Lima 477588 Tx: 25202 PE CP CESAR (Add address and tel.no.)
SOUTHERN ANDEAN REGION Peru South, Bolivia, Chile, Paraguay.	As above	As above

<u>Area Covered</u>	<u>Address</u>	<u>Telex/Telephone</u>
BRAZIL Manaus Office (N. Brazil)	(Refer to Oxfam, Oxford)	
N.E. Brazil only	Caixa Postal 1987, Recife 50000, Pernambuco, Brazil.	Tel: Recife 3264165 Tx: 811279 XPRC BR
CARIBBEAN	B.P. 947, Port au Prince, Haiti.	Tel: Port au Prince 72972 Tx: PPBOOTH 0001 (Add address and tel.no.)

NOTE Other areas, e.g. Jordan and the occupied territories, Pakistan, the Philippines, Sri Lanka, Thailand, and refugee relief in S.E. Asia, are covered from Oxfam House.

OXFAM INTERNATIONAL

Oxfam America, 302 Columbus Avenue, Boston, Massachusetts 02116, U.S.A.	Telex: 940288 OXFAM BSN USA
Oxfam Belgique, 39 Rue de Conseil, 1050 Brussels, Belgium.	Telex: 63939 OXFAM BELGIQUE B
Oxfam Canada, 251 Laurier Avenue West, Room 301, Ottawa, Ontario K1P 5J6, Canada.	Telex: 534358 OXFAM CANADA CN
Oxfam Quebec, 169 rue St. Paul East, Montreal 127, Quebec H2Y 1G8, Canada.	Telex: 5560522 OXFAM QUE MTL CN
Community Aid Abroad, 75 Brunswick Street, Fitzroy, Victoria 3065, Australia.	Telex: 30333 COMCOM AA

ADVICE CENTRES AND RESEARCH ORGANISATIONS

1. Agriculture and extension

Agriculture Extension and Rural Development Centre, University of Reading,
16 London Road, Reading RG1 5AQ. Phone 0734-85234.

Centre for Overseas Pest Research, College House, Wrights Lane, London W8.
Phone 01-973-8191. Pests in growing crops.

Land Resources Division, Tolworth Tower, Surbiton, Surrey KT6 7DY.
Phone 01-399-5281. Soil survey, water resources, agronomy.

National Extension College, Shaftesbury Road, Cambridge. Phone 0223-63465.

Overseas Liaison Unit, N.I.A.E., Wrest Park, Silsoe, Bedford. Farm mechanisation, oxen, minimum tillage.

Tropical Stores Products Centre, London Road, Slough, Bucks SL3 7HL. Phone 0753 34626. Great expertise on crop storage but taketime to answer queries.

2. Appropriate Technology, including some agriculture.
See also Section 4.

Agriculture and Water Development Office, College of Agricultural Engineering, Silsoe, Bedford MK45 4DT. Phone 0525 60428.

Brace Research Institute, Macdonald College, McGill University, Ste. Anne de Bellevue 800, Quebec, Canada. Windmills, solar power, water supply, etc.

Groupe de Recherche sur les Techniques Rurales, (GRET), 34 rue Dumont d'Urville, 75116 Paris, France. Phone 2603680.

Intermediate Technology Department, (ITDG), 9 King Street, London WC2. Phone 01-836-9434.

Returned Volunteer Action, (RVA), Technical Consultancy Service, 1c Cambridge Terrace, London NW1 4JL. Phone 01-935-944.

T.O.O.L., Mauritskade 61a, Amsterdam, Netherlands.

Volunteers for International Technical Assistance, (VITA), 3706 Rhode Island Avenue, Mt. Rainier, Maryland 20822, U.S.A.

3. Cooperatives

International Cooperative Alliance, (ICA), Upper Grosvenor Street, London W1. Phone 01-499-5991.

Plunkett Foundation for Cooperative Studies, 31 St. Giles, Oxford. Phone 0865 53961.

4. Management

British Executive Service Overseas (BESO), 10 Belgrave Square, London SW1X 8PW. Specialises in providing advisers, consultants, or temporary managers for overseas work; costs are low, but not free.

5. Training/Education

City and Guilds of London Institute, 76 Portland Place, London W1. Phone 01-580-3050.

Department of Education in Tropical Areas, Institute of Education, Malet Street, London WC1. Phone 01-636-1500.

SUPPLIERS OF MATERIALS AND EQUIPMENT

In general, application should be made for this to the Purchasing Department, Oxfam, Oxford, U.K. However it is worth noting the following:-

(a) agricultural equipment: see the notes at the end of Section 14.

- (b) medical equipment: see notes on the Joint Mission Hospital Board (ECHO) in Section 28.
- (c) water supply equipment: see the notes at the end of Section 12.
- (d) books for overseas libraries or colleges, second hand or at concessionary prices: write to Ranfurly Library Service, Kensington Barracks, Kensington Church Street, London W8, U.K.

BRITISH DEVELOPMENT AGENCIES

1. Government and Official

Overseas Development Administration, phone 01-213 3000 Telex: 263907
Foreign and Commonwealth Office, MINISTRANT G
Eland House,
Stag Place,
LONDON SW1.

The British Council, phone 01-930 8466
10 Spring Gardens,
London SW1A 2BN.

2. Voluntary Development Agencies

British Red Cross Society, phone 01-235 5454 Telex: 918657 BRCS G
9 Grosvenor Crescent,
London SW1X 7EJ

British Leprosy Relief Association, phone 0206 62286
(LEPRA)
Fairfax House,
Causton Road,
Colchester, Essex.

Catholic Fund for Overseas Development (CAFOD),
21a Soho Square,
London W1V 6NR. phone 01-734 4158

Christian Aid, phone 01-733 5500 Telex: 916504
P.O. Box 1, CHRAID G
240 Ferndale Road,
Brixton,
London SW9 8BH.

Commonwealth Society for the Deaf, phone 01-235 8182
75 Kinnerton Street,
Knightsbridge,
London SW1.

Disasters Emergency Committee (DEC) phone 01-235 5454
c/o 9 Grosvenor Crescent,
London SW1X 7EJ.

Royal Commonwealth Society for the Blind,
Commonwealth House,
Heath Road,
Haywards Heath, Sussex. phone 0444 2424

Save the Children Fund,
157 Clapham Road,
London SW9 OPT.

phone 01-582 1414 Telex: 918836 SCF
LN G

War on Want,
467 Caledonian Road,
London N7 9BE.

phone 01-609 0211

3. British Volunteer Programme and Agencies Sending Volunteers

British Volunteer Programme, (BVP), phone 01-836 3672
Bedford Chambers,
Covent Garden,
London WC2E 8HA.

Catholic Institute for International Relations, (CIIR)
1 Cambridge Terrace,
Regents Park,
London NW1 4JL. phone 01-487 4431

Friends' Service Council, phone 01-387 3601
Friends House,
Euston Road,
London NW1 2BJ.

U.N.A. International Service Department,
93 Albert Embankment,
London SE1. phone 01-735 0181

International Voluntary Service, (IVS)
Ceresole House,
53 Regent Road,
Leicester. phone 0533 541862

Voluntary Service Overseas, (VSO) phone 01-235 5191
9 Belgrave Square,
London SW1X 8PW.

4. Missionary Societies

Baptist Missionary Society phone 01-935 1482
93-97 Gloucester Place,
London W1H 4AA.

Church Missionary Society, phone 01-928 8681
157 Waterloo Road,
London SE1 8UU.

Church of Scotland, phone 031-225 5722
121 George Street,
Edinburgh EH2 4YN.

Methodist Missionary Society, phone 01-935 2541
25 Marylebone Road,
London NW1 5JR.

Salvation Army International Headquarters,
101 Queen Victoria Street,
P.O. Box 249,
London EC4P 4EP. phone 01-236 7020

United Society for the Propagation of the Gospel (USPG),
 15 Tufton Street,
 London SW1P 3QQ. phone 01-222 4222

EUROPEAN AGENCIES - see also Addendum on 9-12.

1. European

Euro-Action ACORD,
 Prins Hendrikkade 48,
 Amsterdam 1001, The Netherlands.

Telex: 23997 IVEF CH

2. Belgium

AGENOR,
 13 rue Hobbema,
 1040 Brussels.

Association Internationale de Developpement Rural (AIDR),
 20 rue de Commerce,
 1040 Brussels.

Centre National de Cooperation au Developpement (CNCD),
 67-75 rue Botanique,
 1030 Brussels.

Caritas Catholica de Belgique,
 rue Guimard 1,
 1040 Brussels.

Telex: 25173 CARTA B

Freres des Hommes,
 Place de Londres 6,
 1050 Brussels.

Terre des Hommes,
 Place E. Verbaeckhoven 11,
 1030 Brussels.

3. Denmark

Danchurchaid,
 Sankt Peders Straede 3,
 1453 Copenhagen.

4. France

ASCOFAM,
 49 rue de la Glacière,
 75013 Paris.

Assistance Technique et Cooperation,
 8 Villa du Parc Montsou,
 Paris 14.

Comité Catholique contre la Faim et pour le Developpement,
 47 quai des Grands Augustins,
 75006 Paris.

Compagnie Internationale de Developpement Rural (CIDR),
57 avenue de Neuilly,
92 Neuilly-sur-Seine.

Freres des Hommes,
9 rue de Savoie,
75006 Paris.

Medecins sans Frontieres/Aquitaine,
Le Manoir,
40200 Sainte-Eulalie-en-Born.

Telex: 270618 MSF
215 F

Secours Catholique,
106 rue de Bac,
75341 Paris Cedex 07.

5. Western Germany

Brot fur die Welt,
Staffelbergstrasse 76,
7 Stuttgart 1.

Telex: 723557 DDWS D

Deutscher Caritasverband,
Karlstrasse 40,
7800 Freiburg.

Telex: 772475 DEV D

Deutsche Welthungerhilfe,
Adenhaueralle 134,
5300 Bonn.

Telex: 8869697 DWHH D

Evangelische Zentralstelle für Entwicklungshilfe (EZE),
Mittelstrasse 37,
5300 Bonn - Bad Godesberg.

Zentralstelle für Entwicklungshilfe (MISEREOR),
Mozartstrasse 9,
5100 Aachen.

Telex: 832370 MISA D

6. Republic of Ireland

Concern,
1 Upper Camden Street,
Dublin 2.

Telex: 5596 CERN EI

Trocaire,
169 Booterstown Avenue,
Blackrock,
Co. Dublin.

7. Italy

Manitese,
via Cavenaghi 4,
20149 Milan.

8. The Netherlands

CEBEMO,
van Alkemadeaan 1,
The Hague.

Telex: 34278 CEMEC NL

Interchurch Coordination Committee for
Development Projects (ICCO),

Tel: 03404 24844
Telex: 47644

P.O. Box 151,
3700 Ad Zeist,
Holland.

NOVIB,
Amaliastraat 5/7,
2514 The Hague.

Telex: 33387
NOVIB

Stichting HIVOS,
Huggenspark 37,
The Hague.

9. Norway

Norwegian Refugee Council,
Professor Dahls Gate 1,
Oslo 3.

10. Switzerland

Helvetas (Swiss Association for Technical Assistance),
St. Moritzstrasse 15,
Postfach,
8042 Zurich.

AMERICAN DEVELOPMENT AGENCIES

American Council of Voluntary Agencies for Foreign Service Inc.,
200 Park Avenue South,
New York, NY 10003, U.S.A.

American Friends Service Committee,
160 North 15th Street,
Philadelphia, Pennsylvania, 19102, U.S.A.

Cooperative for American Relief Everywhere (CARE),
660 First Avenue,
New York, NY 10016, U.S.A.

Catholic Relief Services (CRS),
350 Fifth Avenue,
New York, NY 10001, U.S.A.
There is also a Geneva office - see under International Agencies

Church World Service (CWS),
475 Riverside Drive,
New York, NY 10027, U.S.A.

Lutheran World Relief Inc.,
315 Park Avenue South,
New York, NY 10010, U.S.A.

General Conference Mennonite Church,
Commission on Overseas Mission,
Box 34,
722 Main Street,
Newton, Kansas 67114, U.S.A.

This body also has a Canadian affiliate; see also the other denomination of Mennonites below.

Mennonite Central Committee,
21 South 12th Street,
Akron, Pennsylvania 17501, U.S.A.
This body also has a Canadian affiliate.

The Pathfinder Fund,
(a family planning agency),
850 Boylston Street,
Chestnut Hill
Massachusetts 02167, U.S.A.

World Neighbours Inc.,
5116 North Portland Avenue,
Oklahoma City,
Oklahoma 73112, U.S.A.

U.S. Government:

Agency for International Development (USAID),
Office of Public Affairs,
Department of State,
Washington, D.C. 20523, U.S.A.

including Action/Peace Corps

CANADIAN AGENCIES

Canadian International Development Agency (CIDA),
122 Bank Street,
Ottawa,
Ontario K1A 0G4

Canadian University Service Overseas (CUSO),
151 Slater Street,
Ottawa,
Ontario, K1P 5H5

Development and Peace,
1452 rue Drummond,
Montreal H3G 1W2

International Development Research Centre (IDRC),
P.O. Box 8500,
Ottawa K1G 3H9

INTERNATIONAL AGENCIES

Caritas Internationalis (Conference of Catholic Charities)
Piazza San Calisto 16,
00153 Rome, Italy.

Catholic Relief Services (see also under American agencies),
11 rue de Cornavin,
1201 Geneva, Switzerland.

Telex: 23866 CRS CH

Commission of European Communities (CEC/EEC),
Directorate General for Development DG VIII,
rue de la Loi 200,
B-1049 Brussels, Belgium.

Telex: 21877 COMEU B

International Committee of the Red Cross (ICRC),
7 avenue de la Paix, 1211 Geneva, Switzerland.

Telex: 22264 CICR CH

International Council of Voluntary Agencies (ICVA),
7 avenue de la Paix, 1211 Geneva, Switzerland.

International University Exchange Fund (IUEF),
P.O. Box 348, 1211 Geneva 11, Switzerland.

Telex: 23997 IUEF CH

International Planned Parenthood Federation (IPPF),
15/20 Lower Regent Street,
London SW1Y 4PW.

Phone: 01-839 2911

International Union of Child Welfare, (IUCW),
Rue de Varembe,
1211 Geneva 20, Switzerland.

League of Red Cross Societies,
P.O. Box 276,
1211 Geneva 19, Switzerland.

Telex: 22555A LRCS CH

LIPCROSS/VOIAGS,
c/o P.O. Box 276,
1211 Geneva 19, Switzerland.

Lutheran World Federation (Department of World Service),
150 route de Ferney,
1211 Geneva 20, Switzerland.

OECD Development Centre,
94 rue Chardon Lagache,
75016 Paris 16e, France.

Service Civil International (International Voluntary Service),
International Secretariat,
35 Avenue Gaston-Diderich, Luxembourg-Ville.

World Council of YMCAs,
37 quai Wilson,
1201 Geneva, Switzerland.

World Council of Churches,
150 route de Fernay,
P.O. Box 66, 1211 Geneva 20, Switzerland.

Telex: 23423A OIK CH

UNITED NATIONS AGENCIES

FAO, Via delle Terme di Caracalla,
00100 Rome, Italy.
including headquarters of: The Freedom from Hunger
Campaign and the World Food Programme

Telex: 612520 OSRO I

Telex: 680096 WFP I

ILO, 1211 Geneva 22, Switzerland.

UNDP, United Nations, New York, NY 10017, U.S.A.

UNESCO, 7 Place de Fontenoy, Paris 75008, France.

UNICEF, Palais des Nations, 1211 Geneva 10, Switzerland. Telex: 27908 UCF CH
Water Supply Section: United Nations, New York, NY 10017.
UK Committee: 99 Dean Street, London, W1V 6QN.
(UNICEF is a charity, although a UN agency in receipt
of some funds from member governments.)

UN University, 15-1 Shibuya 2-chome, Shibuya-ku, Tokyo 150,
Japan.

UNHCR, Palais des Nations, 1211 Geneva 10, Switzerland.

UNRISD, Palais des Nations, 1211 Geneva 10, Switzerland.

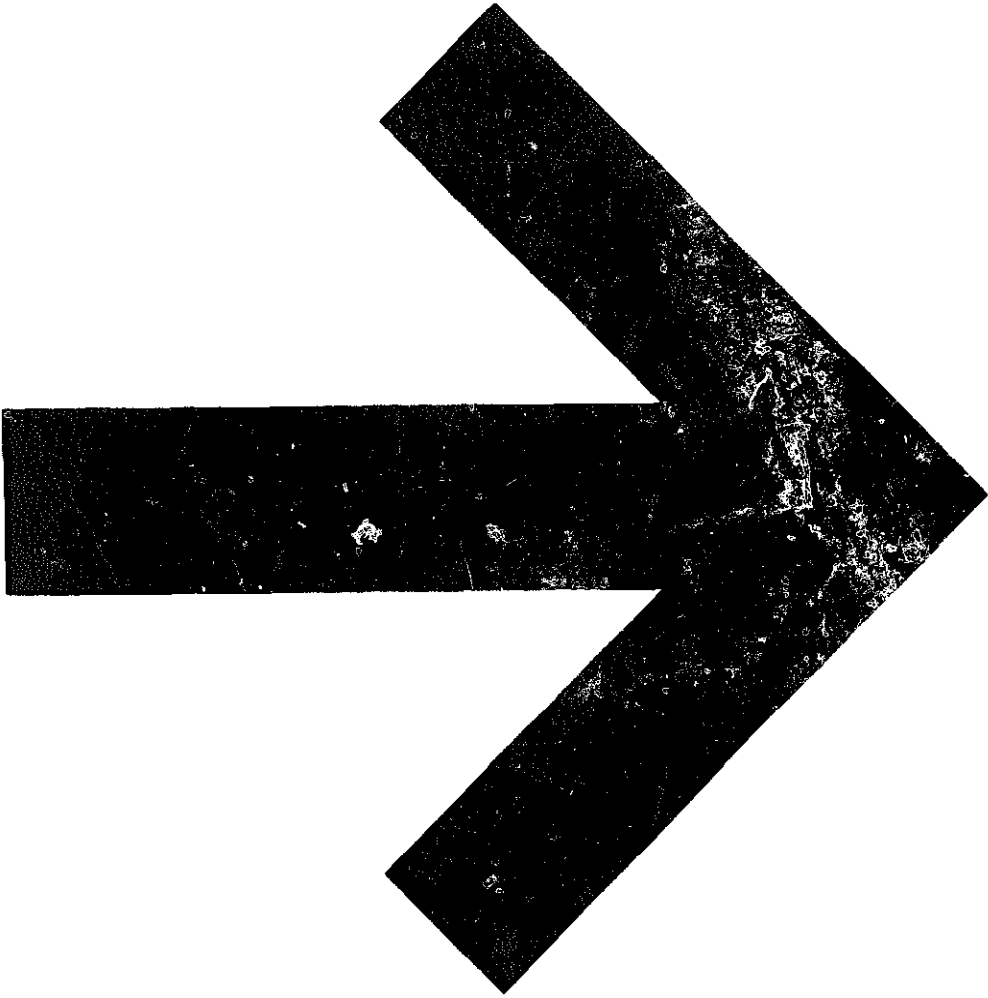
World Food Programme, see FAO above.

World Bank (International Bank for Reconstruction and Development),
1818 H Street, Washington DC-20433, U.S.A.
U.K. Branch: New Zealand House, Haymarket, London SW1.

WHO, Avenue Appia, 1211 Geneva 27, Switzerland.
WHO Centre for Community Water Supply, Bilthoven, Netherlands.

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Section 10: AGRICULTURAL GUIDELINES - INTRODUCTION

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1. Definition of Scope

In the Sections that follow (11-19) guidelines are suggested which cover not only agriculture (arable and pastoral) but also tree cropping and fish farming, all of which are important aspects of rural activity.

Raising and maintaining the level of living of rural people, and urban people through the creation of surpluses for sale, depends on the sustained improvement of agriculture in this broad sense.

The following Sections cover:

- | | | |
|--------------------------------|---|------------|
| 11. Land Resources |) | |
| 12. Water Resources |) | |
| 13. Manpower and Capital |) | Resources |
| 14. Farm and Household Power |) | |
| 15. Grassland and Trees |) | |
| 16. Crop Production |) | |
| 17. Animal Production |) | Production |
| 18. Fisheries and Fish Farming |) | |
| 19. Extension and Training |) | |

2. General Aims of Agricultural Projects

Oxfam aims to raise the nutritional level and the general standard of living of the poorest members of rural communities through improved, appropriate and sustainable use of land and related resources. To the extent that higher production per unit of area can be obtained and sustained, so a higher proportion of the population can be supported at an adequate nutritional level in rural areas, reducing the 'push factor' for impoverished people to migrate to the towns. If, in addition, higher productivity per working person can be obtained, surpluses may arise which:

- (i) could act as a hedge against shortages in below-average seasons (a pre-requisite for survival in much of the tropics)
- (ii) under appropriate marketing conditions, could provide benefits to those urban and rural poor who have to buy some or all of their food. But the dangers to small farmers of their excessive reliance on selling in the market must be stressed, as they tend to operate from a position of weakness vis-a-vis the trader.

To support increased production and productivity is not to ignore the importance of:

- who controls the productive resources employed in agriculture
- how the fruits of effort are distributed

These are matters about which Oxfam is very much concerned. The problem is discussed more fully in Section 11.

Although we may not exert a strong direct influence on central government policy, there are ways in which Oxfam can and does seek to mitigate the effects of the imbalance of resource control, for instance, by:

- (i) giving legal assistance to those who are at a disadvantage in the face of the authorities although on paper the law is on the side of the poor (see Section 39, and Oxfam PAU working paper 'Land for People')
- (ii) projects should be confirmed as being socially and technically sound and equitable (such as the provision of independent water supply see Section 12, or revolving credit funds Section 37)
- (iii) helping the poor to see their predicament more clearly, building their confidence and supporting their initiatives so that they may be able to strengthen their position

It is essential however that Oxfam's choice of activities and general style should try not to lead to a lack of official support, nor to the obstruction by those rural interests that may not receive benefits. As field activity expands both in number and in some instances in size of projects, and as governments become more concerned with agriculture, the maintenance of good general relations will become ever more necessary.

3. Characterisation of the People

- (a) The economic system The production unit is the basic element of the economic system. The effectiveness, and to some extent the size of these units, is in the control of decision-makers. In a true co-operative this will include all the full members. The actions

of decision-makers are determined by:

- (i) the resources they control, both physical and human, including their own personal ability to manage those resources
- (ii) possible alternative options as perceived by these decision-makers

All decision-makers are operating a cyclical system of interrelated 'production' and 'consumption' even if, for the landless labourer, 'product' takes the form of wages paid for a single resource: work. When considering a farmer or a farming group or community, the system is more complicated, but needs to be seen as a whole.

As a self-contained economic system, this emphasises that:

- (i) the production-consumption cycle can continue only as long as a flow of natural resources is available. Over-cultivation or over-grazing can easily damage this flow
- (ii) labour productivity, ie work depends on an adequate food supply
- (iii) work especially is a major contributor to investment goods, like irrigation channels, grain stores, tools and equipment, which are in turn crucial to raising output in future cycles
- (iv) agricultural products, including stores and/or processed ones, become either directly consumable or capital for investment. Dual-purpose products, like grain for eating, and straw for thatching, animal feeding and bedding, may both be vital to the system
- (v) there is a premium on the use of wastes of all kinds, for fertility maintenance, fuel and sometimes feed. This is particularly relevant where natural resources are limited and labour abundant.

When the system becomes 'open', so that investment goods like mineral fertilisers, hired labour, new consumer goods like purchased food or clothing are available, it must be enlarged sufficiently to produce a surplus adequate to cover their cost if indebtedness is not to ensue. This surplus may include raw or processed products, investment goods, labour, and occasionally waste.

- (b) Identifying the decision-makers Any Oxfam project is likely to have a number and variety of decision-makers both farming and non-farming - men/women, fathers/sons, landowners/share tenants, farmers/employees. It will be necessary to establish a degree of autonomy of each party and, maybe, to treat the constituent types separately when considering their objectives, resources and technology. These inter-relationships should be kept in mind during project formulation. Thus some plans will not be feasible because they conflict with traditional roles or with inter-class obligations and privileges; while the benefits of other plans may result in advantages to those who need no assistance.

Relatives living outside the village or group, whether receiving remittances such as school fees, or paying them, eg contributions from urban wages, must also be taken into account. The size and timing

of these transfers may be crucial to individual behaviour, and therefore to project plans.

While the objective must be to assist all members of a target group selected for assistance, a policy which relies on the people themselves to make suggestions and show enthusiasm will also require the identification of those capable of taking initiative and leadership. This identification of individuals who are effective and acceptable as leaders may be a crucial step in project preparation. A particularly useful example of how Oxfam may have an impact by funding and encouraging imitators of simple, community-orientated endeavours is provided by the Oxfam West Orissa Programme (OXWOP - ORS 20). The people in a number of villages touched by OXWOP are extremely poor but they have been effectively encouraged to help themselves and many groups are now being accepted by banks to get loans (reports on this programme are available from Oxfam, Oxford, U.K.)

- (c) Social and political aspects These must be fully understood. They have been elaborated in Section 3. Their relevance in terms of land-holding systems are crucial. See also the sub-section on land tenure which follows later in this Section.

4. Personal Objectives and Project Design

Decision-makers involved in project design are likely to have a number of objectives which they try to reconcile and rank in order of priority.

In the short term these objectives are likely to include:

- (i) an assured supply of food and non-food materials for a given number of dependants
- (ii) the maintenance and repair of existing capital goods, ie tools, houses, grain stores, etc.
- (iii) a surplus by which to obtain cash for 'necessary' purchases ('necessary' will in part be culturally determined)
- (iv) a surplus for 'social' investment for a particular event like a marriage or pilgrimage, repaying an obligation for old age
- (v) a surplus beyond (i)-(iv) for investment to increase the level of living

Achievement will be limited by want of a particular resource, by mischance or miscalculation, or because extra physical or mental effort is greater than the expected benefit. Individual personality will affect the tendency to take or avert risk and uncertainty.

In the longer run objectives will change:

- (i) with age affecting responsibilities, change of energy, the help available and change in perceived social status
- (ii) with good or bad fortune, eg disease, the number of sons and daughters born and surviving
- (iii) with changing perceptions of the world in which the decision-maker lives, affecting aspirations

Project designers need not only to be aware of the attitudes of mind of those whose lives they are planning to change, but also to remember that the project itself will affect those attitudes in ways both intended and incidental. The techniques of planning used need to be rational in themselves and to be adaptable to the rationale of those whom it is desired to assist, if aid is to be acceptable and valuable.

Thus, (to borrow from Section 8) establishing the true cost of any project plan entails knowing how each resource is regarded by the decision-makers concerned. If, without the project it would remain unused, whether unemployed labour, land or hoarded funds, then the true or opportunity cost might be assumed to be nil. But whether this is so depends on the judgement of the people, both men and women (for further consideration of the role and factors affecting Women, see Section 34). There may be important social or religious reasons for labour inactivity at certain times; land may be regaining natural fertility, and hoards may be regarded as a necessary contingency. In these circumstances, the opportunity costs of employing these resources to the people is not nil. To take another example a farmer who attends a training course may forego product from work during that time, a cost which he will take into account in attending the training scheme.

Community concerns Project designers also need to take into account longer-term community considerations which may weigh little in the thoughts of individuals or groups whose poverty concentrates their minds on survival.

First, there are those matters where the local decision-maker will tend to take a short-term view; for day-to-day survival may indeed be his paramount concern. If he is short of irrigation water he will spread it as far as possible so as to keep plants alive, irrespective of soil salinity in the longer term; although he might like to plant trees for his old age, he may not be able to afford either the trees or the annual crop land they occupy. Careful project design may be able to take a different line and so ensure income in the future.

Second, there may be trends caused by individual decisions which in the long-term may prove detrimental to the community as a whole and which the project design may be able to counter. These include:

- (i) long-term upward trends in population growth
- (ii) poor pest control, the answer to which lies in technical innovation known to the project designer
- (iii) taking water to the inconvenience of communities downstream or land for cultivation hitherto grazed by passing nomads, problems which may yield to patient negotiation

Third, the project designer may have better knowledge of broader issues like market opportunities, or political instability and impending change.

5. Group Action

There is probably no agricultural activity carried on by one individual which does not affect others. Oxfam-supported agricultural projects involve groups of people and their design may have to take into account the interests of others not directly involved.

Homogenous groups, such as small farmers, farmers' wives and landless labourers, may be the target group because:

- (i) they have common needs and are economical to service, with seeds, or a training course

- (ii) they have, or can be persuaded to develop, a sense of identity and henceforth to act as a group, again deriving economies as a working team clearing land or as a market co-operative
- (iii) having identified themselves as a group, they will have strength for future group action in new projects, and in resisting rival interests of greater potential power, like money-lenders and local officials

Heterogeneous groups It may be impossible to focus agricultural projects on one stratum of a community, except in the initial stages. Inevitably the interests of others will be affected, such as hired labour by farmers becoming better equipped, and wives responsible for post-harvest processing by increases in farm yields which add to their work. It will be almost inevitable, if not desirable, that agricultural projects should eventually diversify so that all the poor elements of the community become involved.

Ideally, agricultural projects which receive Oxfam support will go on to grow in scope and depth, giving lasting relief from poverty. At the end of the project period, this will leave a community that is confident and competent to stand on its own feet and make social and material progress. At worst, stabilisation must be achieved so that natural resources are saved from continuous decline. This may only be attainable by devising continuous out-migration which is accommodated in other agricultural areas, or in areas of non-agricultural activity leaving an adequate support base for those remaining.

NOTE: Particular issues concerning rural development -

Before moving on to the individual resource and production aspects of agriculture, it is appropriate to consider two issues which directly affect Oxfam's work in rural development. The first is the inequality of land tenure systems leading to the need for agrarian reform and all the implications that this involves in terms of land tenure itself and in the provision of services and changes in social attitudes. However in the absence of such reform, the opportunities for effective assistance by Oxfam are severely constrained as the following sub-section illustrates. The other issue concerns food aid and the relevance for it in both relief and longer term development situations.

6. Land Tenure Systems and their Implications for the Poor

1. Definitions

Land tenure - refers to arrangements and systems whereby people engaged in farming 'gain access to productive opportunities on the land', such arrangements being legal or customary in type. Land in this case refers to land and water since access to water is imperative for productive opportunities in most areas.

Land reform - more usually refers to a reform of existing land tenure systems to gain a greater equity in land distribution. Such reform can be on an individual or communal basis.

Agrarian reform - usually includes reform of existing systems of tenure where these reveal inequities in land distribution, but also substantial reform of institutional factors which relate to the use of land and include the availability of credit, access to the market and infrastructural elements such as roads.

2. The Context and the Problem

The economy of most developing countries is dominated heavily by the agricultural sector and within this sector emphasis is placed upon cash crops whose export gains essential foreign exchange. Therefore, the importance of agricultural land cannot be overestimated. Ownership of land is the key to economic and, consequently, political power. As an estimated 70% of the population of developing countries make their living from direct cultivation of the land and a large proportion of this population constitutes the estimated 800 million people living in poverty and destitution, it becomes clear that a very small minority own, for productive purposes, the great majority of available agricultural land. Because ownership of land implies power, such power is thus concentrated into the hands of a few while the many do not even have an element of control over their food supply, a dependency which can have a severely debilitating effect on the social well-being of the community.

This position is partly a result of existing land tenure systems. In Latin America the predominant system of land tenure emanates from the Spanish and Portuguese colonial conquests where land in the form of large estates was concentrated in the hands of dominant groups such as the Church. Although some changes in ownership have occurred, currently the system is very much the same, leaving the majority of the agricultural population with no access to land of their own. Instead, dependent relationships exist between landowners and tenant farmers who work a small plot of land in return for rent or payment in kind by a degree of work on the landowner's estate, or sharecroppers who work a small piece of land and give a proportion of their crop to the landowners.

In Asia, existing land tenure systems do not carry quite the same characteristics although the outcome is similar. Systems of land tenure in Asia are very diverse but one common feature is evident: a hierarchy of landlords each dominating the next level of sub-tenant.

In Africa, land tenure does not appear to be such a pressing problem because agricultural land is in abundant supply. However, the trend over recent years has revealed a change from the dominance of common ownership through the tribal system to a concentration on individual ownership and the treatment of land as a commodity to be bought and sold in the market place.

In each of these three continents, feudal or semi-feudal concentrations of land ownership have the same end result: a wide and widening gap between the incomes of landowners together with their intermediaries such as credit banks acting on their behalf and that of peasant farmers. For the small tenant farmer or sharecropper access to land and so actual existence are dependent on the landlord or his intermediary with whom he has a debt/dependency relationship. Increasingly also, especially in Asia and Latin America, as land becomes scarcer, as modern and capital-intensive methods of farming are introduced, the number of landless peasants grows. Such peasants are dependent upon a diminishing supply of seasonal work to purchase food for subsistence because they do not even have land on which to grow their own food. For those who cannot find work, starvation is a reality. Alternatively many move out of the rural sphere into the towns in the hope of finding the work that is probably just as non-existent.

3. Insecurity of Tenure and the Law

Present systems of land tenure affect the development of the small tenant farmer and sharecropper, and compound his poverty by preventing land

reform through keeping him insecure and alienating him from the law.
Thus:

- (i) Security of tenure often does not exist and tenurial agreements are verbal only. This allows the landlord to evict at any time should he choose. It also prevents the tenant farmer or sharecropper from improving his land for, if it showed too much improvement, the landlord may be tempted to take it back. Enforcement of security of tenure through the law presents difficulties because a landlord may then be reluctant to let at all.
- (ii) Alienation from the law comes about through a combination of fear, ignorance and prohibitive cost on the part of the peasant farmer. Firstly however the law, if utilised to the full, works in favour of the peasant farmer in most cases. Secondly the knowledge of the law by landowners, and the ignorance of the law by peasant farmers, leads to a good deal of legal chicanery in favour of the landowner which can in extreme cases reveal itself as actual physical repression. And thirdly in the face of such intimidation the peasant farmer is reluctant to exploit his rights under the law even if he could afford the legal costs.

Oxfam aids the cause of social justice by working through organisations which aim to instigate such simple land reforms by helping peasant farmers to recognise their rights under the law and by providing the knowledge and support that many of them currently lack. Such rights are available to maintain security of tenure, to obtain adequate compensation for eviction or for the take-over of improved land, and to recognise the existence of peasant organisations (see Section 39). Basic land reform can at least help the peasant farmer to control his own food supply.

4. The Landless

The growing population of landless labourers face a two-fold deprivation: firstly they do not even have the rather tenuous hold on a piece of land that tenant farmers or sharecroppers do, and secondly they are dependent upon the availability of work on the larger farms and estates.

In detail:

- (i) Lack of access to land is probably the severest plight of the landless labourer because as a result he cannot even control his own food supply. Obtaining land for the landless is fraught with difficulty in areas where land is scarce. In some cases Oxfam has assisted in settling landless peasants on land leased from local landowners, who are organised into a cooperative utilising loans from a local bank (BN 84).
- (ii) Employment for landless peasants is becoming increasingly difficult in the face of farm modernisation and scarcity of land which in turn lead to greater dispossession. One problem is a lack of organisations without which the landless cannot hope to gain fair wages and conditions of work and protection against arbitrary dismissal. Oxfam supports the collective organisation of landless peasants in order to minimise their exploitation; for example of 70,000 cotton pickers in Bolivia (BOL 39); though such organisations are often vulnerable to attack by landowners who see collective action as a threat. Support for the landless is also imperative if the drift of the poor to the towns is to be curtailed. Often direct employment in agriculture is not available, but agricultural support and service industries provide an important contribution to the survival of the peasant farmer

who would otherwise be dependent upon the urban market with which he would be unfamiliar and which would be prohibitively costly. Rural workshops, which train landless peasants in skills related to the provision of agricultural services, can be an effective way of providing employment for the landless and keeping the cost of such services within the income of the peasant farmer (MAH 38 and Section 33). Other rural-related employment, such as rope-making, leather-tanning and the keeping of buffalo for the production of clarified butter, can also assist in providing a more secure future for the landless (AP 22 and Section 35).

5. Women and Reform

Any attempt to secure a measure of land reform must take account of the role of women in rural society. The United Nations estimates that women are responsible for over half the agricultural production of the Third World yet consultation with women on aspects of land or agrarian reform is virtually non-existent. Land reform frequently puts emphasis on ownership by the head of the household. In many cases this is the role of the woman but male heads of household still predominate. This means that skills relating to new technology are learned by men, thus creating a skills gap between themselves and the women who do the majority of the work, and credit is only available to men because they own the land. Schemes promoting the production of cash crops by peasant farmers often fail because most of this extra work falls to the women who when faced with the choice of tending cash crops or tending food crops will quite obviously favour the latter. Decision-making on any land or agrarian reform must be undertaken in full consultation with women whose knowledge is often greater than that of the men and whose attitude to and acceptance of proposals can mean the difference between success and failure (see also Section 34).

6. The Full Implications of Agrarian Reform

Reform of land distribution goes only part way to securing a future for the peasant farmer. Even with land, he still may be locked into a system that compounds his poverty. To overcome this problem a reform of the agrarian system may be required within which elements such as the availability of credit, access to markets, roads, transport and storage facilities, and extension and training services are of prime importance. In detail:

- (i) Physical infrastructure such as roads, transport and storage systems are often planned in favour of the larger farmers with the result that access to markets and the services to maintain the farm may be denied the peasant farmer. Distance from markets creates a serious problem and often means that the small farmer is prey to middlemen such as the lorry owner. Storage is again a problem, not merely storage of food crops to provide insurance against a lean period, but also of cash crops which can deteriorate rapidly before they can provide the expected return. Oxfam supports projects of this kind through farmer cooperatives whose joint action provides better security and better returns per farmer. Assistance in the storage of coffee for a farmer cooperative in Cerice, Haiti, provides an example (HAI 52). See also Section 36.
- (ii) Market access is one thing but selling produce for adequate returns once the market is reached is another, as the same interests that dominate the land ownership may also control

the markets. For this reason Oxfam has found difficulty in helping peasant farmers with marketing problems (AP 24S). Nevertheless, the importance of marketing produce at a reasonable price cannot be underestimated and some success can be achieved through the joint action of peasant farmers. Thus cooperatives concentrating on one or more aspects of crop production can succeed where individual action cannot. Marketing cooperatives are an example although it is necessary in many cases to combine such activity with an educational programme which makes the peasant farmers aware of the problems that they will undoubtedly face. For example the organisation of potato growers in Cochabamba Valley, Bolivia (BOL 35). Cooperation between peasant farmers in many aspects of their lives where they may be vulnerable to exploitation gives added security and will defend members' interests as in the market gardening cooperative at Urcomaga in Upper Volta (VOL 31). See also Section 37.

- (iii) In order to improve the land that they own and the crops that they grow, peasant farmers need access to credit. Unfortunately because of their lowly status, peasant farmers are often considered by established financial institutions as uncreditworthy. One of the principal reasons for the failure of the Green Revolution programmes has been that the improved technology, fertilisers and seeds required funding before the increased yields could be taken advantage of. Because access to the major financial institutions is not available, many peasant farmers have to resort to money-lenders for credit, who with the buyers, mill-owners, transport-owners and others are among the many exploitative middlemen with whom the farmer has to cope. Money-lenders charge usurious rates of interest which leads to the peasant farmer entering into a debt-bondage relationship which can ultimately mean the loss of his land. The problem is one of persuading the more worthy financial institutions of the creditworthiness of the small farmer. This can be done by persuading the banks to accept security on the farmers' behalf as in Andhra Pradesh (AP 24S). The bank then provides loans for seeds or fertilisers at preferential rates of interest. Alternatively, where a strong organisation of farmers exists, a revolving loan scheme can be set up within the organisation (DMR 5). See Section 37 for a fuller discussion of Savings and Credit, and of Revolving Loan Funds.

7. Food Aid

A discussion of food aid under the Agricultural Guidelines can be justified as:

- (i) it has the same objectives as the encouragement of agricultural production, namely the increase of food available for consumption by the poor
- (ii) paradoxically, it can have retrograde effects on local production and hence consumption, unless it is handled with great care.

Oxfam's aim should always be to use food aid in such a way as:

- (a) to save lives, and
- (b) to foster economic activity that will focus benefit on the poor.

There are three situations in which food aid is often used:

(a) Sudden emergencies arising from unpredictable causes, particularly natural disasters

- such as earthquakes, cyclones, tidal waves. Here food aid is often needed, but it is important to determine exactly what food has been destroyed or is temporarily off the market. Account must also be taken of the opportunity to purchase needed food in-country; this has the added advantage of stimulating local production.

For instance in Guatemala in 1976 a severe earthquake destroyed homes and buried stocks of corn. Oxfam found that food aid was required for only a short time until existing stocks could be retrieved, but that small quantities of goods like salt, soap and cal (lime for making tortillas), which it was impossible to rescue, were required (GUA 30). Other agencies which continued to supply food aid were probably responsible for the subsequent fall in local farmers' corn prices and a shortage of harvest labour.

(b) Forecastable emergencies arising particularly through disruptions caused by political conflict

Here food aid may be needed in large quantities by the time access to those requiring it is possible. It is likely in these circumstances however that:

- (i) more time is available for planning supplies,
- (ii) the disruption will require a multi-facet and multi-stage response, involving not only relief food, medical supplies, protective materials etc, but also seeds and possibly tools and other equipment to restore the agricultural production cycle.

The aims should be both to save life and restore physical strength and morale, and to get local agriculture on the move again, thus avoiding dependency on further food aid.

For instance in Kampuchea in 1979, following a nationwide devastation extending over five years, Oxfam was the first body to respond to an appeal for 100,000 tons of food aid (KAM 1). But in addition to the first 1,500 tons consignment of rice, milled maize, sugar and edible oil, six tons of seeds and 600 hoes were supplied; the emphasis on provision for the next growing season increased in subsequent shipments.

In a somewhat similar, though less dramatic drought situation in Haiti in 1976, Oxfam found that the poor could afford to buy neither food nor seed and had to help supply both (HAI 53). In these circumstances it is important that supplies get to the people in real need.

(c) Food aid for development

It is frequently argued in areas chronically short of food, where malnutrition and unemployment are rife, that there is an opportunity to supply food both for nutrition programmes and as a basis for public works and other development projects. The rationale is centred on the assumptions that:

- (i) overcoming malnourishment will save lives and create healthy children and adults
- (ii) public works such as roads and dams will increase the potential productivity of agricultural land as well as creating more employment in the rural sector generally.
- (iii) government funds previously used to import food can be switched to investment goods.

Over the past 30 years food aid of this kind has grown to a large scale, sponsored by the World Food Programme and with major contributions from some national agencies especially in the USA, and increasingly from the EEC.

However Oxfam and certain other agencies have become aware of severe shortcomings in the assumptions concerning food aid. Basically the problems are:

- (i) at a technical level to get the food to those who need it and to prevent it being used elsewhere, eg by the urban elite and merchants
- (ii) the potential disruptive effects on local food production and consumption
- (iii) above all, the contra-developmental effects. Many development workers have found that food aid achieves the opposite of self-reliance.

In some countries the long term benefits of food-for-work land improvement schemes go to those who own the land upon which the work is carried out. Thus the rich receive a capital gain, and the poor work for food over a limited period. At other times, the work done is to such a simple design and often of poor quality that new or reconstructed roads may quickly wash away, and re-forestation and irrigation projects may collapse. The danger here is that communities will be left with monuments to their own incapacity to help themselves. Indeed a common phrase in one country about food-for-work is "Food suspendu. Travail suspendu".

It has to be remembered that people are often hungry because they are poor, not because of the lack of food locally. In this instance the basic problem of poverty needs to be tackled, and not its symptom - hunger. Food aid may serve as a palliative but it does little to overcome the poverty issue.

Nutrition projects using supplementary foods designed to feed malnourished children may also be less successful than they appear on paper. A survey of studies reviewing supplementary feeding programmes has concluded that "Supplementary feeding has in practice proved largely ineffective in nutritional terms." In the Dominican Republic a 2-year survey of a project (DMR 13) showed that children's weights increased at certain times of the year: during mango and avocado times, and whenever food aid stopped. The survey concluded that when aid failed to arrive, mothers began to rely on their own resources and so took more care of their children. In an endeavour to overcome this, the World Food Programme for example try to use food distribution as an opportunity to weigh and inspect children and to teach mothers simple nutrition and hygiene.

Food aid has had successes, such as in food-for-work activities to support some land improvement schemes in certain areas of India and Kenya.

Food aid is also used to good effect in colonisation schemes when the settlers first arrive in their new plots, until such time as they can cultivate their own crops, eg in Bolivia (BOL 32), Egypt, Indonesia, Nepal.

The crux is in the design and implementation of the programmes in which it is intended to use food aid. Where it is to be supplied for example in a children's nutrition programme, it is important that:

- (i) the food needs should be carefully assessed in the context of local customs and feeding practices
- (ii) the mothers should be encouraged through education programmes to adopt health and hygiene practices
- (iii) wherever possible the programme should be extended to encourage them and the fathers to increase their own food production (see Sections 16 and 17).
- (iv) where it is supplied to schools, it should be written into the contract that the school itself has a kitchen garden and/or keeps livestock

In drawing up food-for-work schemes involving land improvement, it is first necessary to clarify who owns the land and who will receive the long term benefit of the work. If the answer to this is satisfactory, plans for a phase-out of food aid support should be explicitly agreed so to ensure that local food production will take over and make the further supply of food aid unnecessary..

In summary, projects using food aid involve very careful planning to avoid the many disadvantages which it is now recognised result from this type of support. On the whole it is Oxfam's experience that food aid can meet short term emergency needs, but it is not normally an appropriate form of assistance for long term development.

NB. Such is the importance of the ramifications of food aid, that Oxfam is employing a consultant to work specifically on its effects.

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Section 11: LAND RESOURCES - land conservation, soils, fertilisers

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1. Principles of Land Use

Oxfam is concerned to help people recognise the importance and the means of protecting their most basic agricultural resource - land, and of utilising it for optimal output of food, fuel and other products consistent with:

- (i) sustaining this output in the future
- (ii) using other inputs appropriately
- (iii) providing employment and life support

Historically, the natural vegetation of the world once consisted of 42% forest, 24% grassland and 24% desert, but within recent times mankind has reduced forest cover to 33% and allowed deserts to increase to 40%. Not only has pressure of population, associated with unwise cultivation and grazing practices, reduced the area available for production, but it has also caused the quality of much land to deteriorate.

To halt the degradation and erosion of soils and to start to restore structure and fertility where it has already been lost, it is essential to appreciate not only the physical characteristics of soils in relation to climate and use, but also the social factors affecting long-term productivity.

Possibilities for expanding food production by extending the area of cultivation now exist in only a few places and are fast disappearing. Therefore the

way to expansion must be by intensifying land use and increasing the value of production; this will put even greater emphasis on the need to manage soils correctly to maintain their production potential for the future.

(a) Physical factors affecting productivity: The major physical factors affecting productivity of the land are:

- the type, condition and fertility of the soil (see below)
- the moisture status (enabling plant roots to function well and to take up nutrients)
- the temperature of the soil (which at any latitude will be modified by altitude and aspect)
- the nature of the terrain, particularly the degree of slope.

These factors will affect both general and local decisions about land use. At the local level the pattern may be complex; the experience and knowledge of local people will be valuable.

(b) Social factors affecting productivity: Poverty and the distribution of land are the main social factors affecting the productivity of land. There are others, notably the size of families, numbers of labourers, health of the people, traditional and cultural attitudes, and economic considerations.

At a given level of technology, land has a human 'carrying capacity'. When this is exceeded, as in Java or the foothills of Nepal, or even in some infertile parts of sub-Saharan where the population is relatively sparse, then food supplies become increasingly insecure and inadequate as over-cultivation with inadequate management leads to a downward spiral of soil degradation. The condition is made worse where population increase exceeds migration from that area.

The long-term solution can only be one of the redistribution of land and a reduction in poverty levels. But in the meantime the agricultural approach must be to limit damage to soils by employing erosion control techniques and to intensify output where this can be done without degrading the soil.

If a large proportion of the land is in the hands of a few owners, output may be low due to lack of incentive or inclination to farm intensively (though that is not always the case).

Conversely, if land is too fragmented it will not form viable production units. Fragmentation arises partly from the sharing (in subsistence communities) of land of different qualities, but may be made worse by inheritance rules which cause further sub-division. The amount of land necessary to sustain a family will vary according to climate, soil quality and other resources and this should be considered carefully when plans for land reform or resettlement of people are being drawn up. Where small farmers are concerned, the formation of groups or cooperatives can provide a means of putting limited resources to fuller use (see Section 37).

Redistribution of land should increase opportunities for the proper involvement of people in agricultural production and associated activities, with the twin benefits of increased output per unit of land and a more equal distribution of food and income. However, land redistribution is seldom sufficient by itself to achieve appreciable or lasting production or socio-economic improvements. There should be

opportunities for Oxfam to support training schemes for small farmers and to assist cooperatives or groups so that their members can be independent of monopolistic money-lenders or pressures to sell their produce when market prices are low. (For Training, see Sections 19 and 33)

Note For a more detailed analysis of the issues involved in land redistribution together with Oxfam's experience of these see item 1 above.

- (c) Increasing and sustaining output: A rapid increase in agricultural production that cannot be sustained either by the people or the soil is highly undesirable. It is far better that the initiative comes from the people who will be involved and that progress is made at their pace. Moreover, the first approach should be to make better and fuller use of local, readily available resources, eg labour, waste materials, rather than put confidence and cash at risk by the too-hurried introduction of purchased inputs. Often the structure, fertility and hence the output of land can be improved and maintained by putting crop and animal residues back into the soil. In the humid tropics there is a mass of vegetation and litter that is vital for soil stability, fertility and moisture retention.
- (d) Some Oxfam experience: Oxfam puts great emphasis on the importance of maintaining the resources of land. It has had some disappointing experiences when it has funded agricultural projects and subsequently found that advice with regard to taking anti-soil erosion measures has not been taken sufficiently seriously. Sometimes land and water conservation measures are given direct support especially when they help small groups or communities. Among many projects being assisted in the post-cyclone area of Andhra Pradesh, India, is one involving the planting of coconut and eucalyptus trees to control erosion (AP 24J). Less typical is a large integrated project incorporating land and water conservation in Guatemala (GUA 12). Another example is sand dune stabilisation by vegetative cover in Somalia (SOM 12).

More typically, Oxfam staff encourage holders of comprehensive agricultural projects to maintain the organic level and structure of their soil by composting, green manuring and returning animal waste to the soil (Zaire 51 and 78)

Loss of fertile land can be severe along lake and river banks, and this can be extremely serious for poor communities living along the banks. In an Oxfam-supported project in Malawi, matting made from bamboo was used successfully to protect a lake shore from erosion (MAL 25c).

2. Soil

- (a) Formation Top soil, which is the portion of the earth's crust which supports life, may be shallow or deep. Over much of the world it consists of only a few inches overlying lifeless subsoil or rock. It is being formed perpetually from parent rocks by physical, chemical and biological processes. It may remain overlying its parent rock or be transported by water, glaciers or wind and be deposited elsewhere over quite different rocks.
- (b) Texture and Structure Soils are made up of mineral particles varying in size from coarse sand down through finer sand and silt to clay. Those with a high proportion of sand are generally referred to as 'light' and those with clay as 'heavy'. A fertile soil will also contain

organic material (humus) and sustain a useful population of micro-organisms and soil fauna, such as worms and insects.

Particles aggregate together and the extent to which they do this determines the soil structure. A good structure means that it is sufficiently open for plant roots to penetrate well, for excess moisture to drain away and for air to be retained in the soil; and yet not so open or loosely held together that it fails to hold sufficient moisture and is vulnerable to erosion by wind or rain. Nothing can be done to alter the basic soil type, whether it be sandy, loam or clay (which depends upon the rock from which it is derived) but a lot can be done to build up the organic matter, and this will improve both fertility and structure.

Under natural vegetation the supply of organic matter comes from plant litter. Under agricultural systems that do not allow for the return of sufficient residues to the soil, the organic matter level will decline as oxidation continues. Traditionally, shifting agriculture allowed sufficient years of rest periods for humus to be restored by natural processes, but, with increasing populations it is now all too common for people to come back to cultivate the same land again too soon. Putting back into the soil as much vegetable and animal waste material as possible will help to compensate for the tendency for soil exhaustion to occur. Integration of livestock and cropping systems may give important benefits in this way - see 3(b) below.

- (c) Acidity and alkalinity Soils are termed either acid, neutral or alkaline; the degree of acidity or alkalinity is measured in terms of pH values which run from 0 to 14. Acid soils have a low pH, neutral are around pH7 and alkaline soils have high pH numbers. Crops vary in their tolerance of acid or alkaline soils but almost all prefer a pH of about 6.5.

Acid soils are said to be sour and sourness can be corrected by adding lime (calcium carbonate) or gypsum (hydrated calcium sulphate). A rough guide is that the application of one ton of lime to one acre will increase the pH by 1. Care should be taken not to apply too much lime as this can affect the availability of other minerals in the soil that crops require. Where soils are too alkaline, the addition of iron sulphate is recommended. If inorganic (mineral) fertilisers are to be used, they should be chosen in relation to the pH value of the soil - see 3(e) below.

- (d) Some important soil types

- (i) Latosols sometimes called lateritic or red earths . By far the most extensive group of soils in the humid tropics. Reddish or yellowish, acid and often strongly leached by rain. Agricultural potential ranges from high to very low. Three main sub-types are:

- Plateau soils of low fertility, associated with disasters such as the Tanganyika groundnuts scheme
- Red loams, which are moderately good soils of the savanna zone and suitable for growing annual crops
- Basisols, developed on volcanic rock, which are of high potential and able to sustain continuous cultivation, but rare.

Laterite is a rock-like material that may occur as particles or impenetrable layers and may be found in any latosol. It has a use as road gravel.

- (ii) Vertisols also called black cotton soils or dark clays . Essentially fertile. In the dry season these soils become hard and develop deep cracks, while in the wet season they become exceptionally plastic or sticky. For this reason they can pose problems under irrigation and are difficult to cultivate by conventional methods, but the natural cracking makes them 'self-cultivating soils' and shallow tillage is generally sufficient to prepare a seedbed.
- (iii) Clay and alluvial soils Dark coloured clays occurring in valley floors, commonly mistaken for vertisols . Highly fertile, particularly valuable under irrigation, but often suffer from poor drainage. In Asia they are used mostly for paddy. In Africa (dambo clays, mbuga soils, vleis soils) they are mainly under pasture, overgrazed and suffering from erosion and compaction.
- (iv) Sands Where sands are the natural product of underlying rocks, they are frequently inherently poor, subject to leaching and, being low in organic matter, are easily eroded.
- (v) Saline and alkaline soils a soil condition rather than type. Salinity and/or alkalinity occurs in arid zone mineral soils where the evaporation rate is very high. It is also a growing problem in many irrigation systems where a combination of inadequate drainage and a high rate of evaporation means that salts in the water are deposited in the soil and crystallise out at or near the soil surface. (See Section 12)
- (e) Degradation and erosion Population pressure associated with unwise farming techniques is the major factor leading to the degradation, or even total loss, of soils. If they are exploited beyond their carrying capacity, either animal or human food supplies will become insecure as attempts to produce more lead to a downward spiral of soil fertility and structure. Climatic characteristics may have a complementary influence, viz. as structure becomes poor, vegetative cover becomes less, soils become vulnerable to wind and rain erosion, to desertification in arid zones and to water erosion of slopes in areas of heavy rain.

Protective measures must be taken to reduce the harmful effects. Farmers must be encouraged not only to return organic matter to the soil including living vegetation known as green-crop manuring, and crop and animal wastes, but also to:

- (i) avoid cultivating in a way which will encourage erosion, ie not straight up and down hillsides
- (ii) maintain a cover of vegetation whenever possible and particularly in seasons of heavy rainfall or high winds
- (iii) grow crops which hold the soil because of a good root system and which improve fertility, eg pulses and other legumes, and avoid crops which remove a lot of fertility such as cassava unless this is returned in fertilisers or followed by legumes like groundnuts. This policy will, of course, have to be balanced against dietary needs and customs.
- (iv) Plough in, rather than burn, crop residues except when burning is recommended as a disease control method.

The extension of deserts (desertification) is largely brought about by overgrazing and by removal of tree and bush cover for fuel and fodder (see Section 15); it is encouraged by successive droughts or long periods with low rainfall. Ideally livestock numbers should be reduced, but in more poor communities where animals are communally grazed, to have large numbers is the best insurance against heavy losses in periodic droughts. Also the number of animals that a family possesses has a social and cultural significance that takes precedence over their productive ability. Farmers should be encouraged to keep their animals under tight control by herding or fencing so that grazed land and browsed trees are rested; areas around watering points need special protective care (see Section 17). A solution to the overgrazing problem generally requires an integrated regional policy affecting access to land and water which may be outside the power of Oxfam to control.

Both over-grazing and over-cultivation associated with poor management can lead to erosion of soil and this takes three main forms:

- (i) wind erosion - which selectively removes fine particles of soil and leaves sand behind
- (ii) gully erosion - when small rivulets steadily grow into deep channels
- (iii) sheet erosion - when the whole layer of top soil is washed away leaving poor sub-soil or bare rock

Wind erosion can be reduced by endeavouring to maintain soil structure, keeping a vegetative cover by irrigation if practical, planting wind breaks, and fixing sand dunes by planting trees and/or grasses with a spreading root system (see Tree Planting, Section 15).

Gully erosion begins when heavy rainfall finds its way into a slight channel arising from a natural indentation or a pathway trodden by cattle. It must be quickly spotted before a gully develops; then the water flow can be diverted, the vulnerable area of soil made more permeable to water and more stable by mulching, ie covering with crop residue etc. or stability can be restored by giving plant cover.

Sheet erosion is at its worst when cultivation is pushed higher up slopes and hillsides and on to more vulnerable, less well-structured soils. Not only does it remove soil from the hillsides, but it also deposits that soil down in fertile valleys where it may reduce crop production by blocking irrigation and drainage systems and causing flooding.

Where erosion is advanced and extensive, necessary measures will be beyond the scope and control of farmers eg building of check-dams and wide-scale re-forestation. However, village communities or farmers' groups may undertake terracing of slopes, contour and tie-ridging of their land, grassing of banks and small-scale tree planting. Oxfam helps projects such as these; for example terracing and land reclamation was subsidised in a highly successful venture in the West Bank area of Jordan (JOR 54) and similarly in Guatemala (GUA 12). The planting of fast-growing tree species has the additional advantage of providing fuelwood which is almost invariably in short supply in such areas (see Section 15).

- (f) Soil surveys and maps The cost of simple soil surveys is small compared with the benefits of having knowledge on which to base soil management, cropping and fertiliser plans. Where applicable, Oxfam should encourage projects to seek out existing reliable soil maps and survey results or to undertake simple surveys.

When surveys are undertaken a map is produced which shows the different categories of soil. It may be useful to produce a land capability map showing the suitability of the land for cultivation, pastoral use or forestry, though economic considerations will affect land use in practice.

3. Fertilisers

Crop production depends upon there being a supply of plant nutrients in the soil. These nutrients must be available, that is to say in such a form that they can be taken up in solution by plant roots. For this to happen efficiently the soil must have adequate but not excessive moisture. Plants will respond best in soils of good texture and in the absence of weeds which compete for moisture and nutrients.

Organic matter/humus helps soil to retain nutrients and reduce the rate at which they are leached by rain. Leached nutrients are usually lost into lower layers of soil or in drainage water, but deep rooted shrubs and trees can perform the useful function of bringing some minerals back to the surface. It is worth remembering that, while a vigorous crop uses nutrients, its well-developed root system subsequently adds to the organic matter in the soil.

The policy of Oxfam-supported projects should always give high priority to maintaining - or preferably improving - soil fertility.

- (a) Plant nutrients Major nutrients for plant growth are nitrogen (N), phosphorus (P) and potash (K). A number of minor or trace elements are also needed in small quantities. All these nutrients occur naturally in soil but are often not available in sufficient quantities. For example, nitrogen and potassium are likely to be deficient where rainfall is high because their salts are readily leached from the soil.
- (b) Nitrogen fixation Plants of the legume family such as beans, peas, clovers and several trees, and a few other species such as alder and tamarisks, have a particular value in enhancing the nitrogen level of soils. Bacteria called Rhizobium, living in nodules in the plant roots, trap nitrogen which they obtain from air between the soil particles and change it into a form that can be used by the plant. These bacteria work well in the warm conditions of the tropics. Different legumes need their own species of Rhizobium; if it is not present in the soil, seed must be inoculated.

Legumes are particularly useful for inter-row cropping as they provide some nitrogen for the other crop while producing useful high-protein food themselves (see Section 16). Legume trees, such as Leuceana and Acacias, can be grown inter-row in forestry schemes to provide nitrogen, fodder and fuelwood (see Section 15).

Blue-green algae, living in association with the tiny azolla fern on paddy water in the Far East, have a similar function in trapping nitrogen for rice.

More recently it has been discovered that micro-organisms such as Azotobacter living in extremely close proximity to the roots of some tropical cereals and grasses also have the ability to enhance plant growth.

All these natural ways in which atmospheric nitrogen is turned into plant food are of great significance to tropical agriculture in general and poor communities in particular. Husbandry methods should be such as to encourage them wherever possible.

- (c) Phosphates and mycorrhiza Of the many living organisms in the soil which help plant growth, increasing interest is being shown in fungi called mycorrhizae. These seem to have a function of making minerals more available to plants. They are particularly significant in relation to phosphorus which is prone to become locked up in the soil.
- (d) Organic fertilisers Although the organic part of cultivated soils rarely exceeds 5% of the total dry matter and is often much less, it influences the productive capacity of the soil to nearly the same extent as the inorganic mineral part.

The organic part is formed mainly by the action of soil micro-organisms on dead and decaying plant and animal materials. It is also degraded and oxidized and these destructive processes can go on at a high rate in tropical conditions.

In the tropics the naturally high level of plant production where there is moisture is possible only because nature recycles plant material and converts it into humus. When this cycle is interrupted by cultivation and the removal of crops from the fields, the balance of inorganic and organic soil constituents is changed. With less organic matter, the soil loses texture and becomes not only less fertile but also more vulnerable to drying out and to erosion. Therefore under cropping conditions, it is vital to put back into the soil as much organic material as possible in the form of vegetable and animal waste and to make use of surface vegetation and litter.

In intensive farming with the high yielding crop varieties and inputs of inorganic fertilisers, the situation become exaggerated. The fertilisers not only produce an increase in grain yield but they also stimulate the micro-organisms into greater activity. These organisms use the carbon of organic matter as a source of energy so degradation of the soil humus is accelerated and this is only slightly compensated for by the greater volume of plant roots of the heavier more vigorous crop.

Therefore Oxfam should encourage the use of organic waste materials such as crop residues, animal manures and suitable human waste. In general organic materials used as fertiliser have the following advantages. They:

- (i) cost little or nothing in cash
- (ii) release nutrients slowly so there is less loss by leaching than when inorganic fertilisers are used
- (iii) improve soil structure so that plants are then able to make better use of any available inorganic fertiliser
- (iv) encourage useful soil micro-organisms and fauna

- (v) can be used as surface mulch to reduce moisture evaporation
- (vi) used as fertiliser, obnoxious wastes in some cases after treatment become valuable rather than a hazard to health

But there are some disadvantages:

- (i) The nutrient value of organics varies widely and is generally unknown, except in the case of purchased fertilisers such as hoof, horn and bone meals, dried blood, shoddy, leather wastes, processed fish waste and bird guano, which should be accompanied by an analysis of main ingredients. In intensive, high output farming, organic materials are usually used only as a means of maintaining soil humus content and the nutrients required for crop production are applied in inorganic fertilisers.
- (ii) Being bulky they require more physical labour than inorganic fertilisers.
- (iii) There can be a health risk particularly where human excreta is used, unless the material is treated to kill any disease organisms.
- (iv) Cellulosic material like cereal straw uses nitrogen in the process of break-down and so will deplete the soil of this nutrient if more is not applied. When there is insufficient nitrogen or moisture, the decomposition of straw in the soil can be very slow.

Compost Compost makes an excellent organic fertiliser. Vegetable and/or animal matter piled into a heap or placed in a shallow pit can be broken down by bacteria and fungi within a few months and provide a fertiliser especially useful for small areas such as vegetable gardens. Almost any waste of animal or vegetable origin can be made into compost and the heat generated during decomposition kills many weed seeds and disease organisms in the material. The top of the compost heap or pit should be covered by a few inches of soil to protect the organic matter from strong rains. The sides and the top should be turned in at least once to ensure that they also decompose. To speed up the process, mix a few pounds of nitrogenous fertilizer with the material to be composted; this is unlikely to be necessary if animal manure, which is rich in nitrogen, is present. Also since air is necessary for the aerobic (air-breathing bacteria) posts can be buried in the heap and pulled out to form chimneys which will enable the air to circulate.

- (e) Mineral or inorganic fertilisers The application of inorganic fertilisers will usually increase yield especially of nitrogenous fertilisers, but is not to be recommended without full consideration of other factors such as:
 - (i) availability of water as rainfall or irrigation. Plants cannot use fertilisers unless there is adequate moisture
 - (ii) cost of the fertiliser in relation to the likely increase in financial return due to a bigger crop, bearing in mind the degree of risk involved
 - (iii) the need to have good weed control so that weeds do not take some of the benefits of the increased nutrient supply
 - (iv) the ability of the farmer to manage the crop and to handle, store and market effectively the increased production

It is particularly important to remember that a farmer's confidence in the use of fertiliser or even in improved technology in general may be destroyed if he is encouraged to invest too much all at once in fertilisers or other bought inputs, and then the crop is badly damaged by weather or pests. In practice it is advisable:

- (i) to have soil analysed, a service which is usually available from research centres, government services and colleges
- (ii) to conduct local trials, to confirm the wisdom of the lessons being taught. These should be continued over a series of years after farmers have begun to innovate.
- (iii) to counsel a step-by-step introduction of fertilisers, starting at low levels and on part of the crop in question, using the best application procedure possible
- (iv) to encourage farmers to calculate the value in terms of increased output of the next increment of fertiliser input, leaving plenty of margin for possibly adverse effects of rainfall, pest and market imponderables

Emergencies may require a different approach, for example, Oxfam supplied fertilisers and seeds to Andhra Pradesh in India and to Kampuchea to enable a quick crop to be grown.

Potash The need for potash varies mainly according to the soil type. If it is required it is usually applied during the preparation of the seed bed. It is often a constituent of a compound fertiliser, ie one containing two or more of the main nutrients - nitrogen, phosphorus and potash - and sometimes some minor nutrients.

Phosphorus is important for root growth and for early maturity. It may be used as a 'straight' fertiliser such as super-phosphate or in a compound. It is usually applied as phosphate in the seed-bed or as an annual dressing in the early part of the season. There is little advantage in applying more phosphate than can soon be used by the crop; the excess will quickly become almost insoluble so it cannot be taken up by the roots, though in later years some of this will gradually become available again.

Phosphate fertilisers vary in quality and cost according to the percentage of water-soluble nutrient that they contain. Mineral rock phosphate, such as is mined in North Africa, has a lot of insoluble phosphate, but this is gradually attacked by soil acids and made available over a period. Solubility is usually increased by fine grinding.

Supplies of high grade phosphate rock are becoming depleted, but there is a great deal of lower grade rock. The new International Fertiliser Development Centre (at Muscle Shoals, Alabama, USA, and set up specifically to work on fertilisers and fertiliser application in tropical conditions) is developing a process for making these cheaper rocks more useful. Another development aimed to make phosphate fertiliser available at a lower price results from Australian research and is being tried in Fiji. It is called bio-super because it is made by mixing rock phosphate, rock sulphur and a sulphur oxidising bacterium so that each pellet of bio-super is a miniature super-phosphate 'factory'. The

merit of the process is that it can be done on a small scale and is much cheaper than super-phosphate manufacture.

Nitrogen is used by plants to synthesise protein and chlorophyll, the green colouring matter of plants which uses sunlight to create carbohydrates by the process of photosynthesis. It increases stem and leaf area and so has a direct effect on the growth and vigor of a crop.

Crops respond positively to applications of nitrogen fertiliser, provided there is moisture and a reasonable balance of the other major nutrients. A good response can often be obtained from quite a small amount. It is wasteful to apply more than the crop can use because nitrates are readily leached from the soil and lost in drainage water, and in large quantities they can be a pollutant.

Of the types of inorganic nitrogenous fertilisers, the one that is most commonly available in developing countries is urea. This is a highly concentrated form but tends to be less efficient than others because it decomposes rapidly and releases ammonia into the air, or as it is soluble the nitrogen is lost in water. It is common for as much as 50% or 60% of the nitrogen applied to paddy rice to fail to be recovered by the rice crop. In Japan and China a technique of putting urea in mud balls and deep-placing them has been used to reduce losses and now the International Fertiliser Development Centre (IFDC) and the International Rice Research Institute (IRRI) have developed a super-granule fertiliser which has urea encased in a sulphur coating. The effect is to slow the rate of release of nitrogen so that the plant is able to take it up and there is less wastage.

Other nitrogenous fertilisers are ammonium nitrate, sulphate of ammonia (not recommended when soils are acid), nitrate of soda (with a lower percentage of N than the others but useful if sodium is also required) and nitrate of potash (only useful where high rates of potash are also needed). Nitrogen fertilisers tend to be used in compounds for basal or seed bed dressings and as 'straights', ie without other elements, to use as top dressing on growing crops.

The amounts of the major nutrients contained in a mixed or compound fertiliser are stated as percentage analysis of N, P_2O_5 and K_2O , always in that order. For example, 20: 10: 10 means that the compound contains 20% N, 10% P_2O_5 and 10% K_2O .

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Some Governments have their own fertiliser handbooks relevant to local conditions.

The International Fertiliser Development Centre (IFDC) has a library and information covering all aspects of fertilisers and fertiliser use, with special reference to the tropics. Address: P.O. Box 2040, Mussel Shoals, Alabama 35660, U.S.A.

5. Checklist of Questions

- (a) What information is available about soil type and capability?
- (b) Are there any signs of soil erosion? If so, what steps are being taken to prevent further damage?
- (c) Is sufficient attention being paid to maintaining soil structure and fertility? What organic material is available? Is it being put back into the soil?
- (d) Is use being made of legume crops or trees, as appropriate?
- (e) If the intention is to use inorganic fertilisers:
 - (i) Has the nutrient need been assessed?
 - (ii) Is the cost justified and has the risk aspect been considered?
 - (iii) Is there enough moisture? Weed control?
 - (iv) Has the farmer the capability, storage, use or market outlet to handle the increased crop?

Section 12 : WATER RESOURCES

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1. The Importance of Water

Water is a crucial natural resource; in many regions it may be more limiting to development than land. Optimising its use is likely to be a central issue in many of the rural projects supported by Oxfam because:

- (i) daily consumption of water is necessary for human survival, as it is for most animals
- (ii) as standards of living rise, so the needs for water in terms both of quantity and quality increase
- (iii) water is required for many uses, which may compete or be complementary; for drinking, domestic uses, transport, irrigation, for fish and for industrial processes
- (iv) humans, animals and plants can tolerate only low levels of salinity and pollution, but purification of water supplies can be extremely costly.

For these reasons the planning of the use of water, maintaining and increasing its supply, and preserving and improving its quality are key problems in development.

- (a) Social organisation. Many aspects of social organisation are related to aspects of water availability - the siting and size of villages may be related to supplies of drinking water or negatively to the need to avoid periodic flooding; the organisation of village life is intimately related to rainfall, not least through the staple crop(s) that it makes possible, and to supplementary irrigation water for which the co-operation of communities on a smaller or large scale is almost always essential. Therefore, the further development of water supplies, for whatever use, is likely to be an exercise in social development. The fundamental need is not always obvious. For instance, in the sinking of wells for irrigation, one new sinking may have an effect on the water level in neighbouring wells, thus causing widespread increases in extraction costs; in such a case a new social organisation may be necessary to ensure that the whole society dependent upon that groundwater obtains optimal benefit.
- (b) Oxfam involvement and experience. Since an assured supply of good, clean water is fundamental to man and animal and to the production of food crops, Oxfam is heavily involved with projects which are totally or partially concerned with the conservation and use of water by means appropriate to poor communities and small farmers. Among such projects has been one in Kenya where Oxfam paid the salary of a supervisor of a clean water and irrigation scheme (KEN 99) and another in Brazil designed to provide community education in appropriate technology with particular regard to trickle irrigation and windmills (BRZ 141).

As might be expected, experience has shown that training and skills are usually essential if a water/irrigation scheme is to be successful.

Projects involving the hand-digging of wells, small dams and small reservoirs are those most likely to attract Oxfam support. Small dams to provide water to make cereal production possible have been built in arid areas in Upper Volta (VOL 41); in contrast, displaced people settled in a large valley in Kenya who were vulnerable to flash flooding, so simple check dams and bunds were built for protection (KEN 2 and 31).

A micro-catchment/run-off system was developed in Jordan's West Bank semi-desert regions (JO 41 and 44), and Oxfam funds have gone towards water conservation for nomads in Niger (NGR 5 & 8).

There are numerous examples of Oxfam supplying pumps and materials for building wells (eg BIH 10) and for building irrigation reservoirs and wells (WBE 23, GUJ 18 and RAJ 12).

2. Availability of Water

- (a) Climate. In the tropics, as the temperature is sufficient for plant growth except in some areas at high altitudes, the amount, pattern and reliability of rainfall are predominant in determining the natural vegetation. Rainfall also greatly influences patterns of agriculture and the human carrying capacity of land.

The amount of rainfall is a very rough guide to the types of natural vegetation and farming to be expected, the following being significant zones:

Rainfall/Water Deficit Classification adapted from Manshard (1974)*

<u>Vegetation</u>	<u>Rainfall</u>	<u>Dry Months</u>	<u>Common Land Use</u>
Wet, evergreen forest	2000 mm	0-2	Rubber, tropical timbers, paddy rice, tree fruits
Partly deciduous seasonally wet forest	1500-2000	2-3	Oil palm, cocoa, coffee, plantain
Wet savanna with riparian forest	1000-1500	3-5	Yams, cassava, upland rice
Dry savanna	750-1000	6-8½	Cotton, millet, groundnuts, winter grazing cattle
Thorn-bush savanna	400-750	8½-10	Sorghum, groundnuts, millet, winter grazing cattle
Semi-desert (a)	150-400	10-11	Sorghum, summer grazing cattle, winter grazing camels
(b)	0-150	11-12	Summer grazing camels
Desert	0	12	

* A typical low-altitude spectrum from equator to hot desert.

The pattern of rainfall is important first in the number of seasons in which it falls and can contribute to crop growth and, second, in the profile of precipitation within any one season. The most fortunate areas are generally those where:

- (i) the onset of the rains is predictable within a very few days
- (ii) the rainfall within the season is well distributed
- (iii) the season is long enough for a food crop to mature
- (iv) heavy downpours and storms do not occur

It will be rare for all of these conditions to apply in areas where Oxfam operates, so it will be necessary to adopt techniques suited to the actual circumstances.

The reliability of rainfall from year to year is seldom good and, moreover, tends to decline from the equator, where the highest rainfall at sea level tends to occur, towards the deserts.

The amount of water available for use depends not only on the characteristics of rainfall, but also on the rate of evaporation (or transpiration through plants); this, in turn, is dependent on atmospheric conditions of temperature and humidity and on run-off, which is related to land slope and soil permeability. Much is lost to man's use by these means and conservation practices are likely to be necessary.

- (b) Hydrology. Water is available not only directly as rain and in surface streams, lakes etc., but some two-thirds of all freshwater in circulation is underground. There are believed to be great opportunities for expanded use of such water resources in many areas, but power costs are a constraint to its great use.

Local knowledge of the amount, pattern, reliability and year-to-year fluctuations of stream flows and of the availability of ground-water tends to be deficient, and obtaining it is costly in terms of men, materials and time. The extent of existing knowledge may be critical to decisions about funding projects where water is a central factor.

- (c) Conserving water. Two general principles apply in water resource development:

first, overall optimisation of the circulation of high-quality water must be achieved primarily on a catchment-area basis. Oxfam-supported projects are seldom so large and must, therefore, be designed to integrate with an overall catchment-area policy;

second, water conservation implies getting the best water supply from a given catchment area over an indefinite period of time which is consistent with the acquisition costs, ie. in terms of net value of product added. This is an optimising, not a maximising, process. Improved understanding of water circulation and better technology can be expected to enhance ability to increase productivity from water.

- (d) Conservation by agricultural method. Water conservation is closely linked with soil conservation and with good crop and animal husbandry (Sections 11, 16 and 17). The objective must be to reduce water losses caused by excessive evaporation from bare earth, rapid run-off, or the 'mining' of underground stores. Water conservation should be a preoccupation, if not a primary objective, in project planning. Where water is a limiting factor, steps should be taken in projects:

- (i) to optimise the use of the amount of rain which soaks in, for instance by:
- cultivating to break-up impervious surfaces
 - maintaining a vegetative cover either of trees, grasses or crops, or of mulch or dead vegetation, so as to break the direct impact of rain

- (ii) to slow down surface run-off, particularly on slopes of loose soil, for instance by:
 - ridging and/or ploughing
 - tie-ridging
 - hillside terracing
 - range-pitting on pasture land
 - (iii) to reduce evaporation of soil moisture by a judicious balance of minimal disturbance of the surface soil and suppression of weeds, in some cases with protective mulching.
- (e) Conservation by enlightened engineering. The engineer can save water in a number of ways, including:
- (i) designing reservoirs bearing in mind the considerable losses through surface evaporation, rapid silting up and seepage (where this has no indirect advantage)
 - (ii) making maximum use of run-off, taking care however:
 - to keep salinity out of the topsoil
 - to avoid interfering with downstream uses of the same water (including fishing)
 - to avoid increasing salt content of the groundwater especially in river deltas
 - (iii) avoiding the over-use of groundwater, which would lower the water-table and cause extraction costs to exceed the net value of the product
 - (iv) taking specific steps to recharge groundwater reservoirs where surface flows might otherwise be wasted
 - (v) integrating surface and groundwater sources to stabilise and prolong the season of water supply
 - (vi) recycling used water; investment in purification procedures may be necessary to combat chemical and biological contamination if the space and time for natural filtration are inadequate

3. Water for Domestic Human Use

The technical, economic and social aspects of this subject are fully dealt with in Section 24. It is necessary here only to emphasise:

- (i) that no natural environment, however high in potential productivity per acre, can be developed without also making available human domestic water supplies
- (ii) that in some situations, like heavy-clay plains, lack of drinking water sources may have been a major hindrance to agricultural development in the past, but there are now techniques of surface and roof catchment capable at least of providing water for temporary residence during the cropping season, for instance in central Sudan

(iii) obtaining water often represents a major cost in:

- payments to carriers over a long distance or to richer neighbours who have facilities
- in potentially productive time spent in travelling to distant water points or in using burdensome methods of water extraction

There is usually a case for investigating the feasibility of improving facilities

(iv) sufficient water of a high quality is not only desirable for reasons of health and living standards, but it also contributes to increased labour productivity which in turn should have a positive effect on standard of living

Oxfam has supported many village fresh water supply schemes which have been of direct benefit for food supply, such as in Lesotho (LES 16) and in Tanzania (TAN 6) where a good water supply led to the development of vegetable gardens.

4. Water for Livestock

Wherever the availability of feed and the absence of restrictive insects and diseases, especially tse-tse fly and trypanosomiasis, allow the keeping of livestock in the tropics, water supply is a primary consideration. Shortage of water and poor quality, particularly caused by debilitating micro-organisms, will restrict the range of animal feeding and retard growth. Ample and good water supplies are particularly important for milk production. (For details of animal water needs, see Section 17). A report from a project in Zimbabwe (RHO 26) commented that the building of dams had a good effect not only on the pasture and the cattle but also on the 'community spirit'.

Considerations related to water supply development

(i) In any project concerned with grazing animals, water development must be considered as an integral part of total resource utilisation, including the following considerations:

first, the size of water supply unit must be related to a specified grazing area of similar carrying capacity;

second, arrangements must be such as to ensure equitable supplies to all animals and a degree of control over animals which eliminates the danger of overgrazing close to the water point and undergrazing elsewhere;

third, the investment in water must be adequately matched by investment in measures to control insects and infectious diseases, intensified by the concentration of animals.

(ii) In any project where water was formerly a limiting factor, the improved productivity of the animals may raise problems of use or marketing. Plans and provisions for this must be made which, in turn, may require changes in the attitudes of the owners.

(iii) The wider implications of water supply projects must be fully discussed and understood by all the people concerned and their agreement established. Wherever possible, the local community should provide some of the resources, notably labour.

5. Crop Needs and Irrigation

- (a) Water requirements. Optimal water conditions for crop growth are those where the supply is such that the soil remains moist throughout the growing period. Excessive water must be removed by drainage channels or flood prevention works; water deficits may be made up by irrigation.

When the ground is fully covered with green leaves, in principle the plant water requirements are determined through transpiration by atmospheric conditions. However, the calculation is complicated because:

- (i) the rule does not apply at the beginning and maybe the end of the crop's life
- (ii) a plant's growth is more subject to stress from water shortage at some times in its life than others, commonly at germinating and flowering
- (iii) extra water may be needed to prevent, or correct for, accumulation of salts near the soil surface

Thus where rainfall is in deficit, the calculation of irrigation water need may be complex. Also in the irrigation system itself there may be water wastage: in evaporation from the surface of stored water, by seepage through unlined transport channels and, if water is applied by sprinklers, by further evaporation. In view of the complexities it will usually be necessary for project managers to seek specialist advice in designing water control schemes.

- (b) Types of irrigation system. Systems differ widely because of environmental conditions, social factors and the nature and final destination of products. Variations arise according to:
- (i) water source, surface or underground
 - (ii) whether or not the water is stored before use, so as to affect the time of application
 - (iii) whether power is required: for lifting from underground, during transport, or during distribution, eg through pipes or sprinklers
 - (iv) the reliability of water supplies
 - (v) when and for how much of the potential growing season water is available, or it is economic to provide it
 - (vi) the nature of the irrigated surface whether flat (or capable of being levelled) or sloping which will influence the choice of water-spreading method
 - (vii) the porosity of the soil, eg heavy clays may be impermeable, light sands may be very permeable, thus affecting the amount and frequency of water application
 - (viii) the precision of water release and placement. Generally, the more precise and economical, the higher is the capital cost of

the system; the most precise is the trickle-and-drip method. Oxfam has paid part of the installation costs (and subsequent evaluation) of drip irrigation schemes in Jordan West Bank where it has proved extremely valuable (JO 38, 44 and 49).

- (ix) the nature of the crops grown: annual or perennial, mixed species or single stands, closely or widely spaced, needing infrequent or frequent watering or even inundation in the case of paddy rice under current traditional methods; and whether being grown for local consumption or for high value exports.

High-cost systems have to be justified by a high value of the expected output. There is little evidence at present to suggest economies of scale in irrigation schemes.

(c) Oxfam supported projects, some considerations.

- (i) Oxfam is likely to be concerned with small-scale community or family projects. In Tamil Nadu, India, small farmers have been helped to make full use of government irrigation schemes (TN 26).
- (ii) Use might be made of the availability of seasonally or wholly unemployed labour, but adequate skills in construction, maintenance and water use are vital.
- (iii) The priority is to ensure an adequate local food supply in an uncertain climate or in heavily populated areas, though there may be situations where the introduction of irrigation for cash crops might be justified by giving an assured income which is greater than the equivalent cost of purchased food supplies.
- (iv) The introduction of irrigation agriculture may be difficult if the people concerned have had no previous experience; social and psychological problems may arise, for instance in introducing irrigated cropping to nomadic pastoralists in arid areas.
- (v) Irrigation schemes will work equitably and well only if the intended beneficiaries have assured access to an agreed share of the irrigation water, and have security of tenure and a system of paying for land and water which encourages them to make the best use of both in the long term. The setting up of an irrigation scheme may provide the opportunity for rationalising access to land by improving tenure regulations and consolidating fragmented holdings.
- (vi) Wherever possible advantage should be taken of assured water to introduce other improved practices suitable to the situation. These might include: fish farming, intensified manuring including mineral fertilisers where they are economically justified, improved plant varieties where they fit into the system and the harvesting of water weeds like water hyacinth for pig feeding. However, the introduction of several innovations simultaneously could increase the farmers' debt burden to unacceptable levels and favour the rich at the expense of the poor. Also beneficiaries must be educated to avoid undesirable side-effects of irrigation such as bilharzia through bathing in infected canal water, or the increase of plant pests and diseases through excessive crop specialisation and failure in control measures.

- (vii) Again there must be thorough discussion and agreement reached with the intended beneficiary so as to raise the chances of a successful transition to a different and more complex form of agriculture, which is likely to be increasingly labour-intensive and sensitive to managerial quality. Choices in design details may well turn on their preferences and capabilities. Where possible, the beneficiaries should be shown successful schemes in action. Where local examples are not available, a pilot project on a very small scale may be desirable.
- (viii) Depending on the scale of the irrigation scheme, care in the design of the organisations of those involved may be crucial to success. Overall managerial efficiency in construction, operation, maintenance and repair, has to be ensured. At the same time the beneficiaries have to be assured of equity in access to water.
- (ix) It is likely that irrigation schemes will require frequent attention and monitoring over a number of years.

6. Water Supply Sources

There are now a large number of ways of obtaining water by small-scale relatively labour-intensive means. Oxfam support is usually directed towards self-help well-digging programmes such as in Sudan (SUD 32), community-built reservoirs such as in a project in Brazil (BRZ 196), and village wells (TAN 6 and RAJ 12). The examples following are explained in more detail in the quoted literature, and see also Section 4:

- (a) Dams. For small catchment areas whether for cattle drinking or irrigation, these can be built of earth and suitably faced with stone or vegetation. Some are designed to allow percolation into porous beds downstream from which water can be extracted by wells.
- (b) Weirs. Built of concrete these may hold and/or divert small rivers which have marked seasonal variation in flow or, when sunk in some sandy wadis, they may give water storage in the sand upstream.
- (c) Catchment tanks. They may vary in size and sophistication in design, depending on the location and utilisation. They may store roof-water or surface storm-water; and incorporate filters, covers and pumps.
- (d) Wells. Hand-dug wells require careful siting in relation to ground-water supplies, which reputable water diviners may be able to locate, thus avoiding the cost of trial and error. They may, if necessary, be lined, for instance by pre-cast concrete rings.
- (e) Tubewells. Hitherto these have usually been made wholly of metal. Bamboo tubewells are a technology indigenous to the Indo-Gangetic plain and appropriate for small farms drawing water from shallow depths. Mobile pump-sets allow a reduction in initial capital outlay.
- (f) Pumps. There are five categories:

The Hand pump is limited in yield and is suitable for domestic use, irrigating small gardens or providing water for stock. Pumps are mounted on tube wells and are of two types depending on the depth of the water. In the shallow well pump, the piston which

is enclosed in a cylinder is inside the pump stand itself. This is the simplest hand pump and relies on atmospheric pressure to lift water to a maximum of 6 or 7 metres only.

The most expensive and difficult to repair deep well pump has the piston located below the water level in the well itself and can lift water from as deep as 180 metres. Since the piston is connected to the handle by rods, its power requirements are higher, therefore children may have difficulty in using it.

Animal-power pumps are quite simple in design and can supply 1,300 people with 20 litres of water per head per day. A bullock harnessed to a pole-drive connected to the main gear turns a chain wheel. This pump can irrigate small areas very cheaply.

Wind pumps are suitable for exposed sites in trade wind zones and can operate over 24 hours. They are however generally expensive to install and are therefore used by larger farmers and co-operatives.

Diesel and Electric pumps incorporate a self-priming centrifugal pump coupled directly to a diesel or electric engine. Running costs can be relatively high, especially with diesel engines, and villagers must be trained in its maintenance.

Hydraulic Rams provide a simple method of lifting water up to a height of 150 metres from a perennial stream where a head or fall of water greater than one metre can be obtained within a reasonable distance. Rams are driven by flowing water and can operate 24 hours a day for many years with relatively little maintenance.

Solar pumps are not used very widely, mainly because of the high cost. They are operated either by flat-plate or focusing collectors or using photovoltaic or silica cells.

These systems are likely to become cheaper as the technology develops. See also Section 14.

NB. As with all mechanical devices that are introduced, the beneficiaries must be taught how to maintain and repair them, together with a clear and agreed responsibility structure to ensure proper operation. It is often necessary to provide suitable tools.

- (g) Springs Springs, frequently an excellent natural water source, can be enclosed by boxing to ensure purity. The water is led away downhill by pipelines with, where necessary, suitable precautions taken to avoid airlocks and excessive pressures.

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Checklist of Questions

- (a) Is the project under consideration the best, bearing in mind the variety of uses to which water can be put?
- (b) Is there any likelihood of undesirable side-effects?
- (c) Is the project designed so that the productivity of other resources is enhanced? For human drinking water, can water-carrying labour be transferred to other useful work? For livestock watering, will grazing yield be improved? For irrigation will the return from other inputs, such as seed and fertiliser, be increased?
- (d) Is the scale of the project such that water may be expected to flow indefinitely?
- (e) Have the rights to water been thoroughly discussed and agreed within the community?
- (f) Is the organisation and continuing management of the project adequate to maintain the installations?
- (g) Will benefits be spread equitably and has the danger of concentration of power over water and also land in the future been minimised?
- (h) Are there strong incentives to users to avoid wasting water?

Section 13: MANPOWER AND CAPITAL

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To complement the Sections on Natural Resources of Land (Section 11) and Water (Section 12), the human population provides resources in the form of labour (manpower) and capital (definable as 'products of labour unconsumed'). People deploy these according to their knowledge, managerial ability and values.

1. Manpower

- (a) Basic characteristics. The manpower available for any project depends not only on the total population involved, but also on the age, distribution, balance between the sexes, physical fitness and strength, and on local customs and practices which influence the ways in which people are prepared to work. Family size in relation to the land available is likely to be important. Where land is plentiful, large families may have a major advantage over small families in their ability to achieve subsistence levels and still have time for other activities. Where land is in short supply, which is increasingly the case, large families may be at a disadvantage, being driven to work the land harder or to seek

employment elsewhere. But even under these conditions, the support of relatives who may control independent small farms can provide a measure of security in times of dire stress.

- (b) Dependency ratio. A crucial factor in determining the available manpower is the ratio of young and old unable to contribute compared to those who do or can work; the ratio is likely to be high -
- (i) where population is increasing rapidly
 - (ii) where life expectation among adults is high
 - (iii) where working adults tend to migrate and are not available for local work. This is a problem particular to agriculture where men go to the mines leaving their womenfolk responsible for food production as well as all other domestic responsibilities
 - (iv) where disease renders members of the workforce ineffective and increases the number of dependents, for example river blindness in the Volta basin in West Africa.
- (c) Community structure. Institutions are the structure within which manpower works and often constitute constraints on work flexibility and efficiency which it is difficult to alter in the short term.
- (i) Household structure may determine responsibilities and possibilities of inter-personal co-operation. Households may be 'nuclear' consisting of husband, wife and children or 'extended' in a larger complex of family or clan ties. It is important to know how authority and obligations are distributed between family members and between men and women, how transfers of wealth are customarily made in every-day dealings as well as between generations at birth, marriage and death.
 - (ii) Village structure is equally important. Villagers may be divided into families or clans, as for instance in some African tribes, or divided 'horizontally' into a complex of classes or castes which are inter-related through rights to property and service. In the latter, strict limits may be placed on freedom of association, of accretion of assets and on opportunities for change, at least for some parts of the community.
- (d) Local mobility of labour. A free 'market' locally in labour can do much in the short term to overcome the rigidity with which resources are unevenly controlled. Farming families short of labour may hire assistance; families with surplus labour may earn income by working for others, thus leading to a better utilisation of land, water and capital. This labour market may be encouraged on a cash or exchange basis to overcome short-term difficulties like ill-health or a late beginning to the cropping season, or where over a longer term the pattern of work shows seasonal differences for instance casual labour for harvesting is needed in a concentrated area of cash-cropping.
- Immobility of labour between jobs and farms may arise:
- (i) where custom is such that one group or sex is regarded as inappropriate labour for a particular task, eg in some Muslim communities women are not allowed to do field work and in Sub-Saharan Africa men are loath to cultivate food crops by hand

- (ii) where land is so unevenly distributed that large land-holders have no wish to cultivate intensively, and in any case they will tend to employ workers at a subsistence wage only as long as the return justifies their employment.

2. Improving the Effectiveness of Manpower

- (a) Physical strength. Improvement of physical strength and well-being is mainly dependent upon improving nutrition and raising health levels (see Section 22).
 - (i) The seasonal pattern of labour requirement in many areas of tropical arable farming is such that the requirements for human energy is intense during certain periods. These peaks occur in the rainy season when disease incidence is at its worst, food supplies from the previous year have become scarce, and thus, when the physical energy available is at a low level. The situation for women may be made worse by the greatest incidence during the rainy season of pregnancy, birth and suckling, as well as by the fact that in periods of food shortage the tendency, in some households, is for men to get the best or the most food.
 - (ii) Traditional apportionment of work, eg the men's responsibility for forest clearance in areas of shifting cultivation, and grouping of peers for communal effort, whether in field-work or housebuilding, is often affected adversely by migration.
 - (iii) Physical strength in the non-growing season may be the rural community's most important asset if it can be used to create investment goods, eg. communal undertakings such as earth dams or village stores, and the improvement of family homes. These will increase labour productivity in the longer run.
- (b) Productivity per unit of effort. Increasing productivity per unit of effort is a function of:
 - (i) increasing practical skills
 - (ii) improving knowledge, decision-making and management
 - (iii) combining investment goods more effectively with manpower, natural resources and wastes.

While (i) and (ii) are discussed in Section 19, some aspects of (iii) are discussed below.

3. Investment Goods

- (a) Traditional investment goods. Traditional systems of agriculture vary widely in the capital investment involved. There may be only a few tools, light housing structures and an assortment of stored goods as in shifting cultivation areas; or heavy investment in soil improvement and water control, oxen and implements, permanent housing and food storage as in densely populated arable areas. Nomads' herds are a major investment in relation to output.
- (b) New investment goods. In recent years population pressure on nearly all tropical farming systems, together with aspirations to raise rather than merely maintain levels of living, have combined to put pressure on natural resources and manpower. This has led some to suggest that more capital investment represents the only solution to

rural development. While this may be true to some extent, appropriate and equitable change is most likely to be achieved by the selective introduction of capital items when it is combined with other measures to increase and conserve natural resources, to save waste and to increase the effectiveness of manpower. It is important to select new capital inputs which:

- (i) relate to any other changes being introduced
- (ii) can be phased in over a period of time with least adverse social disturbance
- (iii) can be expected, with minimum risk of failure, to give greater benefits to the community concerned than all the costs ~~that that~~ community will incur in the process.

Slender resources, degraded environments and communities unfamiliar with intended activities are likely to gain most from step-by-step programmes with initially modest objectives, often stretching over considerable time periods and involving substantial education and monitoring. Heavy capital investment at the initiation of a project should be the exception rather than the rule.

4. Sources of Credit (See also Section 37)

The more the pace of change is increased, particularly in terms of capital and hired labour employed, the more likely that credit will be required.

- (a) Family Credit. Innovation in rural areas still depends largely on the innovator gathering assistance from family and friends on an informal basis; pay-back of loans takes various forms, including undertaking reciprocal obligations like paying school costs for nephews; interest rates are difficult to calculate and it is difficult to identify who carries the risks.
- (b) Shopkeepers, moneylenders and landowners. Frequently, the relatively wealthy members of the community offer informal credit, both for emergencies and for productive innovation; often collateral is not required, interest rates are high by Western standards reflecting capital scarcity, high risks and to some extent monopoly power. Chronic indebtedness often follows for the borrower; the creditor's interest in a stable stratified society may be to keep the borrower alive though he may take over what capital assets, particularly land, he still has.
- (c) Groups. It has been a frequent policy of governments to encourage group-lending in the form of groups such as Credit Unions where credit may be the sole group function or one of a number including product marketing, tractor hire, etc. In spite of the apparent advantages to the group, credit groups on the Western pattern have been rather unsuccessful. The reasons for this are analysed further in Section 37.
- (d) Public agencies. Many governments have attempted to extend commercial lending facilities to small rural borrowers by setting up special institutions, often called Agricultural Development Banks (ADB's). Characteristics of these are:

- (i) for the farmer's part: below-market interest rates, guaranteed collateral, formal procedures of application, plan assessment and phased pay-back
- (ii) for the ADB's part: high overheads, which governments often hope will be reduced and disappear as the farming district becomes commercialised.

Again disappointment has been the general rule. Small farmers have been reluctant or are unable to meet the ADB's requirements while large farmers have benefited most. Loan repayment records have been poor. The scale of successful business has seldom increased as planned and this has resulted in misallocation and waste of scarce capital resources. Some governments as India have begun to set up credit agencies specifically designed to assist the small farmer.

5. Saving (See also Section 37)

- (a) Saving as an aid to capital formation. Provision of credit in the past has often been misplaced insofar as it has been one-sided. Borrowing is ultimately dependent on the saving of surplus unless long-term subsidies are to continue indefinitely. Efficient ways are required of:

- (i) encouraging individual saving
- (ii) holding savings safe from theft
- (iii) using savings as a basis for judicious local creation of investment goods by the saver himself, or maybe by lending to others
- (iv) devising ways of transferring savings from areas of surplus to areas of productive potential.

From Oxfam's viewpoint probably (i) and (iii) are the most important.

- (b) Encouragement of saving. Poor people can discipline themselves to save small sums regularly, eg Oxfam Saveways scheme over a long period as a basis for capital investment. Investment may be:

- (i) by the saver himself
- (ii) by the group as a whole
- (iii) by another member of the group.

A pre-requisite for success is an enthusiastic and determined leader who must quickly establish the trust and resolve of the participants.

6. Seasonal Patterns of Investment and Saving.

In any one locality the pattern of investment and saving will depend on:

- (i) the seasonality of agricultural activity
- (ii) the degree of independence of operation of the individual unit, whether farmer, tradesman or labourer.

8. Checklist of Questions

- (i) Does the project make demands on the people which, with their current resources and obligations to relatives, they are likely to accept?
- (ii) Will the project entail major changes in social relations within the community and, if so, are these likely to be achieved without serious friction?
- (iii) Are the assumptions implied by the project, about human migration in or out of the area, reasonable?
- (iv) Are the people's capital resources together with any project aid intended sufficient?
- (v) Does the project provide sufficient stimulus to members of the community to save and then to lend/borrow wisely?
- (vi) How does the seasonal pattern of activity influence the need for savings and credit and the type of action most likely to reduce risks and smooth out surpluses and deficits?

Section 14: ENERGY AND POWER

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1. Energy and Power in the Farm/Household System

The economic system (summarised in Section 10) is built around a continuous flow of energy deriving initially from the sun. Its three main uses are manifested in:

- (i) biological products for direct human consumption

(ii) power in such forms as

- biological power units: human, animal
- mechanical power units depending chiefly on stored energy in the form of fossil fuel
- wind, and falling or tidal water

(iii) heat for cooking, heating, drying, distillation etc

The conversion of a maximum amount of this energy for food is man's major preoccupation, at least in subsistence situations. But the social and economic inequalities, the pressure of population and limitations to our knowledge about this conversion-to-food process are severe; hence a major effort must be made to achieve the minimum expenditure of energy in terms of power and heat in producing that food. The state of technology, the ability of decision-makers as managers and the control of the distribution of energy sources are crucial considerations in economising in energy expenditure.

2. Justifying the Use of Added Power

Increased power application in rural areas is justified only if it provides greater net human benefits. It is not necessarily easy to say when this will occur. Reduction in drudgery, which may affect health and life expectancy, might be as important a benefit as additional food, materials or cash sales.

Power can be thought of in terms of the output of human, animal or mechanical 'engines' of various sizes. Such engines seldom have single-purpose roles, are rarely used singly and seldom are used consistently throughout the seasons. Therefore optimising productivity of a given set presents complicated choices.

Moreover choices have to be made in a dynamic situation, and this increases uncertainty particularly over the long term. Dynamic elements include:

- (i) increasing population. This implies a potential increase in manual power; and in most areas increasing pressure on land to the relative disadvantage of animal power which is rather costly where it relies on cultivated crops for feed
- (ii) increasing prices of fossil fuels and of capital goods needing fossil fuel for their manufacture
- (iii) changing technology and associated hardwares
- (iv) variable markets for saleable surpluses from agriculture and related rural industry. This in turn affects the ease with which power units and associated equipment can be bought in.

Therefore applications for Oxfam grants for projects of this type will require careful consideration in their own setting.

Power problems need to be considered and solved in

- (a) a whole-family context
- (b) more generally at the community level.

While a degree of specialisation, in terms of work done and capital items controlled, may be inevitable and economically desirable at both levels, care will be needed to avoid excessive inequalities. For instance, unequal

balance in available work-for-food as between men and women in some families, particularly at crucial times of the year or periods in the women's life; unequal advantage as between those who hire animal and mechanical power units and those who let them, which often leads to indebtedness and increasing and irreversible inequalities in level of living.

3. Increasing and Making Maximum Use of Human Power

- (a) Increasing the human power available. Increased human work implies increased food and clean water intake (Section 13). Oxfam's primary concern in agricultural projects is often likely to be to turn a vicious circle of declining human productivity leading to declining ability to work into a benign one of returns to extra work exceeding the energy required for that work. The latter will lead to improved health and productivity in the next round. Choosing the most productive activities and improving the overall environment in which they are pursued will be a central preoccupation of many projects. This implies:
- (i) it is useless to persuade a family to grow an extra crop, eg irrigated sorghum in a hot dry season, if the power expended exceeds the energy value of the product
 - (ii) it may be highly rewarding to introduce a labour-saving device, eg roof-catchment of drinking water, if this allows time for other productive employment, the value of which exceeds the capital cost of the innovation.
- (b) Improving deployment. Here there are a variety of possibilities:
- (i) changing - after very careful consideration - traditional to new ways of doing things. Work study principles have hardly been considered in the tropics, such as are commonly applied to repetitive tasks in industrialised societies.
 - (ii) better lay-outs, including location of homesteads, water points, fields, etc. in relation to one another, to save time and ease management. Such changes must have community approval and may not be easy to achieve. For example often scattered fields are related to local variations in soil fertility and the present pattern ensures a degree of 'equality of inconvenience', or because inheritance rules which perpetuate and exacerbate the situation are difficult to alter (see Land Tenure in Section 10). If labour is not an obvious limiting factor, there may be more attractive ways of increasing labour productivity.
- (c) Improving associated equipment. There is a substantial flow of new thinking and achievement in creating new technology and equipment appropriate to human power making better use of human ability. It is important to remember:
- (i) that people and their situations vary enormously in significant detail. Thus while there may be principles that are widely applicable, their local application may require fine adaptation to make them acceptable, eg pedal power seems to have been a neglected category until recently.
 - (ii) part of the variation under (i) may be social conservatism. For instance, pedal power derived from a bicycle frame may be unacceptable if the work is to be done by women

- (iii) for equipment of a given value to the user, its desirability as an innovation will lessen the further away it is made. Distance will increase introduction costs and deny the opportunity to the local people of contributing labour and local experience to its construction. Similarly, costs of maintenance and repair are likely to increase.
- (d) Supplementing with other types of power. Supplementation of human power with power derived from animals, water, wind, sun, or engines, using chiefly fossil fuels, may be desirable. This is most likely to be so when a power 'bottle-neck' occurs. For instance, multiple-cropping made possible by irrigation creates new peak labour requirements at those times in the year when one cropping season ends and another begins; extra power may be required to relieve pressure on post-harvesting labour by employing a power-driven thresher, or to ensure timeliness of the next planting by using better-equipped bullocks or a tractor.

Before such decisions are taken, care is required:

- (i) to ensure that the increased productivity to power is more than enough to pay for all the extra costs (see Cost-Benefit Analysis in Section 8).
- (ii) that individuals do not incur obligations which are to their long-term disadvantage. For instance where power supplementation involves taking up a loan or becoming dependent on someone else for hiring.
- (iii) that introduction of extra power units and associated equipment, frequently attractive to men, does not by increasing other work like manual harvesting put more strain on already over-burdened women.

A successful solution may lie in a group or community project where costs can be spread.

4. Increasing and Making Maximum Use of Animal Power

- (a) Increasing the animal power available. Where animal power is already employed, increased power per animal will be directly related to better food intake and health (Section 17). Decisions to improve the feeding of work animals must take into account the balance of other advantages, eg the increase in milk, more dung to enhance soil fertility and/or biogas, against the competition which high quality animal feed presents to the growing of food for direct human consumption. In practice crop by-products, and in less densely populated areas waste land, may provide a high proportion of animal feed.

Where animals - whether they be oxen, buffaloes, camels, horses, donkeys or llamas - are introduced into farming systems previously powered wholly by human means, the main considerations are:

- (i) that the real capital and operating costs should be understood, and that increases in benefits should exceed the costs in the long term.

- (ii) that animal health conditions are such as not to impede their introduction. Widespread insect and disease incidence, notably tse-tse fly and trypanosomiasis, should be under control by preventive veterinary programmes
- (iii) whether to import adult draught animals from pastoral breeding areas or to carry the burden of rearing replacement stock locally. If the availability of feed is good, the latter course may be preferable with the additional advantages of more livestock products for human consumption. Where rearing areas suitable only for pastoralism are accessible, this may be a cheaper source of obtaining animal power
- (iv) that the substantial costs of training both operators and animals can be met
- (v) that social stresses are not created, notably through increasing the range of income to the point where some people become markedly subservient to others.
- (b) Improving deployment. Work animals should be put to a variety of work to ensure their optimal use. Costs may be reduced more than benefits by having larger fields and an adjusted cropping pattern, as well as using the animals for post-harvest and off-farm work to maximise their employment without over-taxing them.
- (c) Improving associated equipment. Despite recent attention to yoking and the design of ~~ox~~-drawn equipment, there is still considerable opportunity for new adaptations suited to specific conditions. Oxfam must keep abreast of technological changes which may have marked influence within the life of medium-term capital items like oxen and ox equipment.

5. Increasing and Making Maximum Use of Mechanical Power

- (a) Increasing the mechanical power available. With the exception of small-scale power units, all of which are subject to research and development, an increase in mechanical power either stationary or mobile involves:
 - (i) substantial capital investment
 - (ii) use of fossil fuels, which probably have to be imported
 - (iii) an adequate maintenance and repair network, again often involving imports of both expertise and materials.

It is not likely that the sporadic introduction of mechanical power units and associated sophisticated equipment will be trouble free. Therefore great caution will be required before proceeding to this level of mechanisation.

The capital cost of power units increases with size less fast than power output, so power from small machines is more expensive than from large ones. There may be a few tasks which can be done only by large units. Mobile, wheeled power units range from 7 to more than 70 bhp; with stationary engines the range is even wider. Small multipurpose, easy-to-maintain stationary engines may be feasible, but small mobile power units present more complex problems.

Mechanical power units may save fodder-growing land, increase the area that can be cultivated at the optimal time and save manual labour. However these advantages may easily be over-rated. The fodder area saved may be rather a small proportion of the cultivated area and in any case it may not be practicable to replace all animal power. The amount of machine use required to justify its purchase may be such that the proportion of timely cultivation is not increased. Saving labour in most development countries generally means, at best limiting hired labour to casual unmechanised work, and at worst to wholesale unemployment if new types of employment do not result.

Use of large mechanical power units may be justified in those areas:

- (i) where heavy soils were previously uncultivable
- (ii) where a receding flood leaves a very short period in which to cultivate
- (iii) where supplementary irrigation together with mechanical power makes a radical intensification of cropping possible
- (iv) where mechanical power allows land reclamation as other forms of power have been withdrawn, eg following salinity and water-logging, cyclones, wartime slaughtering of work animals.

Mechanical power and equipment by themselves are likely to increase yields only in limited ways, eg by better burying of weeds, deep ploughing to break hard pan, more efficient cutting and carrying of forage, less grain damage in well-designed threshers. Sometimes heavy machines may cause soil compaction. In paddy fields they may need modification of wheels to simulate the puddling effect of frequent animal traffic.

Introduction of mechanical power units represents:

- (i) a major intrusion into the countryside and may result in an outflow of surplus to urban dwellers
- (ii) a markedly capitalistic trend which may have wide implications, eg turning feudal landowners or authoritarian systems into capitalist farmers through the replacement of ox-owning share-croppers by casual labour, thereby causing communities to lose yet further uniformity and cohesion as a result of the enhanced position of a few rich entrepreneurs.

Only in limited circumstances is Oxfam likely to find it worthwhile to invest in mechanical power units and associated equipment. For instance:

- (i) since mechanical power units are usually most important in supplementing but not replacing labour, stationary engines pumping water for drinking or irrigation, and driving threshers or crop processing machinery are likely to be of first importance. Scarce fuel oil should be directed to them

- (ii) power tillers (PTL's) may be feasible and preferable to four-wheeled tractors (4WT's) where - services are adequate, selling campaigns reduce capital costs, conditions for machine handling are not particularly onerous. However they are, unless as small as c. 7 hp, heavy to control for people lacking proper nourishment who are working in difficult conditions and great heat, and they are cumbersome to move on terraces. They are as complicated as 4WT's to service and repair and are often used as much for transport as for fieldwork
- (iii) small 4WT's, ie. less than c 25 hp, may be competitive with PTL's on light soils if they are manufactured locally to reliable design and manufacturing standards, thus avoiding hard currency requirement. But design is often poor in this range of 4WT's.

Most aid agencies have had many disappointments from investing in sophisticated mechanisation such as tractors.

- (b) Improving deployment. If mechanical power units are available it is essential to use them to maximum capacity to spread the fixed costs. This implies
 - (i) concentrating on non-seasonal tasks. These are relatively few in agriculture, windmills and water pumping may be exceptions
 - (ii) using power units as flexibly as possible. Though tractors are not being used to their design capacity when engaged as stationary engines or in transport, the increased net return may exceed the additional cost involved
 - (iii) concentrating the use of mobile power units, so minimising travelling time to work
 - (iv) combining what were hitherto successive operations in one operation with minimum disturbance of the earth, eg. minimal cultivations plus seeding and fertilising.
- (c) Opportunities for the joint use of power units. The bigger the power units or pieces of equipment used, the less likely they are to be appropriate for small farms. Economies achievable with big machines are in theory possible by
 - (i) the owner hiring out the machine
 - (ii) shared ownership and costs
 - (iii) group organisation in which the operation of one or more power units may be the sole reason for co-operation, or one of a number of reasons (see Cooperatives in Section 37).

Although success stories of all these alternative types of sharing can be quoted, alternative (i) requires the participation of at least one substantial farmer, and alternatives (ii) and (iii) require sophisticated organisation and adequate scale. Unless these exist already and those involved are experienced and confident, the introduction of mechanisation involves many difficulties and risks.

Hire charges, arrangements for the allocation of the machinery over time, responsibility for maintenance and repair, and acquisition and repayment terms applicable to the original capital sum, are all potential problem areas.

6. Developing Power from Other Sources

The rapidly escalating scarcity of oil must have a particularly serious impact on poor countries without their own local sources. Discovery of alternative power sources and development and renovation of existing ones therefore takes on a new urgency; these include wind and water power.

- (a) Wind power. In open or elevated positions windmills may be geared to pumping drinking water, irrigating, threshing/winnowing and grinding grain, pressing sugar cane, propelling boats, as well as generating electricity for other power uses.

Many local designs exist, their advantages lying in the use of local materials, labour and skills, and their adaptation to local conditions and needs. The main constraints are the unevenness of airflow and the inefficiency of conversion to power output. The latter may be improved at some cost by the introduction of improved designs and superior materials and components. Alternatively, designs for construction from spare vehicle parts are available, the cost depending on local availability.

- (b) Water power. Designs of equipment depend on the nature of the site, the size and constancy of water flow, and whether storage of water is feasible so as to prolong power supply beyond the natural season. Power offtake varies from the very simple principles of the hydraulic ram where large quantities of water are utilised to power the lift of a relatively small quantity, to the sophisticated use of electricity-generating turbines.

7. Priorities in Power Development

In situations in which Oxfam assistance may be appropriate, the order of priority taking both economic and social considerations into account, is likely to be as follows:

- (i) the introduction of methods and equipment well suited to local circumstances so as to increase the productivity and reduce the drudgery of manual labour, not least where this eases the work load in the busiest season
- (ii) the introduction of animal power at higher technical standards
- (iii) small power units, whether driven by wind or water, or small stationary engines using fossil fuels, to supplement both human and animal effort
- (iv) small mobile power units designed for a wide variety of work under conditions which pose no serious physical constraints
- (v) large mobile power units where opportunities and organisations already exist for their management, and where regionally the back-up service for the machinery specifically chosen will be satisfactory.

8. Sources of Energy for Heat

Subsistence farmers are generally efficient in their conversion of energy through power units into food, that is relative to the high energy-consuming farmers in modern agriculture. But they are extravagant in the conversion of energy into heat. In the search for fuel, rapid depletion of vegetation in the neighbourhood of settlement is occurring. Consequently:

- (i) the poor spend increasing energy and time in searching further afield for fuelwood
- (ii) by-products of agriculture, including dung, are burnt instead of being put back into the soil to maintain organic matter. (see Section 11).

The long-term result is soil erosion. Radical improvement in conversion of energy into heat is therefore of the greatest urgency.

(a) Charcoal making

In Africa and Asia wood charcoal is widely used as cooking fuel. It has five important advantages:

- (i) it is a concentrated energy source, with 3-4 times the heat value of green wood and twice the heat value of dry wood. Thus it is more practical for high temperature work like blacksmithing
- (ii) it is easier to transport long distances
- (iii) it does not make smoke when it burns
- (iv) it preserves wood that would otherwise rot before burning. And accordingly it can be stored indefinitely in all kinds of weather because it does not rot
- (v) it adds no taste to food which is cooked over it and there is no residue in the smoke to damage the cooking pots.

Although charcoal can be used in confined spaces since there is no smoke, you must have ventilation to prevent the build up of poisonous carbon monoxide gas.

Charcoal is made by heating wood in a limited supply of air. Small quantities can be manufactured very easily in a 200 litre (44gal. drum). One drum will produce about 20 kg. of charcoal a day.

(b) Biogas technology

Biogas technology represents one of a number of village-scale technologies that are currently enjoying a certain vogue among governments and aid agencies and that offer the technical possibility of more decentralised approaches to development. However, the technical and economic evaluation of these technologies has often been rudimentary. Therefore there is a real danger that attempts are being made at wide-scale introductions of these technologies in the rural areas of the developing countries before it is known whether they are in any sense appropriate to the problems of rural people.

Having said that, there is no doubt that countries like China have developed the use of biogas to the extent that it has a major role in providing the rural population with much of their energy.

The great advantage of biogas is that it can be produced from all organic matter, such as animal faeces, human excreta and crop waste, when it is enclosed in a container or tank. The organic matter decomposes by anaerobic bacteria under uniform conditions of humidity and temperature and produces a gas.

The other advantage of producing gas is that the decomposed solids are not wasted but can be used as a good quality fertilizer.

Experience has shown that biogas plants are more successful when used in a community project or communes such as in Chinese villages, or in an institution such as a school. Individual village families can rarely afford to buy the materials needed to make a gas digester or to produce the quantities of organic matter needed to produce gas in useful quantities. The use of night soil combined with other waste would appear to be a solution for a family unit. However in some societies social, psychological and religious barriers are confronted when using night soil.

(c) Applications of solar energy

Solar energy is another example of a technology that at present is enjoying a peak. This is certainly justified as it is without doubt representing a large untapped renewable energy resource that the developing countries can certainly take advantage of.

Unfortunately at the present time, most of the applications of solar energy are still at the stage of 'developing the technology'. It is therefore fairly expensive and out of reach of the rural population.

Family size water heaters, water distillation and solar drying of crops however are very cheap and can be made from local materials. Solar energy in the future will certainly be a power source that could replace the diesel motor in powering deep well pumping, irrigation pumps, refrigeration plants and cold stores, disinfection of water and battery charging systems.

Solar cookers have been available but they do not provide the power at the right times of day and are still expensive. Suitable designs of solar cookers have not yet been shown to be popular in the rural areas.

(d) Improved drying

The proper drying of fruits, vegetables and other food stuffs mean these can be stored until the season in the year when food is more difficult to get.

The most cheap effective way of drying is to use a simple solar dryer or drying technique. The techniques have proved to be very successful and can be used at village level. These are set out in the Oxfam information pack on drying of fruit and vegetables.

Solar driers can be used for drying anything from groundnuts to large planks of wood for seasoning.

(e) Improved cooking stoves

In most rural and semi-rural areas, fuel needs for cooking are largely met from fuelwood, crop residues or cow dung. All of this material in the past has always been readily available and either free or very cheap.

The situation unfortunately is changing rapidly in many areas where wood is becoming scarce and expensive due to the increased use of traditional fuelwood sources. Serious economic and environmental losses are becoming associated with the present patterns of using wood, crop residues and dung as a fuel.

It has been realised that the traditional methods of open fire cooking, and even local cooking stoves, are very inefficient. Without changing domestic habits it is possible to improve the efficiency of burning wood by introducing the use of either a mud or cheap concrete stove. In many parts of the world, research work is going on to find efficient stoves that are both cheap to make and socially acceptable. A training session was held recently in Upper Volta for masons on a particular design of oven (VOL 68); the training itself highlighted many of the problems of producing an efficient oven.

(See appropriate references in the Bibliography)

Refer also to: Tree Planting and Fuelwood in Section 15 and to Nutrition, Section 22.

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Indian institutions interested in design problems

1. Agricultural Engineering Department, Allahabad Agricultural Institute, Allahabad, India.
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Implements Suitable for local Manufacture

I.T.D.G. have a range of designs available for agricultural and village equipment.

Complete technical drawings are available for some of these and the rest are covered by the Agriculture Green leaflets of dimensional drawings and photoprints with text.

A list of all these are available in the Intermediate Technology Publications Catalogue.

10. Checklist of Questions

On Energy in General

1. Is this a project where the energy flow through the farming system needs to be considered as a whole, to ensure maximum economies and avoid long-term deterioration in natural resources?

On Manual Labour

2. Does the project increase the total amount of employment in the area, without putting undue burden on certain individuals or groups, for instance the women?
3. Is the annual spread of employment improved by the project with undue strain being reduced in the season of peak labour requirement?
4. Is the productivity of labour, and therefore the consumption of all individuals, increased by the project?
5. Is the design of tools and equipment the best available for the project's needs?

Additionally, on Animal Power

6. Will there be a net gain in income/consumption from introducing animals?
7. Do the people have the necessary skills for keeping and controlling animals, or can they acquire them?
8. Is the design of project such that the introduction of a large capital item, like a pair of bullocks, will not lead to permanent and major inequality of income or dependency?

Additionally, on Mechanical Power

9. Is it reasonably certain that the large capital investment involved cannot be used better in any other way?
10. Will the equipment be used to its full capacity?
11. Is the back-up - in fuel, spares, maintenance and repair services - adequate in the area?
12. Is the sophisticated management, which is required for mechanical operations, available?

On Other Power Sources

13. Are there other power sources not being used?
14. Is there a case for utilising one of them?
15. Does a local tradition and skill already exist?

Section 15: GRASSLANDS AND TREES

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1. (a) Social and environmental considerations

This section covers regions which vary widely in their natural vegetation, ranging from scrub bush and highly seasonal grazing on the desert fringe through mixed grassland and trees to tropical rain forest. A feature in common is that they support the poorest and most vulnerable people in the world.

The savanna grasslands suffer from periodic drought, and their vulnerability is increased by the over-concentration of grazing and browsing livestock belonging to nomadic peoples, and similarly settled communities exercising insufficient grazing control. Yet they are environmentally vital as a last defence against encroaching desert. There are also vast areas of savanna such as in parts of South America which are greatly under-utilised because of distance, inaccessibility and past lack of interest in their particular problems of soil and climate.

Vegetative cover is an essential in maintaining soil structure and fertility and preventing erosion (see Section 11). Woody species, bushes as well as trees, are the only source of fuel for the vast majority of mankind and, as population density has increased, the need to maintain and replenish supplies has become urgent. Oxfam should assist in encouraging a community or village approach to planting trees for the common good. Tree planting should generally be on bare ground that is not suitable for growing food crops.

Protection and improvement of natural vegetation and indigenous tree species is often more desirable than the introduction of exotic species because this approach is less costly and there is less risk of upsetting the ecological balance. But there may be occasions when it is right to introduce fodder or tree legumes to enrich soil and produce protein, or to plant fast-growing exotics for urgent fuelwood, provided that due care is given to possible consequences. For example, in North India eucalyptus species were planted to replace belts of the Tarai forest, the object being to produce pulping wood for a paper mill. Unfortunately, this meant the loss of indigenous grazed, browsed and lopped fodder for local graziers' cattle and for wild animals. The result was that the animals crowded on to other areas and soon, by over-grazing and trampling, those ecosystems were also set into decline.

Some methods of increasing the productivity both of grassland and of forest areas run the risks of:

- causing environmental damage if they are not planned and managed very carefully
- being to the disadvantage of nomads or forest dwellers if their traditional rights and needs are not considered fully.

In many areas the degree of degradation and erosion of soil together with scarcity of fuel has become such that steps have to be taken to try to control grazing of the savanna or limit the frequency of return of shifting agriculturalists. Oxfam may be able to play a part in supporting projects which seek to safeguard the rights of poor communities in such areas and to educate them in simple conservation methods. Oxfam is supporting tree-planting projects and school tree nurseries (eg TAN 88) where children learn not only to grow saplings for planting locally but also to appreciate the value of trees.

(b) Some Oxfam experience

So far, Oxfam has not had much experience of tree cropping projects but its involvement in this type of work has been growing steadily recently. School or community tree nurseries are seen to be particularly relevant as they provide opportunities for teaching the value and importance of trees while at the same time providing planting material for village woodlots or for gardens. Under a Tanzanian fuelwood tree nursery project (TAN 101) every family is encouraged to plant six trees around their house each year.

Large-scale afforestation is not the kind of work that Oxfam is likely to become involved in but there are circumstances where it may well lend support to co-operative afforestation projects (ECU 18).

Most suitable of all are the type of projects where efforts are being made on a small-scale to find what trees could be grown which would improve the conditions of the people. For example in an extremely poor arid area in Kenya, a great variety of tree seeds were sown to see what would grow and what value it would be in improving the immediate environment, providing fuel wood and perhaps improving the meagre local diet (KEN 98a).

Other tree-planting projects are in Jordan (EB 44), where villagers were supplied with olive saplings, in Lebanon (LEB 22), in Niger (NGR 8) and in Andhra Pradesh (AP 24y). The Andhra Pradesh tree projects involve planting coconut and eucalyptus seedlings in villages in the post-cyclone area and also the production of a pamphlet as a guide to tree planting for extension workers in the Telugu language.

2. Grasslands

- (a) Range management Limited improvements are possible, but they are very dependent upon the effective control of livestock by herding or fencing to allow recovery of the vegetation. There may be some areas where game animals provide a better long-run return than domesticated animals.
- (b) Pasture improvement In areas where rainfall does not limit production, but where pastoral rather than arable farming is practised because of factors such as thinness of soil, steepness of terrain, or inaccessibility of the region, pastures may be improved in a number of ways. It is unlikely that it will be feasible or desirable because of erosion-risk to destroy the natural herbage and sow improved grass or to apply significant amounts of inorganic fertilisers. A better approach can be to over-sow with a good vigorous grazing legume which will supply nitrogen and set the pasture into an upward spiral of fertility. Again, grazing control will be essential on a rotational basis and with a suitable mix of types of livestock.
- (c) Grazing rights and control The traditional groupings of people who occupy most of the range areas are usually ill-defined in law and they live a subsistence way of life well adapted to local ecological conditions provided that pressure of people, or, more particularly, grazing animals is not pushed beyond existing land and climate capacity. Where this has happened, or is in danger of happening, Oxfam may be able to assist in encouraging the people to exercise their own discipline through strengthened existing local social structures or the formation of grazing societies, groups or co-operatives. Discipline will be particularly crucial if new sources of drinking water are installed. (See Section 24). As a general rule, forms of organisation that build on existing social structures are likely to be the most effective. Some countries are operating settlement schemes with reasonable success as a means of getting graziers off run-down pasture land. Oxfam is assisting such a scheme in Brazil (BRZ 221).

To protect vegetation from destructive grazing, the object should be to try to control both overall numbers and types of animals, domestic and wild in order to maintain fodder productivity and optimise consumable and useable products. Local custom will

dictate the scale of values placed on alternative products and custom may be slow to change. In many communities numbers of animals are considered more important than quality for social as well as economic, risk-aversion, reasons. (For livestock management see Section 17). It may not be possible, or even economically desirable, to control animal numbers so that the stocking rate is constant from year to year; some fluctuation in response to alternating sequences of dry and relatively wet years may be inevitable.

3. Trees

- (a) Tree planting More trees are needed urgently, particularly for fuelwood and charcoal. Nearly one-half of the wood used in the world goes for fuelwood and in Africa and Latin America it accounts for nine-tenths of all wood. Vast areas around towns and villages have become utterly denuded by indiscriminate cutting; women are having to walk long distances daily, at high cost in energy time and health, to fetch wood; and even dietary habits are being adversely affected. Millions of families in rural Africa and Asia, as an FAO study (1978) has revealed, are now having to eat most of their food uncooked; and the boiling of drinking water from unclean sources may no longer be possible. Shortage of fuelwood also leads to, for instance over much of India, in the burning of animal dung, straw and other crop wastes, resulting in less organic matter being returned to the soil (Section 11).

Developing countries now have about 10m hectares of man-made forests but it has been estimated that 60m hectares will be needed by 1995 to meet fuelwood requirements at 1977 per capita consumption levels. Major forestry projects are generally not suitable for Oxfam support, but there will often be opportunities for small-scale tree planting activities within Oxfam projects.

Oxfam staff should encourage community action to prevent uncontrolled destruction of trees either by villagers or lumber operations. The Chipko Movement in the Himalayan foothills (UP 34) has organised hundreds of villagers to hug the boles of large forest trees when they are threatened by forest contractors who are denuding the Tehri region of its timber. Through a simple but effective programme of education the importance of protecting trees from indiscriminate felling has been brought home to villagers.

Oxfam should seek opportunities, whether on privately-owned or communally-held land, to support the establishment of small coppices for firewood, the planting of fruit or fodder trees in gardens, around fields or on spare ground, the use of live fencing posts, and planting of trees for shelter belts and erosion control where desirable. Many trees can be a useful source of pollen to support village bee industries (Section 17).

(i) Nurseries

Many trees species are best started in simple plastic soil containers in a nursery rather than directly in the ground in their future growing position, a notable exception is the Neem. This is very important if there is a shortage of seed or the species is one that is known to germinate poorly or unevenly. It is essential for nursery sites to have a reliable water supply and provision for

shading the young seedlings from hot sun. Oxfam is funding tree nurseries from which small trees are provided for local community planting (TAN 101, AP 24J).

(ii) Plantation and woodlot management

The site for planting, whether with saplings or seed, must be cleared of vegetation that would compete with the young trees. When transplanting from the nursery, keep as much moist soil as possible around the roots, place in a small hole, replace top soil and heel in by pressing the soil around the plant from several directions. Place a clearly visible stick by each small tree or planted seed so that it will not get damaged in subsequent weeding operations. The trees must be kept clear of any vegetation and, if inter-row cropping is practised, the cultivation must not disturb the tree roots. The type of crop should be chosen with care so that it does not compete aggressively with the young trees. See Sub-Section below on agrisilviculture.

There is great value in a community undertaking its own tree-planting rather than having it done by government or other officials. This engenders a feeling of responsibility and reduces uncontrolled cutting of immature trees.

Damage by cattle, sheep or goats must be prevented though this may be difficult to achieve effectively, - the woodlot may have to be fenced. Where the area of trees is large, particular precautions must be taken against fire by maintaining fire breaks and/or having wardens.

(iii) Shelter belts and windbreaks

These are created by planting rows or blocks of trees and shrubs. They can reduce soil erosion, limit the spread of air-borne weed seeds and improve the immediate environment both for crops and for workers. The preferred types of tree, height of the windbreak, width, density and angle of the rows or block will vary according to the particular circumstances so it is advisable to get on-the-spot expert advice.

In general: the higher the shelter belt, the greater the distance it affects particularly if density is only moderate; the greater the density, the more confined is the effect; a carefully chosen mixture of trees and shrubs can not only protect houses and crops from cyclonic winds but also yield food, fodder, fuel and/or resins; where breaks are deep enough a path can pass through at an oblique angle, this can provide a respite of shade for field workers and also livestock that are under control.

- (b) Forests and afforestation Tropical forests have not only shrunk in area due mainly to encroaching agriculture, but vast areas have also been severely degraded by exploitation and by forest fires. The exploitation is of two kinds. One is by companies who remove top quality trees, but do not manage the forest so

that other qualities are utilised and do not plant trees or foster natural regeneration. The other is by forest dwellers or villagers who practice shifting agriculture on too intensive a rotation and without adequate care to confine their fires. If the latter have no involvement in the commercial forestry, and they have not appreciated the value of the trees to their environment, they will feel no responsibility for them.

Oxfam is unlikely to be involved in direct funding of major forestry projects, which are usually run by government forestry departments receiving international aid, but there may be scope for helping local communities to see that their needs are not overlooked in long-term forest management planning. There are also likely to be opportunities for establishing small-scale industries associated with forest by-products or waste products.

(i) Integrated management: multi-purpose

A feature of tropical rain forests is that they contain a great diversity of species. The new approach to management of such forest areas is to develop a diversity of uses on a sustained yield basis so that from the same area there can be a continuing yield of timber for construction yield of timber for construction and furniture, pulping wood, poles and posts, charcoal and probably food and fodder as well. Natural regeneration together with some replanting will be an integral part of the plan. Such a plan for upgrading and sustaining a forest will generate employment.

(ii) Food from the forest comes from agrisilviculture, ie. inter-row cropping with fruit trees or annual food crops, and from a diversity of naturally occurring products.

The "taungya" system originated in Burma in the mid-19th century and has been widely used since in many countries, particularly in Asia. It consists of inter-cropping a forest plantation with food crops in the early years until the tree canopy closes. Often in areas of land scarcity, the local people are allowed to crop between the trees in payment or part-payment for work they do in the forest. The width of the rows and the choice of tree species and of food crop are important if neither is to suffer unduly from the other. A good, brief guide to "taungya" practice is given in the FAO Forestry Paper No. 7, 'Forestry for Local Community Development' pages 43 and 99. Because of the hazards to young trees, some forest project managers prefer to keep the agricultural practice under their control. The "taungya" system should not be practised on steep slopes.

Natural foods available from the forest include fruits, nuts, fungi, honey, wildlife and fish in swamp or mangrove forests. Clearance of more land for cultivation or for fuel is likely to reduce this food supply, which may be locally important in providing minerals, vitamins and proteins that are otherwise in short supply, especially where roots like cassava and yams are the staple crops planted.

In 1976, the importance of agro-forestry was recognised by the setting up of the International Council for Research in Agro-Forestry (ICRAF) on the initiative of IDRC (The International Development Research Centre of Canada). Its headquarters is in Nairobi.

- (iii) Fuel from the Forest: in the integrated forestry projects, charcoal production is being fostered to utilise all the low grade wood, old stumps and wasted woody material that were previously wasted. For example, a major feature of the UNDP/FAC forest energy project in Ghana is the encouragement and training of local entrepreneurs who want to become involved in small-scale charcoal production using traditional earth kilns or small mobile metal kilns in the forest.

Some centres, like the Technology Consultancy Centre in Kumasi, Ghana (GHA 22), are investigating uses of sawdust, such as the production of charcoal, fuel oil and gases.

(c) Tree cropping

(i) Fuelwood

In choosing species primarily intended for fuel, the main features to take into account are suitability for soil and climatic conditions preferably using indigenous forms, speed of growth, suitability for coppicing, and the local desirability of uses of multi-purpose trees. Some examples are:

- Neem is multi-purpose and excellent for coppicing
- Leucaena, grown as living fencing posts or in blocks, is a legume which enriches soil while it can be cropped for fodder as well as fuel
- Several Acacias are good arid-zone fuelwoods, including the gum arabic tree (Acacia Senegal)
- Dalbergia sisoo is a tree of river beds and alluvial flats which has a high reputation as a fuelwood
- There is a range of eucalyptus suitable for differing conditions which is good for fuel

Coppicing, organised on a rotational cropping sequence, can yield an indefinite supply. The ratio of area required: people served varies with the land fertility and species grown, and with the demand; this in turn will depend on whether fuelwood is required for both space heating and cooking and on the efficiency of the appliances used.

(ii) Building and fencing

Rural community plantations will seldom be planted with major construction materials such as sawlogs and

plywood in view, because of the time it takes for suitable trees to reach maturity.

Bamboo, in addition to being a village construction material, is amazingly multi-purpose.

Quick-growing pinus and eucalyptus species make good poles and fencing posts, but in a village situation it is best to have live fencing that will provide shade, fodder and fuel.

A number of species, when used as posts, will grow roots and sprout leaves; among these are Leucaena, and some Acacia and Prosopis. Neem is a village tree which can provide fencing posts, but they will need treating with an insecticide.

(iii) Fruits and nuts

The growing of local trees which have edible parts like fruits, nuts, palm hearts and oil should be encouraged, provided they do not compete for land with annual food crops. They usually have added advantages such as providing shade, holding soil or yielding other products.

(iv) Fodder

Many trees will provide useful browsing or cutting fodder for livestock in dry periods. Again Leucaena and other legume trees are outstanding because of the high protein content of their leaves.

Another source of fodder may be from vegetation growing under mature trees, provided that the herbage is cut and taken to the animals or the trees are protected from damage. Sometimes a soil-holding grass such as elephant grass may be planted under pines when eroding steep slopes are being re-afforested; in this situation workers in the forest are usually allowed to cut the grass and carry it to their cattle.

(v) Other uses

Silk Sericulture can be a village community activity. Usually the silk is produced by the caterpillar larvae of *Bombyx mori* which feeds exclusively on the leaves of white or black mulberry trees and the mulberry trees can be useful for holding soil in anti-erosion projects. Oxfam has supported a project of this kind in Bangladesh (BD 76) which is providing an additional income for local people while, at the same time, having a beneficial affect on the land. A coarser thread is produced by several species of the genus *Antheraea* (tasar insects) which feed on a number of tree species.

Gums and resins These are products of many broad-leaved tropical trees. Collection is labour-intensive, and requires little or no capital investment. Traditional local uses should be encouraged to reduce the need for imported industrial products.

Tannin is extracted from the bark, wood and seeds of some trees. It can be used for tanning leather at village level. Preparation of solid tanning extracts for sale to industry is not suited to small-scale village activity.

Kapok, or silk cotton tree, is best known for the cotton-like floss produced in the seed capsules and used to fill mattresses and pillows. It is also a lofty shade tree, yields wood for many purposes ranging from the making of canoes to use as living fence posts, and has leaves that are edible and medicinal for people and livestock.

Oil for burning or soap manufacture comes from several trees suitable for planting around the village. Notable is the Neem which is multi-purpose; research and experience in India suggests that the residue left after the oil is pressed out of the Neem seed has a beneficial affect if incorporated in soil; it appears to improve the utilisation by crops of the nitrogen in applied urea fertiliser. Palm oil is widely used (TAN 6).

Hard wood for carving Oxfam has supported craft communities engaged in wood carving.

(d) Improved fuel utilisation

Demand for fuelwood can be reduced by designing and using more efficient stoves which are within people's means and which are culturally acceptable. ITDG and VITA have publications which give detailed guidance. The following are a few key points taken from an ITDG report (October 1978), 'Designing Stoves for Third World Countries', by Helen Gould and Stephen Joseph.

- (i) It is an essential part of the job of the designer of a stove or oven to determine specific socio-cultural factors that will affect the success of an innovation. No-one knows these factors better than the people themselves.
- (ii) Innovations are much more likely to be successful where people have participated actively in their design and introduction. If close involvement of the designer with the community is not possible, the design should be flexible so that it can be adapted to local resources and skills in construction.
- (iii) The most inefficient way of cooking food is to cook it slowly in a lid-less pot on an open fire as is common in Africa.
- (iv) If fuel is scarce, there is evidence that people will change their cooking methods fairly readily provided the technological changes are small.

(v) Some fuel-saving techniques that have been suggested are:

- use a simple pressure cooker
- cut wood into small blocks and dry it before use
- use better pots, eg. with lids, pots that will stack, pots with finned bottoms
- waste heat from a traditional mud stove can be channelled into ducts for under-floor heating
- use a 'hay' box ie. a box containing insulating material, into which a boiling pot can be placed.

(vi) There are simple technical modifications that can greatly improve the efficiency of traditional mud stoves eg.

- putting an iron grate in the hearth
- providing an adequate air supply by building a simple chimney.

The World Bank report for their RIDEP project in the Shinyanga Region of Tanzania indicates that only 7% of fuelwood is usefully converted in the local wood-burning stoves. This amounts to a requirement estimated at 22 hectares of firewood to be cut per year for an average village of 500 families. Accordingly the encouragement of the use of stoves with a more efficient conversion ratio should be given at least as much emphasis as the establishment of the tree plantations themselves.

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For cooking stoves which economise in fuel see VITA Village Technology Handbook and Appropriate Technology magazine, November 1975.

For details of Information Sheets that are available on Oxfam-assisted projects, see Section 2, Appendix III.

5. Checklist of Questions

- (a) Are the rights of traditional graziers or forest dwellers appreciated and respected?
- (b) Is there proper control of grazing and browsing livestock?
- (c) Is the community aware of the harmful effects of over-grazing?
- (d) What opportunities are there on a community basis for growing more trees, particularly for fuelwood?
- (e) Is any attempt being made to economise in fuel use and to utilise it more efficiently?
- (f) Nurseries: is there an adequate and reliable source of water? Also siting for convenient distribution, including road access?
- (g) If mixed forestry and food production is planned, is due consideration being given to choice of crops and adequate row width to avoid undue competition? What rotation system will be used, eg for coppice?
- (h) What possibilities are there for developing crafts and utility village industries, eg ox-carts and furniture, related to tree cropping or the forest?

Section 16: CROPS - production, protection, storage and use.

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1. Introduction

(a) Priorities when choosing crops and cropping systems

Oxfam seeks chiefly to alleviate malnutrition and to support endeavours to attack the conditions which cause it. These include:

- poverty due to lack of income or indebtedness with which to buy food, or lack of land including insufficient land due to land tenure systems and other resources for families to produce enough food for themselves.
- farming systems which produce unbalanced diets that are often deficient in protein, vitamins and minerals
- farming and post-harvest systems which together produce seasonably inadequate food supplies, eg. food supply may be least during the early part of the growing season which can be the period of hardest human effort
- ignorance of, or resistance to, suitable improved crops and improved techniques
- over-burdening of those who do the crop work, often women, although adequate family labour may be available
- pressures to sell food which should be consumed by the family, resulting in a cash income insufficient to purchase an adequate diet
- increasing population per unit of land
- practices which reduce the productive capacity of land.

Therefore Oxfam supports local initiative and gives priority to projects which:

- (i) increase total food production or dietary balance where that is the problem, especially for the most disadvantaged people, eg:
 - aid to school gardens
 - aid to small-farmer groups and cooperatives to support joint efforts to improve seed supply, savings clubs and revolving loan schemes to raise production potential
- (ii) provide combined agricultural and nutritional advices in the villages
- (iii) encourage cropping systems which reduce risk and spread and diversify food supplies through the year

- (iv) reduce post-harvest losses of food and protect small producers from unfair market pressures. For example, simple community-owned or cooperative processing facilities and stores not only reduce losses but also improve diet in traditionally lean parts of the year or enable sale of surplus when market prices are good.
- (v) provide training in crop production and storage, particularly training of a practical nature and preferably with emphasis on giving on-farm advice and training in the village
- (vi) foster the introduction and improvement of animal-power or appropriate small-scale equipment and machinery
- (vii) take account of the effect that increased cropping or changed systems will have on field workers with special regard to the burdens laid on women and to their traditional sources of income
- (viii) make optimal use of natural resources, but avoid exploitation
- (ix) processing and handling schemes which give work and income to those who would be otherwise un/under-employed.

(b) Some Oxfam Experience

Most of the crop-based projects or the related aspects of comprehensive programmes which Oxfam supports concern either the supply of seeds or help to improve crop storage and marketing. It is at these two ends of the crop production sequence that the small producer is most vulnerable to exploitation or loss.

Support has also been given to enable farmers carefully to diversify by introducing new crops to spread risk, or to improve the diet, or to add a cash crop where land can be spared without jeopardising the family food supply. Such projects include the development of oil seed crop production in villages in the Tabora Region of Tanzania that are not benefiting from tobacco growing (TAN 106), passion fruit in Brazil (BR 225), small-scale cocoa in Bolivia (BOL 31), coconut production and marketing in Colombia, and the growing of disease-resistant varieties of sugar cane in the post-cyclone rehabilitation work in Andhra Pradesh, India (AP 24).

Though farmers may normally be able to save their own seed satisfactorily, they will need additional reliable supplies, sometimes very urgently following a crop disaster, or for a diversification or expansion programme. Drought in an area of Ethiopia (ETH 111), where shallots are the basic cash crop, left growers in danger of being without seed at the critical planting time; Oxfam was able to obtain seed for them.

In Oxfam's West Orissa Programme (ORS 20) which is in an exceptionally deprived area of India, some 200 families are involved in a project to encourage family vegetable production and consumption. In Upper Volta (VOL 31, 33, 84) support is being given to a large scheme for establishing market gardening groups by assisting in the purchase of seed and the purchase and erection of a cold store. In the sphere of storage, more typical involvement is in helping to improve village

storage of staple foods for home consumption or sale. Good storage facilities help in two ways: they reduce grain losses, and if they are well managed by a co-operative or group with access to credit they can insulate the small producer from market forces.

In Upper Volta, projects (VOL 53 and 80) are concerned with the establishment of village grain banks with the grain stored in simple, but effective constructions, under a share-holding system and managed by a village committee. In Haiti (HAI 43) an Oxfam interest-free loan helped a grain storage co-operative which had facilities for treating grain against pests and storing it. Members benefitted from being able to sell their crops to the co-operative for immediate cash and subsequently receiving a share of the profit after bulk sale. In Tanzania (TAN 107), assistance has been given for purchasing materials for village go-downs or stores; the villagers organise and provide the labour for construction.

There are a number of lessons that have been learnt from the experiences of storage groups and co-operatives which have been set up. Chief among these is the essential need for adequate management to preserve the crop in good condition, free of pests, and adequate finance to be able to maintain a reserve of grain for the community's own needs following a poor crop season when local production is low and market prices are high.

Mechanised grain milling is becoming the norm everywhere, but there are still remote areas where it may be worth introducing improved hand-mills, or pedal-mills with bicycle mechanisms. Whilst such improvements may seem small, to the people involved they may require substantial adjustments, eg the introduction of a pedal mill (SUD 21) failed because men do not grind grain and women do not ride bicycles. The Tropical Products Institute (at Slough, UK) is currently working on a pedal mill, as is UNICEF with windmills for grain milling as part of its applied nutrition work. One Oxfam grant for motor-driven grain mills (SUD 18) helped a child welfare project provide a service to mothers using its centres. Oxfam has also provided mills for feed grain at poultry co-operatives (ZAI 31 and 108), and one water mill for grinding grain (MAL 25).

2. (a) Crops for food

- (i) Cereals : rice, maize ('corn' in American usage), bread wheat, durum wheat, sorghum, millets, barley, oats, rye, triticale.

As harvested, cereals generally have an acceptable nutritional balance, but sophisticated methods of de-husking and polishing seriously reduces their nutritional value. Breeders' attempts to improve content and quality (high lysine) in maize and wheat have had some success, but this has very limited geographical application as yet and nutritionists differ in their views of its value. Triticale is a man-made cereal, with wheat and rye parentage, bred for higher protein.

All cereals are best suited to particular environments of soil, rainfall, temperature, day length and to local tastes. Therefore, it is not advisable to introduce a different cereal or type of cereal, eg a yellow kernel maize where white is generally eaten, except with extreme care and under special circumstances such as to get an out-of-season crop quickly when the main crop has been destroyed or when an additional crop is included in an intensified annual cropping programme. Local experience and custom is important.

High Yielding Variety (HYV) refers to varieties of wheat, maize and rice based on improved plant breeding material originating from two of the international agricultural research centres : the International Rice Research Institute (IRRI) at Los Banos, Philippines, and the International Centre for Improvement of Maize and Wheat (CIMMYT - 'Centro Internacional de Mejoramiento de Maiz y Trigo') near Mexico City. IRRI and CIMMYT are two of the international agricultural research centres. A list of these CGIAR Centres and their specialities is given at the end of this Section. Early varieties based on material from these Centres had weaknesses with regard to disease and pest resistance, but for some years now research and breeding work has emphasised breeding varieties: for resistance to a wide range of hazards, suitable for poor environments ie for the conditions in which many poor people farm, which will perform satisfactorily though not to full potential with low inputs.

Hybrid maize varieties can be produced only in countries where there is a highly developed seed trade or government seed organisation so they are uncommon in conditions where Oxfam works. A hybrid in this context is a variety produced by crossing two or more specially bred and selected genetically homogeneous parent lines capable of breeding true to achieve hybrid vigour as well as a desired combination of characteristics. Grain of the farmer's crop ie the progeny of the cross will be heterogeneous, and therefore if used as seed it would produce a mixed collection of plant types. Since the late 1950s, all CIMMYT's work to develop improved maize varieties for the tropics has been with open-pollinated conventional varieties, not hybrids.

- (ii) Pulses and other edible legume seeds: including peas, beans, lentils, soya beans, groundnuts, winged bean. All these are rich in protein and so they are valuable for improving diets based on starchy crops such as cassava, yams and sweet potatoes. Legumes also have the advantage of obtaining nitrogen from the air and making it available in the soil for other crops, so they are useful for inter-cropping. The nitrogen is fixed and made available by bacteria (rhizobia) living in nodules on the roots of legumes. It is usually necessary for strains of rhyzobium specific to the crop to be present in the soil if the crop is to flourish and fix nitrogen effectively; if it is not present, the crop seed can be inoculated with the desired bacteria before planting if an effective innoculum is available in the area. Research centres currently working on problems of nitrogen fixation and rhyzobium innoculum include Rothamsted (England), IITA (Nigeria), ICRISAT (India), University of Florida (USA) and the Max Plank Institute, West Germany.
- (iii) Roots and tubers: Cassava which is also called manioc and tapioca, yams, taros, potato, sweet potato, winged bean (this can also be classified as a vegetable). The root crops - cassava, yams and taros - are extremely important subsistence crops in many areas and especially Africa, giving high starch - and therefore energy - yields per acre. Until the setting up of the international Centres, they were almost entirely neglected by research and extension workers. Cassava and yams are now the subject of a major research programme at CIAT in Colombia. Cassava is propagated by sticking portions of stem of mature plants into the soil. It is important to see that these sticks are free

of disease; where possible and practical, good results can be obtained by dipping the sticks into a solution of fungicide before planting. Excess cropping with these root crops leads to soil degradation.

The main tuber crop of tropical lowlands is the sweet potato, but the so-called 'Irish' or 'European' potato is important in high areas of the tropics such as in parts of Mexico and Peru, where it originated. Work at the International Potato Centre (CIP) in Lima and at major national potato research centres, such as at Simla in India, aims to produce varieties tolerant of higher temperatures and hence to extend the geographic limits of this very high-yielding crop. Though essentially a high starchy energy crop, it also gives a good protein yield per acre and contains valuable vitamins and minerals; (CIP are selecting for higher protein in their breeding experiments).

(iv) Vegetables

The growing of green vegetables should be encouraged as they are rich in vitamins and minerals. However it is important that they do not compete for scarce land with needed subsistence crops, nor for water which if it is scarce could add seriously to the burden of the family water carriers who are usually women. An example of Oxfam support for this kind of development is in Ethiopia (ETH 32b) where seeds, fertilisers and oxen have been provided to help the establishment of community vegetable gardens.

School vegetable gardens are particularly desirable so that the nutritional importance of vegetables can be taught and both their production and use demonstrated (TAN 80). Oxfam has often helped with the supply of seed. Full use should be made of crop waste by green manuring ie digging in or composting. There is often an opportunity to integrate small-pond fish farming and vegetable growing to their mutual advantage. Sometimes yards or kraals where cattle have been penned at nights subsequently make excellent fertile areas for vegetable growing, as in Zaire (ZAI 78c) where vegetable growing, night-yarding of cattle and small-scale fish farming are complementing.

(v) Fruits and nuts

These are nutritionally valuable and are possible raw materials for cottage industries. They are often available, but are not appreciated by local communities. Their production and use is well worth encouraging where they will not compete seriously for land with the subsistence crops that are required.

(vi) Beverages

Where crops such as coffee, tea and cocoa are grown by small-scale producers, there may be scope for Oxfam to support group and co-operative ventures which will encourage and assist in crop hygiene and protection against pests and improve marketing.

(vii) Sweeteners, relishes

Sugar cane - see remarks about beverages above. Waste materials from both fields and factories are valuable cattle feeds. (See also Section 17).

Relishes may be important local crops.

(b) For fodder:

grass, forage legumes, fodder trees, crop by-products.
(Also see Sections 15 and 17).

Where land is limited, food crops must always take priority over fodder. In an intensive irrigated multi-crop situation it may be possible to take a quick-growing fodder crop between two food crops. A legume, such as lucern - 'alfalfa', a clover or one of the improved tropical legumes suitable for the area, will provide fodder rich in protein and minerals and also enrich the soil. A vigorous grass planted on steep slopes as between trees in a re-forestation scheme can hold the soil and provide fodder for cutting and carrying to livestock. A quick growing tree such as *Leucaena* will provide fodder while serving many other village purposes.

- (i) Grasses: Where grass is growing on land not suitable for an arable rotation it is highly unlikely that destruction of the natural grass and re-planting will be advisable; rather one should try to improve the old pasture by better management.
- (ii) Legumes: Some highly-productive improved tropical legumes are now available. Most have been developed at the CSIRO Division of Tropical Pastures and Crops, Brisbane, Australia, from plant material originally collected in Latin America. By over-sowing a natural pasture with a suitable legume, i.e. seeding into the existing sward, and grazing with cattle, the fertility of the land can be improved and this will encourage the development of the best of the indigenous grasses and fodder legumes.
- (iii) Other fodder and browse crops: many 'weeds' including aquatic weeds such as water hyacinth can be useful as fodder; for this local knowledge will be valuable. For multi-purpose trees which can be browsed or cut for fodder, see Section 15.
- (iv) Crop by-products and waste products : most waste products from crops eg. tops, haulms, straw, are valuable fodder, as also are trimmings and rejected material from canneries and factories. Digestibility of cereal straw can be improved by chemical treatment; care is needed, but fairly simple village techniques have been developed.

(c) For industry

- (i) Fibre, including kenaf, jute, cotton, sisal, agave. These are unlikely to be significant crops in the circumstances of Oxfam-type projects, though there will be exceptions to this. In the recent past the world market for natural fibres has been severely hit by the large scale production of synthetics; this could change with the scarcity and cost of petro-chemical based synthetics. Interest is increasing also in the use of kenaf for paper, eg. research by CSIRO, Brisbane, Australia.
- (ii) Oil crops. Apart from edible oils extracted from crop seeds such as eg. rape, safflower, olive, palm, linseed, cotton, there are important industrial uses for edible and non-edible oils. The bean of the jojoba plant, which will grow in dry conditions, has attracted particular interest recently because the quality of its oil is near to that of the industrially-valuable whale sperm oil.

The residue after extraction of the oil from oil seeds is usually useful either as an animal feed or a soil conditioner. Research in India has shown that the residue left after removal of oil from the seed of the Neem tree will not only improve the structure of soil, but will also increase the effectiveness of applied urea.

- (iii) Rubber and guayule. A shortage of rubber is anticipated for the future. There may be some scope for village rubber production in suitable circumstances, but first-class advice both on production and on marketing would be essential. A perennial shrub guayule, which thrives in semi-arid conditions and is native to Mexico, produces rubber when under moisture stress. It is being tried in low rainfall areas of North Africa and Asia.
- (iv) Cellulose. With costs of petro-chemicals rising and their finite nature being appreciated, industrialists are becoming more interested in cellulose-rich components of crops such as bamboo and the straw of cereals. Examples of institutes undertaking research on the utilisation of cellulose waste products are:
 - Forest Products Research and Industries Development Commission, Laguna College, E-109, Philippines. Do research on use of rice, straw, sugar-cane, banana fibres, coconut husks.
 - Association pour la Promotion Industrie-Agriculture. APRIA, 29 rue du General Foy, Paris 8, France. Cereal straw and vegetable waste.
 - Department of Chemistry, Oregon State University, Corvallis, OR 97331, U.S.A.

3. Production Systems and Techniques

(a) Good Husbandry

Any system which progressively reduces the value of the soil must be avoided. Intensive cultivation without proper attention to the maintenance of soil structure and nutrient status, or ploughing straight up and down slopes will encourage loss of soil by erosion. In some environments, a near-continuous ground crop is necessary to avoid erosion, and mixed animal and perennial cropping may be the most suitable system. Repeated and annual cropping, without putting back humus, i.e. organic matter such as green manure, crop waste or animal manure, will make the soil more likely to erode and will reduce its ability to retain moisture and nutrients for crops. Some crops are more 'hungry' than others - they remove more nutrients which must be replaced. (See also Section 1!).

- (i) Rotation, fallowing. It is usually best to grow different types of crop in rotation rather than repeatedly to grow the same or a very similar crop. Continuous growing of one crop is likely to favour the build up of particular weeds pests and diseases favoured by the seasonality of the one crop or by the micro-climate which it produces. Under shifting systems of agriculture, the traditional fallow will

restore the soil after cropping if the fallow period is of sufficient years; but as land has become limited in relation to population in many areas the fallow period has become too short for natural restoration of soil fertility.

- (ii) Suitability of crops. Weeds can be good indicators of soil condition, acidity or alkalinity, and long-range climate, and can therefore point to suitable crops where no long range climatic or rainfall information is available. A world-wide advisory service based on this concept is operated by Dr. James Duke at the U.S. Department of Agriculture's research centre, Beltsville, Maryland, U.S.A. Of course, before introducing new crops, it is also vital to consider: their nutritional value, the amount and seasonal distribution of labour they require, and local tastes and customs.
- (iii) Appropriate timing of field operations. Timely planting of crops is most important in order to make full use of available seasonal moisture, allow full period to maturity, have the crop at required stage for optimal day length, and so on. Weeding early before the weeds stifle the crop is also important. To be able to achieve correct timing for all crops within a range, careful planning is necessary otherwise priority attention to a cash crop may be given to the detriment of a family food crop or vice versa.
- (iv) Planting. Apart from the importance of timely cultivations, yields can be increased by optimal spacing and depth of planting. This can be supplemented when their use is justified with placement of mineral fertilisers close to the roots of plants to minimise wastage. For some crops, transplanting from nursery beds can radically raise yield per acre and speed up crop turn-round if the extra labour required is available.

(b) Systems

- (i) Mono-cropping. In the industrialised countries and in some large-scale farming enterprises in developing countries, mechanisation and the scale of operation has encouraged mono-culture, ie. the planting of large areas with single crops. This makes for the efficient use of power, but can have disadvantages in terms of land utilisation, crop protection and soil condition unless good management and inputs are available. Mono-cropping can also be highly risky in areas where rainfall is unreliable.
- (ii) Inter-cropping, relay cropping. Where land, inputs and expertise are limited, the practice of mixed cropping which is often traditional is worth encouraging because it can provide greater stability of production. Crops can complement each other both in their growth habit and requirements and, when subsequently consumed, in their nutritive value.

A good method of mixed cropping is inter-cropping in which two different crops are planted in separate rows (either in alternative rows or alternate blocks of rows). If a legume

such as a bean is inter-row cropped with a cereal such as maize, the legume will provide nitrogen for the other crop and the maize may support the bean.

A variation of the system is relay cropping in which the second crop is sown near to the harvest time of the first, eg. ground nuts just before maize harvest, and makes most of its growth after the first crop is removed.

Many crops are suitable for inter-row or relay cropping, but an understanding of the needs of likely partners is necessary. Sugar has been inter-cropped successfully with cow pea as a good partner. Sesbania species, small leguminous trees, are inter-cropped with rice as some of them will tolerate the water of the paddy fields. Inter-cropping usually suppresses weeds and often one crop will protect another from pests; the spread of disease is likely to be slower than in a mono-cropped field and because the leaves of two different crops will be at different angles and heights, fuller use will be made of solar energy.

- (iii) Intensification, mechanisation (See also Section 14). An advantage in introducing mechanical power into a cropping system is that more land can be cultivated per family and/or the time between crops can be reduced so that more crops are grown per year, assuming adequate moisture is available. But when increasing the area or intensity of cropping, it is important to be aware of the increase in work which will occur at other seasons and to plan so that timing of operations can be maintained, and also so that there is not too great an increase in manual work. Mechanisation often benefits men while indirectly adding to the work that has to be done by the women (see Section 34). Handling, storage, use or marketing of the increased crop output from the land must also be considered in advance.
- (iv) Hydroponics, nutrient film technique. Hydroponics is the growing of crops without soil in a solution of nutrients. It is a highly specialised technique requiring good management and is generally practiced under glass or polythene. The newly-developed nutrient film technique (NFT) involves growing crops usually vegetables in a continuously-flowing shallow stream or film of nutrient solution. The solution re-cycles so that the only loss of water and nutrients from the system is in that which is taken up by the plants or lost by evaporation. This is a very efficient use of water, but requires a high degree of hygiene as disease in the system will immediately be carried to all plants together with constant monitoring and topping up of the solution. While using space intensively, hydroponics is capital and technology-intensive and unlikely to figure prominently in Oxfam programmes.

(c) Seeds and Cuttings

- (i) Good seed. It is always worth using the best seed that is available, that is seed which: is not contaminated with weeds, is freed of seed-borne disease, will germinate well and will be true to type. Unfortunately sources of such reliable seed tend to be few in the areas where Oxfam works. When home-grown seed

is saved for use, it should be from a healthy and vigorous crop, any weed seed or other extraneous matter should be cleaned out of it, and it should be stored in dry conditions, secure from vermin, and as cool as environmental conditions will allow. Even so when all these precautions have been taken, seed can degenerate so that it is incapable of maintaining yield potential. Seed of hybrid varieties such as hybrid maize should not be saved.

- (ii) Cuttings. Some plants are best propagated by cuttings or other vegetative means. A guiding principle is that plants from which propagating material is taken should be carefully inspected to make sure they are healthy. Where available, fungicidal dips can be an advantage. In sophisticated circumstances, cuttings can be encouraged to root quickly by dipping them in a hormonal rooting powder before planting. A simple alternative is to use a honey solution; pollen in honey contains growth substances.

(d) Gardens

Small plots around homes may provide food which is supplementary to that from fields, but for some people such as widows or landless labourers and their families it may be the only direct food source. Best advantage can be achieved by intensive use of organic matter, water, labour and purchased inputs where possible. Full use of the land will be made by growing crops of different types and heights such as fruit trees and various kinds of nutritionally-rich crops.

School gardens. Oxfam frequently supports school garden projects because, in addition to having the nutritional advantages of gardens generally, they provide opportunity for instruction and familiarisation with foods such as green vegetables which could improve the traditional diet.

4. Crop Protection

There is often an unnecessarily fatalistic attitude towards crop losses incurred both in the field and in store and, although crop hazards can be considerable in tropical conditions, a great deal of food could be saved by careful attention to simple protective measures.

(a) Rodents

Destroy rodent habitats. This, of course, will not be practical where woodlands are near to cropping areas. As regards rats and other vermin attacking stored crops, prevention such as access to the grain is always better than cure. When preventative methods fail, warfarin baits can be used with care to kill rodents, but not in communities where rodents may be used for human food.

Warfarin is a dangerous poison for humans as well as rats.

(b) Insects

Rotations and mixed cropping systems can be natural ways of keeping many forms of insect attack under control. Chemical insecticides can be applied with knapsack/hand-held sprayers: but manufacturers' instructions must be read and followed precisely to avoid harm to the user, other people and the crop. If insecticides are used in excess, the pests may develop resistance. Biological control methods using natural processes, such as the employment of chemicals

used by insects as sex attractants or the release of sterile males and integrated control methods in which cultural and chemical methods are used to complement each other, are now the subjects of a great deal of research and development around the world.

(c) Diseases

Crop diseases are caused by fungi, bacteria or viruses. Disorders due to mineral deficiencies may be called deficiency diseases. Minute organisms in the soil such as eelworms (- nematodes) damage plants and give rise to 'disease' symptoms. Airborne insects such as aphids can be vectors of disease, carrying it from field to field or from one type of susceptible plant to another; sometimes disease organisms can over-winter or remain during a crop-free period on a host weed. Use disease-free seed, practise crop hygiene to destroy disease-carrying plants and promote vigorous growth of crop plants. The breeding of resistant varieties is a major objective in all plant breeding work.

(d) Weeds

Hygiene and good husbandry should always be the first line of defence against weeds. Avoid bringing in weeds in seed and irrigation water, on vehicle wheels, etc. Practice timely cultivations to kill weeds before they compete with the crop. Rotations and continuous coverage of the ground by vigorous crops help to keep weed growth down. However, some profitable systems favour certain weeds and then spraying with a suitable herbicide to manufacturers' precise instructions using a knapsack sprayer may be necessary. An example is the irrigated wheat/rice rotation in northern India which favours the grass weed, *Phalaris minor*, and others. When any weed is pulled out by hand, care should be taken to pull as early as possible or, if that is not possible, to remove seeding weeds completely and destroy them, as some weed seeds such as wild oats are viable even when still green and soft.

5. Storage and Use

Millions of tons of food are lost each year because of poor post-harvest handling, storage and subsequent use. Apart from this total loss, there may be a reduction in nutritional value, particularly during processing by some modern techniques, eg. rice hulling and polishing.

Therefore Oxfam, with its concern to combat malnutrition and poverty, is interested in supporting projects which:

- Improve farmers' understanding of good post-harvest handling of crops, eg. not leaving cut rice lying on stubbles in damp paddy fields.
- Help communities or cooperatives to store crops in improved but appropriate storage facilities. This reduces waste, smoothes nutritional seasonal 'peaks and troughs' by extending the period of availability of the home-grown food, and permits selling cash crops or crops surplus to domestic needs without duress and when prices are good.
- Improve local techniques used for processing crops, help to foster community or village processing and assist in the establishment of local agro-industries.
- Improve domestic use of available crops eg. by drying and cooking.

If crops can be processed within the rural community, rather than being sold for processing by large commercial concerns elsewhere, a greater proportion of the income arising from the crop will remain in the rural area and there will be more employment. However if the product is to be sold, the standard of processing and presentation should be such as to enable it to compete with products of large-scale, commercial production.

(a) Storage

Family scale storage, where a high proportion of the crop is consumed at home, has the advantage of reducing the practice of selling after harvest and buying back later, which is a major element in the build up of chronic indebtedness.

Oxfam has made loans or grants to enable groups of farmers, or village communities, to set up improved small-scale grain 'banks' or cooperative storage and marketing ventures. An example is in Tanzania (TAN 107, 108) where Oxfam financed the construction of village grain stores together with the expenses of seminars on crop protection. The educational aspect through seminars is considered a vital part of funding grain stores. Important requirements of storage schemes are:

- (i) A reliable person in charge - and of integrity and with sufficient understanding of the technical aspects of storage.
- (ii) Provision for financing the maintenance of a reserve of grain even after a bad harvest.
- (iii) Storage facilities that will keep the stored crop dry. Dampness causes sprouting of grain, rotting and mould. The grain must be thoroughly dry before it is stored and then protected from rain and condensation. Traditional small-scale methods usually provide adequate ventilation, but the need for ventilation must be observed in larger stores.
- (iv) Hygiene and protection against insects such as weevils and beetles. Hygiene means preventing new grain from being infested with insects or contaminated by moulds. Permanent stores should be swept clean and if necessary fumigated as soon as they are empty of the old crop; standing crops in the vicinity of stores can be infected by pests of an old stored crop. Simple storage facilities that cannot be thoroughly de-infested are best destroyed and replaced.
- (v) Complete protection against rats and mice which not only eat grain, but also cause even greater loss through damage. Rats can jump at least a metre vertically and can climb vertical walls. Beware of using a rodenticide in communities where rodents may be used as human food.

Obviously, it is far better to prevent grain deterioration than to have to deal with it once it has occurred, but vigilance is necessary.

Signs and symptoms of trouble are:

- (i) Insects visible in grain, hollow or eaten grain, mould, silk spun by moth larvae

- (ii) Small, black, stringy droppings from rats
- (iii) Grain caked in lumps due to mould and dampness
- (iv) Close examination - a pocket magnifying glass is useful - shows minute holes on the grains caused by penetration by insect larvae or insect eggs
- (v) Dust and crumbled grain; a good method of testing the larger grains that may be infested is to pass them over a sieve. Serious damage is indicated if a great deal falls through.

If bags are re-used they should be carefully inspected for contamination and turned inside out.

Types of grain stores: well-established traditional methods of storing grain for the family or small community are not to be despised. Mud-brick or wicker-work stores above ground or in sealed pits in the ground are usually suited to the environment, cheap and effective in keeping grain in good condition provided that they are properly maintained and that strict hygiene is observed. An example is the Pusa bin, developed in India which is made of plastic, coated inside and out by mud. Oil drums and old water tanks may also be adapted by farmers for use as grain stores. Any bins or silos made from metal must not be exposed to the sun as this may lead to moisture condensation on the cool side of the container.

Inflatable butyl rubber balloon type grain stores are now widely used for bulk or in-bag storage of reserve or emergency grain and also in more permanent situations. There is an element of physical vulnerability though this is not great, and they lack the prestigious look of large concrete silos favoured by some governments. Advantages are:

- (i) their fairly easy transportation and speed of erection
- (ii) low cost per tonne compared with brick or cement structures
- (iii) the fact that they are hermetically sealed so that if there are any insects in the grain when it goes into the silo they will die for lack of oxygen.

Expert advice should be sought on construction and planning of storage buildings and permanent silos. Ventilation should be controllable; external paint chosen to reflect light and heat; interior paint of gloss type and not whitewash which could react with insecticides; walls which provide good thermal insulation and roofs which overhang to protect walls from sun. The store must be rat proof, ie walls smooth, doors tight fitting and with metal along the bottom to prevent gnawing, and if possible rat habitats in vicinity of store should be destroyed. The building should be easy to clean with no cracks or ledges to harbour insects. The site must be dry and well-drained and located away from fields of growing crops. Grain should be stacked so that inspection is possible from all sides. If possible, stock bags on wooden pallets. (See Bibliography at the end of this Section for suggested technical references).

(b) Processing(i) For conventional use

Oxfam will be mainly concerned to aid village-scale crop processing and to promote the development of simple manual, pedal-powered, animal-powered or small-scale mechanical aids to processing.

Rice hulling and polishing Machine methods usually remove not only the husk but also an outer very nutritious layer of the grain; as a result people may suffer from beri-beri. Vitamin B additives can restore the nutritional value, but reliance on these is unwise in small-scale processing. It is preferable to encourage parboiling of rice before processing. This practice, traditional in parts of Asia and West Africa, causes the natural vitamin B to move deeper into the grain so it is not lost. Parboiling also makes grain less susceptible to physical and insect damage in store.

Grain milling Mechanised milling has now become the norm, even in rural areas of Africa (BUR 17 and TAN 120). Oxfam should be concerned to see that the technique used minimises the loss of feed value and maximises the recovery and use of waste products, eg for animal feed. IDRC, UNICEF and TPI all have research in hand, some of which includes the milling of legumes to make high-protein flour.

Cassava drying Cassava deteriorates rapidly after the root is harvested, so if it is not to be peeled and eaten immediately, it must be processed. A common method of processing is for the root to be peeled, cut into pieces, dried in the sun, milled or grated, soaked in water to remove the hydrocyanic (prussic) acid - and the water then thrown away, and baked as flat cakes that can be stored. Improved methods of cassava preservation are being investigated at CIAT, Colombia.

Oil extraction Crops giving the highest yield of oil are: soya, sunflower, safflower, groundnut, cotton seed, palm, coconut, rape and olive. Small engine-driven oil expellers, suitable for village projects, are widely available; but where quantities are not great a manual press operated by two people may be preferable. Hand presses have been developed at the Technology Consultancy Centre, Kumasi, Ghana (GHA 22) and elsewhere. The residue left after oil has been pressed from the seeds can be a useful animal feed.

Soya and groundnuts are important as protein foods and not just as oil seeds. But soya contains a substance which negates the food value of the protein and can cause dysentery in children unless it is destroyed by processing such as lengthy cooking.

Full fat soya flour is valuable for adding protein to starchy diets. Oxfam has supported village soya flour production; this involves 5 hours soaking, 15 minutes boiling, 24 hours drying, then cracking, winnowing and grinding.

Drying fruit and vegetables Much wastage of fruit and vegetables can be avoided by drying the produce and storing it. The process can be simple, as follows:

trimming and slicing to 7mm slices. Some vegetables such as green beans, carrots, turnips and cabbage

then require blanching in boiling water and dipping in a bisulphite preservative; but others such as tomatoes, mangoes and bananas are not blanched. Sun drying is then done on wire, gauze or muslin trays or in glass-roofed boxes called solar dryers or cabinet dryers. (For further references see Bibliography.)

(ii) Leaf protein extraction

The idea of pressing a protein-rich juice from green leaves was pioneered by Dr. N.W. Pirie of Rothamsted Experimental Station, Harpenden, U.K., and has since been further researched by a number of other people. Nutrition trials with the dried extract from the high-protein crop, lucerne, are being done at Coimbatore in South India, and are showing promise. A wide range of green leaves are potentially useful for this process, but vary in their protein value and their suitability for the extraction process using existing equipment. An interesting possibility is that water weeds could be used, hence both removing a problem and providing a nutritional product.

(iii) Microbial protein production on starch substrate

Starch from grains, cassava or potatoes is one of a number of proven substrates on which microbial protein can be grown. The product results from growing yeasts, bacteria or fungi on the substrate, skimming them off and drying.

(c) Home use/cooking

Two types of pressures have developed in some areas in recent years which lead to practices which contribute to malnourishment:

- (i) The growth of urban populations able to pay attractive prices for food tempts poor farmers to sell food really needed by their own families, for instance as is occurring in Zaire. Where possible Oxfam should help to avoid this by supporting nutrition education, increased production, and actions which reduce poverty and hence the need for cash from such sales.
- (ii) Shortage of fuel wood is forcing many families to eat food raw as they are unable to cook it; this has been surveyed in a recent FAO study. It can have disadvantages in terms of palatability, digestibility and hygiene and, in the case of some foods cooking is necessary to destroy bitter or even toxic substances, eg. some bitter varieties of cassava must be steeped in water and then cooked to destroy cyanogenetic glucosides and hydrocyanic acid. Oxfam should promote: the planting of fuelwood, improvement in efficiency in cooking methods in terms of fuel use, and a greater understanding of the reasons for cooking. See also Sections: 15 - Trees, 14 - Power/energy, and 22 - Nutrition.

(d) Marketing

In most situations encountered by Oxfam, the producers' primary concern should be an adequate, well-balanced diet round the year for the whole family. Virtually all farmers will want to produce a

surplus; first to exchange for necessary commodities and services not produced on the farm, second to pay taxes, and third, because of year-to-year yield fluctuations to ensure adequate supplies in below-average years. It will be in the farmers' interest to market:

- unpredicted surpluses, after making adequate provision for year-round consumption
- crops they can grow more economically, which can be exchanged for others so as to balance family diets and/or increase their overall income, eg. sell maize and purchase cowpeas or dried fish; sell cotton and purchase some food requirements.

Variations in conditions from place to place and year to year result in a complex pattern of exchange between neighbours, at village markets, in market towns, in the cities and outside the country. In general, the greater the distance and time to market, the greater is the marketing cost and the weaker the farmers' bargaining power vis-a-vis traders.

The smaller the individual farmers' resources, the more difficult it tends to be to gain by sacrificing self-sufficiency in favour of specialisation and the easier to become chronically indebted. However, in rural societies where a high proportion of the people have insufficient food-producing land and work for wages, it is socially desirable that specialisation is pursued to that optimal limit which minimises the cost of food for all in the long run.

Bulky and perishable foods are best processed before marketing when local labour and skills are available. This, as well as marketing itself, may be an activity best suited to group activity, particularly where this has been traditional practice. (For Marketing Schemes, See Section 37).

6. Bibliography

All the CGIAR Centres produce useful training material and a variety of publications. These include some practical, illustrated handbooks: 'Field Problems in Cassava' from CIAT; and 'Field Manual of Common Wheat Diseases and Pests' Information Bulletin 29 from CIMMYT - both pocket size.

The following is a list of the Centres and their main subjects of work.

International Rice Research Institute (IRRI) Los Banos, Philippines (P.O. Box 933, Manila). Rice: resistance to disease, insects, pests, drought; tolerance to adverse soils, deep water and floods, extreme temperatures; improved nutritional quality.

International Maize and Wheat Improvement Centre (CIMMYT), Mexico (Apartado Postal 6-641, Mexico 6, D.F.). Wheat, maize, triticale; emphasis on pest and disease resistance, nutritional quality of grain, high yields.

International Centre for Tropical Agriculture (CIAT), Colombia (Apartado Aereo 6713, Cali). Cassava, beans (*Phaseolus vulgaris*), improvement of acid infertile savanna for beef production, feeding of crop wastes and unconventional diets to pigs, collaborative maize work with CIMMYT and rice work with IRRI.

International Institute of Tropical Agriculture (IITA), Nigeria (P.M.B. 5320, Ibadan). Cassava, yams, grain legumes (cowpea), rice and maize collaborative work with IRRI and CIMMYT, farming systems to assist transition from shifting to settled agriculture, on-farm crop storage and the FAO/African Rural Storage Centre is based at IITA.

International Potato Centre (CIP), Peru, (Apartado Postale 5969, Lima). Improved potato varieties and potato growing in developing countries and extended range of adaptation to include lowland tropics.

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), India. (1-11-256 Begumpet, Hyderabad 500016, Andhra Pradesh). Improved grain yield and nutritional quality of sorghum, pearl millet, pigeonpea, chickpea and groundnut and developing farming systems making better use of natural and human resources on the seasonally dry semi-arid tropics.

International Centre for Agricultural Research in the Dry Areas (ICARDA), Syria/Lebanon.
Barley, lentils, broad beans (*Vicia faba*), durum wheat, dry land systems.

Other centres under CGIAR but not crop orientated are given under Section 17 - Animal Production.

Information or publications on vegetables can be obtained from:

The Asian Vegetable Research and Development Centre (AVRDC), Taiwan. (P.O. Box 42, Shanhua, Taiwan 741). Chinese cabbage, tomato, white potato, sweet potato, mungbean, soyabean, rice.

The National Vegetable Research Station (NVRS), U.K. (Wellesbourne, Warwickshire). Temperate vegetables.

The Centre for Tropical Agriculture, University of Florida, U.S.A. (Gainesville, Florida 32611).

A range of publications on production and storage of crops are produced by the Tropical Products Institute (TPI), 56/62 Grays Inn Road, London WC1X 8LU, U.K.

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I. Arnon, Crop Production in Dry Regions (2 Vols), Leonard Hill, 1972.

Eberhard Bohlen, Crop Pests in Tanzania and their Control, GTZ.(see next entry)

Theodor Doerfler, Seed (Production Guide for the Tropics), German Agency for Technical Cooperation Ltd., (GTZ), 06236 Eschborn 1, Stuttgarte Strasse 10, West Germany, 1979.

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Oxfam Information Sheet, Food from Waste Land: Kebele Vegetable Gardening, (ETH 96).

V.W. Parseglove, Tropical Crops, Dicotyledons Vol I and II also, Tropical Crops, Monocotyledons Vol I and II.
Longmans, Valuable reference work of all the most important crops.

Hans Ruthenberg, Farming Systems in the Tropics, Clarendon Press, 1976.

Intercropping in Semi-arid Areas, IDRC, Ottawa, Canada, report of symposium held in Tanzania, 1976.

FAO Better Farming Series, 26 elementary handbooks designed for a two-year intermediate level agricultural education and training course. Very practical. Published by FAO by arrangement with the Institut Africain pour le Developpement Economique et Social, Abidjan, Côte d'Ivoire. Available singly at \$1 or as a set.

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M.L. Vickery & B. Vickery, Plant Products of Tropical Africa, Macmillan, 1979.

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D.E. Kay, Root Crops, TPI Crop and Product Digest No. 2, 1973, Tropical Products Institute, 56/62 Grays Inn Road, London WC1X 8LU, UK.

Vegetables - see also Addendum on 16-21

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Geoffrey C. Hawtin and G.J. Chancellor, eds., Food Legume Improvement and Development, The International Centre for Agricultural Research in the Dry Areas/International Development Research Centre.

G.A.C. Herklots, Vegetables in South-East Asia, Allen and Unwin, 1972. Useful reference book - relevance much wider than south East Asia.

F.W. Martin & R.M. Ruberbe, Edible Leaves of the Tropics, Antillian College Press, Mayaguez, Puerto Rico, 1975.

H.A.P.C. Oomen & G.J.H. Grubben, Tropical Leaf Vegetables in Human Nutrition, Royal Tropical Institute, Amsterdam, The Netherlands, 1977. Practical and well illustrated guide on the production and nutritional value of leaf vegetables.

Arnold Pacey, Gardening for Better Nutrition, booklet prepared by Oxfam, published by Intermediate Technology Publications Ltd., 1978. £0.50p. Second in the series of manuals on socially appropriate technology.

H.D. Tindall, Commercial Vegetable Growing, OUP, 1968. Despite title, this is a simple level book covering small-scale gardening in the tropics; includes short description of wide variety of vegetable.

H.D. Tindall, Fruits and Vegetables in West Africa, FAO, 1965.
In French and English.

Tropical Legumes; Resources for the Future, 1979. National Academy of Sciences.

P.J. Skerman, Tropical Forage Legumes, FAO Plant Production and Protection Series No. 2, 1977, f13.

Straw/Cellulose Waste Products

A.R. Staniforth, Cereal Straw, OUP, 1979.

Les Pailles de Cereales, (in French), APRIA/TCF, Paris 1977. Can be obtained in mimeograph form from APRIA, 29 rue du General Foy, Paris 8, France.

Storage

For dry fruits and vegetables, see the Oxfam Fruit and Vegetable Drying Information Pack, available from Overseas Division, Oxfam, Oxford.

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committee of Winged Bean, 1978.

In French:

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pamphlets in French on topics such as "Comment empêcher l'érosion du
sol", and "Comment obtenir des rendements élevés", available from
Oxfam, B.P. 98, Kikwit, Zaire.

For details of Information Sheets that are available on Oxfam-assisted
projects, see Section 2, Appendix III.

7. CHECK LIST OF QUESTIONS

- (a) Will the nutrition of the family or group benefit?
- (b) Have the consequences of improved, intensified or changed production been thought through?
 - the effect on women's work load and income
 - the managerial and workforce ability to cope with the crop at all times, including storage and marketing
 - the greater financial risk/confidence if the outlay is increased
 - the effect on the soil: can structure, fertility and low weed/pest infestation be maintained?
 - the adequacy of resources and necessary inputs
- (c) Is optimal use to be made of natural and local resources?
- (d) Is the crop(s) suitable, bearing in mind the climate, soil, traditions of the people, market requirements and demand, availability of workers/power, management ability, nutritional needs, and processing facilities if required?
- (e) Is the meaning of the term good husbandry understood and likely to be observed?
- (f) Is good, reliable seed or vegetative material available?
- (g) In the case of a fodder crop, is it to be grown on land not suitable or needed for food crops?
- (h) Is proper provision being made for storage?
- (i) Are waste and by-products to be put to good use?
- (j) Are the farmers free to make wise choices about marketing and will the policy they adopt be in the long-term interest of the community?

Section 17:

ANIMAL PRODUCTION AND PROCESSING

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1. General Principles

(a) Why assist livestock development? It has been suggested that the development of livestock production is an inefficient utilisation of resources. This need not be so, for the following reasons:

(i) Much food, and therefore energy, is available in forms not directly consumable by man, such as fibrous roughages and crop by-products, that can be processed into edible foods by livestock.

(ii) At least 60 percent of the world's rangelands are unsuitable for cultivation and can be exploited only by the use of ruminant

livestock or wild game.

- (iii) Many animals, ultimately killed for food, have a primary role as providers of energy in cultivation or transport or as producers of other products required by man such as milk, wool and fuel in the form of dried dung.
- (iv) Crop and livestock production can be complementary and are often interdependent. Mixed farming systems are often ecologically more stable, and in some circumstances can produce more edible food in terms of energy input than can separate crop and livestock systems.

In developing countries livestock are utilised mainly in the following systems:

- (i) Extensive grazing, in which livestock are the major source of livelihood. These include ranching, nomadic and transhumant (where pastoralists migrate seasonally from a fixed base) subsistence systems. The major types of livestock raised are camels, cattle, sheep and goats, and in the Andean countries of South America llamoids such as the llama and the alpaca.
 - (ii) Shifting cultivation, in which livestock are relatively unimportant, but provide some high-quality protein foods and other useful products. The major types of livestock raised are sheep, goats, pigs and poultry.
 - (iii) Sedentary cultivation, in which livestock are of primary importance as work animals, but also provide milk, meat, fuel, fertiliser and other products. The major types of livestock raised, depending upon the region, are cattle, water buffaloes, sheep, goats, pigs and poultry.
 - (iv) Mixed farming, particularly where livestock are associated with tree crops in the wetter tropics.
 - (v) The rapidly expanding intensive livestock sector, producing milk, pork, poultry meat and eggs. The major types of livestock utilised are dairy cattle, pigs and poultry.
 - (vi) The raising of small animals and poultry in peri-urban areas. Sheep, goats, pigs and poultry are used either as scavengers or are fed on human and crop waste products.
- (b) Priorities Normally, ranching systems will not require assistance from Oxfam, but there may be exceptions such as where an effort is being made to develop group, co-operative or communal ranching for the benefit of nomadic or seasonally migrant peoples or where the objective is to finance services for poor people. Also apart from exceptional circumstances, Oxfam is unlikely to wish to become involved in the development of the intensive modern sector of the livestock industry.

Of the other livestock systems listed above, priority should be given to those that: are rational in ecological terms; are likely to be economically viable; or will benefit in some way the majority of the indigenous participants.

Technical improvements in livestock production can be achieved by improved breeding, nutrition, eg pasture improvement, health and management. Production is encouraged by a fair and adequate price system and the establishment of improved processing and marketing facilities. It is supported by rational and appropriate research programmes, suitable educational facilities and a well organised extension service.

Oxfam may be asked to support one or many of these aspects, but if one of them is totally inadequate, the overall development effort may fail.

In the technical field, improvements in animal health should receive priority, followed by improvements in nutrition and management, and finally in breeding. Major mistakes are still being made in attempting to improve the breeding of livestock by the importation of exotic animals. This should be advocated only after extensive investigation shows that it will be justified and that the quantity and nutritional quality of the food available will be adequate. Artificial insemination should never be advocated unless appropriate and efficient support services are available.

- (c) Some Oxfam experience In many areas Oxfam has been assisting community or cooperative livestock ventures where either the product, eg milk will contribute to much needed improved nutrition, or where livestock will provide an income while being fed largely on waste or by-products and will not compete for human foods or scarce land.

In dairying, Oxfam support has enabled poor villagers to come within the State dairy development schemes in India (Gujarat 47, 61 and 75); in Tanzania (TAN 128) help was given to a village communal dairy production project which involved reseeded of pasture and upgrading of cattle; and another example of assistance in dairy cattle improvement was in a small farmers' dairy scheme in Malawi (MAL 50).

Sheep and goat schemes have mainly been associated with training in management (eg SUD 29) and in supplying finance for revolving loan schemes to purchase goats as in India (MP 5). There has not been much involvement with pigs, an exception being support for a pig improvement centre and extension service in Brazil (BRZ 143).

There are many examples of support for poultry projects; a comprehensive project in Tanzania (TAN 80) included poultry, starting in schools, and then developed to involve village communities; in Brazil a poultry feed cooperative (BRZ 123) has been supported; in Lebanon (LEB 22) a poultry project was hit severely by the universally felt experience of steeply rising feed costs.

Projects involving small animals kept by schools or village communities lend themselves well to Oxfam support. Part of a comprehensive project in Guatemala (GUA 12) is concerned with rabbit breeding; and another involving the locally traditional guinea pigs kept by the Peruvian Indians are, together with bees, receiving assistance (PRU 112).

2. Principal Farming Systems Using Livestock

- (a) Extensive grazing In nomadic systems or those where pastoralists seasonally migrate from a fixed base the livestock owners' usual objective is to maintain as many animals as possible consistent with the availability of forage, ie grazing and browse, and water.

However this is in an environment which is subject to unpredictable seasonal and annual fluctuations in rainfall and thus in the availability of these resources. Livestock are usually kept to produce milk for family consumption; meat, hides and skins, and manure will be major by-products. They may also be a source of prestige for the owner and can play an important role in the social life or even the religion of their owners.

In the majority of such systems, overgrazing is common as land is communally-owned whilst livestock are individually-owned and female livestock are often the only available outlet for investment. In recent years, overgrazing has worsened with the almost continuous withdrawal of land for settlement, the advent of improved veterinary services and the uncontrolled provision of additional water supplies.

Modernisation and development of these systems does not necessarily imply settlement. In fact most arid areas can be exploited for human food production only by the use of migrant livestock or by irrigated crop production. It does however require:

- (i) a transition from nomadism to transhumance (seasonal migration from a base) so that the livestock owners can take advantage of medical, educational and other social facilities provided by their government.
- (ii) a decrease in total livestock numbers in order to minimise overgrazing and hence the degradation of the environment. This in turn requires:
 - the maintenance of a stable, low density human population by the emigration of people out of the system and the provision of alternative employment opportunities for them
 - conversion of the system to a 'cow-calf' breeding system producing young stock for sale to climatically more favoured areas where the young stock can be grown and fattened on surplus forage or crop by-products
 - improvements in the productive capacity of the present livestock population by the introduction of improved breeding, feeding and management and animal health measures. This is a difficult but not impossible task once overgrazing has been minimised and an adequate marketing system developed.

Thus, the problems of development in extensive grazing areas are particularly difficult. It is unlikely that minor improvements in the present systems will help indeed they may impede development by encouraging further overgrazing. Bold political, as well as economic and technical decisions, have to be made by the governments concerned if extensive grazing systems are to be developed that are not only ecologically and economically viable, but also improve the standard of living of the indigenous livestock owners.

- (b) Shifting cultivation Shifting cultivation systems require a low labour input, but very large areas of land over which the farmers can move if the system is to remain viable. With increasing populations, most shifting cultivation systems are becoming obsolete and a change to sedentary cultivation is essential. This is now the situation in many regions of Latin America and Africa and some regions of South East Asia.

Shifting cultivators usually raise only small stock such as goats and sheep and poultry. A change to sedentary cultivation requires not only crop rotation, but also a much higher labour input. Mechanisation is not a practical or economic solution and the obvious answer is the introduction of work animals, either cattle or water buffaloes. The introduction of work animals to these systems provides additional benefits according to local circumstances: working female animals may also be milked, meat becomes available at the end of the working life of the animal, and throughout their life the animals produce manure that may be used either as a fuel or as a fertiliser.

The introduction of working animals into these systems is not an easy task, as experience in Africa has shown, but it is a vital task in which Oxfam can participate. Some of the difficulties to be expected are pest and disease problems, eg tse-tse fly, inadequate capital, and lack of understanding of how to manage animals.

Where the rural population density is still relatively low and there is an urban demand for milk, it may be possible to develop a smallholder dairying system. If sheep and/or goats are not already raised by the farmers it may also be possible to introduce these livestock into the system.

- (c) Sedentary cultivation systems These systems are the norm in regions of dense rural population such as the sub-continent of India, parts of South East Asia, the Caribbean islands, and parts of South and Central America and Africa.

In the least-densely populated areas the use of working cattle and/or buffaloes is widespread. In drier areas most farmers keep a few sheep and/or goats and some fowls, whilst in wetter areas the rearing of pigs and large flocks of ducks is common. Integrated systems with rice, fish and ducks are also viable in these areas.

Their development requires the introduction of improved breeding, feeding and management methods, and above all improvements in animal health.

- (d) Mixed farming In the wetter tropics animal production can and should be combined with tree crop production. This is particularly so in the coconut growing areas where ruminant livestock may be allowed to graze beneath the trees, but such systems can also be practised in fruit, rubber and oil-palm plantations. Alternatively, the fodder can be cut and carried to the livestock. (For tree planting, see Section 15)

Alternate husbandry systems are possible at higher altitudes in the tropics.

- (e) Livestock in urban areas With the migration of large numbers of rural people to the areas surrounding large cities, eg to "barrios" and "flav-elas", there is an opportunity for them to improve their diet by raising small animals. In the less densely populated areas the people can keep small numbers of sheep, goats, pigs or poultry and let them scavenge around the houses, whilst in more-densely settled areas poultry, rabbits and guinea pigs may be fed on waste foods and garden forage.

The possibilities for small scale Oxfam-supported projects are considerable, particularly in the provision of breeding stock and advice on feeding, management and control of disease and parasites.

3. Types of Farm Livestock

- (a) Camels The Bactrian or two-humped camel is of importance only in Central Asia. Dromedaries or one-humped camels are of major importance in the Sahel, Ethiopia, Somalia, Western Asia and the drier areas of the Indian sub-continent. They are being replaced as transport animals, but should be assured of a future role as a meat producing animal in very arid areas as they are the only domestic animal that can be used to exploit this environment.

There are two major types, riding camels and baggagers. A riding camel can transport a man together with 54 kg of luggage 48 km in one day. Baggagers can transport on average 200 kg for 24 km in one day.

Well-grown male dromedaries weigh 450-600 kg. Females are somewhat smaller. Under desert conditions a female can produce 1000 - 1500 kg of milk per lactation with a 3.8 percent fat content. Well-fed females may produce 2500 - 3500 kg of milk in a lactation lasting 16 to 18 months.

Both male and female camels are sexually mature at 3 years old and are normally used for breeding at 4 years. A male can serve up to 50 females during one rutting/mating season. On average one calf is born every 2 years.

Camels are exceptionally tolerant of heat and of water deprivation. They can lose up to 25 percent of their bodyweight and still survive. They prefer browsing to grazing, and require adequate quantities of salt in their diet.

In arid areas they are not particularly subject to disease or parasitic attack, but if moved into a tsetse infested area, they are very susceptible to trypanosomiasis.

- (b) Llamoids The llama and the alpaca are important domestic livestock in the Andean countries of South America. Both animals produce wool; the llama being used also for transport purposes. Their meat is somewhat similar to that of sheep.

Well-grown male alpacas weigh approximately 65 kg, the females being somewhat smaller. If milked, the females produce about 2 kg of milk per day.

Alpacas or llamas produce 1 - 4 kg of fine wool each year. The wool is particularly valuable as it is of a fine texture. The wool of vicunas is of even better quality, but the animals are now relatively rare and therefore expensive.

Male alpacas are first used for breeding when they are about 3 years of age. Females are usually bred at 2 years. Normally one young is born every two years.

Llamas and alpacas can thrive on very fibrous forage and do better than sheep at high altitudes in the tropics. They suffer from most diseases common to other ruminants, but are tolerant of foot-and-mouth disease.

- (c) Water buffaloes Oxfam has helped by providing revolving loan funds for the purchase of buffaloes, for example in India (Gujarat 61 and 47). There are two types of water buffalo: river and swamp. River-type buffaloes are found in the Indian sub-continent and as far west as

Italy. Swamp-type buffaloes are found in South East Asia as far east as the Philippines and Guam.

The river-type buffaloes are used for work, but they are also good milk producers. Swamp-type buffaloes are sometimes milked, but are used primarily as work animals. The major river-type buffalo breeds in India are the Murrah, Nili, Surti and Jaffarabaldi. Swamp-type buffaloes are designated by country name.

Good average female river buffaloes in India produce 2000 kg of milk per lactation with a butterfat percentage that varies from 7 to 15. Swamp buffaloes produce far less milk.

River buffalo bulls mature at 3 years of age, swamp buffalo bulls later. One bull can serve at least 50 cows per annum. Female river buffaloes mature at 3 to 3½ years, swamp buffaloes at a later age. Adult females usually produce two calves every 3 years.

The meat of mature buffaloes is coarser than that of cattle, but if they are well fed the meat of young buffaloes is approximately of the same quality as that of young cattle.

Buffaloes are not as tolerant of hot dry conditions as cattle and are better suited to hot, wet climatic conditions. They thrive best where water is available for swimming or wallowing during the hottest time of the day. They are more likely to survive floods and cyclones than cattle.

They can pull heavier loads than cattle and are superior workers in rice paddies.

Buffaloes are generally susceptible to the same types of disease and parasites as cattle, but they are more susceptible to rinderpest and less susceptible to foot-and-mouth.

- (d) Cattle The majority of cattle in the tropics are general-purpose, being milked, used for work and, where religion and custom allow, killed for meat. As they are not generally very productive, there is a trend towards the use of more specialised types, particularly for milk production purposes.

- (i) Dairy-type cattle The milk production of almost all breeds of cattle in developing countries is low averaging less than 700 kg per lactation. The most productive native breeds in the tropics are the Sahiwal, Red Sindi, Tharparker, and Kenanas, whilst good, more-or-less stabilised crossbred breeds are the Jamaican Hope and the Australian Milking Zebu. The Damascus is a good breed in Western Asia. Purebred, high producing temperate-type cattle are not normally suitable for use in the tropics unless they can be raised at high altitudes.

Under wet tropical conditions and on oceanic tropical islands, when the level of management is high, the best milk producers are crossbred ½-temperate type X ½-zebu cattle. Average production should be of the order of 2000 kg per lactation. In drier areas half-breeds are more suitable and under poor managerial conditions only a quarter-bred temperate-type animal should be used.

The more common temperate-type milking breed used for crossing is the Friesian/Holstein.

The most suitable and economic managerial system is one where the cattle are grazed at night, in the early morning and late afternoon, and kept under shade or indoors during the hottest part of the day. Indoor feeding and managerial systems, where the cattle are fed large quantities of concentrates are common but they produce expensive milk of interest only to the richer members of the community. This type of system will not normally receive Oxfam support.

Well grown female cattle can be mated first at 15 to 18 months of age, but it is usual for them to be older. Bulls are used for first service at 3 to 4 years of age.

- (ii) Beef-type cattle Under extensive grazing conditions, the most productive animals in subsistence systems are more likely to be indigenous cattle. When improvements can be made in feeding, management and health control, crossbred cattle may prove to be more productive.

Some of the best indigenous breeds are: the Hariana, Ongole and Gir from the Indian sub-continent, widely used in South America and part ancestors of American Brahman cattle, but not used for beef production in India; the Bali in South East Asia that provides very lean meat; the N'dama in West Africa that is tolerant of trypanosomiasis; and such breeds as the Adamawa and White Fulani in West Africa, the Boran in East Africa, the Mashona in Central Africa and the Africander in South Africa. Some exotic breeds that may be used, when managerial conditions are good, are the American Brahman and Santa Gertrudis from the United States and the Beefmaster from Australia.

Beef cattle on range usually grow more slowly than cattle in the temperate zone and average age at slaughter is 4 to 5 years. The feed lot system is neither practical or economic in most developing countries, where grain is scarce and expensive. The raising of beef cattle on irrigated forage is uneconomic everywhere, though it is often advocated.

- (iii) Working cattle Work ability in cattle depends upon many factors, including breed, sex, size, training, management, feeding and health. A good pair of bullocks should be able to plough 0.4 ha of land in two days to a depth of 20 cm, working 4 to 6 hours per day, and carry out all cultivation work during one year on a 6 ha holding.

Sturdy, compact animals with well developed muscles should be chosen. They can be trained in six to eight weeks, but should not be worked until they are well grown. In the tropics they should not be used for more than 4 to 6 hours a day and then either in the early morning or in the late afternoon. They should have access to shade and water when not working and unless their grazing is of very good quality they should be fed small quantities of concentrate feed. Cattle can be worked except prior to calving.

NB There is a major need for the design of light and more suitable equipment for use by working animals.

Diseases

Some of the major diseases of cattle in the tropics and in most other parts of the developing world are:

Trypanosomiasis: spread by tsetse fly. Prophylactic drugs are available but they are expensive.

Rinderpest: now being brought under control in most parts of Africa. A vaccine is available.

Contagious Bovine Pleuropneumonia (CBPP): still common in Africa. A vaccine is available.

Foot and mouth disease: still found everywhere in Africa and in some areas of Asia and South America. Vaccines are available.

Diseases transmitted by ticks such as East Coast Fever (only in East Africa) anaplasmosis and piroplasmosis: control by control of ticks.

Internal parasites: are prevalent everywhere. Control measures available.

- (e) Sheep Sheep are reared primarily for the production of meat and wool. In some countries they are also milked and in others their manure is of importance. Karakul sheep produce high quality pelts.

They thrive best in drier climates and when grazed on short pastures, though there are a few breeds that do quite well in wetter climates or even in swampy areas.

Sheep can be classified as thin-tailed, fat-tailed or fat-rumped, or as hair or wool producers. Some of the most productive meat-type breeds in the drier areas of Africa are the Fulani, the Sudanese Desert, the Somali and the Blackheaded Persian. In Western Asia there are many indigenous breeds and one - the Awassi - is an outstanding milk producing breed. Two of the more productive indigenous breeds in the Indian sub-continent are the hairy Nellore and the woolled Lohi. Breeds suitable for use in the wet tropics are the Black Bellied Barbados, the West African Dwarf (not exactly a dwarf animal) and the Thai or Malaysian. Nilotic sheep from the Sudan can thrive in swamp areas.

In regions where woolled sheep can be bred and standards of management are good, Merinos can be introduced for crossbreeding. The Dorset Horn and Wiltshire breeds may be used in crossbreeding for meat purposes. The Dorper, a Blackhead Persian X Dorset Horn crossbred, is a very productive meat breed for use in arid areas.

Females may be first bred at 10 months of age, but are usually bred at about 14 months. In the tropics they breed in any season but in higher latitudes they only come on heat as daylight lessens.

The largest indigenous male sheep in drier areas may weigh up to 70 kg but average mature weight is approximately 40 kg. Sheep acclimatised to wet tropical areas are usually small, often weighing only 18 to 25 kg.

Awassi ewes under good management have yielded up to 350 kg of milk per lactation. The ewes of most breeds, however, only produce about 63

to 80 kg of milk per lactation.

Indigenous woolled breeds of sheep may produce 1 to 4 kg of coarse wool per animal per annum.

Sheep are subject to a number of diseases such as bluetongue, Nairobi sheep disease - only in Africa, and sheep pox, and are usually particularly susceptible to the ill-effects of internal parasites.

- (f) Goats Goats, like sheep, thrive best in drier climates, but unlike sheep they are primarily browsers. Thus they can be herded together with sheep to advantage. They can thrive on coarser forage than can sheep but they are not as tolerant of water deprivation.

The goat has a bad reputation: it is considered to be destructive of vegetation and to be one of the main agents of range degradation. The real culprits however are the goat owners who allow their animals to destroy vegetation. Well controlled goat herds can suppress unwanted forage species and improve grazings. Alternatively, goats can be reared in pens constructed of indigenous materials and fed cut forage - as they are in many parts of Indonesia.

The primary products produced by goats are meat, milk and skins. One breed, the Angora, produces mohair.

Goats of the largest breeds weigh up to 70 kg, but the majority in the tropics are much smaller and weigh on average 20 to 25 kg.

Amongst indigenous goats, the Jumnapari from India possibly exhibits the highest milk production - about 200 kg per lactation when well managed. The majority of indigenous goats, however, produce only 60 to 80 kg of milk per lactation. One exotic goat that thrives quite well in the tropics is the Anglo-Nubian. This goat is capable of producing up to 900 kg of milk per lactation, but is unlikely to achieve this level of production in a tropical environment.

Female goats mature sexually at 4 to 6 months of age, but are best if not served until 12 months old. On average, females in indigenous flocks will produce 3 kids every two years.

One of the most serious diseases of the goat is contagious caprine pleuropneumonia (CCPP).

- (g) Pigs Pigs are an important class of livestock in some regions of the tropics, such as the non-Moslem areas of South East Asia or the Pacific Islands. They not only provide high quality protein food, but on account of their propensity to accumulate fat they also provide a high energy food. They are an important source of manure.

Often they are used as scavengers, running loose around the holding or in the forest. They are used also in very intensive integrated pig/methane production/fish pond/vegetable and fruit systems.

Often it is suggested that no effort should be made to develop pig production as they compete to some extent with humans for food. This is a mistake. If small quantities of concentrate feeds are provided, large quantities of inedible by-products can be converted by feeding to pigs into meat and fertiliser.

In scavenger systems only indigenous or three-quarter-bred indigenous pigs should be used, but in intensive systems there is probably an advantage in using commercial strains of exotic crossbred pigs. Preferably these should be Large White (Yorkshire) or Duroc crossbreds. The sows of some South East Asian indigenous breeds are very prolific and might be used with advantage for crossbreeding.

Gilts (virgin females) should be served when they are about 8 months of age, some experts say not before 12 months if it is planned to have two litters per year. Females must be de-wormed before mating.

Boars are sexually mature at 8 months of age but usually are not used until they are older. When mature they can serve at least 20 females per month; they should not serve their own daughters and they should be changed from time to time to avoid in-breeding. The aim should be to wean about 7 to 10 piglets per litter, each weighing 14 to 18 kg.

Pigs grow rapidly, and if well fed and managed they will weigh 50 kg at a slaughter age of 5 months. Some areas prefer heavier weights but it will be uneconomic to feed above 80 to 90 kg. Scavenger pigs will grow much more slowly, mainly due to the effect of internal parasites. It is, therefore, highly desirable that pigs should not be fed on the ground. They should be penned and each pen should have feeding and drinking troughs.

The following are some of the sources of feed for pigs: groundnut cake, rice bran, chaff from the grinding mills, boiled cassava, cotton seed meal, soyabean oil meal, market wastes (boiled), food leftovers from institutional dining halls (schools, hospitals, hotels), leaves and fruits from some of the fodder trees and shrubs, young shoots of pigeon pea, green vegetables and grass, maize, yam peelings, surplus sugar cane (chopped) and bananas.

The type of housing used for pigs in the villages is usually in need of improvement. Piggeries should provide about 3 square metres for each adult pig. Hard-surfaced (but not rough so as to damage feet) floors of brick, cement or pounded laterite are necessary for good drainage and to avoid an accumulation of mud in the pens. There should be an exercise area and it is helpful to plant shade trees around the piggery.

The major diseases of pigs in South East Asia are swine plague and hog cholera. The latter disease can be controlled by vaccination. African swine fever is important in Africa and has spread into adjoining areas. Pigs are very susceptible to the ravages of internal parasites. Kidney worm is probably a major cause of unthriftiness and lack of growth in scavenging pigs. It can be controlled if pigs are kept in clean pens.

- (h) Rabbits Rabbits have many advantages in the kind of circumstances in which Oxfam projects operate. They provide a good protein food, require only a low capital outlay, have high reproductive and growth rates, utilise many kinds of readily available materials as food, and have a good conversion rate of food to meat.

In general, they are trouble-free animals to keep if simple rules of management and hygiene are observed. However, many projects have failed due to lack of proper attention, so Oxfam field staff should view rabbit production with a degree of caution.

Local breeds, being adapted to the conditions, will often be the best to consider first when setting up a unit. It will probably be possible to improve their productivity by better management, good feeding, and selecting and grading up the males to a good meat production type.

If improved breeds are introduced, good meat ones are the New Zealand White, the Californian and the Flemish Giant.

Bucks mature at 7 months of age and does can be mated at 4 to 6 months, depending on the breed. One buck may be required for 2 to 3 does. The aim should be to have 4 to 5 litters a year with about 6 rabbits in each litter. The progeny can be killed at 4 to 6 months of age when, depending upon quality of feed and on the breed, liveweights will usually be in the range of 2.2 kg to 3 kg.

Emphasis should be placed on feeding locally available foods that are of little or no other value to man. In the wet season this will be easy since broad-leaved weeds grasses and vegetation generally are abundant. Leaves which can be used to advantage include banana leaves, vegetable wastes and agricultural by-products.

Good housing is important, but can be simple provided that it successfully excludes predators such as rats and snakes. A useful design consists of an open section with wire or split bamboo floor through which droppings can fall and an end section that can be closed at night. If available wire will be preferable to bamboo as rabbits can gnaw their way through the latter. If the cages are well raised from the ground, this will facilitate the collection of the manure for use on growing crops. Rabbits need dry, airy but draught-free conditions; their appetites and hence their productivity tend to be less good in high-humidity/high-temperature conditions. Therefore the positioning of cages and the provision of shade should be given careful attention.

The main disease problem is coccidiosis. Hygiene is therefore important, so where circumstances justify and permit, a coccidiostat (as sold for poultry) should be given regularly in the drinking water.

Religious and traditional social constraints may affect the successful initiation of village rabbit-keeping, so this aspect (or the alternatives, such as keeping guinea pigs) should be investigated before a pilot scheme is set up. For example, white rabbits are unacceptable in parts of India.

- (i) Guinea pigs The main varieties of guinea pigs are the Peruvian (very long-haired), Rosettes (long-haired) and Abyssinian (smooth-haired). The smooth-haired varieties are possibly better adapted to hotter climatic conditions.

Much of what has been said above about rabbits is relevant to guinea pigs, except that guinea pigs are usually hardier, and easier to manage. Females mature at 4 to 5 months of age; litter size ranges from 1 to 6, depending on the breed and the age of the female.

Guinea pigs are raised in captivity and sold for fresh meat in the Andean region of South America, where they are an important source of good protein in a cold and arid area.

In certain areas of Nigeria, domestic guinea pigs are popular as a

source of meat and are either caged or allowed to run around the main dwelling area with a open box for food in one corner. The latter system appears to work very well under these conditions, since guinea pigs are relatively docile creatures and it requires virtually no capital or labour inputs. Where schemes are devised for rabbit production, guinea pigs should also be considered as a viable alternative.

In some parts of the world, there are also other varieties of small herbivores which are reared for meat. These usually consist of indigenous varieties such as the Capybara in South America and the African Giant Rat (*Cricetomys gambianus*) in Nigeria. The establishment of programmes for the domestication of small herbivores, which might be more acceptable to the local people as a source of food, should be given consideration in the development of village livestock programmes.

4. Poultry

Poultry provides one of the most palatable and easily digested meats, and eggs are a good source of minerals, vitamins and protein but unfortunately are rarely consumed where they are produced.

Some of Oxfam's most encouraging experience in this field has been in Africa, particularly Zaire (ZAI 52) and Tanzania (TAN 64 and 81), and it is mainly African experience that is drawn on in this article. Oxfam has also supported poultry schemes in Latin America (BRZ 111, and chicken co-operative MEX 6).

- (a) Traditional poultry farming Most breeds of chicken come from a common ancestor, the jungle fowl of South East Asia. Chickens behave like birds of the forest: they dislike intense sunshine, preferring the shade of bushes, trees and houses, and they are not accustomed to low temperatures. The climate in many parts of equatorial Africa is ideal for poultry farming.

Every village in Africa has poultry, though traditional farmers do not feed the birds but expect them to find their own food. This method of poultry keeping results in low egg production and a high mortality rate. Of 15 hatched chicks, probably only one sound chicken will survive at the end of the year. Egg production from a hen living under these conditions will only be approximately 40 eggs per annum, whereas a hen from a selected laying breed which is given correct food and management may lay 180 - 200 eggs per annum.

- (b) Improved management Compared with most other livestock projects, poultry farming has the following advantages: it is not alien to most traditional villages; it can be introduced on a family basis; and it requires little capital. The hen has a short incubation period and potentially it is a prolific breeder.

The adoption of new stock by peasant farmers to improve egg and/or meat production can be approached in several ways:

- provision of improved cockerels to run with local hens, but all existing cockerels must be killed as they would be more aggressive than the introduced stock
- provision of chicks to farmers from a central distributor or hatchery
- provision of hatching eggs for local incubation if husbandry is good

Chicks are normally distributed at 6-8 weeks old to avoid problems with warmth requirements when they are very young, and to allow time for inoculating chicks against disease before distribution. The hazards of distribution at one day old are well illustrated by experience in Tanzania (TAN 6G).

- (i) Chicken pens and housing The ark system allows the keeping of up to 20 birds in a locally made portable unit which can be moved across harvested fields or vegetable plots providing access to insect life, plant material, seeds, etc., and distributing manure.

Poultry runs are fairly expensive to build if wire netting is used, and unless covered do not provide protection against hawks. The build-up of disease is a major problem.

Deep litter units are expensive but efficient if the standard of husbandry is high. The birds rely entirely on the care provided by the owner as they have no free access to food or water.

- (ii) Incubation To incubate eggs naturally, it is necessary to find good broody hens to sit on them. Such hens are rare among the improved breeds because broodiness has been virtually eliminated during selective breeding. The farmer may therefore need to maintain a small flock of native fowls or turkeys to provide brooders.

Artificial insemination is the norm in modern poultry schemes. Breeding stations will need electric or kerosene incubators designed to take, say, 200 eggs at a time.

- (iii) Vaccination and veterinary care All chicks need vaccination against Newcastle disease, fowl typhoid etc. In general, hygiene is of great importance in preventing outbreaks of disease. With pullorum (bacillary white diarrhoea) dead birds should be burned and hen houses disinfected or perhaps burned also.

- (iv) Feeding Use grain, cassava, oil cakes, crushed legumes, fish meal (in moderate quantities to avoid tainting meat and eggs) etc. Grit and oyster or snail shell is needed to help digestion and shell-making. Cost of food needs to be balanced against income from eggs and meat. 100 birds may consume 25 litres of clean water per day. The scheme should not be dependent on water carried for long distances by the women.

- (v) Marketing Eggs cannot be stored in tropical heat. Also the packing of eggs must be adequate to guard against breakage. Because the transport and packing of chickens presents less of a problem, small farmers may prefer to concentrate on raising chickens for meat.

- (c) Types of bird Broadly speaking, improved stock falls into three distinct categories:

- white egg layer (Leghorn type)
- brown egg layer (Rhode Island Red or Light Sussex type)
- tinted egg layer (usually a cross between light and heavy breeds)

The Leghorn type of bird is smaller bodied and a more prolific layer and requires a higher level of nutrition and management. For developing countries where the standard of nutrition may be marginal, and bearing in mind the meat value of the carcass, the heavy bodied birds (Rhode Island or Sussex) are possibly more suitable. Various breeds are available either as purebreds or more usually as hybrids, which are supplied by most progressive commercial hatcheries throughout the world. The Australop has been very successful as an exotic import for village poultry schemes.

- (d) Ducks The Muscovy duck is the most common type kept on any scale in tropical areas, and thrives under the toughest conditions. The females will lay up to three clutches of eggs in a year and are excellent brooders. The large size of the duck and its naturally slightly aggressive nature enables it to survive under haphazard management. Its egg-laying abilities do not compare very favourably with other highly bred species, but as it is mainly used as a meat producer, this is not of primary importance. It does not require access to open water unlike most other breeds.

One outstanding highly bred duck is the Khaki Campbell. Under good conditions of management, difficult to attain in many developing rural areas, they are capable of 300 eggs per year. Under adverse conditions such as high rainfall, high temperature, excessive humidity and poor housing, they can still exceed the best laying strains of chicken. They have the additional advantage of immunity to most disease problems prevalent among fowls and turkeys, and no vaccinations are needed. For small family flocks, they can be ideal. More vulnerable to predators than fowls or Muscovy ducks, they tend to wander in search of water, which the ducks need for constantly washing their bills as well as for other functions.

Indian Runner ducks are almost equal to Khaki Campbells in egg production. The White Pekin duck is a very efficient meat producer. The large Pekin, bred especially for meat production, is able to provide 3.5 kilograms of duckling in 7-9 weeks under good management.

Ducks can be profitably kept in conjunction with inland fisheries projects, where they provide a lucrative additional income. Their manure stimulates the production of plankton and phytoplankton within the fish pond.

- (e) Geese A pair of geese kept with access to green feed and water at all seasons of the year, such as is common in tropical climates, can produce 40-70 kilograms of meat for the family, yearly, for a period of 20 years or more.

Their reproductive life is much longer than that of any domestic fowl and their diet can consist largely of fresh growing greenstuff, such as grass, weeds or legumes.

A by-product of keeping geese and ducks is the soft downy feathers. These fetch a good price if separated from the coarse feathers and dried.

- (f) Guinea fowl They are more resistant to disease than hens, and provide a reasonable quantity of meat and eggs.

5. Bees

Beekeeping has long been practised in tropical Africa and parts of Asia. Traditional techniques of keeping local honey bees are generally appropriate to their environment and are satisfactory, except for the destructive method often used in collecting the honey.

Traditional beekeeping provides peasant farmers with:

- (i) honey - for home consumption, ceremonial use, beer-making, barter or sale

- (ii) beeswax - this has some important local uses and may be sold as a cash crop, but is often discarded
- (iii) pollination - hives of bees near fruit or seed-bearing crops can increase quantity and quality of the crop

In an Oxfam project in Kenya (KEN 2), it was estimated that 50% of farming families in some famine areas derived 50% of their cash income from bees kept by traditional methods. Other Oxfam-supported honey bee projects have been in Senegal (SEN 12), Lebanon (LEB 22) and Tanzania (TAN 48 and 64)

Beekeeping is said to have raised the standard of living by 10% in some parts of Latin America. There is also considerable potential in South East Asia, provided that problems of pests and diseases can be overcome.

- (a) Projects suitable for support Various attempts have been made to improve beekeeping systems in developing countries. Some have been very worthwhile; others have had limited success or have even been harmful. Projects on a small rural development basis are generally more beneficial than national ones: they are in more immediate and direct contact with the beekeepers and can be modest in capital outlay. They involve only teaching improved husbandry methods and giving assistance towards the acquisition of hives etc.

National projects are already under way in a number of countries, and at least one Government Officer is known to be involved in the following countries: Kenya, Uganda, Tanzania, Ethiopia, Senegal, Malawi, Rwanda, Burundi, Angola, Sri Lanka and India. National projects are often involved in extension work, research, and sometimes in marketing schemes. Marketing can be a real problem in the remote agriculturally marginal areas where there are many beekeepers, but few and poor market outlets. (See Section 37)

A project relating to processing, packing and marketing is not an easy undertaking and must be under the charge of a person knowledgeable in this field. If marketing collection is to be done on a co-operative basis, establishment of a honey co-operative is likely to be more successful than tagging honey on to an existing multi-purpose co-operative where honey may be regarded as of secondary importance. Oxfam has assisted a honey co-operative in Upper Volta (VOL 85).

In more developed and progressive areas, it is likely that people would derive greater benefit from assistance on bee management and honey production than on honey marketing. They may take the form of short courses on the use of modern, movable-frame hives. Workshops that produce hives locally can be of considerable value.

(b) Honey bees

- (i) Central Africa The indigenous honey bee is the same species as the European honey bee *Apis mellifera*, but is adapted to the tropics, where it is productive, but is also very easily alerted to sting, so its management can present difficulties.
- (ii) Tropical Asia Here there is a smaller species, *Apis cerana*, which produces only about one third as much honey as the African bee, but it is well adapted to its environment. It would be a mistake to introduce the African bee indiscriminately into Asia. Two Asian species (*Apis dorsata* and *Apis florea*) cannot be kept in hives, but honey is collected from them in the wild, throughout much of South East Asia.

(iii) Latin America There are no indigenous honey bees. European honey bees, *Apis mellifera*, were introduced 150 years ago, and the African bee in 1956. This caused much trouble because of its stinging, but it does produce larger amounts of honey. Stingless bees also produce honey in smaller quantities which is collected in the wild, and colonies are kept in hives in some areas.

- (c) Hives The comparatively high cost and complexity of movable-frame hives are often considered to be prohibitive in attempts to improve or to introduce beekeeping as a commercial venture in developing countries. Where the frame-hive has been used successfully, it has been under intensive supervision; they require precision in manufacture and use.

Cheap hives which have been successful under a variety of conditions are movable-comb hives without frames adapted from a Greek Lasket hive. One of the most advanced of these is the Kenya Top-Bar Hive, which is built like a trough with sloping sides. A queen excluder made from coffee wire (mesh 5 wires per inch) may be placed in the centre if desired. The movable-comb hive has the advantage over the fixed comb hive as the combs can be inspected and returned, and management manipulations carried out without damage to the brood and colony as a whole.

- (d) Economic return The economic return from beekeeping is good, provided there are adequate supplies of pollen close by. It should be possible for a beekeeper to pay off the capital cost of a simple hive within two years, or even after only one year. The recurrent costs are normally nil and the labour input only a few hours per hive per year.

In Kenya it has been estimated that 10 good hives of bees under reasonable management can earn in one year what a labourer would earn in the cities in a month. World prices for beeswax, of which there is a world shortage, and for honey are good.

The commercial use of honey bees for pollination should not be forgotten, but this is still in its infancy in the tropics.

- (e) Information In 1978 the International Bee Research Association prepared an extensive Bibliography of Tropical Apiculture, the work being funded by IDRC, Ottawa, Canada. A free leaflet listing the titles of the 24 parts, which provide access to virtually all the information available, can be obtained from the International Bee Research Association (IBRA), Hill House, Gerrards Cross, Bucks. SL9 0NR. Institutions in developing countries can apply on form BOTA/3a to obtain what parts they require, free of charge.

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For details of Information Sheets that are available on Oxfam-assisted projects, see Section 2, Appendix III.

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7. Checklist of Questions

- (a) If livestock is being introduced, what is the justification? To provide power? To utilise waste products and by-products and turn them into human food? To provide additional income where this is possible without competing with human food supplies? Have alternative livestock types been considered?
- (b) Will the introduction or expansion of a livestock enterprise compete with food production or consumption or with some other more marketable or more remunerative type of production?
- (c) Will management be adequate for the scale of development envisaged so that the environment is not adversely affected? Are the dangers of over-concentration of livestock fully understood, eg cattle around water sources, or of uncontrolled grazing on eroding hillsides.
- (d) Will there be adequate food and water for the type and numbers of livestock planned?

- (e) Will the manure be put to good use?, eg associating housed or yarded livestock enterprises with vegetable or fish production.
- (f) What veterinary and extension services are available in the area? Are there any particular pest or disease hazards in the locality?
- (g) If the introduction of exotic breeds or cross-breeding is planned, have the following points been given full consideration:
Why is the productivity of the existing animals of local breeds poor? Could it be improved by better health, nutrition and management?
If animals are introduced from elsewhere, could they adapt to local climatic conditions? Would they be resistant to local diseases? Would available food and management be adequate for their increased productive ability?
- (h) Have the implications for utilisation, storage or marketing of the livestock products been fully explored and thought through?
- (i) Can the capital outlay be met and justified?

Section 18 : FISH PRODUCTION

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1. Oxfam Practice

Fish can provide both a nutritionally valuable and an attractive high-protein food and a possible cash crop, if markets are readily available. Investment demands are modest and projects often can be integrated profitably with other farming and rural enterprises. Oxfam is, therefore, interested in encouraging fish farming as well as making greater use of natural sources of both freshwater and off-shore fish. This is an area of great potential, which has been neglected in the past, but it should, nevertheless, be approached with some caution. There are risks, particularly with new projects if they cannot be supervised by someone with specialised experience. Low-cost projects leading to low-cost food supplies for subsistence or sale are in line with Oxfam policy.

The types of fishing projects which Oxfam has already supported are varied and include:

- (a) Introduction of new species of fish from their natural habitats into communal farms or enclosed off-shore areas. There are many examples of types of fish successfully cultured in certain tropical waters which could be grown elsewhere. (TAN 99, fishing boats provided for village communal fishing on lakes and dams.)
- (b) Stocking new reservoirs, rivers, swamps or paddy with species which can survive even in polluted or saline waters. In Lesotho assistance was given to a village fishing scheme using mountain streams (LES 19).
- (c) Building or excavation of ponds for fish farming in conjunction with disposal of human, animal or vegetable wastes. (ZAI 78). A pilot scheme for village fish ponds, involving husbandry experiments and communal level management was successfully carried through in Malawi (MAL 31). Training and construction of a fish nursery was part of a project in Tanzania (TAN 112)

- (d) co-operative marine fishing, including locally-made wood and wire cages.
- (e) growing of rice and fish simultaneously in countries, such as Thailand, where this is traditional practice, problems have arisen owing to the use of pesticides on the rice which kill the fish
- (f) provision of facilities for processing fresh fish and their transport; storage; curing; and training for marketing. Help has been given by Oxfam to fish marketing schemes as in Tamil Nadu, India (TN 2).
- (g) collection of inedible fish and offal for fish-meal production.

2. Production

Production can be by:

- (a) fishing by traditional methods of net, line or cage from the sea or naturally stocked lakes, rivers and the sea
- (b) the deliberate introduction of fish into ponds, lakes, swamps, reservoirs or other permanent water supplies where they will be cultivated, fed and harvested by approved techniques. This is the main area of potential and of risk, particularly with regard to distribution, marketing and human as well as fish health.

In detail -

- (a) Fish from rivers, lakes or sea Applications for support in this category should include details of:
 - (i) type and acceptability of fish available at present
 - (ii) possibility of and any plans for introducing compatible and/or complementary species
 - (iii) risk of over-exploitation of existing stocks. This can be assessed from the history of fishing in the community, annual catches and seasonality of supplies.
 - (iv) type of boats already used; cost of maintenance and ability to service engines, if any; and opportunities for training in use of more efficient craft
 - (v) type of nets or cages in use or available with details of gear required
 - (vi) indication of local, specialised skills and need for further training in adopting or adapting entirely new techniques or equipment
 - (vii) organisation in operation, eg individual or collective enterprise and possible improvement within a co-operative or association
 - (viii) whether fish will be distributed locally; organisation for handling, processing, transporting and, above all, marketing by the fishing community itself

- (b) Fish farming Applications for assistance in this category should include all relevant information from above (a) and also:
- (i) water supplies: availability of, source, temperature - which is most important, possibility of pollution, whether acid or alkaline. Presence of trees or shrubs in area to be flooded. Type of soil, with particular regard to permeability, and slope of land.
 - (ii) indication of species to be introduced and whether co-operative breeding can be contemplated, or whether Government sources of stock are available, and at what cost
 - (iii) technique proposed for management, harvesting and dealing with catch
 - (iv) availability of food such as waste products, water weeds for herbivores whose droppings can be digested by other species
 - (v) knowledge of fish diseases and pests; predators
 - (vi) other benefits, such as the control of bilharzia which is particularly successful with the species, *Haplochromis millandi*
 - (vii) availability of guidance from someone already experienced in fish farming or opportunities for training in fish husbandry and supervision before the project begins

3. Practical advice

Fishing in natural waters, already stocked, may be improved by no more than the provision of facilities for supplementing traditional techniques, and advice on handling and marketing the catch. On the other hand, there may be opportunities to introduce additional methods of netting off convenient bays or areas of lakes and improving designs for timber and wire cages so that fish can be given supplementary feed. They will thus reach maturity more quickly and at the same time be protected from predatory fish.

Fish culture in artificial waters requires far more skill. The range of suitable fish is large and includes: tilapia, carp, catfish, milk fish, buffalo fish, yellowtails, mullet, eels, salmon, trout, prawns and oysters. Salmon and cod can now be bred and reared in fresh water. Ponds can be stocked with herbivores, plankton eating and bottom eating fish to make full use of all available foods and space.

In principle, all artificial waters can be regarded as ponds provided they are not too deep and are capable of being drained. Some waters are more nutritious than others. Evaporation can be high and water all-the-year-round is an essential.

Natural depressions can be used if they are capable of being filled with water and drained. In the case of artificial ponds, when soil is permeable, the bottom of the ponds can be improved by plastering with dung before filling.

Feeding of fish, or of underwater vegetation on which they can feed, makes for fast growth rates. Integration of fish farming and local agriculture has evident advantages. Manure should be placed in heaps over the area, and not spread around sometimes livestock pens are built over ponds. Vegetable material can be thrown in. If grain fodder is used, it should be pre-soaked so that it sinks. Maize, rice and beer wastes make suitable feeds, as do crushed maize cobs. Plants such

as green grass, Napier grass fodder, leaves of banana, cassava, papaw, sweet potato, cabbage and lettuce are all favoured; large leaves should be chopped. Feed points should be marked with poles and changed from time to time. Household scraps are usually satisfactory.

4. Types of ponds

Contour ponds are made on sloping ground with the water entering from a stream or conservation dam at the highest point. Walls are built at the lower end. Barrage ponds are preferred where a wall can be built along the side of the stream, each pond having its own inlet and outlet or overflow pipe. Paddy ponds are on flat land and require walls (bunds) to be built on all four sides.

When available, ponds may be treated with phosphate but pig, chicken or duck manure should be used if available. Cattle dung is not recommended. Pig manure at a rate of 1200lb to 2400lb per hectare per week is ample. Poultry manure at one-fifth of this rate is required.

There are immense opportunities for the culture of fish in rice paddy provided that there is no danger from chemicals used on the rice. One of the tilapia group of fish is the most popular. Pits or trenches should be excavated in the soil to retain water and fish for the next season whilst the field is drained for weeding or harvest. More fertiliser, in the form of green manure or night soil, is required for this integrated type of production.

5. Pests and diseases

In well-managed ponds, which are regularly drained, there should be little danger of serious disease or parasitic problems developing. All the same, disease is the most serious danger if sufficient care is not taken, once fish farming becomes intensive. Fungus diseases, such as gill-rot, may be introduced inadvertently through water inlets if these are not well protected. The incidence of gill-rot can be minimised by reducing feed intake in periods of exceptionally hot weather, particularly of organic matter.

Fish can 'catch colds' and suffer from anaemia and sleeping sickness. But most bacterial, fungal and parasitic problems will be avoided by good husbandry and the avoidance of over-crowding. The introduction of some saline water, such as the run-off after irrigating saline soils, is a useful prophylactic. Many species, specially carp, can tolerate slightly saline waters.

Routine drying-out of ponds and sluices will check diseases. If the bottom of the pond can be cleared and limed, the parasites and worms which attack fish should be kept under control. One of the greatest hazards comes from predators including other fish, birds - these can also introduce disease, and small mammals.

6. Marketing

Unless a fish project is intended only to provide food for the local community, marketing aspects should be studied before proceeding. In areas where fish are not a normal part of the diet educational programmes should be incorporated in the scheme.

If fish are to be sold fresh, great care must be taken in gutting them as soon as they are removed from the water. They should be kept as cold as possible, but refrigeration will probably be beyond the economic resources available. Alternatively, fish can be: sun-dried, dried in the sun after preliminary heating or smoking, cold smoked, or sun dried after salting.

It may be possible to set up a central transporting and trading agency, either with Government help or through a producers' co-operative. But when such an organisation is formed, it should have safeguards built in to avoid the possibility of exploitation by middlemen. There are, unfortunately, many examples of schemes failing either through take-over after initial success or through the appointment of a manager not experienced in trading at a higher level (see Co-operatives, Section 37).

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For details of Information Sheets that are available on Oxfam-assisted projects,
see Section 2, Appendix III.

8. Checklist of Questions

- (i) Are you satisfied that this project will be of direct benefit to the participants and/or their immediate poor community?
- (ii) Is off-shore or inland fishing traditional in the area?
- (iii) Has an outlet been established for the type of fish to be caught or farmed?
- (iv) Is there a production/trading manager available or could one be trained for the job?

- (v) Can equipment be regularly maintained?
- (vi) What steps are to be taken following the capture of fish?
- (vii) If pond fishing: is water available all-the-year-round?
Is there a danger of pollution or poisoning from
neighbouring trees?
What type of water and what is its temperature?
- (viii) What is the nature of the terrain and what type of soil
is involved?
- (ix) Would fish stocks be available from Government agency or
co-operative breeding grounds?
- (x) Could adequate supplies of vegetable matter, pig or poultry
manure be available for fish feeding?
- (xi) Is a fish diet already acceptable in the area?

Section 19: EXTENSION AND TRAINING

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1. Principles of Extension and Training

Education, at some level, is a major component of any development. It may even be the key to a project where expansion along existing lines is planned, such as where local people need help, for instance in increasing their efficiency of water application, bullock handling, or preserving and marketing their products.

The decision-makers concerned are principally farmers, but note:

- (i) this term includes many family members other than the head of the household, especially women in some societies
- (ii) decisions have to be made concerning many activities, not only those concerning farm production

These two facts must be taken into account when planning and providing training and extension services.

See also Non-Formal Education (Section 32) and Training (Section 33).

(a) General approach

In Oxfam projects education content must be primarily directed towards creating the means for survival of the whole community that has been identified as deserving help. It must take into account the social and political pressures on the participants, the continuing increase in rural population which is also often unbalanced by migration of the young and relatively active to the cities. It must consider the need to preserve natural resources and increase their productivity.

Education is a two-way process. To be effective the educators must understand the problems and perceptions of those they are concerned to assist. In fact Oxfam-sponsored fieldworkers will often be in the position of stimulating the decision-makers to identify their problems, and of creating the confidence as well as the knowledge necessary to solve them. Thus Oxfam projects may be concerned with extension and training programmes which range from stimulating thought processes and the will to act, through the direct transfer of appropriate knowledge to those already willing to learn, to the training of local teachers and extension workers. The ability of the people to continue the work after the discontinuation of a project assistance will be a major criterion by which to measure its success.

The focus and range of Oxfam's support for activities will be influenced by what the recipient country's government currently provides and plans. It will impress upon project staff that their intention at the end of a project should be to leave behind trained local personnel capable of expanding the impact and upgrading the quality of the programmes already established.

Extension and training programmes are most likely to succeed where the trainees either form natural groups of equal status or where these can be easily organised; group membership provides a sense of solidarity, a cross-fertilisation of ideas and the basis for economies of scale in the use of grants and loans.

Education activities are particularly difficult to appraise and to evaluate because returns include both demonstration and multiplier effects (see Section 8). However, calculations designed to establish what methods are likely to be most cost-effective in achieving clearly identified ends will often be necessary.

(b) Some Oxfam Experience

Many Oxfam-supported projects have an element of education, training or extension. The following are a small selection. In the case of short courses for farmers (BRA 94, YEM 6, RHO 10), Oxfam usually favours those which devote a large proportion of the course time to teaching farmers on their own farms or, at least, in similar circumstances nearby.

The same approach applies to rural training centres. For example some centres (eg RHO 8) place great emphasis on going out to the people. Experience in Zaire has shown that far more can be achieved in a centre where both living and working conditions approximate to those to which the students are accustomed than in more elaborate circumstances with relatively sophisticated facilities. A development from the simple, practical training in fish farming provided in Zaire is that farmers who have benefited have been inviting others to come to their farms to learn from their knowledge and experience.

More formal agricultural education and training will qualify for help from Oxfam in some circumstances:- a Boys Town in Sri Lanka wanted to widen its training by adding dairying and Oxfam agreed to a grant towards some of the capital investment required, but only after it had received an assurance that the training being planned would be at a level appropriate to the circumstances in which the boys would subsequently be working (SL 20).

It was felt that a course in India (BIH 1) did not have enough practical field work, but a strong point in its favour was that it was open to women as well as men. In another course involving women (MAL 7) a good feature was that students being taught home economics were also given some agricultural training.

Oxfam has given considerable support to INADES, an organisation which organises correspondence courses associated with village seminars in many African countries (eg. TOG 2, VOL 55, KEN 114, BUR 26 and KEN 82).

2. Types of Extension and Training Activities

Any one project may incorporate one or a combination of the following, depending on perceived and felt needs at the time of planning the project and the experience and choices of those involved as the project continues. Flexibility in content and methods of communication is essential. The components may include:

(a) Extension workers visiting farmers.

Farmers often understand their situation and problems better than they are able to express, and better than the newcomer is able to comprehend until a long period of familiarisation has elapsed. It is especially important to understand their objectives which may be complex, involving increasing the level of living, emulating or conforming with their neighbours, but above all securing their food supplies against a variety of hazards. Where useful communicable knowledge exists, the extension programme should start with components designed to establish customer confidence. These will be innovations:

- (i) likely to be conspicuously successful, eg. increases in income or reduction of risk
- (ii) requiring a relatively small proportion of the innovator's total resources
- (iii) causing minimal disruption to existing social relationships.

Thus a new seed variety that raises yield, without increasing risks of failure or requiring different cooking procedures, is likely to be a winner. Improvement of an existing implement is likely to be easier to introduce than a totally new one. While there may often be useful knowledge that can be transferred from one place to another, the subtle reasons why the people in one locality do things the way they do must be thoroughly understood before a really appropriate innovation can be introduced with confidence.

(b) Demonstrations These may take a variety of forms, depending on the subject, the distribution of learners and resources of the project. Generally speaking, demonstrations will be most successful

- (i) if they take place on the farmers' own land rather than at the demonstration farm itself
- (ii) the more closely demonstration conditions approximate to the conditions experienced by the potential adopter
- (iii) the simpler the subject being demonstrated
- (iv) the more often the demonstration is repeated
- (v) the more clearly the theme is expounded.

Above all, the attitude has to be overcome that this new thing does not apply to my situation.

(c) Reinforcement by other audio-visual aids

Depending on the locality, the literacy of the target population and the projects' resources, these may range from on-the-spot exhibitions, films, plays, to radio programmes, newsletters and magazines for mass contact. Choosing the most effective means of communication is a job requiring careful thought and probably specialist advice. It may be necessary to do action research to find the best medium and the best technique within that medium. See Varma "et al" in the Bibliography who demonstrate that seemingly simple pictures illustrating the use of rat poison may be completely misunderstood by villagers new to teaching-through-pictures. (See also Section 31).

(d) Research and development

This may be a pre-requisite to effective extension and training programmes. Too often the new technology available is not appropriate to the needs of the target group. It must first be tested carefully on site; quite often the adaptation of local practices will be more effective. Research and development can be expensive if it is to be effective: that is, it may be necessary to conduct statistical trials or to devote considerable time and capital to the development of an appropriate tool or machine and this is likely to be beyond the scope of an Oxfam project. While extensionists themselves might be inspired improvisers and should not be discouraged, major innovations need careful testing to guard against undesirable side-effects which might damage individual people, eg disease, social groups eg. increase income disparity or the environment eg. induce soil erosion. Because of the expense, research and development should ideally be done by government, but many governments are doing little that is relevant at local level, thus sometimes organisations like Oxfam can step in by encouraging simple trials. Such trials form part of the comprehensive, long-term Oxfam/CIDR project in Upper Volta (VOL 58).

A variety of ways of providing advice have been tried in different countries. There is probably no single best solution. Some communities may be most effectively stimulated through individuals they recognise as their leaders by virtue of social status, superior education, wider experience, etc. Other groups may best be stimulated through group discussion. Oxfam through the projects it works with will always be seeking that structure which attempts to combine speed of learning and dissemination with equality of access and response. Special care is required where the selection of local leaders is involved so that the result of an extension programme is not greater inequality within the community, as so often tends to occur in government-organised programmes.

3. Training Centres

(a) Functions. Oxfam favours village-level demonstrations but in-centre or residential demonstrations may be appropriate for funding by Oxfam where

- (i) there are special skills to be taught, generally through a short intensive course to a large number of individuals
- (ii) a set of immobile equipment can be used for a series of groups
- (iii) the information gained will enhance the value of another activity which is getting Oxfam support.

Short courses are particularly suitable for the training:

- of oxen and ox-handlers;
- of farmers being introduced to tree crops or irrigation methods can frequently best be done at an established centre in the first instance
- in the growing of crops and preservation and preparation of food can often be associated with a baby clinic where mothers can be taught the close connections between food production, feeding, hygiene and mother-care.

It is important that these courses should not be so long that the family members who would really benefit from them cannot be spared from the home and therefore dispensable or peripheral relatives are sent in their place.

Such centres may be expensive to establish, difficult to run to capacity, and almost invariably the trainees require follow-up monitoring and advice at their own farms and households. The integration of such centres into wider aspects of rural development may be crucial to the success of the overall programme; care is thus required in their siting, in the range of services offered, in linkage with government on the one hand and the structure of local society on the other and in the type and training of personnel employed. A training centre may be optimally sited if it is adjacent to a crop store, a shop where farm requisites can be bought, a saving/credit unit, and so on.

A final useful function for training centres that receive Oxfam support may be that of providing a steady supply of information that Oxfam can use and pass on to others:

- (i) about their own work and progress
 - (ii) about problems and the scope for further Oxfam intervention.
- (b) Staffing, teaching methods and administration. The details will vary according to size, functions and the way the training centre is funded. Nevertheless:
- (i) the staff chosen must not only be technically competent, but must be able to communicate with and gain the confidence of the trainees; their origin, personality and rank will all be important; impressive paper qualifications are not necessarily the hall-mark of a good potential teacher
 - (ii) teaching methods need to be focused on trainee participation, and courses must simulate the trainees' home conditions as closely as possible
 - (iii) wherever possible locally-respected people must be involved closely in general administration. This not only helps to ensure that the programmes chosen are worthwhile, but also to avoid animosity which might arise from suspicions that the centres are spreading bad advice, have ulterior motives, are providing help to certain factions, or that certain individuals will benefit at the expense of others.

4. Mobile Units

Much of the capital required for day or residential training centres can be provided by organised local labour. Mobile units require investment in transport. Nevertheless there may be a case for such investment:

- (a) where the subjects to be taught lend themselves to audio-visual aids, which can often be effectively blended with village entertainment so that all can participate
- (b) where a mobile unit can spread the improvements already being achieved in a concentrated project area over a wider area.

Mobile units have been used successfully in an Oxfam-supported project in Guatemala (GUA 12) to bring practical training to Indians in the highlands.

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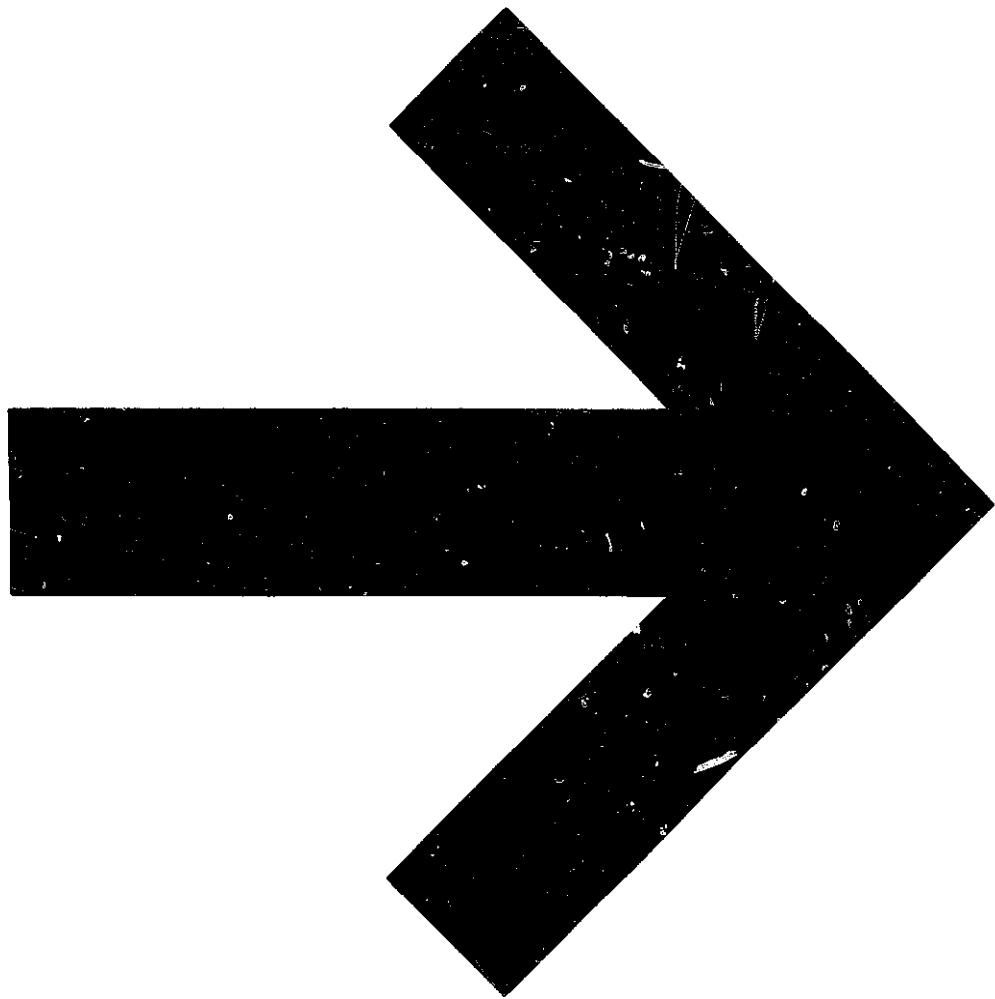
Specialist advice on extension can be obtained from:
International Extension College, 8 Shaftsbury Road, Cambridge, CB2 2BP

NOTE: Also see the bibliography for Community Development (Section 32), which includes references on extension and training that are relevant to agriculture.

For details of Information Sheets that are available on Oxfam-assisted projects, see Section 2, Appendix III.

6. Checklist of Questions

- (i) What kinds of knowledge will be most helpful to the target group?
- (ii) What methods are likely to be most cost-effective? - by what media, by what sequence of innovations?
- (iii) Are there solutions to local problems that are already available from outside sources, or is more progress likely to be made by stimulating the search for, and/or application of, internally generated innovations?
- (iv) If investment in research is envisaged, can it be justified in the circumstances?
- (v) What is the best organisational structure for relating the project's teachers to the people, which can be expected to lead to on-going enthusiasm for change, while at the same time avoiding excessively unequal benefits from such change?



Section 20: HEALTH GUIDELINES
 (as laid down by the Medical Advisory Panel in 1977)

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I. Introduction

Since the first set of guidelines were written in 1972 there has been an enormous change in thinking among the international bodies who are responsible for guiding the delivery of health care in developing countries. The view of Dr. Mahler at W.H.O. and books like "Health by the People" (W.H.O.) both reflect and promote this new emphasis towards the delivery of simple primary health: this is in contrast to previous emphases towards prestigious hospital complexes with high running costs. Associated with this move for simpler systems and wider coverage is the trend to involve the people themselves in their own health care. This community approach is increasingly reflected in projects coming to Oxfam.

The closer health care comes to the community it seeks to serve the harder it is to separate it from other areas of development. In fact all programmes aimed at changing the environment must be examined for their health implications. Irrigation projects may increase the risks of malaria and schistosomiasis infections. Social changes like villagisation in Tanzania may make health delivery easier but at the same time alter disease patterns; the effect of relative crowding may be to increase the incidence of T.B. and diarrhoeas.

Further the integration of medicine with community development as a whole means closer cooperation with government both at village and regional level.

Finally with a community approach the boundaries between different components of the health package become less clear. MCH and environmental sanitation, nutrition, etc, become parts of an integrated approach. While this trend has many advantages it does have the danger that specific sections of health such as for the handicapped, leprosy, T.B. and family planning may be neglected: so having once opted for the community approach it is important that the programme remains balanced and comprehensive.

II. Definitions

1. Primary Health Care (P.H.C.) is the delivery of basic curative and preventative health care at the community level: organisationally it includes all work at dispensaries and other static units, mobile clinics and small health centres: out-patients and community health programmes, etc, can be included under the Primary Health Care heading even if run from hospitals whose other functions would be classed as secondary health care. The services included in the P.H.C. are simple curative, MCH, nutrition, health education, water supplies, sewage disposal and other aspects of environmental sanitation, family planning, immunisation, and the training of paramedical health workers. The cost per head of the total population is usually low (£1 to £3, 1976).
2. Secondary Health Care: Rural or urban hospitals providing in-patient treatment of a curative nature or specialised facilities handling referral cases are classed as providing secondary health care. Cost per patient treated is usually high.
3. Community Health in the context of Oxfam's work is the delivery of primary health care to the community with the active training and participation of that community both in the planning and practical execution. Many so-called community health programmes are in reality merely public health extensions services with little community involvement. One aspect of community health now being tried widely is the village health worker (V.H.W.) or barefoot doctor. Community health is in theory the cheapest method of providing primary health care. The community can make material contributions through:
 - (a) provision of local accommodation facilities and semi or unskilled help;
 - (b) payment for services;
 - (c) local health insurance schemes.

Village Health Committees are usually formed to discuss problems and integrate health with related agriculture and socio-economic programmes ie cottage industries.

4. Thus Health Care can be broken down schematically:

(a) Primary Health Care

Nutrition (Section 22)
 Emergency nutrition (Section 51)
 Immunisation (Section 23)
 Sanitation and Water Supply (Section 24)
 Emergency sanitation (Section 56)
 Control of endemic diseases, ie T.B. and leprosy (Section 25)
 Maternal and child health (Section 26)
 Family Planning (Section 26)
 Training Health Workers (Section 27)
 Simple curative services and First Aid

(b) Secondary Health Care

Hospitals (Section 28)
 Poor patient funds (Section 40)
 Care of the disabled (Section 45)

III. Priorities

1. General: Oxfam's priorities lie firmly in the delivery of primary health care with the maximum possible involvement of the community. Geographically rural areas and slum areas of large cities have priority. In times of disaster however some of these criteria may have to be adapted to demands of urgency in relieving acute suffering and distress.
2. Specific High Priorities (not in order)
 - (a) The positive promotion of health with emphasis on the prevention of malnutrition especially in children of vulnerable groups. This should be linked with efforts to increase food production.
 - (b) Family Planning
 - (c) The training of auxiliary medical personnel, ie Village Health Workers; family planning workers; lab. technicians.
 - (d) Health Education (including all aspects of Primary Health Care).
 - (e) Immunisation.
 - (f) Rural outreach including mobile units but increasingly emphasising static units with possibly mobile supervision.
 - (g) Primary Health Care for slum and rural areas.
 - (h) The provision of adequate water supplies preferably linked to preventative health programmes.
 - (i) Sanitation; simple systems.
3. Low Priority
 - (a) Mental Health
 - (b) Dentistry
 - (c) Geriatrics
 - (d) Tertiary and postgraduate education.

For General Bibliography: see Section 21.

Section 21: PRIMARY HEALTH CARE : Infrastructure, Planning and DataContents:

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1. Baseline Study and Assessment

One important prerequisite for a successful programme is the formulation of clearly defined objectives, and sufficient data to check whether the objectives are being reached. For objectives to be set realistically some form of baseline study is needed: this study is also useful for later evaluations where change can be observed. A fuller section is in preparation on evaluation but in brief, data can usually be collected under four main headings.

- (a) Infrastructure: This measures the basic equipment of the health programme such as buildings, communications, personnel available, supply systems, etc.
- (b) Coverage: This involves both coverage of population and coverage of area. Examples are the proportion of children under five attending under-fives clinics or the number of patients with self-retained health record cards, the proportion of children immunised, the proportion of pregnant women attending antenatal clinics or the proportion of married couples of child-producing age who have adopted some form of family planning.
- (c) Quality: This is hard to measure but would include the correct diagnosis and treatment of illness; the availability of well-refrigerated vaccines, efficient use of mobile transport; effective home visiting by VHW, etc.
- (d) Vital Statistics: These are the hardest to measure and would include such things as change in mortality rates, drop in birth rate, change in the incidence or prevalence of individual diseases or malnutrition in the community, etc.

The community should be involved in setting the goals of the programme and in evaluating their own achievements.

2. The Infrastructure of Primary Health Care

(a) Support and supervision

It cannot be overstressed that any PHC system must have adequate supervision and support. However well trained medical auxiliaries or village health workers are they will achieve nothing if they are not regularly supervised and provided with essential drugs and equipment. Any project coming to Oxfam however small should therefore be seen in the context of the health service and infrastructure of the region or country as a whole.

Ideally, the basic unit of medical care should be a person with some medical skill, however little, in each and every village (village midwives, village health workers). In the absence of such people, an aid post can be visited weekly by a medical assistant and/or nurse. If neither of these is possible, mobile clinics may be operated as an intermediary step. Costing in 1972 showed that mobile clinics were four times as expensive per person treated than static clinics using VHW.

Larger units in the rural health service from which the individual villages may be visited are dispensaries and health centres. These will be staffed at least by a medical assistant and a nurse, and the health centre in particular will offer a complete health service (apart from the more specialised functions); it will carry out health education and perhaps do agro-nutritional work (Section 14); and it will service all the village workers and aid posts in its catchment area.

Transport linking together the various parts of this infrastructure is obviously necessary, but quite distinct from this is the operation of mobile clinics carrying staff, supplies and equipment and functioning as a self-contained unit for treatment or vaccination. There are two types of mobile services:

- (i) those that supply a curative service and some preventative service, ie under-fives
- (ii) those that supply a supervisory service for static units at village level

The first type of mobile service that Oxfam often funds usually is provided by a single vehicle carrying a team of medical auxiliaries (nurse, midwife, family planning worker, nutrition health education worker). There are regular stopping places, often dispensaries or aid posts, where the team works for a day at a time.

A survey of several mobile medical teams in Tanzania showed that typically they would make three day-trips per week, working at the base hospital for the rest of the time. About half the stops made by teams were at dispensaries, each one visited weekly or fortnightly. Other stops would be made at villages without any sort of static infrastructure, though sometimes local women were recruited to meet the teams at such stops and help with the unskilled work.

(b) Problems of mobile clinics

While mobile clinics provide a valuable interim service their limitations have become increasingly apparent since their inception

in the 1960s. Too much time is spent in arranging routine servicing and the replacement of vehicles. Too often vehicles break down and the schedule is disrupted, often eventually abandoned. Too much staff time is spent in travelling, and costs are high. Oxfam's consultant in Tanzania (TAN 68) concludes that the ultimate aim should be to have a static infrastructure providing the basic services. In evaluating mobile clinic operations, it may be helpful to ask the following questions:

- (i) How many children and pregnant women are seen per month?
- (ii) If any of the scheduled clinics were cancelled last month, give reasons why.
- (iii) Is the transport, storage and use of vaccine satisfactory?
- (iv) Are sterilisation and injection techniques good?
- (v) Are major illnesses spotted and referred correctly to health centres or hospitals?
- (vi) Do under-weight children improve under guidance and treatment?
- (vii) Is family planning being effectively carried out?
- (viii) Does the team keep to schedule, hold proper discussions with dispensary staff and keep proper records?
- (ix) Is there a move towards static units?

(c) Vehicles for Primary Health Programmes

Oxfam support for primary health programmes often takes the form of providing the vehicles used. The following questions should be considered:

- (i) What is the cheapest vehicle that will do the job? Land Rovers are expensive and their 4-wheel drive facility is rarely necessary.
- (ii) Can the vehicles be quickly repaired and serviced when necessary.
- (iii) What provision is being made for ultimately replacing the vehicle? Is there a depreciation fund? (Such a fund may be difficult to arrange because there is usually no income from the programme).

In view of rising fuel costs and the cost of vehicles, Oxfam cannot now supply conventional motor vehicles on the scale that was once possible. Wherever possible, motorcycles or scooters, pedal bicycles or even animals should be used. Health centres and other bases should be less widely scattered, so that use of these simpler forms of transport becomes feasible. A better service may result - excessive mobility can lead to a superficial approach.

(d) Record Keeping

Two types of record keeping should normally be encouraged -

Patient retained (Road to Health)
Hospital retained

Patient retained cards

The advantage of these are that:

- (i) The cards are available to any visitor to the home.
- (ii) The mother may go to another clinic or health centre: the health personnel will be able to see the health situation immediately (ie immunisation).
- (iii) Self-retained cards make for easier under-5 clinics: the mother arrives and the child can be weighed immediately and the result marked on its chart. If the record is only kept in the hospital, this has to be traced and dug out of records. Often names are the same, so patients' records get confused and lost.
- (iv) It is easy to go into a village and do a survey if the families are covered by home-retained cards.
- (v) As responsibility for health is increasingly placed on the community, it becomes more important that records are available at the periphery which Village Health Workers can use and monitor.

Hospital Retained Records

Hospital retained records are useful in giving an overall pattern of disease within the community, coverage, etc. Data accumulated should be the basis for planning and evaluating the programme as well as setting new objectives. This information is also useful for following up defaulters if this is possible. Special emphasis should be given to 'at risk' groups and records of these children and adults should be kept separately and revised regularly: these records can then be used to guide home visiting.

3. Guidelines for Community Health Programmes

- (a) Population of catchment area; description (ie tribal groups).
- (b) Brief details of geographical, climatic, agricultural and sociological background.
- (c) Map indicating terrain, communications and all health facilities of the area both voluntary and Government (this only need be roughly to scale).
- (d) What are the main health problems in the area and how many people are affected? Differentiate between adults and children (and different seasons if possible).
- (e) What are the underlying causes of these problems? (ie ignorance, poverty, large families, lack of immunisation, poor water management, lack of sanitation, etc.)
- (f) How does the community see its needs?
- (g) How do you intend to cure the problems and remove their underlying causes? How does this approach relate to the government programme? Be specific about the use of mobile services if any. How will they be related to static clinics?
- (h) How do you intend to involve the community both in the planning and implementation and financing stages?
- (i) How will you ensure adequate coverage of the population in your catchment area?
- (j) What staff do you intend to use? What form of training of para-medical personnel is planned? Will village health workers be used? What will be the sex distribution?

- (k) How will this work be financed? ie charges, insurance schemes. If no charges are made, why not?
- (l) What other work, Governmental and other, is taking place in your area? How does your work relate to theirs? If it doesn't, why not?
- (m) What will be the family planning content of your programme?
- (n) What baseline data do you have if any?
- (o) How do you intend to assess your programme?
 - (i) Infrastructure ie how many clinics started - personnel trained - drug supply system - transport, etc.?
 - (ii) Coverage ie what proportion of the target population in each category is to be reached? (ante-natals, under-5s, T.B. patients, proportion of children immunised, proportion of families accepting Family Planning).
 - (iii) Quality Good supervision, correct diagnosis and treatment.
 - (iv) By health statistics ie reduction of under-5s mortality, reduction of T.B. or measles incidence. These are often difficult and expensive to gather due to other factors.

Please state therefore what measurable improvements you hope to achieve.

4. Information required of Health Centres

- (a) Most of the above information about community health programmes.
- (b) Name and address of hospital/health centre.
- (c) Number of beds in each category.
- (d) Number of in- and out-patients in last 12 months. Breakdown of age, sex and cause (ie disease, maternal etc.)
- (e) Staff and their qualifications.
- (f) Staff training programme.
- (g) Departments within the hospital; how many people treated during the last twelve months in each.
- (h) Trends in attendance, ie up or down.
- (i) Average number of patients receiving free or reduced cost treatment per annum.
- (j) Record keeping system (samples).
- (k) Accounting system.
- (l) Distance from nearest other hospital/health centre.

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- * D.J. Halestrop, Simple Dental Care for Rural Hospitals, 40p.
Basic knowledge for a medical worker caring for dental conditions.
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- H.E. Hilleboe and others, Approaches to National Health Planning, WHO, 1972.
- H.S. Horn, Away With All Pests, Monthly Review Press, 1971. Graphic experience of being an expatriate surgeon in China shortly after the Revolution.

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Contact 48: Evaluation - Can it become Collective Creativity, Dec. 1978. For details of the publishers of Contact, see below under Journals.

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*David Morley, Paediatric Priorities in the Developing World, Butterworths, 1973. £3.00. Also available in French and Spanish. Alternative priorities to those suggested by traditional paediatrics.

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C.R. Swift, Mental Health, African Medical and Research Foundation (AMREF), Rural Health Series 6, 1977. A manual for medical assistants and other rural health workers.

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*D. Werner, The Village Health Worker, "Lackey" or "Liberator", Hesperian Foundation, 1977. 30p.

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Cicely Williams and Derrick B. Jellife, Mother and Child Health, OUP, 1972. £3.00.

For details of Project Information Sheets that are available on Oxfam-assisted projects, see Section 2, Appendix III.

The following organisations have extensive lists of publications available:

- 1) AMREF, P.O. Box 30125, Nairobi, Kenya.
- 2) Hesperian Foundation, Project Piaxtla, Box 1692, Palo Alto, California 94302, U.S.A.
- 3) WHO, Distribution and Sales Service, 1211 Geneva 2, Switzerland.
- 4) TALC (Teaching Aids at Low Cost), Institute of Child Health, 30, Guildford St., London WC1N 1EH.

NOTE: Books marked * are available from TALC (see above for address).

Journals

Contact, issued by Christian Medical Commission, World Council of Churches,
150 route de Ferney, CH-1211 Geneva 20, Switzerland.

Nature, published weekly by Macmillan Journals Ltd., Basingstoke, Hants. RG21 2XS.
Annual subscription £25.

Salubritas, quarterly in English, French and Spanish. Published by American
Public Health Association, International Health Programme, 1015 Eighteenth St.
N.W., Washington D.C. 20036, U.S.A.

Tropical Doctor, a Journal of Modern Medical Practice. Published quarterly
by the Royal Society of Medicine. Available from Academic Press Inc. Ltd.,
24-28 Oval Road, London NW1 7DX. Subscription £6.00 (UK) £8.80 (overseas).

WHO Chronicle, published by WHO, provides a monthly record of the principal health
activities undertaken in various countries with WHO assistance. Subscription
Sw.fr.45. Available from HMSO, P.O. Box 569, London SE1 9NH.

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Margaret Cameron and Ynve Hofvander Manual sobre Alimentacion de Lactantes y Niños
Pequeños. FAO/WHO, 1977.

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particular to aspects of community health. Available from: Rep. Argentina 9,
Mexico 1 DF, Mexico.

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Kangu, Zaire.

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on subjects such as "L'infirmier face au malade" (Brochure illustrée No.30)
and "Education Nutritionnelle" (Brochure illustrée No. 7), from Bureau
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Source de Progrès, Bureau d'Etudes et de Recherches pour la Promotion de la
Santé, Kangu - Mayumbe, Republic of Zaire, 1975.

EDICEF. Le Guide de la Famille, series of practical, illustrated booklets in French on subjects such as "La Bilharziose" and "Vitamines et Avitaminoses", with special relevance for Africa. From: EDICEF, 93 rue Jeanne d'Arc, 75623 Paris Cedex 13, France.

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Section 22: NUTRITION (excluding emergency feeding, Section 51)

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- I. World View and General Points
1. Globally malnutrition is the most prevalent cause of ill health. It is currently being experienced by around 500 million people at least half of whom are children: this figure is likely to rise.
 2. Malnutrition is multifactoral and in different circumstances different causes may predominate. It is important to distinguish these. Thus in an Indian village it may be landlessness, in urban areas it may be poverty or the early weaning of children by working mothers; among rural populations with land it may be ignorance, etc.
 3. The vicious circle of malnourishment and disease is common knowledge: the cause of both is often poverty.

4. Most malnourishment is due to a total lack of food (calories) rather than a relative lack of one or more ingredient(s). The implications of this are that the solution is a socio-economic one rather than a purely technical one.
5. The rise in population in all countries and urban drift both aggravate the overall problem.

II. Causes of Malnutrition

1. Poverty In developing countries people spend a high proportion of their real income on food: they are therefore very vulnerable to price fluctuation.
Because of the poverty of hungry people they cannot generate sufficient demands to allow normal market forces to increase supply. It is harder for poor people to obtain loans, advice and other inputs for improving food production.
2. Ignorance especially in (a) supplementing breast milk from 6 months onwards
(b) weaning habits
3. Inadequate production of food
Urban conditions where no land is available
Landlessness: the proportion of landless people varies from area to area
Agricultural techniques: appropriate technology and instruction is often lacking.
Storage facilities: up to 25% of food is wasted in storage in developing countries. Reserves are not built up after good harvests: this results in a failure to meet seasonal shortages.
4. The existence of vulnerable groups
 - (a) Babies and young children: these are especially vulnerable in the under-fives group, common problems being early weaning on to unsuitable foods and bottle feeding
 - (b) Pregnant and lactating mothers: these women have special needs and are often subject to repeated drains on their reserves by repeated closely spaced pregnancies.
 - (c) Large, closely spaced families have been shown to have a low calorie intake and to be more vulnerable to malnutrition.
5. Disease
Diarrhoea and malnutrition often form a vicious circle in children under five. Measles and T.B. are also commonly associated with failure to thrive. Repeated infections reduce the appetite of underweight children and may precipitate severe malnutrition.

III. Approaches to Tackling Malnutrition

1. The principal causes of malnutrition and at-risk groups in any circumstances must be identified. These at-risk groups may be the poorest section of the community or a certain age group within that community: often it is a combination of both.
2. Having identified these at-risk groups an appropriate project must be designed. It is important to realise that there is no panacea for malnutrition.

3. Emphasis should always be given to the prevention of malnutrition.
4. Supplementation of breast-feeding from 6 months of age on should be a priority. These infants should ideally have 3 meals plus breast.
5. Breast-feeding should be prolonged both for its direct food value and for its contraceptive effect with consequent child spacing.
6. Family planning and child spacing by other methods should also be encouraged.
7. Every effort should be made to improve agricultural techniques and especially the storage of crops. It is usually best to encourage people to grow more of their staple rather than introducing new crops: there are exceptions to this when the staple is deficient in protein or certain vitamins.
8. Where people are landless, projects should be designed to generate income and help given in identifying and purchasing cheap nutritious foods.
9. Efforts should be concentrated on encouraging people to grow their own food.
10. Welfare: there will probably always be cases needing food hand-outs and this responsibility should not be shirked: preferably hand-outs should be in the form of food for work programmes.

IV. Applied Nutrition Programmes

Introduction: Traditional methods of tackling malnutrition have often proved unsuccessful so it is especially important in this field to keep an open mind to new ideas and techniques. Wherever possible the responsibility for maintaining nutrition should be laid on the community itself. The components of nutrition programmes can be broken down roughly as follows:

1. Education
 - (a) Better marketing and buying
 - (b) "Right" foods especially for children: cooking: storage.
 - (c) Encouraging breast-feeding and discouraging bottle-feeding.

Education can occur at antenatal clinics, under-fives clinics, farmers' clubs, schools via Nutrition Scouts or Village Health Workers and at Nutrition Rehabilitation Units.
2. Encouraging gardening: provision of seeds, etc., especially among women: small-scale agricultural extension work. (See Section 14).
3. Provisions of supplementary foods
 - (a) at clinics
 - (b) at schools
 - (c) at creches
 - (d) at Nutrition Rehabilitation Units
4. Provision of care for the severely malnourished.
5. Agro-nutrition

V. Practical Examples

1. Under-5s Clinics

Early warning of malnutrition can be obtained from under-5s clinics where each child is weighed and has a "road to health" growth chart: weight gain on these charts is more important than the actual weight. Falling-off in the rate of weight increase or an actual loss of weight are early signs of malnutrition. When this occurs the cause can be identified and the mother advised and helped. This may entail education, distribution of food supplements, garden projects or all three. Malnourished children can be encouraged to attend weekly or fortnightly until progress is satisfactory. Wherever possible home visiting should be included as this enables the factors causing malnutrition to be better understood and thus prevented.

2. Nutrition Scouts

These were tried by UNICEF in East Africa and in Rhodesia at the Siliveria Hospital (now disrupted by military action) in an interesting variation of the Village Health Worker scheme. These scouts are local people and villagers trained to recognise malnutrition in its early stages. They are equipped with tape measures and quac sticks to check on the nutritional status of children by body measurement. They use bicycles to visit all homes within a 5-mile radius: they give advice to mothers of malnourished children and carry leaflets to emphasise their points. They can also refer serious cases to other workers and clinics. The low cost, home visiting and high coverage elements of this approach make it very attractive and one that Oxfam should certainly pursue further.

3. Nutrition Rehabilitation Units (N.R.U.)

The term N.R.U. has been used to describe several different entities: in general it implies a residential facility where mothers with their malnourished children come for a period of 3-4 weeks for the purpose both of rehabilitating the child and educating the mother. While N.R.U.s were high on Oxfam's priority list, evidence is now beginning to accumulate that results are not as good as was anticipated. This is probably because N.R.U.s are not run well rather than because they are intrinsically bad. As the main idea of N.R.U.s is to influence nutrition by educating the mothers of the treated children who then act as agents of change when they return home. If N.R.U.s are successful one would expect:

- (a) the children admitted to N.R.U. to remain well nourished
- (b) the siblings and relations of those children admitted to N.R.U.s to have a lower incidence of malnutrition than of other children of similar background and socio-economic status.
- (c) the general state of nutrition of children within the catchment area to improve relative to other areas not served by N.R.U.

While these changes are difficult to measure and hard to evaluate because other factors may influence change, nevertheless some form of baseline survey should be carried out before N.R.U.s are set up. Similarly a simple evaluation system should be built into the project: such an evaluation should attempt to measure the impact of the N.R.U. on the community as well as on individuals.

N.R.U.s should always be able to refer the children to someone when they are discharged from the Unit. This can be a village Health worker, a village Health Committee or an under-5 clinic. N.R.U.s without a system for following up children should NOT be funded.

Ideally it is hoped that in the future N.R.Us may act as part of the infrastructure for the village health workers network. Initially N.R.Us were developed as it became obvious that treatment of malnutrition in sophisticated hospitals had no effect in reducing the prevalence among the community. The basic elements which make up the N.R.U. are:

- (a) simple non-sophisticated surroundings as near to home conditions as possible.
- (b) the use of local foods.
- (c) a large input of nutrition education
- (d) the promotion of vegetable gardens.

Some of the main criticisms levelled against N.R.Us are:

- (a) the follow-up of children in the home is often inadequate resulting in recurrence.
- (b) the N.R.U. keeps the mother away from home or farm for a relatively long time.
- (c) the N.R.U. has no effect on mothers where the cause of malnutrition is poverty rather than ignorance.
- (d) vegetable gardens are only successful in certain climates and tend to fail in long dry seasons which are usually the hungry period.
- (e) at-risk groups are not identified.

N.R.Us vary enormously in important respect such as the average length of stay and the amount of home visiting and follow-up. Oxfam field staff should look at the results of other N.R.Us in their area: the important data not being what happened to the child whilst at the N.R.U. but what was the condition of the child and its siblings one year later. With the community approach it is hoped more and more cases of malnutrition will be treated in the home or at least on an out-patient basis, the emphasis being on the training of home visitors of the Village Health Worker type.

Where N.R.Us are approved the following guidelines may be useful:

- (a) Buildings: these must be as simple as possible.
- (b) Equipment: this should be simple and locally-produced (except scales, files and charts).
- (c) Transport for home visits and follow-up: often bicycles are adequate
- (d) Staff: these should be mainly indigenous but with visiting paediatricians/nutritionists.
- (e) Drugs: in theory ill children should not be admitted to the N.R.Us but most malnourished children have at least one concomitant illness. Really sick children should be transferred to hospital as a death is bad for morale and often causes a mass emigration of patients. It is often convenient to carry out the basic immunisations while children are in the N.R.U.

4. Creches and Daycare Centres

These are often provided for working mothers especially in urban areas: often both well-nourished and malnourished are admitted. The children are fed and given some form of nutrition education. The advantage of this is that it allows the mothers to earn and so afford more food: the disadvantage is that there is a lack of education content: well-run day creches should be encouraged.

5. Mothercraft and Mother Clubs

Both in urban and village communities these are part of the community self-help approach and can be a good base for helping the at-risk groups.

6. Nutrition Work Among Older Children

While the first five years of a child's life carry the heaviest toll of disease and death, the older child should not be neglected. School programmes however only pick up those that attend, which are usually the wealthier sector of the community. At present there is no agreed system for reaching the over-5s who do not attend school. This is short-sighted; good nutrition is especially important for girls in the 8-12 age group if short stature and subsequent obstetrical problems are to be avoided. Nutrition Scouts would be one means of identifying these older cases especially as the Scouts will have a "family unit" rather than the "age group" approach at clinics.

Nutrition Work at Schools

- (a) Education: nutrition and domestic sciences: agriculture: gardening and other food production. Family planning where allowed.
- (b) School Meals: this should have a low priority except in grave circumstances. It should always be phased out over a reasonably short period. These schemes tend to become dependent on outside funding and withdrawal is difficult. Therefore:
 - (i) Government and education authorities must be included in the planning and implementation
 - (ii) parents must be involved in the scheme
 - (iii) supervision and control is essential to prevent pilfering and injustice; as far as possible this should be local
 - (iv) the use of imported foodstuffs should be minimised wherever possible as transport costs are high. The food may act as a disincentive for local agricultural production, and imported foods lack educational value.
 - (v) the feeding scheme should be integrated into an education approach preferably involving local parent and farmer groups.
- (c) Screening by weighing, measuring and clinical assessment can usefully be carried out in schools.
- (d) School gardens may be developed, usually they are for education purposes rather than for providing food for the whole school.

7. Adult Nutrition

- (a) This usually has a low priority except in severe near-famine conditions when it is usually linked to food-for-work programmes.
- (b) Exceptions
 - (i) Lactating and pregnant mothers who need 750 extra calories per day
 - (ii) Anaemia in pregnancy: anaemia is probably responsible for more problems in pregnancy than any other single factor. Treatment is therefore a priority.

8. Domestic Science & Nutrition Education

At clinics, health centres, women's clubs, schools, etc., teaching should be as practical as possible with locally-produced visual aid material. Subjects to be stressed are:

- (i) Shopping: best buys to provide balanced diet with a limited budget. This is especially useful in areas where food is mainly purchased, ie Lima, Peru.
- (ii) Growing vegetables: for various minerals as well as significant amounts of protein and energy. This can have a significant effect on nutrition. See Section 14.
- (iii) Cooking: to make fuller use of family foods and to demonstrate the acceptability of unusual foods: improved cooking stoves may be introduced which may improve fuel consumption, often a costly item either in time or cash terms
- (iv) Food technology (Section 19): may be taught partly to demonstrate how foodstuffs are produced, partly to teach techniques which are usable within individual homes and sometimes to produce convenience foods which the project can sell to the mothers attending, ie dried vegetables (ZAM 22), cooking oil (ZAM 23) or macaroni (BRZ 102)

ANNEXES

VI. Basic Nutrition

1. Type of Nutrients

- (a) Carbohydrates (starches and sugars) provide energy for physical activity, body heat and functions.
- (b) Fats and Oils are a concentrated source of energy: stored as a reserve mainly under the skin.
- (c) Protein: needed for body building and maintenance. Can also be used as an energy source if carbohydrates and oils don't meet the body's calorie needs.
- (d) Minerals: ie iron, calcium fluorine, iodine and salt: small amounts of these are needed in the formation and maintenance of various tissues, ie bones (calcium), teeth (calcium fluorine), hormones (iodine), body fluids (salt).
- (e) Vitamins "vital-amines" small quantities of which are needed as catalysts in the production of body chemicals essential to growth and health, ie Vitamin A for preventing blindness.

TABLE OF CONTENTS FOR COMMON FOODSTUFFS

FOODSTUFFS	PROTEIN %	FAT %	CARBOHYDRATE %	VITAMINS MINERALS
Cereals	7-14	negligible	75	B vitamins, iron
Roots & Tubers	1-2	negligible	20	some B & C vitamins
Soya and Groundnuts (dry weight)	25-40	15-40	20	iron, calcium
Beans & peas other than soya (dry weight)	20-30	negligible	50	iron, calcium
Oilseeds, nuts	20	40-50	20-25	
Vegetables, fruits and immature pulses	2-5	negligible	little	carotene for Vit A, Vitamin C, iron, calcium
Animal foods	10-25	0-30	nil, except milk and liver	Vitamins A, D

2. Energy requirements: these vary with age, ie

<u>Age</u>	<u>MJ</u>	<u>Kilocalories</u>
0-3 months	1.7	410
1 year	4.9	1180
5 years	7.6	1800
Adult	12.6	3000

3. Protein requirements: these vary with age being proportionately higher in young children than adults.

This situation is complicated by the fact that different proteins have different nutritional values: this is because protein is made up of various essential amino acids. The closer the relative quantities of these amino acids match the relative needs of the human, the higher will be the value (or N.P.U.) of the protein. N.P.U. (net protein utilisation) is highest for animal proteins but certain vegetable foods complement each other, ie cereals and legumes. In practice this means that mixed foods should be encouraged.

Protein needs can either be expressed as:

- (a) grammes per kilogramme live weight, ie 3-3.5 gm/Kg for infants and 1.2 gm/Kg for adults; or
- (b) the percentage of energy or calories in the diet which is provided by protein (N.D.P. Cal %). For instance this is about 8% for older children and adults 5-6%. Most staple foods have an NDP Cal of 5% or over (cassava and ensete being exceptions) which emphasises that high protein supplements are only necessary in the very young and severely malnourished.

It is important to stress again that a proper balanced diet may still be insufficient in total calorie or energy content: if so the protein will be burnt off to provide energy and growth will be retarded.

4. Minerals and Vitamins: these are usually contained in adequate quantities in a normal diet. The routine use of vitamin pills should be discouraged. Much has been written about the lack of Vitamin A leading to blindness: it is certainly a risk among people living on diets deficient in milk products, eggs and green vegetables, and it is important to realise that Vitamin A is contained in the fat portion of milk and is therefore lacking in dried skimmed milk (D.S.M.): therefore where D.S.M. is used as a relief food, alternative sources of Vitamin A must be provided. As Vitamin A is stored in the liver, deficiencies may take some time to develop, early signs being roughening of the skin and a reddening and itching of the eyes proceeding to an opaque cloudiness. Where the diet is deficient, Vitamin A can be given in large doses at 3-monthly intervals (100,000 units: larger doses give longer protection but can be toxic).

Folic acid and iron are also frequently inadequate in the diet resulting in anaemia especially where other factors such as malaria and hookworm predispose the population to this condition.

VII. Common Causes of malnutrition

It is very important to realise that the commonest form of malnutrition occurs in children and is due to an inadequate intake of food rather than inadequate quality or lack of protein. The need is for more food or higher calorie or joules.

Following from this one must infer that:

1. in emergency feeding the emphasis should be to provide more of the staple rather than high protein supplements (except for the very young).
2. livestock projects may be justified on nutritional grounds but often the same land and resources would produce more food if used to grow cereals, legumes or vegetables. Converting plant food to meat or eggs is inefficient.
3. Food enrichment with proteins is usually not necessary except with cassava eaters.

Inadequate intake of food may be due to a lack of supplies but in view of the small needs of children who are the most common sufferers it must be presumed that behavioural factors predominate: ie lack of understanding of the special needs of the child in terms of frequency and quality of food and the problems of pecking order where the needs of the newly-weaned child are given a low priority. Malnutrition peaks in the second year of life when weaning occurs and special emphasis should be given to this age group in any nutrition programme.

VIII. Types of malnutrition

The most common and important types of malnutrition are:

1. Protein calorie malnutrition
2. Anaemia
1. Protein calorie malnutrition (or protein energy malnutrition) is classically divided into two types, marasmus and kwashiorkor although there is a spectrum which lies between these two.

- (a) marasmus is the most common and is due to a lack of food rather than a relative lack of one specific ingredient (ie protein or vitamins).

The appearance of the child is typically that of a matchstick type with very thin arms and legs and an old "monkey" face as well as a "baggy-pant" appearance of the buttocks due to loss of fat tissue.

Marasmus is often seen in very young bottle-fed babies and in breast-fed babies over 4 months who are getting no supplementary food. It is also common in the later stages of childhood, the under-fives group being the most vulnerable as it is in all forms of malnutrition. Marasmus is the classic malnutrition of famine and the hungry season: often it is related to repeated attacks of diarrhoea and other infectious diseases.

- (b) kwashiorkor used to be attributed to a relative protein lack but that hypothesis is now regarded as a simple view though the disease is certainly associated with a low protein diet (ie cassava and insete banana). The classical sign is oedema, or fluid in the tissues, which result in large abdomens and fat, puffy legs (if the child is walking) which "pit" (ie if a thumb is pushed on the top of the foot a dent remains after it is removed). The skin is often pale and rough and the hair may become lighter in colour and straighter in texture. Kwashiorkor is virtually never seen on breast-fed children but typically occurs at weaning. It is often associated with severe measles. Kwashiorkor is endemic in certain areas where insete and cassava are staple foods.

2. Anaemia. The prevalence of anaemia in tropical climates is well known. It may well be the single most serious complication of pregnancy and certainly causes a failure to thrive and increased vulnerability to disease in young children.

Causes: The most common causes are:

- (a) nutritional, notably where iron and folic acid are absent in the diet, thus reducing the formation of blood.
- (b) diseases which destroy the blood in the body, ie malaria or cause loss of blood, ie hookworm.
- (c) genetic. This is less important except in certain parts of West Africa where sickle-cell anaemia is common.

Approaches to prevention and treatment

- (a) diet: where food includes meat and green vegetables in sufficient quantities the iron and folic acid intake should be sufficient. It should be remembered that the iron content of breast-milk is inadequate after a child reaches 4 months. Where the diet is inadequate, iron can be given either orally or by injection, usually with the addition of folic acid.
- (b) prevention: this consists of treating worm infections and using public health measures to prevent them from recurring. Also malaria prophylaxis should be practised during pregnancy and early childhood.

IX. Assessment of malnutrition

1. P.E.M. (= Protein Energy Malnutrition)

- (a) anthropometry: this measures the state of nutrition of the individual and is an indication of what has happened in the past.
- (i) slowing of weight gain or weight loss: the evidence of inadequate growth is a more useful indication of malnutrition than a single low measurement.
- This can be demonstrated graphically on the "road to health" charts and is a cornerstone of the under-5 clinic.
- (ii) arm circumference is a less accurate measure but extremely useful for screening. The normal arm circumference of children between the ages of 1 and 5 years is fairly constant at about 17 cms. Low arm circumference indicate a loss of subcutaneous fat and muscle which in turn indicate malnutrition.
- (iii) weight for height is probably the most useful single measurement as it distinguishes between short, fat children and tall, thin children, both of which might fall into the same grouping on a weight for age basis. In spite of this the Gomez scale is still a measurement of weight for age.
- (iv) the O.U.A.C. stick involves the use of the arm circumference in relation to height and is similar in its purpose to the weight for height, but not as accurate: it is useful for screening and has the advantage of not needing scales.
- (b) present diet: some idea of what people are eating at the time of assessment is important.
- (c) reserves of food and cash/storage/harvest prospects: these all give some index of future trends. But it is important not to take too simplistic a view; many other factors like market prices, food-stuff imports, hoarding tendencies, etc, play a part.

2. Anaemia can be measured

- (a) roughly by looking into the inside of the lower eyelid for paleness
- (b) by pinprick using special paper strips and comparing the colour with a standard
- (c) standard laboratory testing.

X Priorities

The main approaches to tackling malnutrition are listed in earlier sections but may be summarised as:

1. aiming at vulnerable groups, ie children under the age of 5, especially during the second year of life; pregnant and lactating mothers; very low-income groups.
2. Self-help components with community involvement obviously have priority.
3. Use of local food.
4. Any programme should be closely linked with what actually happens in the homes of people with malnourished children: home visiting is therefore vital.
5. Income generating programmes are also of high priority especially in urban areas.

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1. Oxfam practice and policy

Oxfam's policy of encouraging preventative medicine leads logically to the support of immunisation programmes wherever this is the most effective way of controlling or eradicating a disease. Immunisation must not of course be viewed in isolation but as a part of the preventative armament. In practice, the stress in Oxfam's work has been on immunisation against:

- (a) D.P.T. (diphtheria, tetanus, pertussis or whooping cough)
- (b) polio
- (c) measles
- (d) tuberculosis
- (e) tetanus for pregnant women to protect the newborn child from neo-natal tetanus

With some other diseases, such as cholera and typhoid, immunisation can be important in controlling epidemics (as in Oxfam project KEN 78), but long term prevention of these diseases can be achieved more effectively and economically by securing better sanitation coupled with better water supplies. Thus Oxfam's policy on cholera, yellow fever, typhus and T.A.B. inoculations is that these should only be supported in exceptional circumstances, or when there is an emergency situation.

Oxfam has supported immunisation against T.B. in Nepal (NP 5) and India (IS 144); against measles in Zululand (RSA 19); and against measles and polio in Nigeria (NIC 8). In Korea, Oxfam was able to persuade one agency to change its emphasis from curative hospital work to preventative programmes covering B.C.G., polio, D.P.T. and measles vaccinations (KR 11).

2. Eradication or control

While it would be nice to imagine that a comprehensive immunisation policy would lead to eradication of the disease in question this is extremely unlikely to occur except in the isolated case of smallpox. Therefore with most diseases one's ambitions must be limited to keeping the incidence (number of new cases occurring) to a minimum or controlling the disease. This implies an ongoing commitment. And Oxfam must be sure that the indigenous health service will be able to take over the financial burden eventually.

The incidence and prevalence of a disease can be controlled by:

- (a) protecting individuals
- (b) reducing the reservoir of disease (ie in animals, insects and human populations)
- (c) educating people where, when and how the diseases are transmitted so that they make take avoiding action
- (d) other environmental measures, ie reducing the breeding ground of mosquitoes

3. Points to consider in assessing programmes

- (a) Individual vaccines vary in cost and in their ability to withstand warm conditions or long periods in store
- (b) Is immunisation being used in conjunction with other efforts to remove the disease reservoir, eg clean water, health education, domiciliary T.B. service, under-fives clinic, etc?
- (c) Are vaccines available locally.
- (d) Are there facilities for safe transport and storage, especially refrigeration? It is essential that a cold chain exists to bring the vaccine intact from the manufacturers to the patient: all the links should be checked. Does the clinic staff understand the different storage requirements of different vaccines?
- (e) Is the equipment and staffing adequate for effective and easy administration of the vaccine? Is the sterilisation of instruments adequate?
- (f) Has a reliable system of recording the immunisation been worked out? Eg 'road to health' charts for the under-fives?

4. Individual vaccines for general use

Vaccine	Storage	*Route & dose	Type of jet injector to be used
B.C.G. for T.B.	Refrigerator	intra. 0.1 ml	Pan-jet
Smallpox vaccine	Room temperature	intra. one drop	Pan-jet
Measles	Refrigerator	subcut. 0.5 ml	Port-o-jet
Polio live Sabin	Refrigerator	oral 3 drops	n.a.
Triple antigen (DPT) for diphtheria whooping cough tetanus	Room temperature or better in refrigerator	Intramusc. or subcut. 0.5 ml	Port-o-jet

* subcut. (subcutaneous) means that the vaccine is injected under the skin; intra. (intradermal) is into the skin. Polio vaccine is dropped on to the tongue - or on to a sugar lump. Some types of D.P.T. vaccine are given by intramuscular injection to avoid local reaction.

5. Method of administering vaccine

Syringes and needles are still the most commonly used, but under certain circumstances, the improved jet injectors or guns may be applicable. The jet from these penetrates the skin without the use of a needle.

(a) advantages of jet injectors

- (i) rapid administration, especially by the port-o-jet
- (ii) low cross-infection; therefore the risk of hepatitis is diminished

(b) disadvantages

- (i) need for good maintenance and regular checking for accuracy of dose
- (ii) limited range of applications, especially the pan-jet
- (iii) costs, especially of the large types (eg the port-o-jet)

(c) types of jet injector or gun

- (i) the Pan-jet (an updated version of the Dermo-jet); about the size of a pen torch; can only put 0.1 ml intradermally; cost in 1973 was £43.
- (ii) The Port-o-jet (the American version is the Ped-o-jet); more versatile and about the size of a suitcase; can put up to 1.0 ml subcutaneously; can vaccinate up to a thousand people an hour; ideal in crowded communities and camps, but not in small clinics; cost in 1973 was £375.

6. Emergency situations

- (a) Under certain circumstances, such as flooding, refugee camps, the risk of epidemics caused by overcrowding may make it advisable to vaccinate the population against enteric diseases T.A.B., cholera.
- (b) Where there is a lack of clinics to run vaccination programmes, there may be a case for a specialised team, ie from WHO to run immunisation for one disease at a time. This was done successfully for smallpox and T.B. in Zaire. At the time of writing smallpox has been eradicated from the globe except in Somalia and possibly neighbouring Ethiopia.

7. Schedule of immunisations for children born in the tropics (as recommended in 1974).

(a) Neonatal period

B.C.G. vaccination; smallpox in areas of high risk; babies seen with an unhealed umbilicus in unhygienic circumstances should have anti-tetanus serum. Issue record cards; inform parents of subsequent immunisations.

(b) At 1-2 months

First D.P.T. and polio vaccinations; B.C.G. if not already given - otherwise check whether the neonatal B.C.G. was successful.

(c) 2-3 months

Second instalments of D.P.T. and polio; smallpox vaccination if not already done. Check previous B.C.G. vaccination.

(d) 3-4 months

Polio; ensure that all immunisations have been recorded. Check scar of earlier smallpox vaccination.

(e) 8-9 months

Measles vaccine. Warn parents about reaction (7-10 days) later.

(f) Finally, a booster dose of D.P.T. and polio may be given when the child is 18 months to 2 years old. All immunisations should have been recorded on a suitable card at each stage.

8. Benefits of measles vaccination

The severity of measles is well known to health workers in those parts where protein-calorie malnutrition is a problem. Not only is it a killing disease with a case fatality rate between 5-20% for hospitalised children, but it also predisposes children to many months of ill-health. It is often the precipitating factor in the development of kwashiorkor; a third or half of all children with this disease have had measles in the preceding few months. Measured in cost/benefit terms, measles vaccination has been regarded as the most effective and worthwhile health measure which it is possible to take in many countries.

9. Measles vaccination: precautions and problems (1974 recommendations)

Measles vaccine is expensive. It is also a very unstable compound which deteriorates rapidly at normal temperatures, or if exposed to sunlight, or if brought into contact with heavy metals. Because of this immunisation often fails to give protection. We have a simple procedure arranged with Great Ormond Street for evaluating measles vaccine programmes: the Medical Panel has approved that 10% of money granted for measles immunisation can be spent on evaluating the results.

- (a) Refrigeration: The vaccine should be stored at 2° - 5°C; note, not in the freezer compartment of a refrigerator which is too cold. Transport in an efficient cold box or bag, or pack with a plastic bag containing ice cubes.
- (b) Handling Because periods spent outside the refrigerator, in transit or in preparation for use, must be kept to a minimum, vials of not more than 10 doses should normally be used; except in a mass vaccination campaign where there is adequate staff for quick handling. Other precautions:
- (i) do not dilute vaccine until all patients are present so that it can be used very quickly
 - (ii) do not vaccinate in bright sunshine
 - (iii) use glass syringes or disposable plastic ones; avoid metal
- (c) Dilution rates One-third, or even as little as one-fifth of the recommended dose is given in some clinics. The saving in expense may justify this where the policy is to keep costs down to spread benefits widely. The

diluent supplied by the maker should be used, necessitating the ordering of extra diluent. There are difficulties in diluting vaccine in the field, and it is currently agreed that more lives and some money would be saved by insisting on a dilution not greater than 1 : 2.

- (d) Age of immunisation It is generally agreed that immunisation should not take place earlier than 9 months because maternal antibodies would interfere with the immune response: on the other hand immunisation should occur before 18 months as this is the peak period of incidence.
- (e) Price of vaccine The price of measles vaccine has been very high but recently has begun to fall. One must expect to pay about 20p for a full dose as a minimum.

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NB See also Bibliography for Primary Health Care, Section 21.

For details of Project Information Sheets on Oxfam-assisted projects, see Section 2, Appendix III.

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I. INTRODUCTION: WATER SUPPLIES, SANITATION AND PUBLIC HEALTH1. General aspects

Many illnesses in the developing countries are caused by pathogens in human and animal excreta reaching people through their mouths. Water is a major factor, but it is a mistake to regard the provision of a highly pure water supply as the solution to all health problems of this type. Hygiene is often more important and if an improved water supply makes better hygiene possible, the health of users will benefit even if water is not as pure as one would wish. In general, an improved water supply will not yield all the expected benefits in health unless it is accompanied by other improvements, such as:

- (a) better personal hygiene
- (b) better food hygiene
- (c) improved disposal of waste (sewage and refuse)
- (d) control of insect carriers of disease (eg mosquitoes)
- (e) better housing

2. Water-related illness: a classification

- (a) water-borne infections - due to bacteriological pollution in water; eg cholera, typhoid
- (b) water-shortage diseases - due to poor hygiene: eg skin infections, trachoma, some intestinal and diarrhoeal infections
- (c) other water-related diseases: infections which develop in aquatic animals, eg bilharzia (schistosomiasis), guinea-worm and diseases transmitted by insects which breed or live near water, eg malaria, sleeping sickness, river blindness

3. The diarrhoeal infections and hookworm

In the past there has been a tendency to think rather loosely of a wide range of diseases as 'water-borne', including hookworm, dysentery and gastroenteritis. People have therefore thought of the provision of a pure water supply as an important preventative measure in all these cases. While impure water may be the factor, hookworm is more often caused by the contact of a person's skin with soil on which human faecal material or sewage has been deposited, as when the person is walking barefoot.

Gastro-enteritis and dysentery may also sometimes be caused by impure water, but these infections are most often transmitted by handling food or utensils with unwashed hands, or by failing to sterilise babies' bottles. So they go in category (2b) above - diseases due to poor hygiene.

With all these diseases, human excreta is the major source of pathogenic organisms. Proper facilities for sanitation confine these organisms so that they cannot so readily pollute the soil, water sources and food, and so that flies cannot so readily carry infection from excreta to food. In rural areas, simple pit latrines plus water to wash with will usually meet this need very effectively.

The key importance of hygiene should always be stressed; frequent washing and good food hygiene will greatly limit the spread of diarrhoeal infections even where sanitation is inadequate.

Bilharzia (or Schistosomiasis) is caused by a parasite which spends part of its life cycle in man and part in a common type of water snail. Prevention of the disease may be attempted by attacking the snail (eg with chemicals), by preventing the infection from reaching the water at all, (ie hygienic disposal of faeces and urine), or by keeping out of the infected water. The organism can penetrate human skin, so the disease can be contracted by bathing, or by wading in irrigation water.

4. Rural priorities: better hygiene

In most rural areas, the diseases which result from inadequate hygiene are far more prevalent than water-borne diseases. Poor hygiene is often associated with a shortage of water in the home for washing, so the provision of a supply giving a larger volume of water nearer to people's homes is usually more relevant than whether the water is fully purified; but note, this applies only to rural areas - seek medical advice when in doubt.

5. Safe water and urban supplies

The level of bacteriological pollution in water is measured by determining the number of coliform bacteria in samples of the water. Bacteria of this type reach the water from human and animal excreta, but do not in themselves cause disease. However, where these bacteria are present, there is always a risk that disease-causing organisms will also be present.

In a very sparsely populated area, a high level of pollution as measured by a count of faecal coliform bacteria may carry a relatively low risk for those using the water. In an urban area, or in a large refugee camp, the same level of pollution will imply a much more serious risk.

In general the risk from water-borne infections (category (a)) increases as the population density rises and the number of people using any particular water source becomes greater. It could therefore be a mistake to tolerate relatively low water quality standards in the way that is possible in rural areas. An urban water supply should always include chlorination or some other dis-infection process.

II. WATER SUPPLIES FOR HUMAN USAGE

1. Oxfam practice and policy

- (a) Oxfam's declared policy is to support the provision of adequate and clean water for specific purposes, eg.
- (i) hospitals, clinics (and schools)
 - (ii) villages, people in rural areas generally (small-scale only)
 - (iii) water supplies linked to preventative health programmes
- (b) Practical objectives in developing an improved water supply are as follows:
- (i) to make water readily available to users so that it does not have to be carried long distances
 - (ii) to supply water in adequate quantity in order to encourage personal and household hygiene
 - (iii) to supply water which is as safe and as wholesome as possible, given the need to keep within 'reasonable' cost limits (see paragraph 9 on costs)
 - (iv) to supply water that is cheap in terms of maintenance
- (c) Social objectives in water supply projects include making people more aware of the importance of hygiene and other health precautions, and making them more conscious of what they can achieve through communal self-help. The latter is often the most important of all - see Section 36.
- (d) Self-help Oxfam requires the use of self-help methods and voluntary labour in the construction and maintenance of village water supplies, but not to the exclusion of drilling rigs and other equipment where these can make a programme substantially more effective. Drilling rigs have been used extensively in India (eg IS 62), Sudan (SUD 12) and elsewhere.

2. Benefits of 'integrated' projects

The benefits expected from an improved community water supply are:

- (a) water nearer home gives a saving in the time spent carrying it
- (b) more water means an opportunity for better hygiene; this can lead to better health, added to which there may be health benefits from having a cleaner supply
- (c) the experience of communal self-help in installing an improved supply can lead on to other self-help projects, as in Oxfam's Lesotho water scheme (LES 16), where domestic water supplies were followed by local initiatives in road-building, vegetable growing and soil conservation

Installation of a new water supply provides opportunities in these three ways, but does little to ensure that the opportunities will be taken. So other inputs may be needed before the benefits of the new facility are fully realised. For example, some kind of extension effort may be needed to divert the time saved in carrying water to the agricultural or other tasks where extra effort is needed. If more water is available for household use, some kind of health education must be provided to make people aware of the improvements in hygiene which are open to them. Better hygiene and purer water will lead to improved child health and reduced infant mortality, so that some kind of family planning input may be relevant. In addition, if the people wish to follow up the project with other self-help work, facilities should be available to support them.

Because of poor employment opportunities in many countries, it may appear that time saved in carrying water is a very marginal benefit. But it is usually women who carry the water, and training or extension work aimed at women often fails because they have insufficient time to spare (see Section 34: RURAL TRAINING).

In many areas, temporary labour shortages occur in agriculture during short periods in the growing season or just prior to it. The writer has estimated that in certain African communities, if all the time spent in carrying water during the appropriate season could be diverted to weeding, food production could increase by 10%.

In all these ways, the improvement of a community water supply will yield the best results when planned in terms of an integrated form of development, with parallel inputs related to agriculture, health, women's training, and further self-help programmes.

3. Human factors in water projects

- (a) Participation of local people

Where rural water projects have failed, this has often been because insufficient allowance has been made for the local people's needs, preferences and interests. Occasionally, people have largely ignored an improved water supply and have continued to use traditional water sources. Very frequently, they have not taken care of the new installations or carried out simple maintenance tasks entrusted to them. Either situation may arise if:

- (i) the improvement has not been adequately related to

the people's needs as they themselves perceive them

- (ii) the installation is purely the result of outside intervention and the people do not feel that it is theirs
- (iii) the taste or hardness of water in the new supply is disliked.

Golden rule No rural water project is likely to be successful unless it arises from holding village meetings, listening to local views, and involving people through the use of a self-help approach. It is especially important to involve school teachers, young people, and all those open to new ideas.

(b) Maintenance and logistic support

The division of responsibility for maintenance between central government and village varies according to circumstances and technology but some responsibility for maintenance nearly always rests with local people, and much depends on whether they feel involved as discussed above. Questions to be answered are:

- (i) will the community maintain an interest in seeing that the work is done?
- (ii) who in the village shoulders particular responsibilities?
- (iii) is any training needed?
- (iv) are any tools or spare parts needed?

Similarly on the government or agency side the management must be efficient to ensure that

- (i) the correct technology is applied in the first place
- (ii) that there is adequate back up in terms of
 - (a) advice
 - (b) maintenance
 - (c) equipment, spare parts etc.
 - (d) evaluation

(c) Scale

Large projects may bring economies of scale, but the most effective project will usually be one whose scale is matched to the local community's capability for managing and maintaining the system. Beware of over ambitious self-help projects in which people become discouraged before anything is completed. Consider also what happens if the new system breaks down. It should be borne in mind that simple improvements of the existing system, ie boxing of springs, obviously calls for less adjustment than newer technologies.

(d) Household level projects

As well as water supplies which are a community responsibility, opportunities for encouraging individual household supplies on a do-it-yourself basis should not be overlooked. Tanks collecting rainwater from individual roofs may provide very clean water, and very near to the point of use - see paragraph 5(a).

4. The choice of water sources

In nearly all areas, domestic water can be obtained from surface water or by collecting rain-water from house roofs. In many places, there are also springs or opportunities for wells. Criteria for choice among these sources are:

- (a) safest water at reasonable cost
- (b) reliability and volume of supply
- (c) water conservation problems: see Section 12 on WATER CONSERVATION
- (d) consumer preference - some water, groundwater especially, is unpleasant to taste, and some is hard for washing
- (e) ease of maintenance

The extent to which a source provides 'safe' water can be estimated by a series of bacteriological tests. Relatively simple methods of making these tests are now available - see paragraph 8 - but in the absence of tests, the following can be taken as a rough guide:

- (a) sources with low risk of water-borne disease given standard precautions: bore-holes, tanks collecting water from corrugated roofs
- (b) sources with low risk only with stringent precautions against pollution in very sparsely populated areas: hand-dug wells and springs in rural areas
- (c) sources often presenting a high risk of water-borne disease: rivers and dams; hand-dug wells without adequate precautions

5. Catchment tank projects(a) Roof catchment tanks

Often the simplest means of providing a really clean and convenient supply in a rural area is by means of tanks collecting water from roofs. Galvanised iron tanks are common, but where possible use concrete tanks or butyl linings held in frames.

In many instances the roofs of a village school are extensive enough (eg 20 metres by 30 metres) to provide a basic drinking water supply for perhaps a hundred people. Tanks of large enough capacity are best constructed as lined excavations or with concrete blocks, as has been done in Ghana. Precautions may be needed to prevent mosquito breeding, eg gauze over inlets.

- (b) Catchment tanks for surface water collection; also known as "hafirs" (Sudan), 'cisterns' (USA, Israel) and 'water harvesters' (Rhodesia). Oxfam Projects BOT 4 and BRZ 10.

These are pits dug in the ground to collect the water which, during heavy storms, runs off hard ground surfaces (school playgrounds, grazing land, or specially treated ground). The same type of tanks may also be used for collecting rainwater from roofs.

The problem is to make these pits hold water - in many cases a water-proof lining is essential. Several types of lining have been used

including butyl rubber, polythene and cement, concrete, etc. Tanks also usually need to be covered to cut down evaporation losses, to stop dirt getting in, and to stop mosquito breeding.

Catchment tanks have considerable potential in the drier parts of the world, but so far, few projects using them have been entirely successful.

6. Groundwater

- (a) Springs Where springs exist and flow throughout the year, water can often be piped from them at very low cost and with simple equipment (LES 16, MEX 28). In planning the supply, check flow from the springs at the end of the dry season when it is at its minimum. Ensure adequate protection of the springs from pollution by cattle etc.
- (b) Wells and boreholes raise many questions about water resource development and conservation. See Section 12.
- (c) Pollution of a clean well can easily occur, and the following precautions should be noted. These precautions have not been fully maintained in all Oxfam projects (GHA 26, TAN 6), so 'safe' water is not being provided.
- (i) Particularly where shallow wells are being used, they should be located uphill and at least 30 metres from a latrine, cattle pen or other source of pollution.
 - (ii) The well lining must project above ground level to form a parapet; there must also be a concrete apron to form a hard surface around the top of the well. These precautions will prevent dirty surface water from flowing into the well or seeping down beside the well lining.
 - (iii) If possible, a pump should be used to draw water from the well rather than a bucket, so that the top of the well can be sealed, and the risk of the bucket carrying polluted water is avoided. If a bucket is used, it should be a special one permanently attached to the well, rather than the buckets belonging to individual families.
- (d) Pumps for wells and boreholes Shallow wells (less than 6 metres deep) need a plunger pump or something similar; avoid semi-rotary pumps which are often recommended as being cheap and easy to install, but which are hopelessly unreliable.

All pumps require regular maintenance, and many projects fail because this is not properly organised. In India, 70% of the boreholes provided by one agency (not Oxfam) were said to be out of use at one time because of pump breakdowns. Where robust, factory-made hand-pumps are installed at boreholes, routine maintenance may be needed once every two months. Other types of pump need more frequent maintenance. A regular schedule should be planned from the start and adhered to. Where some maintenance tasks are left to villagers, training at Rural Centres in pump maintenance should be a condition of the grant. (See in particular the manual Hand Pump Maintenance of Community Wells by Arnold Pacey in the Oxfam - ITDG series on Socially Appropriate Technology.)

7. Piped water supplies

The choice of pipe sizes and types (polythene) the selection of a pump (where necessary) and the design of storage tanks is a job for an engineer, even in a small project. Some kind of water purification is needed in most piped supplies, but usually this will consist only of rudimentary filtration. Delivery pipes from the storage tank are connected to consumer outlets, which may include:

- (a) standpipes or public taps for communal use
- (b) a laundry facility - a group of sinks with taps on a concrete base as proposed for MEX 28
- (c) animal drinking troughs filled via a ball valve
- (d) taps in hospital kitchens, bathrooms, theatres etc.
- (e) Taps in individual houses are not normally provided in Oxfam projects.

There are considerable health benefits to be gained by providing taps within people's homes, because hygiene improves even over a situation where the public tap is only 200 yards away. But the benefits are usually only significant if all houses in the community have taps, and the public standpipes can be closed. In most Oxfam projects, this is not a realistic objective.

8. Water treatment and purification

The greater the number of people drinking from or using a single water source, the greater the risk of contamination and epidemic and therefore the higher the level of maintenance and quality needed. This is why greater care has to be taken with urban supplies where some form of chlorination may be necessary as against the practice in rural areas.

Rainwater and groundwater are usually clean and drinkable in their natural state, and emphasis must be on precautions against pollution.

Water from streams, rivers and dams is rarely clean, and it is advisable to consider what purification facilities can be provided:

- (a) as part of a piped water system
- (b) in the home

If a water supply is suspected as a source of infection, there may be ways of getting samples tested at a local hospital or laboratory. There are now methods of making simple bacteriological tests with minimal facilities, but some are expensive and their application to tropical waters is not yet fully standardised.

Some of the organisms in water can be easily seen with a microscope, and the way these are killed by boiling can be demonstrated with a cheap microscope in health education campaigns (project GUA 12). However, this is not a way to look for pollution in water.

Methods of water treatment for piped systems are:

- (a) Improvement at source, ie 'gallery' system with rivers, river bed 'box' system etc.

- (b) Purification in storage When water is stored in a covered tank for 7-10 days, its quality improves because much of the suspended matter settles to the bottom and many of the disease-causing organisms die off. Prevent mosquito access to all storage tanks.
- (c) Filtration Small filters are available for household use. Sand filters are the most common method with community water supplies, and these can be very simply and cheaply made, eg from a 44-gallon oil drum filled with graded layers of sand and gravel - see the ITDG booklet on water treatment.
- (d) Sterilisation The simplest way to sterilise a small quantity of water is to boil it for at least five minutes. In some communities the scarcity and cost of firewood makes it impossible to boil all water regularly. In one such case in Brazil, Oxfam supported a programme for providing each family with a filter which was considered to be effective in removing parasites, if not all bacteria, from the water (project BRZ 105).

It is impracticable to boil large amounts of water for a community water supply, and in piped water projects, chlorination is usually the best alternative. In practice, however, small village water supplies are rarely provided with either chlorination or any other form of sterilisation, because of the difficulty of maintaining this form of treatment. Oxfam water projects almost never include chlorination; it is not the usual policy to chlorinate in rural areas.

During cholera epidemics, however, emergency chlorination of wells and other supplies is important and often practicable; emergency water supplies for refugee camps should also be treated because of the high disease risk. Many readily available chlorine bleaches can be used for this - see Burns and Howard, Safe Drinking Water, and Oxfam technical guide, April 1974.

9. Costs

- (a) Piped water supplies WHO estimates based on a comprehensive survey of rural water needs in Kenya were that costs should be in the range of £5.50 to £7.50 per person served. The higher figure is relevant to areas of low population density where long pipelines often reach only a small number of people. Using appropriate technology and a self-help approach, Oxfam water supplies usually cost less than this, even with the value of voluntary labour costed in, and the following guidelines apply for total costs (at 1970 prices): prevailing in the early 1970s:
 - (i) gravity flow schemes taking water from upland streams or springs: £1 per person served (MAL 14, LES 16)
 - (ii) water pumped from reservoirs, areas of high population density: £1 to £4 per person served (KEN 41, KEN 61)
 - (iii) water pumped from reservoirs, areas of low population density: £4 to £7 per person served (SWA 1)
- (b) Wells Well programmes in which there is a hand-pump at the well head but no piped distribution tend to look cheap compared to piped water schemes - about £0.50 to £1.50 per person served. The cost of one well with pump and fittings was about £200 in the early 1970s.

- (c) Cost/benefit studies A cost/benefit study of catchment tanks in Ghana, collecting water from large roofs, has shown a very favourable ratio of costs to benefits, the main benefit being the economic value of the time saved by women in carrying water. Higher costs than the per capita costs given above may be justified when it is clear that benefits will be fully realised so that cost/benefit ratios will be favourable. See 'Catchment systems for rural water supplies', in Agriculture in S.E. Ghana, by G. E. Dalton and R. N. Parker, Reading University 1973.

III SANITATION

1. Sewage Disposal

While most communities welcome the provision of new water supplies, they are often less susceptible to changes of habit and technology in the disposal of faeces, which is after all a more private affair.

Like many forms of development, sanitation to be effective needs both an appropriate technology and motivation. There is no one solution. In order to remain flexible an understanding of, and involvement by, the local people is vital.

2. Rural areas

The vast majority of rural people in developing countries use the fields for defecation. While this may be good for the land, it can involve health hazards, though not necessarily so. There is a real risk that diseases such as hookworm infection, schistosomiasis and the non-specific diarrhoeas may be transmitted by this casual practice.

Efforts to introduce latrines in rural areas have been discouraging, and those provided have not always been used, because:

- (a) insufficient health education has been carried out for people to appreciate the connection between disease and defecation in the fields
- (b) It is pleasanter to use a field than a foul-smelling, ill-maintained latrine - possibly healthier too.
- (c) In the absence of community development and self-help, people do not regard the latrines as theirs and do not feel they need clean them or even use them.

In summary, in rural areas faeces are usually not moved from the point of defecation. The problem is usually not a technical one as a simple pit latrine suffices, provided it has a good concrete squatting plate, is kept clean and is sited so that it does not offend neighbours or pollute the water supply. In large villages communal latrines may be more popular but maintenance must then be organised. The problem is motivation at family level (as against in cities where some form of community effort has to be made for removal of night-soil).

3. Urban slums

In these conditions the problem of faeces left in the streets is an obvious one, so by and large motivation is less important than in rural areas. Conversely an appropriate technology is much more important under urban conditions especially where the constraints of cost operate. Expensive water-borne systems traditional to the developed world are usually well beyond the means of Third World urban communities. Unlike rural areas the faeces of

urban dwellers have to be moved from the point of defecation. Moreover the organisation of this transportation involves a communal effort and therefore some form of organisation and administration to be responsible (as against in rural areas where the unit responsible is usually the family). Also see

Postscript on page 24-17.

4. Technologies

(a) For rural sanitation

- (i) Pit latrines and bore hole latrines See Section 56 (page 56-3) for details. Where the subsoil is suitable (ie not water-logged, not rocky) latrines of this kind are capable of fulfilling all public health objectives at very low cost - though they often fail to do this because of poor maintenance. A pit latrine consisting of a hole 1 metre in diameter and 2.5 metres deep should last a family for over a year, and maybe three years; when it is full to within $\frac{1}{2}$ metre of the surface, it should be filled in with soil and a new latrine made.
- (ii) Aqua-privies and septic tanks Again, see Section 56 for details. Excreta is stored in water in excavated tanks lined with concrete; these need de-sludging every 3-4 years. They are relatively expensive.
- (iii) The Chinese and Vietnamese methods where excreta is stored till fermentation makes it harmless and then used as a fertiliser (ie the Vietnamese two-chamber system).

(b) Urban areas

Here emphasis tends to be on public communal latrines rather than those aimed at the family with some form of cartage system to remove the faeces outside the urban area for treatment. The people who have the unpleasant task of transporting faeces should be made to feel important members of society rather than outcasts doing a job fit for unclean people.

5. Re-use of sewage

Clearly where sewage is seen as a valuable resource, the people are highly motivated to collect it. Therefore, provided simple health precautions are built in, it is important to encourage all forms of recycling. At present these take the form of:

- (a) fertiliser (after a period of composting)
- (b) fish food
- (c) methane gas production: faeces used for gas production can subsequently be used as a fertiliser

6. Other aspects of environmental sanitation

Besides excreta disposal the control of tips and rubbish heaps is important. Disease carriers like rats and certain forms of mosquito thrive on discarded food, paper etc. Moreover broken glass and tins are a hazard to a population who by and large do not wear shoes.

7. The Oxfam Sanitation Conference

Much experimental work is going on in the areas of sanitation (the Oxfam Sanitation Unit itself is one example) in poor countries. In July 1977 Oxfam in conjunction with the Ross Institute ran a Conference and the resulting book published in 1978 should be useful to those requiring information. A catalogue of the individual papers presented at this Conference and copies of these papers are available from Technical Officer, Oxfam, Oxford, U.K.

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Note: (i) See also Bibliography for Primary Health Care, Section 21.

(ii) For details of Project Information Sheets on Oxfam-assisted
projects, see Section 2, Appendix III.

Postscript on Sanitation

The Oxfam/Concern Sanitation Research and Consultancy Group has been set up recently in Dacca. Its overall objective is the development of sanitation programmes that are more appropriate to the needs of Bangladesh, and to do this by involving local groups, institutions and the government.

The Group has already gained much valuable experience and information which is relevant to Bangladesh, and may be to other areas of high population density such as urban neighbourhoods and long-term refugee camps. Details are available from Oxfam, Oxford and the Oxfam field office in Dacca.

Section 25: PROGRAMMES AIMED AT SPECIFIC DISEASES

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I. THE CONTROL OF TUBERCULOSIS AND LEPROSY1. Background

The world is experiencing an epidemic of T.B. and its impact is greatest in developing countries where it is the most important specific communicable disease, and where resources in both cash and man-power for its control are least. In some places, eg Nepal, T.B. is the most common fatal disease. The number of leprosy sufferers may also be increasing.

2. Oxfam Policy and Practice on T.B. Control

T.B. control programmes in India (IS 144), Nepal (NP 5) and Haiti (HAI 42), illustrate the main recommendations laid down in the Oxfam booklet on T.B. control, namely:

- (a) prevention, by B.C.G. vaccination of infants, is better than cure.
- (b) cure by ambulatory treatment is cheaper and at least as efficient as hospitalisation.
- (c) detection and case-finding of pulmonary T.B. should be carried out by means of sputum smears which are more effective and very much cheaper than providing X-ray equipment.
- (d) to implement these programmes, control teams are needed which work to rigidly defined schedules of vaccination, diagnosis and drug therapy. Laboratories are needed as centres for the rapid training of staff, and for culture and resistance tests on tubercle bacilli. Strict record-keeping is essential.
- (e) the active cooperation of local chiefs, women's organisations and welfare committees should be sought.
- (f) Village Health Workers (V.H.W.s) have an especially valuable role to play in case-finding and ensuring continuity of treatment.

3. B.C.G. Protection

For maximum protection B.C.G. should be given to all children at or shortly after birth; previous tuberculin testing is unnecessary in these circumstances. This response will give 80% protection for 10 years.

However, protection by vaccination is mainly a first aid measure. If there were no sources of infection in a community, there would be no T.B. either. So the control and eventual eradication of the disease involves discovering and treating all T.B. cases in the area concerned. Thus T.B. control programmes need to include a case-finding and treatment operation to deal with existing tuberculosis cases, and this should accompany the immunisation programme as is happening in projects IS 144 and NP 5. Ambulatory treatment is not only cheaper than hospitalisation, it is also socially preferable in that it avoids social upheavals and the removal of the bread-winner from the family. Treatment by drugs (chemotherapy) is necessary extending over several months, though new drugs have recently shortened the process somewhat.

4. Cost effectiveness

- (a) Studies have shown that hospitalised treatment costs twenty times as much as ambulatory.
- (b) While B.C.G. immunity may appear the cheapest, where a choice has to be made, money is best spent on case detection and treatment.

5. Leprosy - the size of the problem

Conservative estimates of the number of leprosy sufferers in the world vary from 12 - 15 millions and of these only 3 million have been diagnosed and probably less than 2 million are having regular treatment. It is feared that the number of sufferers is increasing, although it would seem quite feasible to reduce considerably the incidence of the disease and prevent the disfiguring sequelae with all its social consequences. WHO have made leprosy one of its main diseases with special emphasis on early case finding and treatment.

6. Leprosy - integration with Community Health

It is now felt that leprosy should not be treated in isolation from other diseases but included as part of the Community Health package. This to some degree lessens the stigma of the disease and also makes use of the existing C.H. infrastructure of personnel, transport and buildings. One stumbling block to the approach is the attitude of some of the leprosy agencies who do not have the desire or expertise for a broader based programme. ILEP (International Federation of Anti-Leprosy Federations) is the co-ordinating body for these agencies and its advisory board is broadly in favour of the community health approach and has in fact asked Oxfam to help advise.

While we feel the integrated approach is best, it is important not to be too naive about it. There is a real danger that leprosy could be neglected in favour of the more obvious and pressing health needs. Moreover leprosy does have particular problems such as drug reactions and resistance which needs the attention of specialists.

One important role of Field Directors is to visit existing leprosy projects and seek to influence them to:

- (a) increase the emphasis on early case finding and treatment as against surgery and rehabilitation.
- (b) encourage the broader C.H. approach.
- (c) help agencies to link up with Government and W.H.O. advisers.

It is important that we are realistic and flexible in our approach; we must start with what exists and work towards the ideal.

Leprosy is now called "Hansen's disease" in many countries in an attempt to remove the social stigma which the word 'leprosy' carries.

7. Types of leprosy

- (a) tuberculoid leprosy: non-contagious or "closed", often self-healing.
- (b) lepromatous leprosy: slightly contagious or "open" and not self-healing.
- (c) intermediate kinds, mostly slightly contagious and "open".

In most countries, the majority (80-90%) of cases are of the tuberculoid, non-contagious type, and since even "open" leprosy is only mildly contagious, it is not necessary to segregate leprosy patients. Segregation, in fact, does more harm than good because it deters sufferers from seeking treatment.

8. Leprosy control methods

The recognised method of leprosy control is to treat all detected cases in their homes, using an inexpensive drug, dapsone, which can be safely dispensed by auxiliaries, village health workers, or, indeed, any senior and responsible villager.

The drug may need to be taken for very long periods (2-4 years) to cure the disease completely, but patients cease to be infectious within a few months, and therefore spread of the disease is rapidly controlled. Newer drugs like Rifampicin reduce the infective period still further but are expensive. Screening for leprosy and treatment of this sort should be built into primary health care systems, and not carried out as a separate exercise - this is done in many of Oxfam's primary health projects in India (IS 144), where great care is taken not to put leprosy sufferers in a separate identifiable category. Medical staff should avoid revealing the results of tests, avoid separately coloured record cards, etc., because people are terrified of being classed as lepers. Leprosy and T.B. control measures can sometimes be linked, as well as screening for other diseases, because B.C.G. vaccination for T.B. gives children some partial protection against leprosy.

As with T.B., case-finding and treatment of leprosy and the monitoring of side effects of drugs can be done by Village Health Workers, where they exist. Segregation of leprosy patients in the leprosarium type of institution should never be encouraged. Countries relying on outpatient methods and the use of auxiliaries (eg. Nigeria, New Guinea), currently treat 90% of their leprosy sufferers and the disease is slowly being eliminated. Countries relying on institutions for leprosy treatment (Tanzania) rarely treat more than 30% of sufferers.

9. School surveys

Where the prevalence of leprosy is above 5 per 1000 school surveys are an economical means of detection.

10. Rehabilitation

Some humanitarian work by voluntary agencies aids hard cases, or helps rehabilitate cured leprosy patients who are left badly deformed. Reconstructive surgery, physiotherapy and vocational training can contribute to rehabilitation and may sometimes be worthy of Oxfam support (see section 45: article CARE OF THE DISABLED). Care of the blind or hopelessly crippled leprosy patients should also be supported by Oxfam as part of its humanitarian work.

II. EYE DISEASES

1. Background

The five main causes of preventable blindness are:

- (a) trachoma - usually with secondary infections
- (b) vitamin A deficiency - xerophthalmia (see vitamin guidelines, section 22 - 9)
- (c) river blindness
- (d) leprosy
- (e) other infections

Many eye infections are exacerbated by dry and dusty conditions, and a high incidence of eye disease is found in most of the drier tropical countries. In Afghanistan, between 30% and 70% of the population is affected by trachoma, varying from region to region.

Conjunctivitis (pink eye) is also common. There are several kinds, some caused by bacteria or virus infections, some by irritation due to dust or a broken eye lash, and some occurring as one of the symptoms of trachoma. Epidemics of infective conjunctivitis can occur, for example, in the West Bengal refugee camps during 1971-2. In children, especially, eye infections are often associated with malnutrition, and with other diseases, especially measles. In the population at large, poor personal hygiene and infrequent washing of the face are major factors.

2. Oxfam practice and policy

In collaboration with the Royal Commonwealth Society for the Blind, Oxfam has supported mobile clinics which work mainly in rural areas - Afghanistan (AG 2), Kenya (KEN 20), Pakistan (PK 2) and Uganda (UGA 30). The eye conditions encountered most often by these clinics and the usual

priorities in treatment or prevention, are as follows:

- (a) trachoma - prevention, or early curative treatment to avoid risk of blindness.
- (b) conjunctivitis - treatment and prevention
- (c) opaque corneas - prevention by attacking (a) and (b); see below
- (d) senile cataract - restoration of sight by surgery
- (e) glaucoma - relief of condition by surgery (iridectomy)

River blindness (onchocerciasis) is common in West Africa, but is usually outside the scope of mobile eye clinics. Effective prevention depends on treating the patient before the eyes are affected, or on eliminating the fly which carries the disease (Oxfam project TOG 38).

3. Operation of mobile clinics

There are several possible types of mobile clinics:

- (a) for medical treatment of trachoma and conjunctivitis
- (b) for medical and surgical work; able to do cataract, glaucoma and entropion operations in the field. (Entropion is distortion of the eye-lid usually due to trachoma).
- (c) for preventive work; mass treatment and health education in anti-trachoma campaigns.
- (d) Eye camps are held in places such as India; sometimes doctors give their services free for one camp each year.
- (e) The health education component and simple treatment of trachoma are well within the capability of the village health worker.

III. ORAL REHYDRATION

1. Definition

Oral Rehydration (O.R) is the replacement by mouth of salts and water lost by the body, usually in diarrhoea attacks. Oral Rehydration is primarily aimed at treating children.

2. Background

Diarrhoea is one of the most common causes of death and sickness among children in poor countries. Attempts to break the vicious circle of malnutrition and diarrhoea have traditionally centred on improved nutrition, environmental sanitation, improved water supply and personal hygiene. While these measures may ultimately prevent the current high diarrhoea rate, oral rehydration offers an immediate curative stop gap which can reduce the effect of diarrhoea attacks.

The main way that diarrhoea endangers the life and health of victims is by the loss of water and salt (dehydration). The fluid can be replaced intravenously (by 'drip'), intraperitoneally, subcutaneously or by mouth. In the context of the third world O.R. offers a cheap, relatively safe and effective method that can be carried out by paramedicals and mothers.

Severe cases especially those that are comatose will still need intravenous treatment but it is hoped that timely oral rehydration will reduce the incidence of these.

3. Methodology

- (a) The Solution O.R. aims to restore the lost water and salts. It is known that glucose (or sugar) is needed to promote the absorption by the body of salt solutions given by mouth. Oral rehydration fluids thus consist of water, salts and a sugar, preferably glucose.

Solutions vary from a simple salt and sugar solution to the more complicated WHO mixture.

Sodium chloride (table salt)	3.5 grams
Sodium bicarbonate (baking soda)	2.5 grams
Potassium chloride	1.5 grams
Glucose (dextrose)	20.0 grams

(b) Methods for measuring dose

It is important that the concentration of the salt is not too high so some sort of standard is needed - the following is a summary.

Method	Ingredient	Comments	Who
1. Finger pinch and four finger scoup	Salt and sugar	Inaccurate but useful as it only needs fluid measure	Mother
2. Teaspoon	Salt and sugar	Better than 1. but depends on availability of standard spoon	Mother + VHW
3. Morley spoon * (type 1)	Salt and sugar	More accurate: ? introducing a new technology. Currently being evaluated.	Mother + VHW
4. TALC spoon * (type 2)	Salts - NaCl (Salt) NaHCO ₃ (Baking powder) KCl (Potassium chloride) Glucose	A better salt solution but more complicated.	Health Worker at clinic
5. Ready mix WHO** powder with measuring spoon for 1 litre	As above	Less complicated than above but possible danger of contamination of glucose	Health worker at clinic
6. Sachets of WHO powder	As above	Good, but questions about shelf life.	Mother VHW clinic

Besides measuring the amount of salts and sugar it is important to have a standard volume of water. This is usually 1 litre but experiments have been tried using 200 cc and Coca Cola bottles.

Probably sachets are the best answer but at present cheap types are not sufficiently widely distributed.

The amount of solution given depends on the weight of the child and the degree of dehydration: thus a child weighing 25 Kg with mild dehydration will probably have lost 5% of its weight and so will need $\frac{5}{100} \times 25$ Kg (or litres) of solution = 1¼ litres.

This deficit must be added to the normal daily needs.

Eye Diseases

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Section 26: FAMILY AND CHILD HEALTH/FAMILY PLANNING

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I. MATERNAL CHILD HEALTH1. Background

Children under five and pre-school children form approximately 20% of the total population in developing countries. Infant and child mortality often accounts for 50% to 70% of total deaths. Causes of death among the new-born are associated with the techniques of delivery, the nutrition and health care of the pregnant mothers, birth hygiene and care of the new-born baby. Many mothers also die as a result of these problems. Deaths among older infants and young children are the result of common infections, most simple to treat or prevent, combined with poor nutrition and weaning habits.

Programmes aimed at improved child health should be linked to other efforts at improving living conditions within integrated development programmes. It is instructive to note that in New York, the halving of infant mortality between 1900 and 1930 had little to do with improved medical services, but was due mainly to improved environmental conditions in the home, better hygiene and better nutrition.

2. Essential components of MCH programmes

These are essentially monitoring or screening services for the section of the population most at risk, but although involved primarily with personal care, there should be a strong emphasis on health and nutrition education at the personal, small group or community level. MCH services should be strongly linked to social developmental programmes involving women in particular and also environmental sanitation projects. MCH programmes should include the following services:

- Antenatal care
- Maternity services
- Post-natal care
- Family planning
- Comprehensive child care (preventive and curative)
- Nutrition programmes
- Immunisation

Some of these services may be organised separately, e.g. immunisation, but it is important that any vertical programmes involving mothers and children be integrated with MCH services.

- a) Clear objectives. An MCH programme should have stated objectives in terms of target populations and what it hopes to achieve in those populations. Objectives must be based on the priority needs which are amenable to treatment. The target for achievement can be defined in terms of indices of childhood nutrition, incidence of preventable diseases, mortality rates, etc. Some base-line information must be available from which to measure the achievements, and the programme should include means of evaluation—preferably built-in evaluation using day-to-day statistics. Collection of data on births and deaths should be undertaken where possible.
- b) Target levels of care. These are the means of achieving the stated objectives, and should be clearly identified. For example, a target of 60% coverage of under-five children might be attempted, with the aim of seeing these children on average six times a year. For maternal care, 80% of mothers might be the target for ante-natal care, at a level of a minimum of three visits per mother.
- c) Wide ante-natal outreach. It will be many years before it is possible to provide supervision by qualified personnel at all births. However, a wide outreach in terms of ante-natal care can identify the mothers at risk and requiring hospital delivery; it can also prevent the common medical problems encountered in pregnancy, such as anaemia, malaria and pre-eclamptic toxæmia.
- d) Health and family planning instruction. Education in health, nutrition and family planning is an important element in ante-natal services. It is the ante-natal clinic which provides the most useful environment for the introduction of family planning within the MCH framework. (see FAMILY PLANNING GUIDELINES below.)

- e) Traditional midwives. In many countries, these women will continue to perform the bulk of the deliveries for many years to come. An integrated, well-run maternity service will ensure that only normal deliveries are done in the home, and that local midwives are trained in basic hygiene and provided with minimum simple equipment. They should also be trained to identify unforeseen complications early, and have the confidence in, and close relationship with, the qualified staff to refer patients early, rather than try to work in competition with them. These women can also act as valuable agents in promoting family planning and identifying families needing family planning services.
- f) Comprehensive care of children and under-fives clinics. This is such an important service that it is discussed more fully below. The four main activities involved are:
- i) weighing
 - ii) teaching
 - iii) immunising
 - iv) treating the sick
- g) Mobile clinics, rural clinics, auxiliary personnel. Studies have shown that to be effectively utilised MCH services must be within 1-2 miles of the homes. For outpatients care people are willing to travel a longer distance - up to five miles - but people are not willing to travel more than 1-2 miles for preventive care, especially pregnant women with a toddler (the latter being particularly vulnerable to malnutrition at this time). It is therefore essential to provide services close to people's homes. This can most easily be achieved by a health worker actually living in the village such as a village health worker, supported by occasional visits from supervisors of a mobile clinic or supervisory visits. To reach those most at risk, often the poorest who are the last to seek treatment, it is advisable if routine contacts are done in the home at least for the mothers who do not visit regularly. If records are kept of all families under care it would be relatively simple for even a part-time village health worker caring for say 100 families to visit each one every 2-3 months (2 families per day). Auxiliary MCH workers can be used to train, supervise and support the village health worker.
- h) Community involvement. Without the participation of the community, an MCH project will have little real impact. Village health committees may be formed, and through them, MCH can be integrated with other activities including agriculture in relation to nutrition, and cottage industries which particularly involve women. Participation may involve training local people as part or full-time village health workers, stimulating the community to undertake co-operative activities such as children's midday feeding centres or day care centres, or providing volunteers to assist with monitoring or the distribution of antimalarials, family planning supplies or T.B. drugs, etc.

3. Pre-school or Under-fives clinics

The activities which should go on in such clinics may be stated as:

- a) Weighing and the use of growth charts. The early detection of poor nutrition is done by regularly weighing each child and recording weights on a calendar type of growth chart. When growth starts to falter - an early sign of malnutrition - the mother should be advised on feeding and child care by individual counselling and if necessary by the provision of food supplements. It is preferable if the mother herself keeps her child's chart.
- b) Immunisation. See Section 23. Also include malaria prophylaxis if malaria is endemic in the area.
- c) Health and nutrition education. This may include cooking demonstrations, group teaching/discussions, vegetable gardens, poultry units, and individual counselling to mothers. Home visits may be made to individual mothers.
- d) Treatment of the sick child. At health units, out-patient care for children should include both preventive and curative and be integrated in the under-fives clinics. This is facilitated by using the weight card for all curative and preventive visits. A child needs comprehensive care and the separation of 'well' from 'sick' is a false distinction based on Western concepts and should not be applied in the developing country situation, where most children in need of 'preventive' care are 'sick'. Many mothers only come to a clinic with children who are sick, but these children need all the preventive services of the under-fives clinic as well. Under-fives clinics should therefore not be run as 'well-baby clinics' - an illusory concept - but should provide a truly comprehensive service for children of this age group. Many of the activities of an under-fives clinic can be carried out effectively by village health workers. One of the most important and simple techniques is oral rehydration of sick children with diarrhoea using boiled water with sugar and salt added. Oral rehydration should be available at all clinics. It allows a potentially serious condition to be treated early and cheaply.
- e) Nutrition Rehabilitation Centres and Malnutrition Clinics (Section 22) These can be regarded as an extension of the under-fives clinic, to which children found to be seriously malnourished can be sent. Discharge from a specialised unit of this kind should involve referral back to the under-fives clinic.

4. School Health Services

Because children in the school age group are healthier and less at risk than those under five, this service is less of a priority than other MCH services, but should become more important as health services develop. In many countries, children who attend school tend to come from the prosperous families in the area, and this should be borne in mind when equality of access is a major factor in the development of health services. School health services include:

- (a) health and nutrition education plus family planning when allowed
- (b) school feeding (see Section 22)

- (c) immunisation programmes
- (d) screening children for parasitic infections, T.B. etc.
- (e) weighing and measuring to detect malnutrition or other disease.

5. Costs

Accurate costing of MCH programmes is extremely difficult and seldom takes into account the costs to the patient such as travel, time wasted etc. However as a rough guide an outpatient visit should not cost more than 30p. Generally mobile clinics and the use of trained personnel is more expensive than static units with voluntary or low-paid village health workers.

6. Payment for MCH services

It is argued by many that a small fee should be charged as this improves the value and possibly the status of the service in the eyes of the community. This may be true with regard to curative services which can easily be seen to be beneficial, but cannot be easily applied to personal preventive services.

Some experiments have been done which may be of value in different communities. In one, a pregnant mother is expected to pay a lump sum entitling her to both ante-natal and maternity care. When she has completed a specified number of visits, the bulk of the fee is returned. Alternatively, a higher fee is demanded for delivery without antenatal care than for delivery following antenatal care. For under-fives clinics, a registration fee for the weight chart may be charged, and any subsequent visits thereafter are free. Sometimes fees are charged for treatment but not for services. Village health workers may be voluntary or supported by the community in various ways; initially assistance may be required especially with training and ongoing supervision but emphasis must always be on community responsibility.

Whatever system is instituted will depend on individual circumstances but what must be recognised is that any system of charging fees on a piecemeal basis in poor communities will inevitably involve selection of the more privileged for health care. Perhaps the ideal system would be a kind of compulsory annual contribution levied on the community itself - a kind of insurance scheme.

II FAMILY PLANNING

1. Background and basic policy

Viewed demographically increasing population pressures throughout the world have already reached dangerous levels in Asia and parts of Africa and the Caribbean. They make the vigorous implementation of family planning programmes very important.

Viewed at the other end of the scale, large closely-spaced families have a higher malnutrition risk. As our emphasis lies at the family level it should stress "family spacing" rather than birth control.

It is no accident that the poorest countries and the poorest classes in these countries have the highest levels of mortality and fertility. Modernisation has led to increasing disparities between classes. In many cases it has led to the loss of land by small farmers, the disappearance of traditional rural occupations and a surplus of supply of labour. These changes in economy and society are associated with increasing malnutrition and growing infant mortality as well as changing marriage and fertility patterns.

In many countries traditional methods of birth spacing and fertility are being undermined by this process. Bottle-feeding has dramatically reduced the interval between births by interfering with the contraceptive effect of breast feeding. This has contributed to the population explosion in some of the countries with the highest levels of fertility in the world. Infant mortality, which is known to increase the fertility of women on populations not practising contraception, is high and may even be rising in some countries. Irregular or incorrect use of oral contraceptives may interfere with the contraceptive effect of breastfeeding and also increase fertility.

Oxfam recognises that programmes which contribute to a reduction in infant and child mortality, and improve the quality of life for the poorest people, are likely to lead to long-term reductions in fertility. In this respect Oxfam's support for health and development programmes can also be considered as support for family planning; the ability to improve the quality of their lives enables families to gain greater control of sickness and death, as well as birth. Properly planned and executed programmes which facilitate access to contraceptive technology in addition to other services, are important means to such control.

Oxfam gives high priority to supporting programmes which provide access to birth control technology and which are sympathetic to, and primarily concerned with, the welfare of the people in need of family planning assistance. Special emphasis should be given to ensuring that existing patterns of fertility control and birth-spacing are identified, in order to build upon these patterns to extend and improve parents' ability to avoid unwanted pregnancies. In this respect Oxfam will provide support for programmes to undertake investigations aimed at finding an optional approach to family planning in their communities.

In the past family planning has been considered to be the responsibility of the women, the men being at best passively acquiescent and at worst openly hostile. Thinking now advocates a wider approach taking into account the role and value of women in

society and the attitude of both parents towards their children. In practice this means that family planning should be a part of all community development and is just as relevant in agricultural extension as in health fields. The approach needs to be more imaginative and flexible than before, taking advantage of any groupings of people in farm clubs, co-operatives, etc.

Two factors are thought to be particularly important in motivating parents to limit family size; firstly as people become more wealthy the number of children desired drops, and secondly parents tend to reduce the size of families once they know that those children which they do have will survive. This stresses the need to see family planning in the context of social and economic development and of course general Mother and Child Care.

2. Family Planning and Other Health Programmes

- a) Particular encouragement should be given to preventive health programmes which include family planning advice and, within such programmes, we should concentrate in the educational and motivational aspects.
- b) Education of young people in schools may well be a key method in altering the communities' views on child rearing and the status of women in the community.
- c) Participation of men should be actively encouraged as in Bali where Farmers Groups become actively involved in family planning discussions.
- d) Support for non-governmental programmes should be emphasised but it is recognised that in some countries there is no alternative to government sponsorship. An assessment of any possible political repercussions should always be made.
- e) Programmes in which family planning is closely associated with maternal and child health work are preferred since the success of the first is ultimately so dependent on the second. The integrated approach has the disadvantage that family planning may be neglected in big MCH clinics when more pressing needs get priority. This makes it all the more important to keep family planning records. In certain circumstances the value of single purpose Family Planning Clinics is still recognised.

3. Methods of contraception

- a) Catholic programmes which recommend only the temperature method of contraception should be supported only where other alternatives are limited and it is believed that the educational and motivational aspects will have positive long term results. The Medical Panel may however wish even in these circumstances to advise against individual applications.
- b) No particular method of contraception can be universally recommended and local religious, cultural, social and health factors must be taken into account.
- c) Oxfam is prepared to support both male and female sterilisation provided that they form part of the family planning programme of responsible medical groups or family planning associations. Participation in such schemes should be voluntary and with the informed consent of both partners who consider their family size to be complete. Oxfam funds should not be used for inducements to potential patients and no pressure should be exerted on

hospital or clinics to initiate such schemes (though they may well be suggested). Out-patient methods not requiring general anaesthesia or bed occupancy for more than 24 hours should be especially recommended; these now include methods of female sterilisation (e.g. culdoscopy, trans-cervical methods) as well as vasectomy for men under local anaesthesia.

- d) The promotion of the sale of contraceptives, if necessary through commercial channels, is considered a proper use of Oxfam funds. Sales can be subsidised but contraceptives should not normally be distributed free because of risks of wastage and re-sale. Programmes to educate and motivate the general public to use contraceptives may be supported even if they are not directly linked to family planning programmes.
- e) Breast feeding has an appreciable contraceptive effect and should be encouraged both for this reason as well as for nutritional reasons; its practice is of course no substitute for safer methods where these are available.
- f) Techniques: Relative advantages of different methods can be found in the IPPF Family Planning Handbooks which have been circulated to Field Directors.
- g) Depo-Provera (Injectable Contraceptive). This answers many of the logistic and social problems often encountered in family planning. However it is a relatively new drug and should only be used with caution and careful supervision. A separate paper has been circulated.

4. Training, staffing, consultants

- a) Instruction on family planning should be included in all training schemes for auxiliary medical personnel which Oxfam supports even in countries where family planning is not yet official policy. Such schemes also provide for following up any family planning work done by the trained auxiliaries.
- b) Staff salaries can be included in the financial support for family planning programmes even when this may lead to long-term commitments.
- c) Experienced consultants on short or longer-term assignments can be made available to visit and advise on the best methods of proceeding with family planning in specific areas.

5. Abortion

Abortion continues to be excluded from Oxfam's active support and is considered to be a sign of the failure of family planning to control population growth. But the legal practice of abortion in a hospital should not preclude consideration of Oxfam support for other medical work there. (This decision was taken after lengthy consultations and will remain under review for consideration at some future date if this becomes desirable in the light of medical developments).

6. Information required for Family Planning projects

Requests for Oxfam help with family planning work should be supported by the following information:

- a) Full details of work being undertaken (both in motivation and

implementation), including methods used and/or recommended. If none, please give the reason.

- b) How is any work you do financed, and from what sources?
- c) How closely is your family planning work related to your other activities, particularly Mother and Child Health?
- d) What other institutions do family planning work in your area, and how do you co-operate with them? If you do not, please give the reasons.
- e) How many staff and in what categories did you train/send for training in family planning in the last 12 months? If none, please give the reasons.

7. Assessment of Family Planning Projects

Family Planning programmes whether they are integrated or not usually have two main components; firstly that of providing an efficient service and secondly motivating people to use it.

a) Introduction

Family planning programmes have become highly organised and their staffing increasingly complex, so it is difficult for a non-expert to assess their likelihood of success and their deficiencies. This note attempts to simplify the problems by presenting a digest of recent publications by the Population Council, New York.

Applications to Oxfam for support of family planning projects should contain a clear statement of the objectives of the programme, their implementation and progress so far. The basic components of the programme should be described, as in the list below, though the list does not imply that all factors are of equal importance. If the application refers to an existing programme, it will be relatively easy to provide all these details, but even if an application refers to plans which are still on paper, there should still be clear and definite proposals for objectives and implementation.

b) Basic components for a family planning programme

i) Place of the programme in the local family planning framework.

This refers to any central co-ordinating department maintained by the government; and to other family planning activities - privately based clinics, government health centres and dispensaries. Overlap should be minimal and rivalry eschewed at all costs.

The application to Oxfam should mention whether funds may be expected from the government or from international agencies other than Oxfam.

Special note should be made of commercial supplies of contraceptives, in particular orals and condoms; their availability in local 'druggists' shops and their turnover if the community is wealthy enough to purchase them. In the Philippines in 1970, enquiry showed that about 1.3 million cycles of oral contraceptives came through commercial channels as compared with 1.15 million cycles through governmental and other non-commercial channels.

Bibliography

- Hawkins and Elder, Human Fertility Control, Butterworth, £21
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- M. Marndani, The Myth of Population Control. Provocative background assessment.
- Snowden, William and Hawkins, The I.U.D., Croom Helm, £7. A practical guide.
- WHO, Traditional Birth Attendants, WHO Offset Publication No 44, 1979. A field guide to their training, evaluation, and articulation with health services.
- WHO, Education and Training for Family Planning in Health Services, WHO Technical Report Series No. 508, 1972. Sw.fr.5.
- NB. (i) See also Bibliography for Primary Health Care, Section 21
 (ii) For details of Project Information Sheets on Oxfam-assisted projects. see Section 2, Appendix III.

Periodicals

- People, is a development magazine, reporting worldwide on the effort to balance resources and population, to promote planned parenthood and to improve the human condition. Published quarterly in English, French and Spanish by the International Planned Parenthood Federation, 18-20 Lower Regent Street, London SW1Y 4PW
- Populi, journal of the United Nations Fund for Population Activities, \$2.50 per issue. Information and Public Affairs Division, UN Fund for Population Activities, 485 Lexington Avenue, New York, NY 10017, USA.
- UNFPA Newsletter, monthly bulletin of UNFPA activities. Available free, also in French, Spanish or Arabic. Information and Public Affairs Division, UN Fund for Population Activities, 485 Lexington Avenue, New York, NY 10017, USA.
- International Family Planning Perspective and Digest, quarterly, published by the Alan Guttmacher Institute, 515 Madison Avenue, New York, NY 10022, USA.

Section 27: AUXILIARIES FOR PRIMARY HEALTH PROGRAMMES: TRAINING AND FUNCTIONS

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1. Introduction

Auxiliaries can handle 80-90% of common ailments, so it is a waste of time and effort for a doctor to attend all clinics all the time. But there must be regular supervision, adequate back-up for referrals, and clear, simple standing orders.

2. Definitions

Terminology regarding different types of medical auxiliary is confusing and is rarely consistently used. Maurice King defines an auxiliary as 'a technical worker with less than full professional qualifications'. So when a professional nurse has to undertake some of the responsibilities of a doctor, she is functioning as an auxiliary.

At the other end of the scale, there are village health workers or 'barefoot doctors', and there are single-purpose auxiliaries, who may have had almost no education, but who have been taught one or two particular skills so that they can help with a few specific jobs, eg in a sleeping sickness campaign. Some auxiliaries are paid a salary, others not. Those that are may be paid by the community or by the central Government. The complete spectrum of skills and functions may be classified roughly as follows:

(a) Professional medical workers

- (i) senior grade: doctors
- (ii) para-medical grade: nurses, pharmacists, physiotherapists, laboratory technicians.

(b) Auxiliary medical workers

- (i) medical assistants and enrolled nurses
- (ii) dressers

(c) Auxiliary community health workers

- (i) health aides, village health workers, barefoot doctors, health promoters
- (ii) village midwives
- (iii) single-purpose auxiliaries

3. Training Village-Level Workers

Oxfam supports a number of hospitals (BOL 11), health centres (BD 20), or special training centres (BUR 22, KEN 19) where village health workers are

trained. Courses need to be problem orientated and, if possible, carried out in an in-service situation. They should not be theoretical or loaded with scientific background material. Points to be noted about these courses are:

- (a) Selection of trainees. Where the health worker is to be based in his/her home village, he/she should be an experienced, possibly middle-aged man or woman chosen by the villagers themselves (KEN 19, IS 144). Many projects aim to train one such person for every village (BOL 11). Where the health worker is to travel between several villages or to form part of a team, ability to work with others will be one factor to look for. Problems may occur where the Village Health worker fails to fulfil his/her role efficiently, and the hospital or central authority wishes to dismiss him or her. The best way of getting round this problem is to make the community aware of the shortcomings of their choice and leave it to them to dismiss and hire another worker.
- (b) Length of courses Courses vary in length from 10 days, backed up by frequent 7-day refresher courses (BUR 22) to 21 days (KEN 19) or as much as six weeks: in the Sudan Primary Health Care programme a 9-month training is planned. Refresher courses, sometimes as often as one day per week, are a key part of the system.
- (c) Content of courses Most courses cover the main subjects in the primary health field (Section 23), but vary according to local problems and the exact function of the village level worker, for instance:
 - (i) child care: running pre-school clinics (KEN 19, IS 144)
 - (ii) ante-natal care, family planning
 - (iii) nutrition
 - (iv) agro-nutrition and gardening (BD 20, BUR 22)
 - (v) T.B., leprosy, malaria
 - (vi) giving vaccine
 - (vii) hygiene and sanitation
 - (viii) first aid

4. Bibliography

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E. Gally Para la Educadora del Hogar. Editorial Pax-Mexico, 1977. (Rep. Argentina 9, Mexico I.D.F., Mexico)

N. Scotney Health Education: A manual for Medical Assistants and other Rural Health Workers. African Medical and Research Foundation. Rural Health Series 3, 1976. (Address as above).

WHO Reference Material for Health Auxiliaries and Their Teachers WHO Offset Publication No. 28, 1976. A valuable bibliography of 400 instructional materials on health and nutrition. Annotations are in English and French.

WHO Training and Utilisation of Auxiliary Personnel for Rural Health Teams in Developing Countries. WHO Technical Report Series 633, 1979. Sw. fr. 5 -

NOTE: For details of Project Information Sheets that are available on Oxfam-assisted projects, see Section 2, Appendix III.

Books marked * are available from Teaching Aids at Low Cost (TALC), Institute of Child Health, 30 Guildford Street, London WC1N 1EH, UK.

A comprehensive list of books and manuals for use as source material in the training of nurses and nursing auxiliaries is available from the Medical Adviser, Oxfam, Oxford, UK. There are separate lists of titles in English and French. Those requiring titles in Spanish should write direct to Editorial Pax-Mexico, at Rep. Argentina 9, Mexico I,DF, Mexico.

Section 28: SECONDARY HEALTH CARE

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I. HOSPITALS AND HEALTH CENTRES1. Oxfam Policy

While Oxfam's main emphasis is, and should remain, community health at the primary health care level, it has supported and will continue to support the work of hospitals in the less developed world for the following reasons:

- (a) Many hospitals in less developed countries are in urgent need of funds to carry on their work. Medical services often receive a low priority in such countries. It is, therefore, a legitimate use of Oxfam's money to provide funds for medical services when funds locally would not be forthcoming.
- (b) Much of the disease with which these hospitals deal is due to, or associated with, malnutrition. This applies especially to children under five, an age group in which mortality rates are extremely high.
- (c) Hospitals ideally should serve as focal points, primarily for referral of severe cases which the primary health care system cannot handle. They can also be used for training and popular health education. Effective medical treatment is likely to make the people more receptive to improved medical practices. Clearly

a hospital which is the central administrative body of a community health programme is viewed more favourably than one which works in isolation.

To date, a large proportion of Oxfam funds given to hospitals has gone to mission hospitals. It should be noted, however, that Oxfam funds are available to all institutions where the activities are in accord with the medical priorities outlined, and which offer a reasonable assurance of continuity. Health Centres, where the cost of treatment per patient is usually lower than in a hospital, are particularly worthy of Oxfam support.

2. Types of aid to hospitals

The Medical Panel suggests that the following types of aid to hospitals and health centres be supported, though this list does not represent an order of priorities:

- (a) Buildings and Reconstructions In normal circumstances, requests for the building of entirely new hospitals should not be considered. It is preferable to assist existing hospital institutions by reconstructing, repair, or additions. The proposed operation should be as inexpensive as is compatible with efficiency. New buildings should conform with sound local standards of construction, and be approved by the appropriate surveyor or architect. They should be designed to fulfil satisfactorily the purposes for which they are intended. Preference should be given to building or reconstruction work which will provide increased facilities for child care (eg children's wards and out-patients' clinics). Accommodation for doctors should be considered only in exceptional circumstances. Wherever new buildings or alterations are planned, possible future expansion must be allowed for.
- (b) Transport Adequate transport is essential for rural ambulatory hospital services. Requests for supplying and maintaining vehicles (landrovers, mobile dispensaries, etc.) should therefore be sympathetically considered, provided the cost involved is reasonable and the vehicles are suitable for the purpose stated and for the terrain in which they are to be used.
- (c) Equipment All requests for equipment should be considered in terms of the likely demands on its use and the extent of the benefits accruing. Costly equipment serving only a small number of patients should not normally be considered. It is essential to be certain that adequate trained staff to operate and maintain the equipment are available, and can be expected to continue to be available. Requests for small electricity generators, which would make a substantial addition to necessary medical services, may be supported in the interests of up-grading hospitals.

The question of X-ray equipment is dealt with in a separate section, see II 1(e) of this section.

It is recommended that the fullest use should be made of the facilities of ECHO, 5 Robin Hood Lane, Sutton, Surrey.

- (d) Staff and running costs In providing assistance of any kind to hospitals and hospital services, it is important to make sure that adequate staff and funds will be available to undertake the work

involved. Where adequate staff and funds are not available, Oxfam should be prepared to consider funding them. Careful account must be taken of the running, maintenance and depreciation costs of equipment and vehicles, as experience has shown that such items are often underestimated.

- (e) Drugs Preferably the trade name of the drug should be given and its intended use clearly explained. It is recommended that less favourable consideration should be given to requests for a variety of drugs needed for day to day use. Oxfam should be prepared to advise hospitals of the opportunities for obtaining such drugs free or at a discount. Offers of sample drugs should be accepted only after professional advice has been given.
- (f) Vaccines Where money is given for the purchase of vaccines the project holders must assure Oxfam that they understand the principle of the cold chain and the needs of the individual vaccines for refrigeration etc.

3. Cost level and design

Field Directors will find it useful to keep a note of building costs on a country-wide basis as this will provide guidance in assessing new requests which include buildings. To do this, calculate the floor area of the building and divide this figure into the total construction cost. This will give you a cost level on a square foot or square metre basis. Elaborate buildings are expensive to build and are seldom justified, and costs can be reduced by a careful study of the building plans. The points to look for are:

- (a) Are there an excessive number of small rooms?
- (b) Is there a recognisable flow pattern in planning for the movement of ambulatory patients, eg in clinics?

VI. HOSPITAL AND MEDICAL EQUIPMENT

1. Oxfam practice and policy

Oxfam frequently helps hospitals and medical programmes with the supply of vaccine, drugs and smaller items of equipment for treatment, laboratories, etc. Where the most costly types of equipment are concerned, Oxfam's practice has been to give grants for the following:

- (a) Autoclaves (sterilisers) Oxfam quite often helps to provide these. Large autoclaves costing around £1,500 are needed to sterilise surgeons' gowns, bandages, dressings, etc. Smaller sterilisers for instruments are also needed and range from £90 to £135 from ECHO (Joint Mission Hospital Equipment Board Ltd., at 4 West Street, Ewell, Surrey, U.K.). A field steriliser for use over a fire costs £120.
- (b) Operating tables Help is again often given with these, but a clear distinction must be drawn between sophisticated models

with a variety of movements and attachments, and simple models which would be adequate, eg for maternity work in a context where major operations are likely to be rare.

The more sophisticated type may cost up to £1,500 and is suitable only for well-staffed and properly equipped hospitals. In contrast, the simpler types can sometimes be obtained for as little as £185 from ECHO. Unfortunately, there appears to be a dearth of tables in between these extremes.

(c) Jet injectors See the article on IMMUNISATION for details of:

(i) Pan-jets cost, export packed, £89 in 1978 (also available in India).

(ii) Port-o-jets for mass immunisation on a very large scale, cost £713 in 1978.

(d) Blood banks These have been provided by Oxfam rather occasionally; see SWA 6 and LES 1.

(e) X-ray equipment

Oxfam Practice and Policy Oxfam does not support the use of X-rays for T.B. diagnosis by mass radiography, because the sputum smear tests are very much cheaper.

X-ray equipment for general hospital use is regarded as important, but Oxfam has only supplied one set of equipment in the last 3 years (BRZ 5).

Many enquiries for X-ray equipment are received, but it frequently turns out that the type of equipment available does not match the hospital's needs, often being so expensive to run that the hospital would not be able to pay recurrent costs. These costs are high due to the need to pay for film, tube replacements about once in three years, costs of running a dark room, salary of a specially trained technician, etc.

In a few cases, Oxfam has helped a hospital to install an electricity supply as a step to acquiring X-ray facilities at some later date, eg in Kenya (KEN 58).

The Medical Panel consider that the following points should be taken into account when considering a request for X-ray equipment:

(i) It is essential that trained staff be available in the hospital and that the degree of this training should be considered in terms of the type and expected function of the X-ray unit requested.

(ii) The proper protection of hospital personnel handling the units should be ensured; the potential dangers due to radiation etc. need to be fully recognised.

(iii) It is essential that there should be an electricity supply capable of providing the current required by the unit.

Types of X-ray equipment

- (i) A small portable unit (15-30 mA) would serve the many needs of a small hospital even if the doctor has no special training in radiology. It would be very useful in orthopaedics, and in the examination of fractures, etc., in a casualty department. It would not be definitive enough for detailed investigation of lungs and other organs. Cost is £1,080 in 1978.
- (ii) A medium unit (100 mA) would be useful to a doctor with some knowledge of radiography. A technician must be available for maintenance. A strengthened floor would be necessary to hold a unit of this weight. Given these conditions, this size of unit is probably the most useful for a small hospital. Cost in 1978 is £2,205.
- (iii) A large unit (300 mA) would require a doctor with considerable radiological training to interpret the various films; also a skilled radiographer to work it, and a trained technician to maintain it. Generally beyond the scope of Oxfam assistance. Cost is £3,488 in 1978.

Hospitals must ensure and be specific that the unit requested is the one most suited to the hospital's needs. X-ray units cannot be returned to the country of origin. Some European manufacturers have agencies overseas which will undertake to install and maintain X-ray units.

- (f) Electricity generators Diesel generators for hospital lighting, refrigeration and for running X-ray equipment have been provided quite frequently. Sizes range from 2kW (for a very small lighting system) to 70kW; the corresponding price range in 1978 is £857 to £8,828.

In one case, delivery of U.K. makes was quoted as taking 22 months; Indian-made equipment was said to be more immediately available at only slightly higher cost. The voltage and A.C. frequency of the generator must be compatible with the electrical equipment which will be run from the supply. When ordering a generator, state:

- (i) output required in kilowatts (kW)
- (ii) A.C. or D.C. (nearly all equipment is now A.C.)
- (iii) voltage
- (iv) A.C. frequency in cycles or Hz; (the choice is usually 50Hz or 60Hz).
- (v) Single phase or 3-phase A.C.

2. ECHO (previously the Joint Mission Hospital Equipment Board)

ECHO is a non-profit-making organisation which sells and despatches surgical instruments and drugs, dressings etc. at well below current market price. Initially supplying mission hospitals, ECHO now has orders from governments, ie Tanzania, and is growing rapidly. One new venture is ready-prepared packs for health centres and village clinics. Brochures on these have been circulated to all Field Directors. The address of ECHO is: 4 West Street, Ewell, Surrey KT 17 1UL, UK.

3. Locally made hospital equipment

Many types of hospital equipment can be made in the hospital's own work-shop (if one exists) at very low cost. Pioneer work by S. W. Eaves

at Zaria in Nigeria has demonstrated the practicability of making trolleys, wheelchairs etc. out of simple materials, standard metal piping, bicycle parts, etc.

Working drawings for use by others interested in making their own equipment have been published by the Intermediate Technology Development Group, 9 King Street, London WC2, as follows:

- (a) hospital blood transfusion drip stand
- (b) hospital bedside table and locker
- (c) folding bed
- (d) hospital ward screens
- (e) dressing/instrument trolley
- (f) bush wheelchair
- (g) hospital wheelchair
- (h) bush ambulance

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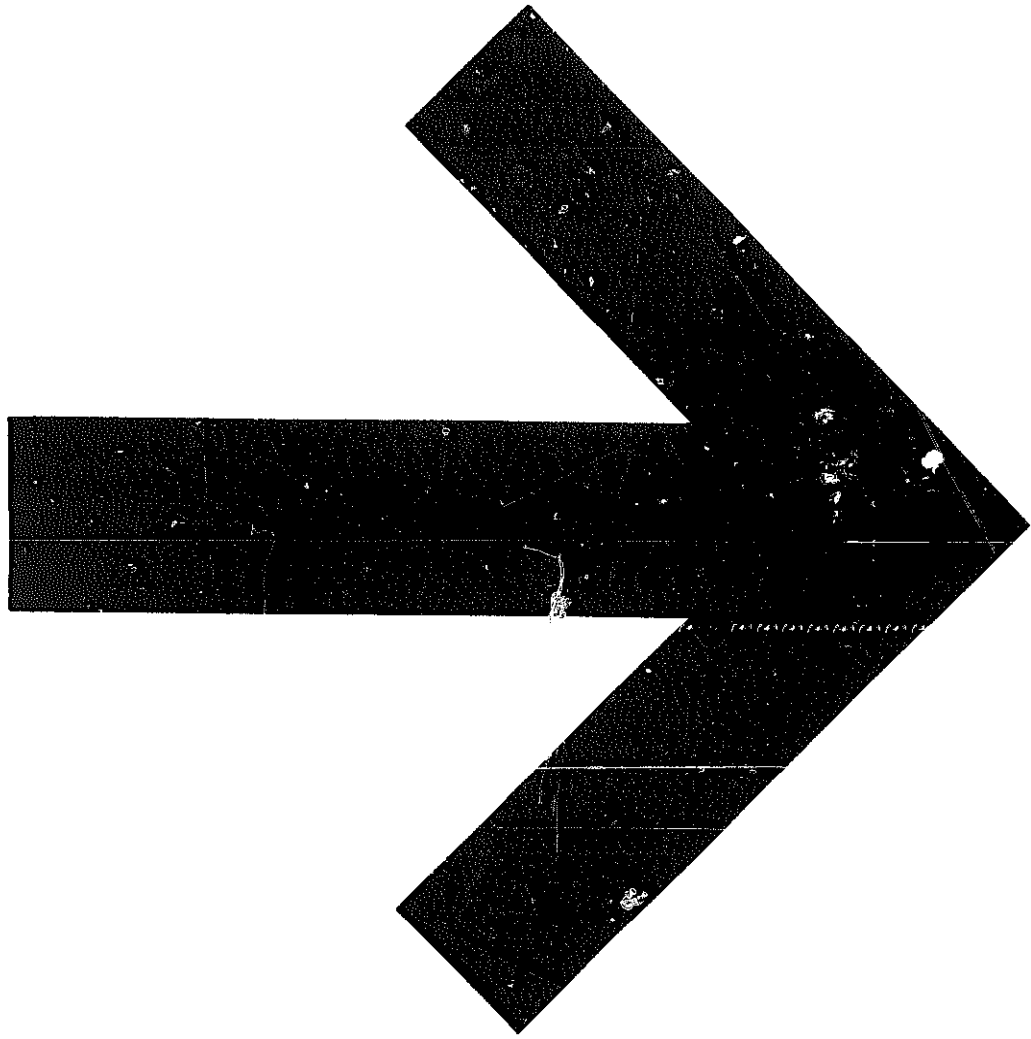
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For details of Oxfam Information Sheets that are available on Oxfam-assisted projects, see Section 2, Appendix III.

NOTE: Books marked * are available from the Foundation for Teaching Aids at Low Cost (TALC), Institute of Child Health, 30 Guildford Street, London WC1N 1EH.



Section 30 : SOCIAL DEVELOPMENT GUIDELINES

REVIEW OF SOCIAL DEVELOPMENT POLICIES

1. The Development of People

Oxfam is interested in the development of people, in enabling people to lead fuller and more satisfying lives. There is much room for debate about what such phrases mean in practice, and the people with whom Oxfam works are encouraged to make their own choices about this. The aim of Oxfam's work in social development is to help them choose their own destiny and handle their own development.

(See also Sections 1 and 2, and Section 3 for a fuller analysis of the types of people Oxfam is working with and is trying to assist.)

Oxfam's other aim of relieving poverty, when translated into social terms, is thus directed toward the basic pre-conditions for the development of people:

- (a) greater self-determination and greater awareness of the possibilities for development
- (b) removal of material barriers to self-development such as: un/under-employment, ill-health, inequalities in wealth and income, and inadequate and deteriorating resources for making a livelihood.

Oxfam is concerned that its agricultural and health projects should help people in the poorest strata of society, not only by improving their material situation, but also in making them less accepting in outlook, more aware of what they can do to effect an improvement in their circumstances, and more confident and self-reliant in their attitude to change. All projects should be designed to reduce inequality, and where appropriate, to erode or evade the exploitive situations which exist in many countries. Quite clearly, the degree of success in achieving these objectives will depend on the nature of the political system at the local and national level and the power of vested interests.

2. Integration of Social and Functional Elements

The types of social project which Oxfam seeks to support will usually have some combination of agricultural, medical and income-generating dimensions. Social development should never be seen in isolation from these more material aspects of life. (See Agricultural Guidelines in Sections 10-19, and Health Guidelines in Sections 20-28).

Conversely, Oxfam's agricultural and medical projects all have implications for social change, and should be evaluated from this point of view as well as on a more technical level. Many projects, eg the improvement of water supplies by digging wells, are operated on a self-help basis and therefore have as much social content as they have technical content. Hence the following Sections on Social Development contain material on the social aspects of Oxfam's agricultural work eg cooperatives, savings clubs, and self-help water and building projects.

3. Social Education, Community Development and Technology

Greater self-determination of people within the local community, as well as on a national and international level, means a stress on people participating in projects, including women (Section 34). It means that community development and liberating forms of education should be stressed (Section 32). It also means building up the local institutions through which people can take charge of their own development such as village committees, cooperatives, local development agencies (Section 37).

The development of such organisations is also often a necessary pre-requisite for the successful introduction of appropriate technology equipment (Section 4). Whereas the equipment may itself be a stimulus to social development where it is clearly relevant to a widely felt need, it is almost always found that using the equipment demands new forms of social organisation, eg a cooperative for a new production process, a village committee for a community water supply project, or a maintenance system for a village pump.

Achievement of a more egalitarian distribution of wealth and income implies that appropriate technology should be so organised as to share the benefits of production. Again, social and community development is necessary, because appropriate technology will not redistribute income unless it is appropriately organised.

In discussing these issues, the term 'community development' has tended to be superseded by 'social education'. Also 'non-formal education' and 'participatory development' are now used almost inter-changeably. Oxfam prefers the use of any of these three latter terms as they emphasise the idea of people educating themselves through their own choices and their own experience. Oxfam's role is to assist in giving them the opportunity to do this, and not to do it for them.

4. Education: Formal and Non-formal

Until the present time support for primary education has been excluded from Oxfam's terms of reference. For some time however there has been support for the idea that education should be a key development activity in which Oxfam should seek to participate. Any formal education Oxfam considers helping should be schooling relevant to the environment and future life of the children. It should include measures to reduce educational wastage, reform curricula in the direction of more practical and less academic education, and efforts to re-train teachers.

In addition the idea has been put forward that there may be a particular need of help in the whole field of deprived children of primary school age and young adolescents who have missed school, especially in rural areas and urban slums. Special attention should be given to the education of girls; to health and nutrition education in school; and to the education of parents in child-rearing.

Non-formal education aimed at those who have missed school should deal with basic literacy and numeracy, as well as skills and knowledge relevant to the improvement of living conditions and life prospects in the communities concerned. This work may include support for youth clubs and young women's clubs (Section 34), it may include training for educators and club leaders; and it will often link up with Oxfam's existing work in support of vocational training or rural training centres (Section 33).

Detailed guidelines on the types of education which Oxfam would be willing to support are set out in the memorandum approved by the Executive Committee on 16.12.76.

5. Indigenous Agencies

Wherever possible, Oxfam prefers to work with indigenous voluntary agencies, rather than with expatriate-directed groups, eg missions, or with government bodies. Indigenous voluntary agencies include the following:

- (i) Charities founded and run by local people
- (ii) Christian churches entirely under local leadership with no Western missionary element, including most churches in Latin America and an increasing number in Africa and Asia. Also churches which have been founded as indigenous denominations separate from the denominations of Western Christendom, eg the Kimbanguist church in Zaire (ZAI 48). Oxfam must not be identified with any sectarian propaganda, only with agriculture, health or welfare activities run by these churches.
- (iii) Non-Christian religious groups involved in humanitarian work or development, eg Buddhists (VN 15, VN 17) and Moslems (ID 20, a family planning project; also ID 24).
- (iv) Social service societies or Mandals; Gandhian groups and the Sarvodaya movement (SL 6, MAH 4, IW 35); and bodies such as the Community Development Trust Fund in Tanzania (TAN 6). These are all agencies geared for development work, as opposed to the charities mentioned in (i) which are normally more concerned with welfare work (see Sections 40, 41).

The better of these agencies have their own specific philosophy of development. As indigenous agencies often have differing views on the meaning of development, it is important that genuine understanding exists which is neither paternalistic nor naive. Abnormal risks may have to be taken on occasions to allow the agency freedom of operation, and freedom to experiment with non-traditional approaches, but these must be reasoned out and seen to have acceptable and tangible objectives in the broad sense. Such is the case for instance with increasing numbers of informal community and action groups in India, Bangladesh and Indonesia with which Oxfam now has contact through its local Field Officers.

Local agencies which have well thought out development philosophies almost inevitably have a political stance even if not an active political role. Oxfam will not be effective in supporting local agencies if it cannot live with this; Oxfam staff need to be politically aware in order to avoid being used by political factions or for political ends.

6. Some Practical Points on Indigenous Agencies

- (i) Oxfam field staff's time. Indigenous agencies require a larger and more regular allotment of time, partly to maintain a dialogue, and partly because practical skills in project management and administration are sometimes rather limited. With a few agencies, it may be useful to think of employing (part-time) an intelligent, sensitive local person who can help keep the communication process alive. The increasing number of local field staff being employed by Oxfam for this work has been noted in the preceding two sections. Field staff must be careful not to become too identified with projects they may have helped to construct.
- (ii) Size of grants. Large grants can be destructive of a local agency's own independence, self-reliance, and local fund-raising efforts.

Small grants are best, with continuous assessment of any detrimental effect of this money relationship. Large grants may also direct the agency's efforts from non-material goals such as social education or campaigns for social justice, and encourage it to work only at the Oxfam-funded material development programme and even to buy in expensive, inappropriate equipment.

- (iii) Internal politics. A foreign donor may tend to strengthen the position of some members of the local agency, eg English speakers; those with Western-oriented opinions; those least interested in making the agency self-reliant.
- (iv) Local attitudes to the agency. The agency's relationship with foreigners is likely to change the attitude of the local people towards it, possibly making them less conscientious in paying back loans, and more suspicious of corruption or of hidden political motives. Foreign visitors may distort local perception of the development process, and care should be taken to see that projects are not over-visited.

7. Assessment

The processes and general objectives known as 'community development', 'social education', 'awareness-raising', 'alertment' and/or 'conscientisation' pose special difficulties when they are presented as applications unattached to practical goals. At the end of the day there is such a multiplicity of possible reasons why initial failures represent the intrinsic difficulty, complexity, unpredictability, slowness, immeasurability and even 'rightness' of the task, as opposed to the malfunctioning, over-optimism, or faulty analysis of the agency. For a charitable agency which is not accountable for the end-results of its projects, this whole field can become a somewhat dangerous easy option for funding. Therefore where large grants are concerned, it is essential that the whole question of assessment, and particularly what will constitute short-term indicators of progress, should be thought through and made the subject of prior agreement between Oxfam field staff and the local agency (see

The application should indicate the criteria to be used for determining progress on various sub-objectives, and preferably indicate which benchmarks exist, and which will be collected prior to the commencement of the work. The criteria should be observable, and the agency should be able from them to demonstrate the progress made. This itself should be sufficiently objective to allow confirmation if required by an independent evaluation study.

It is worth noting that the purpose of these comments is to prevent this whole vital field from becoming discredited either by unrealistic expectations, or by an involvement which is inappropriate for a foreign agency such as our own (see also Section 8).

Oxfam is giving serious attention to the issue of evaluating rival social development projects. Currently two researchers, at the request of Oxfam are undertaking a research project the aim of which is to establish criteria by which to achieve greater understanding of the non-quantifiable aspects of social development projects. It is hoped that this project will assist projects and Oxfam field staff to monitor better the progress and evaluate the effect of rival social development projects.

8. Summary of Types of Social Development Work Oxfam Supports

- (i) Communication - Section 31
- (ii) Non-formal Education and Community Development (or Participatory Development) - Section 32 - this includes certain aspects of all the other categories of social development listed below. Projects should be categorised as 'social education' only if this is the dominant element. For housing or water projects carried out as social education, see Section 36.
- (iii) Specialised Training - Section 33
 - including:
 - (a) adult literacy
 - (b) technical training including vocational and management training
 - (c) rural training
 - (d) training of the blind
- (iv) Women's Programmes - Section 34
- (v) Employment and the organisation of work: - Section 35
- particularly employment/income generating projects.
- (vi) Physical Infrastructure community development approach to neighbourhoods and homes - Section 36.
- (vii) Social & Economic Institutions, including marketing, cooperatives, savings & credit, revolving loan funds - Section 37.
- (viii) Rural Settlement Schemes - Section 38
- (ix) Legal Aid - Section 39

Bibliography

Please refer to the detailed bibliography at the end of Section 3.

For details of Information Sheets that are available on Oxfam-assisted projects, see Section 2, Appendix III.

The Editor will welcome further suggestions that are appropriate to this Section.

Section 31: COMMUNICATION AND DEVELOPMENT

Introduction

The 1970s have witnessed a growing interest in the role of communication in development. Communication in its widest sense has been defined as: all the ways in which people influence one another. In a narrower sense it refers to the transfer of information such as ideas, knowledge, skills etc. between people. In both these senses it is the lifeblood of development. Regrettably it is often equated in the popular mind with the media. Most human communication makes no use of media, nevertheless media communication is assuming increasing importance and raises many problems, especially in the context of rural development. Communication is still an embryonic science, borrowing from psychology, sociology, linguistics, cybernetics and many others, and is therefore developing a new and often ill-defined jargon.

UNESCO has recently defined Education as 'organised and sustained communication designed to bring about learning'. So education, extension and training can be looked on as particular forms of human communication, or one may prefer to regard communication in the narrower sense of the transfer of information as an important component of education. Confusing but, whichever way it is taken, the quality of communication is crucial to the realisation of Oxfam's ideals of development.

Effective Communication: 'Empathy' and 'Feedback'

Two factors crucial to effective communication are 'empathy' and 'feedback'. Empathy means 'putting yourself into another person's shoes'. The communicator who defines, studies, knows and considers his audience is able to predict the results of his communication and adjust it in advance. The term target audience, often used by communicators, may be objectionable on some grounds, but the importance of adapting messages, media and styles of communication to clearly defined groups cannot be over-emphasised.

Attempts to reach diversified audiences with a single communication are usually counter-productive. For example, three manuals on one subject for three levels of readership may be more cost-effective than one. A broadcast for a special interest group (eg poultry keepers) may be more useful than one seeking to interest everyone.

'Feedback' gives the communicator knowledge of the results of his communication, enables him to correct errors and to increase empathy. It turns one-way communication into two-way or multi-directional communication. It is thus crucial to any attempt at participatory development. It is important especially in training communicators to insist that feedback is not simply a response from the receiver to the sender, but also involves control, since nothing is fed back into the system if the response does not influence, modify or control the sender's behaviour. In direct, face-to-face communication the use of feedback involves listening, ie seeking, receiving and using information as distinct from transmitting it. Nothing is more difficult, or more important, than to teach a teacher to listen. In indirect ie 'distance' or 'delayed' communication through media, feedback has to be systematically organised and this requires action research.

Related to the idea of feedback and two-way communications are attempts to reverse the traditional top-down flow of development information. These

can take many forms and their experimental development might well attract Oxfam's interest and support:

- (i) efforts to use the media to discover and demonstrate people's problems, needs and interests eg. interviewing farmers on radio, making films with local actors on community problems, use of video to represent local problems to politicians or power groups
- (ii) putting media into the hands of local groups through community radio and video programmes
- (iii) opening up channels from people to government, from farmers to agriculturalists and researchers, from community groups to planners by organising local discussion groups and listening to them, by mass consultation or opinion research as used in the Botswana Tribal Lands Scheme.

Development Support Communication

More traditional programmes for the use of media especially in rural development are now often classified as development support communication. In Kenya, for example, a directory of Agencies producing media for rural development included 27 distinct units and services. In developing countries these range from vast multi-million pound schemes like the Indian Satellite Instructional Television Experiment programme (SITE) to small, say 4-man, media production units supporting a local literacy or health programme. An unfortunate tendency has been apparent for aid agencies to flood developing countries with costly and delicate hardware such as T-V systems, cinema vans etc with little or no provision either for software or for maintenance and repair of hardware. Production of media requires highly specialised skills and built-in evaluation and action research to provide feedback to check the appropriateness of messages and to pre-test media at the draft stage. The British Council Training Division (Tavistock House South, Tavistock Square, London WC1H 9LL) and Selly Oak Colleges (Bristol Road, Birmingham B29 6LE) provide training in media production skills. Reading University Agricultural Extension and Rural Development Centre (18 London Road, Reading) includes in its post-graduate courses special training in action research for media production. Expensive media schemes often lose efficiency and even grind to a halt for lack of basic repair and maintenance workshops or competent staff. So this may be a crucial point for assistance.

Regrettably large sums are spent on ineffective communication through poor quality media often of inappropriate messages. Communication of modern knowledge through modern media to largely illiterate and remote rural populations raises many acute problems eg language and culture barriers, difficulties in interpreting 2-dimensional representations like drawings, films etc. In spite of this, or because of it, the improvement of development communication is crucial.

Oxfam's Intervention

With the increasing importance given to communication and the increasing understanding of its problems and needs, Oxfam may well find opportunities for cautious involvement for example in:

- (i) training to improve communication skills of the field staff of local agencies, especially in non-formal education

- (ii) equipment for media production eg cameras, graphic art materials, sound tape or video recorders, offset presses, or for the use of media in field programmes eg transistor radios, slide projectors
- (iii) repair and maintenance of equipment
- (iv) complete mini-projects with staff, equipment, travel, local transport, etc. 'Mini' in the sense of limited aims but often quite expensive eg. making a film or video tapes to support a social education programme
- (v) provision of national or expatriate staff for all the above.

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Check List of Questions

Before accepting requests in the field of communication, Oxfam staff should seek positive answers to the following questions:

- (i) does the project aim to communicate useful and appropriate information to the poor and underprivileged?
- (ii) is there an understanding of the problems inherent in such communication and for a readiness to acquire this?
- (iii) is the flow of communication two-way rather than one-way top-down and/or is there an intention to make it so?
- (iv) is there evidence of empathy, ie willingness by staff to define, study and consider their audiences?
- (v) is there provision for feedback, ie readiness by field staff to listen and adapt to response from audiences, either directly or through evaluation and action research?
- (vi) are efforts being made to open channels and make media available for people, especially the poorest, to talk (a) to each other and (b) to planners, officials, technologists and research workers? Will their views be listened to and acted upon?
- (vii) where the production and use of modern media are involved:
 - (a) is there a competent unit, adequately staffed or seeking help to up-grade its staff?
 - (b) are its aims clear and compatible with Oxfam's?
 - (c) is its equipment, transport etc. adequate or can it be helped to make it so?
 - (d) is its financial provision adequate for its task or can it be made so?

Section 32: NON-FORMAL EDUCATION AND COMMUNITY DEVELOPMENT
(or Participatory Development)

COMMUNITY DEVELOPMENT

1. Background

The term 'community development' was used for the first time in official government reports less than 30 years ago but since then over sixty developing countries have started National Community Development Programmes. Many of these C. D. programmes have failed to bring about any real improvement in the living standards of those they were intended to benefit. As a result many people are re-thinking the community development approach and are questioning the wisdom of emphasising the gradual nature of the process - see the U.N. publication, Popular Participation, 1971.

1. Tests of True Community Development

- (i) Government and non-government organisations claiming to be doing C.D. are not necessarily doing so. Organisations helping communities in a paternalistic way to improve conditions through construction of public works projects, etc, but with little or no participation by the people are not using the C.D. approach.
- (ii) One can ascertain whether or not the organisation concerned is C.D. orientated in its approach by:
 - (a) asking for the objectives of the organisation
 - (b) observing the decision-making process, ie how projects are selected and on what basis
 - (c) assessing the amount of voluntary community participation in the implementation of projects
 - (d) if some projects have been completed, look to see whether they are maintained and whether the innovation is continued
- (iii) What is most important is how the agency works with the people, ie the method by which it achieves change.
- (iv) The most crucial people in the programme are the field workers. See how they are selected and trained. What is their attitude towards the people with whom they work? Do they respect comments, criticisms and suggestions? Do they take care to satisfy people's doubts?

3. Objectives

To merit the term 'community development' the agency must have two principal objectives: non-formal or social education and material improvement.

(i) Non-formal and Social Education

- (a) Programmes which assist people to become more aware of the reality of their own situation through a study of vital issues such as: household economy, rural economy, marketing systems,

social structures and institutions, starting from a study of the community and gradually working outwards to a study of the inter-village system and then the region. Eventually the study group would look at the role and function of the different departments of government, etc.

- (b) Through these and other learning opportunities, villagers will gain greater confidence and skills and be better able to organise themselves to assess local problems and find solutions to them.
 - (c) The C.D. field worker or promoter assists the people in setting up appropriate organisations through which they can plan and implement decisions to promote changes for the better in their communities. These could include specialist groups to cater for the needs of young people, women, farmers and craftsmen.
 - (d) Through this process of collective decision-making people will develop greater self-reliance and willingness to co-operate together.
- (ii) Material improvement The programme must offer tangible benefits particularly to those on the lowest incomes, eg rural wage workers, self-employed craftsmen, micro-plot cultivators, the 'marginal' strata. These benefits can be in the form of:
- (a) Higher income through improved farming methods, marketing procedures, development of additional work opportunities, teaching new skills.
 - (b) Better services which lead to improved health standards and quality of life, such as schools, clinics, sewage and drinking water systems, libraries, recreational facilities, etc.
 - (c) Reduced household expenditure as a consequence of increased domestic production.
 - (d) Increased security both economic and social.

4. Method

- (i) Projects should, wherever possible, respond to an expressed need, usually referred to as a 'felt-want' or 'felt-need'.
- (ii) Where the process of social education has only just begun, it may be necessary for the change agent in the person of the C.D. worker/educator/motivator, also referred to in the appropriate context as "promotor" or "animateur", to give considerable assistance to the people in the formulation of their ideas.
- (iii) Different groups in the community may have differing felt wants. If questions of priority arise, the project which is most likely to benefit those in greatest need should be given first consideration.
- (iv) The C.D. worker should not be a 'modernisation package' salesman. There are dangers in over-stressing the advantages of a proposed innovation with little or no mention of its disadvantages; farmers have often rejected an innovation after trying it, when disadvantages

became apparent. It must be remembered that the final decision on the acceptance of any change rests with the people. To achieve lasting success the proposed innovation:

- (a) must be technically sound, eg new seeds or fertilisers must have been tested a few years in the local environment
- (b) must offer advantages related to some existing want, or something the people learn to want
- (c) must be locally practicable. Workers must be aware of the dangers of cross-cultural transferences of methods and approaches
- (d) must protect innovating farmers against the risk of losing everything. Wherever possible, they should be given the opportunity to experiment and convince themselves of the utility of an innovation before making an investment. Failure can make later efforts to introduce change much more difficult
- (e) must be based on adequate knowledge of local traditions, customs, social structure, existing organisations and their objectives. During this stage of local investigation, which may include a community self-survey carried out by the villagers, the C.D. workers can identify likely areas of greatest need and people with leadership skills in different fields. They can be given special training.

5. Advantages of Locally Born Community Development Workers

- (i) They have deeper understanding of the real needs of the people and are able to communicate more effectively than an outsider with an alien accent, strange dress and habits.
- (ii) They may occupy a place in the local power structure and be in a strategic position to encourage the community members to form organisations to promote local development.
- (iii) Trained and enlightened local leaders may be highly motivated to improve their own communities; they may offer to work on a voluntary basis or just receive expenses.

6. Possible Pitfalls with Locally Born Community Development Workers

- (i) If locally born C.D. workers belong to privileged groups in the community they may have a vested interest in resisting change. In this case they will tend to persuade the people to adopt prestige projects, such as the construction of a Town Hall, a community centre, a library, a road, where the principal burden in terms of voluntary labour falls on the poorest members of the community whilst the main beneficiaries are the urban-oriented elite or the shopkeepers.
- (ii) With insufficient training they may have insufficient skills to be really effective. But too much training, particularly involving a long stay away from the community in an urban environment, tends to create a cultural and social gap between them and the villagers.
- (iii) If they are dispensing goods and services, eg fertilisers, seeds, credit, they may be tempted to benefit their kin or members of particular social groups. Even if they do not, they will be suspected of it.

- (iv) If local workers are given inadequate support, supervision, or opportunity for refresher courses, and are expected to do too much, they may become disillusioned. In Oxfam's Chimaltenango and San Martin programme in Guatemala (GUA 12), considerable attention was given to training and tactical support of local extension agents. They were given the opportunity to meet together regularly to exchange experiences and learn new methods, techniques and skills.

7. Economic Benefits from C.D. Projects

It is important to select projects which lead to tangible economic benefit, which can in turn be invested in improved housing or education. In most countries where Oxfam is working, the bulk of the rural population is independent small farmers. There are a number of ways of enabling them to increase their income:

- (i) Increased production through improved seeds, fertiliser, irrigation, crop rotations, ox-drawn ploughs, soil and water conservation measures. See Agricultural Guidelines, Sections 10 - 19.
- (ii) Improved marketing, through cooperatives, or through guaranteed prices and a certain market, eg direct sale to a cooperative processing plant or canning plant, and improved road communication. See Sections 36 and 37.
- (iii) Agricultural Credit Government banks do not usually lend money to the marginal and small farmers who most need it. A good example is a scheme in Oxfam's Cuanhtenco C.D. project in Mexico (MEX 15) which gave insurance against crop failure to farmers prepared to try new methods. The innovating farmers were given close supervision at all stages of the agricultural cycle. If for some reason the crop failed, they were guaranteed the same income as they had received from the sale of their previous year's crop. The success of this scheme has encouraged the Mexican Agricultural Bank, which previously was not willing to provide unsecured loans, to extend supervised credit to villagers to buy seeds, fertilisers and animals. It is important to ensure that under normal circumstances the farmer should be able to repay his loan and also to ensure a reasonable profit margin. See Sections 13 and 37.
- (iv) Technical Assistance/Advise with support from specialised laboratories which can analyse soil samples, test fertilisers and develop new strains of crops suited to local conditions. Included also are classes for farmers held in slack seasons in comfortable surroundings, not in schools on seats made for ten-year-olds, and given opportunities to visit successful innovators and discuss their experiences. See Section 4.
- (v) Assistance with cooperatives Training leaders and members. Providing supportive services. Initially set up a pre-cooperative under close supervision - See Section 37. Remember that developing countries are littered with the remains of cooperatives which have failed because of inadequate guidance, technical assistance and financial support, or because the cooperative model used was inappropriate to a peasant society.

8. The Development of Supplementary Employment Opportunities

(i) The development of small scale industry employing intermediate technology and using local raw materials. In project GUA 12 there was a bakery, furniture workshop, peanut butter project and improvements to the weaving trade including better looms, dyes, designs and better markets found.

(ii) Introduction of chicken hatching, intensive livestock; sewing machines for homework by women. See Section 35.

9. Improvements to Village Services

An example of this has been the improvement of village water supplies in Lesotho (LES 16) undertaken by the C.D. department of the government. Through the participation of the people in planning and execution of the project, they have been made to feel that the scheme is theirs. Evidence of this has been the trouble they have gone to in repairing any broken pipes or taps without seeking help from the C.D. officers. Water was the main need of these communities, and the project acted as a catalyst in bringing people together. Village committees have remained active and have gone on to plan and implement other projects such as communal gardens, roads, and anti-erosion measures. See Section 36.

10. Human Development

The overall purpose of C.D. is the development of people, so the aspects of C.D. work that are most important are those which enhance the dignity of the people, and increase people's confidence in their ability to effect change. Literacy classes especially functional literacy are often seen as having a special role to play here.

Special problems arise where institutional changes, eg agrarian reform, changes in prices policy, are a pre-requisite to any fundamental change in the living conditions of weaker members of the community. The logic of C.D. is that it should encourage people to exert political influence on governments to achieve essential structural changes, but this conclusion would not be widely accepted. One must expect however that there will be greater pressure in the future from the hitherto silent peasants in most developing countries, and that C.D. if it remains true to its aims cannot help but contribute to this pressure at least implicitly.

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Section 33: TRAININGINTRODUCTION

This is a composite section concerned with four aspects of training relating to Oxfam's work in the social development context. More specific guidelines on training relating to agriculture and health workers are to be found in Sections 19 and 27 respectively.

The following are covered in this Section:

	<u>Page</u>
(i) Adult literacy, including adult education	33-1
(ii) Technical training, including vocational and management training	33-4
(iii) Rural training, including training for women	33-9
(iv) Training for the blind.	33-14

ADULT LITERACY, including numeracy and adult education.

Over 50% of the adults in many developing countries are illiterate. Despite substantial reductions in the rate of illiteracy in some areas, the total number of illiterates is still growing due to the increase in population.

One response is to expand the primary school system. But tailor-made adult education and training, especially for young adults, can be less costly, and it reaps immediate benefits. Where programmes are related to manpower needs, development priorities and individual motivation the result may be more cost-effective than the generalised training of young children in classrooms.

1. Numeracy

The importance of imparting the ability to understand figures should not be overlooked. This should be considered in its own right at times when it is not possible to introduce a simultaneous literacy programme.

2. Functional Literacy

This means something more than just the ability to read. UNESCO defines it as follows:

'... a person is (functionally) literate when he/she has acquired the essential knowledge and skills which enable him/her to engage in all those activities in which literacy is required for effective functioning in his/her group or community, and whose attainments in reading, writing and arithmetic make it possible for him/her to continue to use these skills towards his/her own and the community's development.'

3. Strategies

The above definition implies that literacy must have permanence and use-value. This leads to the following points about strategies in adult literacy programmes:

- (i) Literacy instruction by itself has generally proved a dead-end. It needs to support and be supported by other activities important or interesting to the learners, eg:
 - (a) work-oriented functional literacy, strongly promoted by UNESCO/UNDP. The 3Rs are integrated into elementary technical training, eg in agriculture, industrial skills. However this approach is now in

some disrepute since it proved very difficult and costly. The integration of literacy teaching with training for work often involved insoluble problems, eg finding suitable teachers, and the synchronisation of literacy teaching where it did not keep pace with technical training.

- (b) culture-oriented functional literacy, in which literacy training is linked to education covering health, nutrition, family life, agriculture and religion.
 - (c) conscientisation. Literacy programmes developed by Paolo Freire around the problems of minority or deprived groups, aiming to make them conscious of their problems and helping to look for solutions.
- (ii) Where literacy is linked to other material, as suggested above, the two must be interdependent and appreciated as such by the learner.

4. Organisation

A reliable organisation, supported by an adequate budget to prepare or acquire and distribute materials, train and pay instructors, and support learning groups with supplementary materials and activities is essential. The organisation should be able to support a literacy programme for at least five years.

Local volunteers, while useful in the short term, have proved largely unreliable in terms of attendance, and continuity is crucial. Instructors should be paid and trained. If primary school teachers are used, they should be given special training for adult teaching.

5. Language

Where literacy is to be taught in the vernacular, functional literacy may be achieved in about 300 hours, though groups should be encouraged to continue further study. Where however the mother tongue is an unwritten vernacular, or where teaching and reading materials are lacking in the vernacular, and instruction is in a second, eg official or national language, then the programme must be viewed as language teaching. Consequently the time and effort involved must be multiplied perhaps tenfold.

6. Teaching Methods and Teaching Aids

All forms of numeracy and literacy require appropriate teaching materials. Many traditional programmes, eg mission sponsored, have failed and continue to fail because of dull and poorly produced primers. Each method requires different types of teaching materials. For example traditional mass literacy campaigns generally use primers which are an anathema to Freire. Freire methods generally use large pictures depicting local problems and key or stimulus words.

Classes - or better, study groups - should not begin until well tested teaching materials relevant to adults are available in quantity and teachers or study group leaders have been trained to use them.

Literacy programmes should generally emphasise from the start both writing and functional numeracy based in the learners needs, eg to write letters, and to handle weights and measures, simple arithmetic, money calculations and budgets.

7. Costs and Quality

A policy of quality rather than quantity, though costly, is likely to be most cost-effective. Short-run, voluntary, elementary literacy programmes which lack adequate professional competence are rarely effective. The best guide to cost levels is to ascertain the cost of six years of primary schooling for a child in the country concerned. Per capita costs of adult literacy programmes should be slightly less than this.

8. Oxfam's Opportunity

Oxfam should consider supporting adult literacy programmes, especially functional literacy related to agricultural training, agrarian reform or settlements, rural industries, health and family planning, home economics and nutrition.

Appropriate objectives for this type of assistance are:

- (i) the production of teaching aids, eg books and visual aids, charts, word and letter cards, to start a programme or to replace obsolete materials in an on-going programme. This generally requires a production team of 3-4 educators/writers and illustrators for at least 2 years.
- (ii) the training of teachers or study group leaders, including re-training
- (iii) the production of reading material of relevance to adults at different levels of readability. This again should be a continuous process
- (iv) the reproduction of reading materials in collaboration with the production staff. This requires a printing establishment or finance for commercial printing
- (v) media programmes eg radio or film production to support and reinforce the literacy programmes as above

A particularly interesting and successful example of this is the large number of programmes supported by INADES based in Abidjan but with offices throughout West and East Africa (VOL 55).

Oxfam might provide:

- (i) salaries of essential staff to make existing projects of the above type more effective. These should include staff for training, teachers/group leaders, or staff for writing up materials or for preparing practical literature on agricultural or nutrition for trainees to use at the end of the course.
- (ii) printing and reprographic equipment such as small offset printing units, spares for existing units together with funds for technicians to instal, maintain and repair printing equipment and to train staff to operate them. Many literacy programmes are severely hampered by defective and obsolete printing machinery.

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UNESCO have many publications available eg. P. Furter Practical Guide to Functional Literacy (7 place de Fontenoy, 75700 Paris, France)

A useful reference source is:

British Committee on Literacy Documentation Centre,
Agricultural Extension and Rural Development Centre,
University of Reading, 16 London Road, Reading RG1 5AQ, UK.

This Centre maintain a useful reading list which is available on request to the Centre.

10. Checklist of Questions

If the answers to the questions below are largely negative, it is likely that a literacy programme will not have useful and permanent results.

- (a) Does the potential audience suffer specific disadvantages through being innumerate and illiterate?
- (b) Are the people aware of these disadvantages? Is motivation high?
- (c) What applications will there be for literacy? Do farmers, for example, need to read instructions on pesticide cans?
- (d) Would numeracy and literacy give people more job opportunities?
- (e) Are there industries or agencies in the area which could support a literacy programme? Would it help other development activities?
- (f) Is there a sound organisation to run the programme?
- (g) Is there an adequate budget?
- (h) Does the responsible authority have clear and realistic aims?

TECHNICAL TRAINING1. Kinds of Technical Training

A basic classification of the types of training programme which Oxfam supports might be constructed as follows:

- (i) Training in subsistence or family-level skills, eg. nutrition, health

and home economics for women; possibly some do-it-yourself skills for men. Training in nutrition is often carried out by health services (Sections 22 and 27), by rural training centres, or in women's programmes (Section 34).

- (ii) Training for the agricultural sector, eg. farmer training, extension work, and the work of rural training centres (see following Sub-section).
- (iii) Intermediate technical training or craft training ie. training in trades of mainly local significance including sewing, dress-making, tailoring, typing, shoe-making, tanning, building, carpentry, printing, simple motor repairs (Section 35).
- (iv) Training technicians for industry. This typically involves training in the use of machine tools and other industrial equipment and is relatively expensive.
- (v) Training for the service sector, ie. training technical staff and assistants needed for health and social services, for the agricultural extension service, etc. For Oxfam this most often means the training of medical auxiliaries (see Section 27 on Training Health Workers).
- (vi) Training in adult literacy might be a necessary accompaniment of any of the above (See previous Sub-Section).
- (vii) Training people with special needs, eg. the blind, the deaf, the physically handicapped.

NB. This Handbook is not the place to go into the practical details of setting up and equipping training workshops. Information on this can be found in Equipment for Rural Workshops by John Boyd, IT Publications Ltd., £2.95. This book is certainly useful as a checklist, though the categories used may be rather confusing.

2. Oxfam Policy and Objectives

Oxfam does not give any funds for academic education, but is keen to support practical forms of training with any of the following aims:

- (a) to improve the employment prospects of school leavers
- (b) to make people better able to help themselves
- (c) to meet the need for special skills eg. family planning workers.

In some cases a confusion of objectives has arisen. For instance in a rural area where there is a need for training which will assist people to be more self-sufficient as in (i) and (ii) above, but instead vocational training is provided with an employment-orientation such as in (iii) and (iv).

There have been many cases where trainees afterwards have difficulty in finding employment. The training has apparently done little more than to provide a bridge between leaving school and adult life, keeping young people occupied during that period.

It must always be borne in mind that training and employment are not just a function of the availability of technical expertise and facilities and of job opportunities. The social and cultural constraints apply just as much to these as to any other form of development activity (see Section 3). For example there is the contempt shown in some societies for certain trades eg. blacksmiths, or of the attitude towards and by the white collar syndrome; similarly there are the issues raised by ethnic and linguistic affinities.

For further guidelines on employment possibilities, see Section 35.

3. The Gap in Rural Training: the need for subsistence and family-level skills.

The development of many communities is held back by a shortage of skills. To some extent this means a shortage of craftsmen eg. blacksmiths, builders etc., but to a greater extent it means a lack of do-it-yourself skills among farmers and householders. The money circulating in most communities is insufficient to support more than an occasional craftsman, and many jobs must be done on a do-it-yourself basis if they are to be done at all.

Technical training in rural areas has often been geared to producing craftsmen instead of giving farmers and householders a wider range of skills related to the practical problems they encounter. The latter type of training is probably best done in the context of a widened agricultural extension programme, or through rural training centres working with farmers and their wives. Some kinds of women's training are already carried out in this way. One survey of the do-it-yourself skills needed in an African community identified the following requirements:

- (a) maintenance and better use of ploughs, cultivators, etc.
- (b) making improved ox harness
- (c) improved wood-working skills related to house construction
- (d) making stabilised earth bricks or concrete blocks for building
- (e) installing guttering and tanks for collecting water from roofs
- (f) bicycle maintenance
- (g) care of water pumps where these are used at local wells.

A lack of suitable tools may often be a major limitation in the development of do-it-yourself skills, and it may be as important to make these available as to provide training.

4. Craft Training (intermediate technical training)

Imaginative work has been done on this level by Village Polytechnics in Kenya (KEN 88) and by the brigades in Botswana (BOT 1, BOT 22), but these and other similar projects have been troubled by the poor prospects for those who complete the training either as independent craftsmen or in paid employment. The Kenya experience has led to the identification of the following problems:

- (a) over-estimation of the need for craftsmen in rural areas
- (b) failure of courses to teach business skills
- (c) courses train people in the techniques of production but not in the necessary rhythm of production.

In Kenya and in many other countries, it would be practicable to encourage apprenticeship in many trades as opposed to courses, and it has been argued that an apprenticeship system would give better training in business skills and rhythms of production, and would be more sensitive to changing demands for craftsmen. Any craft training scheme for which Oxfam support is sought should satisfy the following:

- (i) It must be able to respond to the temporary and changing nature of the skills market.
- (ii) It must include realistic and competitive working rhythms for the trainee.
- (iii) It must provide knowledge of relevant business methods, entrepreneurial skills as well as book-keeping.

- (iv) It must be tailored to specific and viable rural opportunities
- (v) It must cost a comparatively small sum.

5. Vocational Training

Looking at craft training and the more industrially oriented training of technicians together, we face considerable problems in assessing employment opportunities. Skilled people are one of the scarcest resources in the third world, but the use of skills is dependent on the state of local economics, which is usually difficult to predict. In this situation, two alternative attitudes are possible:

- (a) training may be considered a good thing in itself
- (b) training is supported only if an appropriate job materialises at the end of it.

Since training programmes take some time, and syllabuses are not easy to modify at short notice; and since changing situations are endemic in developing countries, it would seem that (b) above is rather an impractical view to take in the planning stage. Planning agencies of governments, and such employment agencies as exist, may help relate courses to job opportunities. But few governments in the developing world are in a position to give realistic advice on this.

6. Management Training

It is generally much easier to provide technical training relevant to local industries and trades than to provide management training. Yet this is at least as important if the trainee's skills are to be put to the best advantage. For instance there is little value in having a group of skilled metal or wood-workers if at least one of their number isn't able to keep the order books, order supplies and maintain adequate accounts.

A good example of this type of training is the seminars run for small industries in Tanzania by SIDO in Shinyanga (TAN 119). A useful aspect of these was guidance on how to obtain bank loans. Most of the groups had subsequently managed to obtain loans, and were up to date with repayments.

7. Oxfam Guidelines

The following guidelines have been put forward:

Rural training and craft training

- (i) Rudimentary training for young people in carpentry, market gardening, sewing, etc, may be subsidised, and regarded as a possible bridge into the adult world.
- (ii) Simple basic training, helping village people to improve their home-life and raise their income through village industry may be thought preferable to providing training that is useful only if they move into the factories, garages and sweat-shops of the overcrowded towns.
- (iii) Short courses for farmers should be considered in this category, and are often supported by Oxfam.

Industrial training and technician training

- (iv) Training in more costly or elaborate skills should not be funded except as part of a package where the skills are known to be relevant and employable in the context of the particular country. This knowledge is seldom likely to be obtainable.

- (v) Where costly skills are acquired for the benefit of the individual who may seek employment in a more developed country, the use of Oxfam funds must be questioned. Trainees in Syria, Jordan and Lebanon (JO 10) who obtain well-paid jobs in Europe after a minimum of £600 has been spent on their 3-year training surely fall into this category, unless it is felt that their refugee status entitles them to special consideration.

Special Groups

- (vi) Subsidised assistance for handicapped people may be considered a peculiarly appropriate function for a charity like Oxfam. It is a welfare contribution to individuals rather than an addition to the country's needed skills. All too often a handicapped person who finds a job does so at the expense of someone else.

Training as welfare, not development

- (vii) The emphasis on development has perhaps confused Oxfam's attitude to training. Training does make an important contribution to development, but this must be assessed in terms of the relevance of the skills provided which entails all the problems noted above. It may be more realistic to think of much Oxfam-supported training as a welfare contribution to the individual, as discussed in points (v) and (vi) above, and in paragraph 5(a).

8. Information Required in Applications to Oxfam

Where courses are given in recognised educational institutions, supporting information should be readily available. Where community centres operate programmes, they should be encouraged to collect information. The points which must be covered in either case are:

- (a) the course duration, its teaching timetable and syllabus
- (b) number of students taking the course in any one academic year
- (c) number of staff and their qualifications
- (d) grading, diploma or certificates which will be given on completion of the course, and whether any certificate has official recognition
- (e) whether the course is at variance or in accord with local or national educational priorities
- (f) data from any employment surveys which may help in assessing availability of jobs for trainees
- (g) details of follow-up system, which the training institution must have to check on the placing of graduates in the labour market.

9. Bibliography - for Technical/Vocational/Management Training

John Boyd, Equipment for Rural Workshops, IT Publications, 1978.

Not a training manual, but gives advice about setting up a workshop and suggests what equipment is required.

Murray Culshaw, Training for Village Renewal, Lutheran World Service, 1977, £1.00.

Useful, short book on vocational and rural training. Interesting section about identifying rural skills.

Malcolm Harper, Consultancy for Small Businesses, IT Publications, 1977, £5.95.

Useful guide for those running or advising on small-scale businesses.

Malcolm Harper and T. Thiam Soon, Small Enterprises in Developing Countries: Case Studies and Conclusions, IT Publications, 1979, £2.95. Illustrates many of the problems facing small businesses and analyses the attempts made to overcome them.

How to Start a Village Polytechnic, Youth Development Division, Dept. of Social Services, Ministry of Co-operatives and Social Services, Nairobi, Kenya. (- at: P.O. Box 30276).

Industrial Training Board (UK) publications. A catalogue of these publications is available from: TETOC, 17-19 Dacre Street, London SW1H 0D3, UK. The catalogue includes comprehensive list of training manuals. Many of these are also relevant to developing countries.

Fr. McGrath, Barefoot Management
Management Skills for All

- both these publications are available from: Xavier Institute of Management and Labour Relations, Jamshedpur, Bihar, India.

Oxfam leaflets on aspects of Management Training. Available from: Training Department, Oxfam, Oxford, UK.

P. van Rensburg, Report from Swaneng Hill. Almquist and Wiksell (Stockholm), 1974, £1.95. Story of Swaneng Hill School and the setting up of the brigade system in Botswana.

Village Polytechnic Handbook National Christian Council of Kenya,
Available from: P.O. Box 45009, Nairobi, Kenya.

For details of Information Sheets that are available on Oxfam-assisted projects, see Section 2, Appendix 3.

RURAL TRAINING

1. The Need for Rural Training

Among the many obstacles to rural development which are experienced in most Third World countries, two of the most important are:

- (a) A surprising lack of opportunities to acquire or improve on traditional subsistence skills, or to learn cost-saving do-it-yourself techniques and attitudes.
- (b) A serious imbalance in the division of labour between men and women, whereby women carry the major burdens of subsistence and family life and men are under-employed and relatively unproductive.

The term 'rural training' is used here to mean training in the skills needed in everyday life and in subsistence skills, as opposed to vocational or technical training which is employment-orientated. Such training is needed by virtually all members of rural communities, including older children and adolescents as well as adult women and men. In many countries, the development

of over-academic schooling on the one hand and vocational training on the other has left an unfilled gap with regard to this kind of rural training. Most communities could benefit if their members could receive some training in domestic and household tasks, house building and repair, maintenance of equipment in everyday use, eg bicycles, hand-mills, and in food production.

Another problem is that rural training in the agricultural sector has usually been aimed only at men, and except in child health, little has been done for women. Not only do women merit much greater attention, but the training of men and women together so that they appreciate and possibly share each other's problems is a possibility which is often neglected.

For women's programmes in general, see Section 34.

2. Types of Training Programme in Rural Areas

- (i) Extension work, including conventional agricultural extension (Sections 19 and 32) and also nutrition extension work aimed mainly at women (Section 22).
- (ii) Training Centres. There is a wide range of these, extending from those which only teach agriculture, to those which cater mainly for women or for girls out of school. Some rural training centres cater equally for men and women and provide training for farmers as well as giving courses in purely domestic subjects. The types of centre commonly encountered are:
 - (a) Farmer training centres
 - (b) District farm institutes
 - (c) Rural training centres for men and women
 - (d) Homecraft centres for women and girls.
- (iii) Medical/health agencies offering some instruction. This category includes pre-school (or under-fives) clinics, where there is a teaching component in the service provided. See Sections 21 and 26.
- (iv) Women's clubs and savings groups provide a vehicle for talks and demonstrations and also for learning by doing.
- (v) Adult literacy programmes - see earlier Sub-section
- (vi) Staff training centres. These are institutions or colleges which train extension workers, community development officers, home economics teachers etc., and are dealt with in passing in this article.

3. The Potential for Women's Training

Rural training must often be women's training, simply because women play such an important part in the rural community. The benefits to be achieved by training women rather than men are very much greater, though to train both sexes together will often be best. The response of women to training and other development activities is also commonly better, as has been found, for example, with Oxfam's experience of Saveway Clubs. (See Savings and Credit, Section 37). The following factors particularly affect women's response to training:

- (i) The responsibility which women have for children and for other dependants appears to stimulate a broader sense of responsibility in discussing changes which may benefit the whole community.

- (ii) Men are often partly out of touch with the most immediate needs of the community as a result of receiving over-academic education, or taking employment away from home, or because of a traditionally inactive role. They may want to see rapid development, but possibly of an unrealistic kind.
- (iii) Girls usually spend less time in school than boys, and this may make later training more difficult for them, or tend to make them conservative about changes which have a long-term rather than an immediate benefit.

4. Separate Women's Projects or Integrated Programmes?

The question of whether women should be integrated fully into projects aimed at the whole community depends very much on the nature of the society concerned, and on the type of programme being developed. Different issues arise for rural training and for employment-orientated programmes.

- (i) In rural training, there are obviously some subjects eg child care, nutrition, cooking, which are more relevant to women than to men, and others such as agriculture and house maintenance which may be equally relevant to both sexes. But there are dangers in training women separately from men when the men do not understand what the training is for. It has been found in some countries for example that 3-4 week courses for married couples are among the most effective forms of training, because training aimed at women has little effect unless their husbands accept the need and can see the value of changes in work patterns. Such courses may also help create a greater sense of partnership, in which husbands shoulder more of the work load. Boys and unmarried men should also be given education in nutrition, family life and family planning when the opportunity occurs, again with the aim of awakening them to their wider responsibilities.
- (ii) In employment generating programmes, there may often be an objection: why worry about female employment when even the men are unemployed? This is a misleading question because it is family income rather than individual income which is crucial to family survival in most developing countries; and women, also children, have always contributed to this and must continue to do so. Programmes to assist the income-generating capacity of women often involve cottage industry and such crafts as basket-making or sewing, and these clearly will not often involve men directly in shared programmes.

5. Guidelines on Rural Training and Training Centres

Whether it is aimed mainly at women, or at women and men together, or at some particular age-group, much rural training takes place at specialised agricultural, medical or adult education centres, offering for example 3-6 month courses for school leaver girls; 3-4 week courses for married couples; and 1 day-per-week part-time courses for mothers.

Excellent work is often done at such centres, but surveys of projects in Zaire and Tanzania indicate that there is often a tendency for such training to be too formal and insufficiently integrated with the existing rural development programmes in the area. Courses at centres should always be supported by extension and follow-up work, including activities in women's clubs or direct help in purchasing, constructing and operating domestic equipment such as hand-mills or water-tanks.

Guidelines on rural training may be summarised as follows:

- (i) Courses for mothers can be highly effective if the new techniques taught can be immediately applied in daily life. Such courses may be suitably organised on a one-day-per-week basis.
- (ii) Courses for school leaver girls need to be kept separate from most courses for adults. They present greater difficulty as the girls often have no opportunity to make immediate use of what they learn. The best training for such girls may be a fairly lengthy (2-3 years) course aimed at a small number who have potential as women's club leaders.
- (iii) People attending courses should be those who need it most, eg mothers of malnourished children, or those who are in a good position to teach others eg women's club leaders.
- (iv) Training should be informal and closely related to existing agricultural or medical programmes, eg a course on health can be part of a health education programme which includes the whole community; a course on agriculture should include both sexes and be related to extension activities in the locality
- (v) Teaching staff essentially need to be experienced in working in the local community. Good academic qualifications are less important, and may sometimes result in a degree of alienation from local life.
- (vi) Facilities and equipment used at training centres should correspond to the facilities available to women at home eg cooking demonstrations should not use paraffin stoves if the women cook on open fires at home.
- (vii) Introduction of new types of equipment may sometimes be desirable, and this provides the main exception to the preceding guideline. In such instances, training with the new equipment should be backed by arrangements to ensure that trainees can acquire the equipment, eg by guaranteeing supplies and by supporting a savings or revolving loan scheme to pay for it.
- (viii) Unless the support of the men in the community is obtained for the new attitudes and practices being taught, the training of rural women can only have a very limited effect. Special consideration should therefore be given by Oxfam to those institutions where an attempt is being made to provide a forum for men and women to discuss such matters as nutrition, budgeting, division of labour and family planning.
- (ix) A follow-up system should be built into the programmes of training centres, so that monitoring and improvement of the course is possible, and so that women are given support in implementing ideas gained from the course.

6. Guidelines on the Training of Women Rural Workers

Selection of trainees according to their potential as club leaders, community development workers or "animatrices promotoras" is obviously important. Two years of secondary education is usually sufficient background. The tendency of parents to want education only for their sons may sometimes be encountered by offering scholarships to girls wishing to undertake this training.

Training which provides for a range of skills, eg in agriculture as well as in homecraft, is to be preferred to the training of highly specialised rural workers, especially in view of the importance now attached to integrated rural development.

Many of the guidelines in paragraph 5 apply as much to the training of women rural workers as to courses for ordinary mothers and housewives, especially the guidelines on using locally available facilities and equipment; on teaching staff; and on the relationship which should exist between the course and local development activities.

7. The Financing of Rural Training

Donor agencies are generally reluctant to finance training centres and pay salaries of local personnel for an indefinite period. Yet training centres can rarely generate enough income to pay all their costs, and some governments leave them in the voluntary sector rather than giving official support. Thus Oxfam should at times be willing to make a commitment for the long term support of good training programmes.

Some training centres include small workshops for making handicrafts, weaving and dressmaking; others have established small bakeries. These activities provide a small income and give employment to school leaver girls, but are not sufficient to finance salary costs or the expansion of programmes.

8. Bibliography - for Rural Training

Marilyn Carr, Appropriate Technology for African Women, UN Economic Commission for Africa, 1978.

Murray Culshaw, Training for Village Renewal, Lutheran World Service, 1977, £1.00. Covers rural and vocational training.

FAO Training for Agricultural and Rural Development, 1976. A cross-section of contemporary experiences.

NB. See also Bibliography for Extension and Training, Section 19.

For details of Information Sheets that are available on Oxfam-assisted projects, see Section 2, Appendix III.

TRAINING PEOPLE WITH SPECIAL NEEDS: THE BLIND1. Introduction

Blind people are often looked upon as unproductive or even saprophytic members of the community, incapable of supporting themselves except by charity. But in fact the blind can be trained to become full members of society, capable of controlling their own destiny. Historically, many blind people have found their way into specialised institutions where they are grouped with others suffering the same affliction, or with the deaf or the mentally handicapped. As each form of handicap requires specialised treatment and handling, the grouping of people with different problems in this way often leads to despair and frustration.

Oxfam's experience in the training and settlement of the blind is not extensive, but a clear picture of essential inputs can be identified and are summarised in the following paragraphs.

2. Job opportunities

As job opportunities in the towns are few, even for the sighted, the majority of the blind must be employed in the rural/agricultural sector. However, there are sometimes opportunities to train blind people as basket makers, carpenters, weavers, wood carvers and occasionally, as telephone operators or for the assembly of simple components. Sometimes the blind are in fact more productive in these jobs than the sighted.

3. Training

- (i) Agricultural training is done for example at a specialised centre where courses are run for one or two cropping seasons. Each trainee is given access to a plot of approximately one-third of an acre (0.13 hectares) where he grows a variety of crops suited to the area. Sometimes up to half the value of the crops grown are held for the trainee and paid on completion of the course in the form of equipment or supplies. The trainee is taught proper husbandry techniques, including the use of insecticides and fertilizers, as well as the maintenance of simple equipment. The keeping of small livestock may also be taught but this poses many problems for the blind. In addition to the trainees' plots, a larger area is often worked communally to provide food for the centre or for sale, but this must not become the over-riding object as training will suffer as a result. The teaching of braille is normally carried out to enable the trainees to communicate later with the centre and to be kept in touch with the work elsewhere. Trainees with no previous schooling often find it difficult to become proficient in braille in the time available. And as with any type of training, the physical and mental maturity of the trainee is important and should be assessed at selection.
- (ii) Non-agricultural training. Where job opportunities can be identified prior to training, the actual syllabus followed can be carefully tailored to this. Where trainees are expected to become self-employed, it is very important that the training given should include business management techniques in addition to craft training (see earlier Sub-section). Access to credit is also essential to purchase the necessary equipment and provide a reasonable amount of working capital (see Section 37).

4. Settlement

(i) Agriculture The settlement of blind people is of even greater importance than their training, and it is essential that opportunities to obtain family land or land on a settlement scheme are identified before the training starts. The follow-up of people who have completed training and have been settled is vital, and must be carefully planned from the beginning. It is unrealistic to expect the people to make a success of their new life without encouragement, and some form of initial assistance with tools, equipment and supplies will be needed. Many schemes have failed in this respect. If the training centre is expected to operate on a national scale, the follow-up work can be very time-consuming and expensive in terms of transport; to overcome this it is best to establish several centres in larger countries, each working locally. The blind must not be settled in large groups or they will not integrate themselves into the community; they should be encouraged to think of themselves as part of the local community, and as not deserving special treatment. If there is a possibility of settling small groups of trainees on recognised settlement schemes, irrigation schemes, etc, this should be undertaken and they must have access to credit and marketing facilities, further training, etc, as the normal sighted settlers would have. This has been done very successfully in Malawi (MAL 3).

The key to success seems to revolve very much around the obtaining of a hard-working sighted wife, and much behind-the-scenes work is done to match up suitable couples (MAL 3 and UGA 15).

(ii) Non-agricultural settlement The director of any training centre must make it part of his job to identify job opportunities by contacting local firms, government officials, etc, and then undertaking to provide suitable people to fill identified vacancies. In projects where large numbers of blind are trained, a settlement officer can sometimes be justified (IW 101). There is a tendency, where employment opportunities are few, to create earn as you learn schemes, which by necessity limit the range of training in order to produce viable quantities of items for sale, and which in turn allow reasonable salaries to be earned (IS 126). Where this happens, care must be taken that the management ability and resources of the centre are adequate and the tendency towards retaining key workers is not allowed to reach a level where it is impossible to take on new trainees.

Bibliography - on Training for the Blind

Christoffel Blindenmission Without Holding Hands : Handbook of Approaches to Vocational Training and Rehabilitation Work with the Blind Arising from a CBM Seminar of Pioneers in 1978
Available from: Nibelungen Strasse 124, D-6140, Bensheim 4, West Germany.
Recommended.

Elizabeth K. Chapman Visually Handicapped Children and Young People
Routledge and Keegan Paul, 1978, £5.50. Useful handbook for teachers working with the blind, includes good bibliography.

Geoffrey Bisley A Handbook of Ophthalmology for Developing Countries
Oxford Medical Publication, 1976, £1.50

Geoffrey Salisbury Open Education Handbook for Teachers of the Blind, 1974.
Available from: Royal Commonwealth Society for the Blind, Heath Road, Haywards Heath, Sussex, UK.

NE The Society maintain a wide-ranging reference and information section.

In Touch: Aid and Services for the Blind and Partially-Sighted People. BBC, £1.00. Available from: British Broadcasting Corporation, Portland Place, London W1, UK.

Section 34 : WOMEN'S PROGRAMMES

1. Introduction

The development of women is a priority for Oxfam, for the sake of the women themselves, for the welfare of their families, and for the balanced development of communities.

The large number of projects which Oxfam has funded over the years have been directly or indirectly for the benefit of women, but these have tended to concentrate on improving only some of women's specialised work, particularly child care and nutrition. Other aspects of women's work and responsibilities are now recognised as equally important for development and it is in these areas that Oxfam seeks to increase its work with women.

The family in both the urban and rural sectors is the basic unit of production and consumption; and development projects must aim to raise the living standards of all its members. In many situations, however, the changes brought by development activity have not benefited all members of the family equally. Because of initial disadvantages in the distribution of work and responsibility, unequal access to resources provided by outside agencies, and cultural constraints, women have frequently found themselves worse off as a result of development. Many schemes, rather than reducing the disadvantaged position in which women find themselves as they intended, in fact lead women to be doubly disadvantaged. Yet it is women who provide the basic needs of many communities, especially in the rural areas: food, which they often grow and process as well as cook, water and fuel for domestic use, the care of children and the old or sick, etc. It is important therefore not to look on women in isolation, but to consider their role in the family and in the local community.

2. The Problems

The situation of women, their economic role, and their relative freedom to take part in development projects or training vary from country to country. Recent research, however, has shown that women in developing countries share some basic problems (see also Sections 3 and 10):

- (i) Work loads In most developing countries women are over-employed and work longer hours than men. The introduction of modern methods of agriculture in the community often increases women's work disproportionately to that of men's. (See for example David Mitchnik's findings in Oxfam Working Paper 'The Role of Women in Rural Zaire and Upper Volta: Improving Methods of Skills' Acquisition). Though in contrast, improved domestic water supply can greatly ease women's work by reducing the distance water has to be carried.
- (ii) Distribution of income The money earned from schemes introduced to increase family incomes is usually paid to men and often not distributed equitably within the family.
- (iii) Loss of earnings Women have been excluded by the modernisation of some sectors in which they were previously economically active, such as food processing, trading and agricultural labour.

- (iv) Cash cropping In areas where women are responsible for staple food production, the introduction of cash crops has reduced the time and land available to women to grow food.
- (v) Land registration and settlement schemes These have often decreased women's access to land or their right to own land.
- (vi) Neglect Women's agricultural work, and particularly their subsistence food production, is usually neglected and little is done to modernise their activities.

Although there is some literature and knowledge on the general effects of social change of women in developing countries, there is a lack of specific information about the consequences of development projects. It is important therefore that Oxfam should:

- (i) consider carefully the implications of any project on the women in the communities concerned. For this reason project holders should be asked to include detailed descriptions of the work and situation of women in funding proposals, even if the project does not include work with women (see Section 8).
- (ii) encourage careful research into the current work responsibilities and status of women in a project which intends to work with women, so that these are fully understood and so that proper monitoring is possible when the project is underway.

3. The Priorities

To encourage a more balanced development for women, in addition to continued support of child care and nutrition projects, priority should be given to projects which work with women in the following areas:

- Food production
- Women household heads
- Income generation
- Women's organisations

(i) Food production

In many countries, particularly in Africa, rural women produce the family's staple food crop. It is important that this production should be increased, both to maintain nutritional levels and to keep a reasonable supply of food. Women in many programmes have been helped to grow vegetables; these are a valuable nutritional source. But women's main need may be for resources and training to increase the basic food crop on which the family depends, especially as this assistance is seldom available from local extension officers. (See also Agricultural Guidelines, Sections 10-19).

Training Agricultural training for women has usually been only a small part of home economics training, where a greater emphasis has been placed on the training for food preparation than for food production. Where appropriate, training programmes for women should emphasise the teaching of better farming techniques. At the CEDESA Community and Agricultural Development Project in Mexico (MEX 45), women and men are trained together and take an equal share in decision making. Half the project's promoters

are women who run a demonstration farm and give agricultural advice to farmers in their communities. See also Section 33.

It may not always be necessary to design entirely new programmes. Project holders can be encouraged to improve existing programmes in various ways, eg basic farming skills and modern methods can be included in health, nutrition and community development programmes currently being supported by Oxfam. Care should be taken however to make sure that the new methods being taught are based on women's work patterns as much as possible and do not increase work loads.

Resources Because women lack collateral, it is usually impossible for them to get credit from official sources for seeds, fertilisers, etc. A training programme should include the provision of savings and credit schemes. Therefore for training to be effective, women must be offered assistance to put these new methods into practice, for instance by membership of cooperatives. (See Cooperatives, and Savings and Credit in Section 37, also Section 13). The Bangladesh Academy for Rural Development (BRAC - BD 94) provides poor women with training and capital funds to take up rice processing, calf, goat and poultry raising and net making.

Vegetable growing Care should be taken to ensure that training and assistance in growing vegetables is not given to the exclusion of help with the main food crop. Here too, practical advice in obtaining credit should be given. In Upper Volta the Gorom Gorom Agricultural Programme (VOL 58) has helped women to grow vegetables notably onions for sale through women's marketing groups as part of a variety of successful activities in the "Programme Economie Familiale".

Surplus production Often the women and project holders may differ in their assessment of what constitutes a surplus. While it is important to encourage women to keep enough food for their family's use, their need for cash is often not understood by project staff. If women are given credit to grow the staple food or vegetables, in order to repay the loans, they will of course need to produce a surplus for sale through suitable marketing outlets (See Marketing Schemes in Section 37).

Animal husbandry In many countries, particularly in Asia but increasingly in Africa, women are responsible for the care of domestic cattle, although it is usually the men who are members of the dairying cooperatives. Where it is appropriate, women should also receive training in animal husbandry; even if they do not control the resources, they do the work. For example the Anand milk cooperative in Gujarat (GUJ 55) organises one-day training sessions for women; they have found that the women prefer separate training sessions from the men. Oxfam supports a variety of animal husbandry projects, for example CEDESA (MEX 45), and Anant Shiksha Niketan in Uttar Pradesh (UP 45) where women are given loans to buy dairy buffaloes. In Kenya a group of women who call themselves the No Joke Women's Group have collectively bought one milch cow (KEN 131).

Poultry raising Projects designed to help women raise poultry for a cash income can fail because they increase women's work load, because feeds are not regularly available, or because women do not have adequate capital or marketing outlets. An example of a successful poultry raising project is the Mbitini Parish Women's Group (KEN 131); while it has had feed supply problems, local marketing outlets have been developed and local women are buying more eggs to add to their children's diet.

Appropriate technology Training programmes should where possible be related to changes in techniques or equipment which provide women with the opportunity to lighten their work load. For example, handmills to process food, or

mechanical weeders and tools to lessen the work of transplanting, as well as the provision of nearby sources of water for domestic use.

It should be mentioned here that the introduction of ox-ploughing often transfers this agricultural work from women to men (as in Zaire). And while there may be a danger that women will then lose some control over the food crop when men take an active part in its cultivation, this may be offset by the easing of their work loads.

(ii) Household heads

Figures on the numbers of households headed by women are very unreliable and often not available, but there are far more than is generally supposed. According to the ILO, one quarter to one third of all families worldwide are headed by women. In countries where more women than men migrate to towns as in Latin America and Jamaica, large numbers of households are headed by women. Latin America is the main example of this occurrence where a higher proportion of women tend to migrate, mainly to service industries. In India the government estimates that 100,000 women between the ages of 20 and 44 become destitute every year because their husbands die or desert them, and the number of landless women labourers is growing faster than that of men.

These women seldom have resources of any kind and are not usually included in official settlement, housing or other development schemes because their status as household heads is ignored. It is not only governments which overlook their needs; voluntary agencies too have tended to see these families as abnormal and therefore welfare cases. Yet their high proportion, particularly in the rural areas, must mean that they should be a target group for development assistance rather than for charity.

It should be Oxfam policy that female household heads are treated in the same way as their male counter-parts, and given equal opportunities and even extra help within the project's sphere. See for example OXWOP (ORS 20), which has included two women household heads in the land distribution scheme in Orissa State in India.

(iii) Income generation

Income generation projects should wherever possible be based on the work that women actually do, with the intention of upgrading that work so that a part of the production can enter the market, or to make it financially more rewarding. These, rather than projects which teach women skills not directly related to their daily work, will take into account women's economic role in the community and so may even improve the economy of the community as well as helping to raise family living standards.

Some examples of income generating schemes for women include:

- (a) the preparation and selling of weaning foods from local produce
- (b) growing and drying of vegetables for sale in the towns.
Examples of these kinds of projects can be found in *Appropriate Technology for African Women* by Marilyn Carr of the African Training and Research Centre for Women of the UN Economic Commission for Africa.
- (c) processing of food and agricultural products using cooperatively

run handmills. At the CEDESA project in Mexico (MEX 45), women have set up and run a maize milling cooperative.

- (d) sewing cooperatives to produce basic goods for sale in the community where these are usually expensive. At the Jalchatra Women's Sewing Association in Bangladesh (BD 75), women have been helped to produce clothes which are cheaper than those imported from the large urban centres.
- (e) help with credit and management training to groups of women who produce goods for local merchants. For example the project in Ahmedabad where women who make cotton quilts have formed a cooperative and by-passed the exploitative middle-men. (GUJ 80)
- (f) training in skills for women who sell their labour. For example a project where women receive training and organisational help to upgrade their work and seek better working conditions.

Care should be taken that income generating projects do not:

- (a) ignore the actual work women do, and instead introduce skills that are irrelevant to their work and the needs of the community. Many projects where women produce handicrafts for the tourist or export market have this fault. It may be because there is no alternative, but it may also be because little research was done before the project was designed or because project staff have a pre-conceived or conservative notion of what is women's work.
- (b) reinforce traditional attitudes and marginalisation by the type of training and the goods produced, eg low status work that is labour-intensive and brings little reward in relation to effort
- (c) use women as a cheaper alternative to unionised labour to produce goods for private industry. The immediate benefits of an income to women cannot offset the long-term harm that this may do to the community.

Projects which train girls and women to produce goods to earn an income can be the starting point for many other developmental activities and help women gain more control over their own lives. An excellent example of this is Potrama in Bolivia (BOL 22) where over 600 girls and women are voting members of a cooperative which produces traditional woollen goods for sale locally and for export, and which has recently branched out into health and community development activities.

(iv) Women's organisations

It is inevitably difficult for outsiders, even if they are of the same nationality, to understand fully the scope for women's work and their position in a community. It makes sense that the women for whom projects are designed should be consulted as they will know what areas of their daily work need to be improved and what cultural norms will allow them to do. But this initial consultation with women can be very difficult to organise, and contact will often have to be made through the men in a community.

Contact can be made through local women's organisations (See also Section 37). Field Directors may be justifiably reluctant to work

with organisations of elite women which often take the lead in women's programmes, yet it is a mistake to dismiss these organisations and an effort should be made to establish contact with them and to determine the scope and interest of their work. This may often help Oxfam field staff to gain some knowledge of the situation of women in the region, and can lead to information about other women's groups.

It is important to remember that in some rural communities, particularly in Africa, women have for many years organised mutual aid groups, usually to share work loads. These associations have largely gone unnoticed by development planners who have concentrated their efforts on organising men into cooperatives. Yet these mutual aid organisations should be of great interest to any development agency, and could form a basis on which to help women earn incomes and stimulate the rural economy. Some women's mutual aid groups devised small revolving loan schemes among themselves and have subsequently developed into powerful cooperative movements; for example the corn mill societies of the Cameroons, or some Mabati groups in Kenya. These societies are usually organised on a traditional basis with membership from certain age groups, and their existence is therefore accepted by the community. Most groups only combine to make their agricultural labour more efficient and their skills and resources do not go beyond this, but their existence should be recognised when a project is planned in the area. Too often an alternative group is formed through ignorance of the existence of any other.

If it is possible to make direct contact with the women for whom the project is intended and to consult them in the design of the project, several other factors must obviously be taken into account. The women may be guided in their choice of project by what they believe will please the funding agency or ensure funds. Or they may know of a successful project elsewhere which may not be suitable in this instance. It is important to be guided by the women's wishes; but it is for the project designers to assess whether it is possible to meet the women's demands and to give the women the benefit of experience in other projects. (See also the guidelines in Section 8 Appendix II).

4. Health and Homecraft Projects

- (i) Health Much of Oxfam's work with women consists of basic health and family planning education carried out in clinics and hospitals, (see also Health Guidelines, Sections 20-28). Health work with women however cannot be separated from an involvement in other areas of basic needs, because women's health and that of their children is affected by the women's conditions of work. Harsh workloads for example go a long way toward explaining why women in some parts of Asia have a lower life expectancy than that of men; and also explain in part inadequate child care and nutrition.

Health projects can only be effective in the long-term if they are seen as a starting point for work with women. Health centres can become a focal point for development work. At the Centro Medico Social in Haiti (HAI 15) health centres are replicas of local houses; the project includes courses for traditional healers, handicraft workshops and help to improve housing and drainage. Similarly at the FEHMUC health and nutrition project in Honduras (HON 16), the women have started small shops which

stock basic necessities. At the Kottar Social Service Society in Tamil Nadu (TN 2B) women's small monthly cash contributions to the child health clinics are pooled to finance community projects chosen by the women themselves. While child health clinics are a useful way of getting groups of women together, particularly in communities where women are not otherwise free to leave their houses without male supervision, they exclude work with women who do not have small children.

Training in family planning, child care and nutrition is obviously more directly relevant to women than to men. However it is important in many societies to try to involve husbands and also mothers-in-law in at least part of the training, so that they accept the need for and can see the value of changes in practice and work patterns. This was the experience of San Martin Guatemala (GUA 12), where the men were not present and in consequence became sceptical of the value of the classes.

- (ii) Homecraft Homecraft training courses have tended to ignore much of women's daily work and instead concentrate on improving the less productive parts of their work. It must be stressed that housework and home maintenance, and all kinds of agricultural work, are often equally important components of women's work. Accordingly homecraft or home economics must encompass all these activities if this training is to be of any real use to women.

5. Separate Projects or Integrated Programmes

The question of whether projects should be fully integrated ones aimed at the whole community which include both men and women, or whether they should be initiated for women, depends very much on the nature of the society and on the type of programme being developed. There may be cultural constraints which forbid joint training sessions; or the women themselves may prefer separate projects because they wish to retain control over the activity and its rewards. In a project run by the Bangladesh Academy for Rural Development, (BD 94), the women broke away from joint societies (ie men and women's co-operatives) and formed women only societies to regain control over their own funds.

Much of women's work is specialised, and it will continue to be their responsibility. Thus training in child care, nutrition, household hygiene and organisation will only be directly relevant to women. Yet because these tasks are related to all other spheres of women's work, and because men control not only the resources but also to some extent women's labour, it makes sense that whenever possible men and women should share in training programmes. Men may not need training in this work, but they need to understand the nature and importance of it in the context of development. At the same time if women share some of the training offered to men in agricultural techniques, this will help them directly too.

It has been found in some countries, for example, that 3-4 week courses for married couples are among the most effective forms of training. Such courses may also help to create a greater sense of partnership, in which husbands shoulder more of the work load and responsibility and women have some access to education usually offered only to men. In the Spinners Worksheds project in Orissa (ORS 17b) both men and women are trained and are helped to buy spinning wheels.

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- Elizabeth O'Kelly, Technology for Rural Women in Bangladesh, UNICEF, 1977. (GPO Box 58, Dacca 5, Bangladesh.)

Oxfam Information Sheets are available on the following projects:-

Women's Self-Reliance Movement, Faridpur District, Bangladesh (BD 76)
Describes the evolution of a women's cooperative involved in income generating activities that include silk spinning, embroidery, tailoring and agriculture.

Fotrama Knitting and Weaving Cooperative and Education Programme, Cochabamba, Bolivia (BOL 22)

Drinking Water Wells, Trial Bores, Nursery Schools and Women's Clubs, Tamil Nadu, India (IS 206)

CHODAK CHOMAGE DAKAR, Unemployment Dakar, Senegal, (SEN 18)

Rural Education Programme - Correspondence Courses and Village Seminars, Togo and Upper Volta (TO 2, UV 55)

Community Development Programme, Fortaleza, Brazil (BRZ 28)

Community Health Work and Fishing Cooperatives, KOTTAR Social Service Society, Tamil Nadu, India, (TN 2)

Mobile clinic for the Calcutta Slums - Association of Medical Women in India, West Bengal (WBE 8)

Caritas Nutrition Project - Barahona, Dominican Republic (DMR 13)

Feeding, Housing and Sanitation Programmes in Demra and Bashan Tek Bustee Camps, Dacca, Bangladesh, (BU 55)

Mobile Creches for Working Mothers' Children, India (DEL 3)

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Women in Development, in 'NFE Exchange', 1978/3, No. 13, (Institute for International Studies, 513 Erickson Hall, East Lansing, Michigan 48824, USA)

Worldwatch Papers No. 16, Women and Population Growth. Excellent resume with many examples of the inter-relation of education, employment and fertility for women. Sound recommendations.

Periodicals Focussing on Women

International Women's Tribune Centre Newsletter

Quarterly, free, from I.W.T.C., 305 East 46th Street, Sixth Floor, New York, NY 10017, USA. Available in Spanish.

ILO News Bulletin, Women at Work, published three times a year. Deals with questions relevant to rural and urban women workers.

ISIS 4 issues per year. From the Editor, Case Postale 301, 1227 Carouge, Geneva, Switzerland.

WIN News, 4 issues per year, U.S. \$15.00 from the Editor, 187 Grant Street, Lexington, Massachusetts 02173, USA.

Section 35: EMPLOYMENT

EMPLOYMENT GENERATION AND SMALL INDUSTRIES

1. Introduction

Almost all of Oxfam's projects generate employment in one way or another. In some places the universal third-world problem of unemployment and under-employment is so acute that employment creation and income generation become almost ends in themselves, with the objective of:

- (a) relieving poverty by giving a wider distribution to the money already in circulation
- (b) restoring dignity and a sense of purpose to people's lives
- (c) encouraging self-reliance and giving people the means of solving their own problems

2. Types of Work Needed

Part-time as well as full-time employment can make a contribution to many people's family budgets, and work as odd-job men should not be overlooked alongside conventional employment. Often there is also a need for seasonal work to fill in slack times in agriculture or in industries influenced by the agricultural calendar. So far employment-generating schemes seem to have by-passed these seasonal needs, except in so far as community self-help projects in rural areas often occupy the slack season.

Droughts often enforce idleness on the rural population, but provided that people are not too under-nourished, food-for-work schemes are a way of combining self-help employment with relief, though see also Food Aid in Section 10. The work done can often be related to drought protection by building dams or earth-works for water conservation and irrigation (IE 93).

3. Ways of Creating Work

Apart from the public works type of project represented by food-for-work programmes, employment of a more permanent kind can be generated in the following ways:

- (i) by providing services which the existing system has neglected
 - (a) in Calcutta, delivering home-cooked lunches for factory workers provides part-time work for men with bicycles
 - (b) there are often opportunities with laundry; and with maintenance of buildings, eg painting, minor repairs, etc.
 - (c) collection of waste paper from printing shops and offices; in project IS 180 the paper had to be sorted into 9 different grades for best prices from the paper mill
- (ii) by opening up new markets Oxfam's major contribution here is through its Bridge scheme, by which handicrafts and furnishings from developing countries are sold in Britain (see Section 2). Other efforts to improve marketing where good manufacturing enterprises or cooperatives

exist could include better transport to market, or better packaging, advertising and display. It is crucial when considering these improvements to take into full account the realities, limitations, and potential of local and other market outlets. See also Marketing Schemes in Section 37.

(iii) by making industry more labour-intensive

- (a) by encouraging the adoption of intermediate or labour-intensive technology in new enterprises
- (b) by re-organising work in existing factories so that parts of processes which can be done by hand are done that way; firms may then save running costs of machines, or expand output without further investment. Examples can be found in India, where some jobs were sub-contracted to men working outside the factory in self-organised groups (IW 64).
- (c) as an extension of the above, by encouraging out-worker systems, whereby people outside the factory are given work to do at home. Many applications are possible in textiles, giving people yarn to weave or knit which is returned to the factory on completion, as at the Fotrama cooperative in Bolivia (BOL 22).

(iv) by encouraging small businesses through credit, training and technical advisory services: helping self-employed people, or people who want to support themselves through self-employment in businesses, small workshops, etc. The key role of the agency running such a scheme is to negotiate loans from banks for craftsmen or budding entrepreneurs who would otherwise be unable to get credit. The agency may guarantee the bank against loss and select applicants. Two approaches are possible:

- (a) specialising in credit and advisory services, eg CYSEC in Calcutta, or a scheme in Recife, Brazil for facilitating the availability of loans from banks (BRZ 130). This approach can be very effective and valuable, but it tends to help those who are already in a relatively advantageous position to help themselves, eg unemployed graduates in India.
- (b) taking a broader, family welfare approach (KR 20). The aim is to help families in danger of breaking up as a result of destitution, by assessing employment potential of all members, then finding a job, giving technical training, or financing self-employment in a small business, as seems best for each case. Such organisations function partly as employment agencies, and only generate new job opportunities in a minority of cases. However, this approach is more effective in helping the very poor.

4. Technology and Capital: Oxfam's Role

All the employment-generating schemes discussed above, and probably most others that can be devised, involve some input of capital. The Indian waste paper project (IS 130) needed a shed, a hand-press, weighing scales and a hand-cart. Appropriate technology must be used if the maximum amount of employment is to be generated with a limited amount of capital, though often this technology will consist only of a basic bit of equipment such as a hand-cart, viz. a project in India where a revolving fund to buy 10 hand-carts for unemployed labourers has succeeded in generating 103 carts plus producing business for a local workshop making them (MP 10).

A crucial factor is often the creation of organisations capable of releasing capital within the economy at the point where it has the greatest potential to generate employment. Paragraph 3(iv) describes how local sources of capital are tapped, and not aid inputs; the money is invested in a more basic and labour-intensive sector of the economy than the banks would usually favour. Finance for small farmers as well as small businesses is important here. (See also Sections 13 and 37).

Oxfam's role may sometimes be to give some initial help in setting up organisations of the latter type, though they should usually be self-financing. Oxfam may also provide capital for some operations which cannot be regarded as commercial in the ordinary sense, provided that they can become self-supporting once started; the hand-carts and waste paper projects in India were of this type.

However Oxfam's principal role could be in disseminating ideas, or in supporting other organisations which do this; ideas about the kinds of organisation needed to provide capital, or about schemes for employment generation such as those mentioned in paragraph 3. Oxfam field staff are therefore urged to follow up any unusual employment generating schemes they come across.

One of the best ways for Oxfam to assist the development of small businesses as a means of providing employment is not through direct aid, but by supporting technology consultancy centres or small industries development organisations of which there are now examples in several countries. These organisations provide technical assistance relevant to local trades, for example, the Kumasi Technology Consultancy Centre in Ghana (GHA 22) has helped with many urban and rural enterprises including glue-making, soap-making and weaving. Advice on management and accountancy is needed quite as often as technical advice.

5. Small Industries

Oxfam does not usually give financial support to small industry projects, as funds for these are normally available from commercial banks. However Oxfam may assist in one of the ways described in the preceding paragraph especially through technology consultancy centres.

With some handicraft production and other semi-industrial activities, there are often opportunities for Oxfam to support enterprises which are outside the normal industrial sector and which may therefore be unable to raise capital, eg women's clubs, training centres, small cooperatives and workshops for the handicapped. Such small industries are particularly appropriate where they make use of raw materials produced in the immediate locality, thereby ensuring that as much as possible of the income arising from local production stays in the community. Some examples are:

- (i) crop processing and food technology covers a wide range from the production of cooking oil to drying or bottling fruit, and extending to the manufacture of building board from crop wastes. See Section 16.
- (ii) agricultural implement repair centres not only provide employment, but make available a necessary service to farmers which is all too often lacking (BD 29). Such projects may often undertake technical training, or include carpentry and other workshops (CHD 4) for making as well as repairing articles of local use.
- (iii) sewing, dress-making and tailoring enterprises, providing work for women (PK 41).

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Financial Planning for the Small Building Contractor Vol 2, 1979
The Small Building Contractor and the Client Vol 3, forthcoming
 - all from I T Publications, £3.95 each.

Jon Sigundson Small Scale Cement Plants I T Publications, 1977, £1.60.

TOOL The Preparation of Soap 1976, £0.45.

For details of Information Sheets that are available on Oxfam-assisted projects, see Section 2, Appendix 3.

Section 36: PHYSICAL INFRASTRUCTURE: COMMUNITY DEVELOPMENT APPROACH
TO NEIGHBOURHOODS AND HOMES.

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1. Understanding the Situation

This Section is intended as a guideline for identifying priorities and matching supply with demand in the complex area of the rapidly-growing built environment. As the Sub-sections point out, there are so many elements and components and so many patterns of effective demand that generalities and models are almost bound to be misleading for most circumstances. Building or improving homes and neighbourhoods are not simple operations that can be standardised or reduced to a manageable number of alternative procedures and specifications. This Section therefore only refers to particular instances or cases as illustrations of general points. It is offered as a tool with which to work out what can be done, not an instruction as to what can or should be done.

Note: For shelter in post-disaster situations, reference should be made Disaster Technology, Section 52.

In order to understand any particular situation demanding housing action, one must know:

- (i) what the circumstances are
- (ii) who are the people and the organisations involved
- (iii) what their material, financial and human resources are
- (iv) what their interests, expectations and motives are
- (v) what operations they normally carry out and are willing to carry out in the particular instance
- (vi) how the various jobs or operations are carried out and how they relate
- (vii) what actually results physically, economically and socially.

It is, of course, impossible to plan realistically and to manage any situation effectively without reasonable interpretations and anticipations of all these factors. What matters in the longer term are the impacts of the whole process and its products, but initially these can only be taken into consideration in the form of the participants' own expectations. To summarise: one must have a clear idea as to who is likely to do what, why and with what results under the particular circumstances.

The circumstances of any neighbourhood activity normally include the following:

- (i) the geographic or natural environment, especially the soil and subsoil, climate, vegetation, and the materials they provide
- (ii) the manmade environment, especially the relative location of settled areas, communications, utility networks, surrounding land uses and buildings
- (iii) property ownership and tenure in the area
- (iv) laws, customs and the administration of controls over land tenure, uses and improvements
- (v) the local building industry including the supply of materials and components, labour and craftsmanship, tools and equipment, forms of contracting, and of course types of building
- (vi) the local systems of exchange and credit, including those in kind such as mutual aid.
- (vii) the composition and interrelationships of the local community, together with its relations with the larger society of which it is a part, eg the ethnic or religious groupings, socio-economic classes, household and family types, age and sex groups.

The existence of local, grass-roots organisations through which people can approach and negotiate with external organisations, especially government agencies, is extremely important. It must be borne in mind that when these local 'mediating structures' are lacking or too weak to be effective, their substitution by outsiders who mediate on their behalf can increase local dependency and subjection, negating the intentions of a community development project. The nurturing and strengthening of locally based and directly representative local organisations must always be a central concern.

2. Identifying Needs and Priorities

As the success of any local development activity depends on the active participation of those who stand to benefit, there must be a locally acceptable match between the goods or services supplied and the needs and priorities of those concerned. It is commonly and erroneously supposed by professionals and administrators that needs for housing and local infrastructures are similar for everyone and even everywhere. What people in a particular situation most need within the limits of what they can choose depends on highly variable priorities which only those that have that choice can know.

It is also commonly and quite wrongly assumed by those in charge of housing programmes that land, utilities and dwellings are equally essential parts of single packages that must always be delivered as a whole. Sometimes people need land above all else and are better off if they camp on it and build their own homes and obtain the infrastructures at later stages.

In order to be habitable a place must have a number of qualities and material components:

- (i) it must be accessible, that is, the residents must be able to get to and from their sources of social and material support
- (ii) it must provide an acceptable degree of shelter and privacy and it must be accompanied by sufficient rights of occupancy or tenure to make the move into it worthwhile.

The great majority of people with low incomes have the highest priorities for security especially if their future expectations are low, and for maximising their opportunities for new or better employment, better education, and an improved social environment. The ways in which these priorities can be met can differ from place to place, and even between different households. The only practical way of determining priorities in a particular situation is to consult with the people concerned if they have not already articulated their own programme. In any case it is necessary to have a basic list, whether to assist with the articulation and formulation of priorities or to check those already stated.

What are the key criteria for deciding whether to take action? It is held that these should be:

- (i) where people are insecure and threatened, and so are hanging on to what they have
- (ii) where people are reasonably secure but are poorly housed and serviced
- (iii) where people have no home of their own or because they do not want to stay where they are

Thus the criteria are in response to the needs of the people, and not necessarily responding to officially promoted programmes.

3. Layouts, Services and Buildings

The immediate physical objective of the main elements in this Sub-section must be separately delineated and appraised as each can change considerably without significantly changing the others, ie they are independently variable components.

(i) Components of Layouts

Land: as obviously there can be no lay-out and no dwellings or neighbourhoods without land. The quality of the land, its soil and subsoil, along with its location, orientation and tenure systems are often critical for decisions on what is to be built and how.

(ii) Components of Public Services and Utilities

Drainage: whether surface and/or piped may be critical in areas liable to flooding or erosion, or where a water table providing domestic water supply can be contaminated. Also see Section 24.

Water supply: this will be essential where it is not available from uncontaminated wells or nearby streams. Also see Section 24.

Made-up Roads and Paths are especially important in areas subject to heavy rainfall and/or where dust is generated by traffic. Roads and paths are both for access to places and for circulation within them. The impact of increased accessibility, especially on more or less isolated or peripheral areas, can be considerable, viz: villages which become connected with markets by road may increase their trade and wealth or they may be more effectively exploited by commerce (also see Marketing Schemes, Section 37); peri-urban land with improved access may become more accessible to people for settlement and housing or, especially if they have low incomes, it may become less accessible owing to increased market values and prices. As explained in the Sub-section on Design below, the form which circulation networks take is a major determinant of costs and social relations in communities.

Electric light and power can be a vital service for the generation of local production and for educational and recreational activities. It can also greatly reduce costs of construction and enhance domestic economies as well as comfort.

Public transport can be essential for neighbourhoods in isolated or peripheral locations. Improved services can do as much or more than any other component to increase both use and market values of an existing or a new settlement.

Telecommunications and Postal Services: the existence of a public telephone can be an immense benefit for low-income neighbourhoods, especially as it can help to overcome physical or social isolation and the attendant risks for the sick and victims of accidents. Adequate postal services are obviously as important for low-income people as anyone else, even if individual use is much rarer.

(iii) Components of community facilities

A meeting place is essential in order to organise and carry out cooperative activities of all kinds; in many cultures this is often provided by

A church, temple or mosque the officiating members of which may also provide educational and medical services as well as the performance of rites and celebrations. In any case

Schools, especially for small children too young to commute, often have very high priority, along with

Clinics and/or Pharmacies where medical advice can be obtained.

Market stalls or shops for subsistence goods are often essential when alternatives are at a distance to which households cannot afford to travel frequently.

Garbage collection may be especially important in some circumstances. Similarly -

Fire protection, especially in densely built-up areas or where inflammable materials have been used.

This is not an exhaustive list but it does include all the infra-structural components which are known to be demanded, more or less frequently. There may well be other goods or services for which particular communities may have higher priorities. For example, where there are many households dependent on home-work or small manufacturing businesses or trades that can best be carried out in the neighbourhood.

(iv) Components of Buildings

As in the case of services, dwellings are generally built by stages in low-income contexts. All more or less permanently built dwellings have the following components which are often independently variable:

Foundations Whether piles driven into mud, footings in trenches, reinforced slabs or other types, foundations must be designed to carry loads that may be placed upon them. These may change from initially light loads of one storey construction to much heavier

loads of two or more. Subsequent changes of materials must also be taken into account as for example light roof structures of corrugated metal may be replaced with reinforced concrete slabs.

Load-bearing walls and frames The structure carrying the roof and upper storeys may be a frame of wood or reinforced concrete and monolithic walls from a variety of different materials or a combination of both. In some cases, walls may be made from prefabricated panels. In others, walls of one type may be replaced by another on the same foundations, even retaining the same roof structure. Walls are to protect the users from extremes of temperature and to provide the visual and acoustic privacy, as well as to hold up the roof and upper floors. They must be capable of doing this under stresses of high winds, heavy snows or earthquakes without undue danger of collapsing onto the occupiers or allowing the roofs to do so. If walls or roofs heavy enough to crush the occupants on falling cannot be built to high enough standards to withstand possible stresses then only light construction must be used.

Roofs These are the most expensive and technically difficult components in most cases. Many traditional roofing materials, such as thatch from rushes or palm leaves, are inappropriate in densely built-up urban areas or when cooking styles and fuels have changed so that smoke no longer eliminates insects. Alternatives, such as corrugated steel sheets, are often costly and have poor insulating properties. Since roofs may account for more than half the total cost of simple dwellings, economies in their construction are especially important. Roofs not only protect the residents from rain, wind, heat and cold, but they may also be important for the protection of walls and foundations, eg from rain. Like walls, roofs often need to be built in ways that allow for extension without waste. When extensions are made by adding additional floors, they must either be dismantled without loss or capable of acting as floors. Innovative roof types that inhibit normal development procedures are generally very costly in the long run even if they are initially acceptable.

Carpentry Windows and doors especially may have very important social as well as physical functions; a large proportion of total expenditure is often lavished upon those that face on to public ways. These and other components, such as built-in fittings, are generally manufactured in workshops and brought to the site prefabricated. They are, therefore, an important source of local employment. Refinements in design and the potential of alternative materials may greatly increase the comfort of homes, and similarly competition between local and manufactured products.

Installations Demands for internal plumbing and wiring are common, even in low-income homes. However the quality of such installations is usually poor, and in the case of electrical work highly dangerous as well as wasteful. There being a general lack of skilled workers in these trades, the pent-up demand is relatively high. This opens up substantial opportunities for on-the-job-training in local development projects, probably much greater than those in trades which are already well-known and quite highly developed such as masonry and carpentry. See Technical Training in Section 33.

There are of course other components: internal non load-bearing partitions, ceilings, floor and wall finishes and so on. But these are all secondary and either present little or no difficulties or they are not essential and left out of preliminary stages of construction and occupation.

The only components among the above that are bound to be demanded in all cases are those involved in lay-outs, especially land. Which of the rest will be most needed in a particular situation depends on the circumstances. In the great majority of cases, full development will and must be spread over many years and unforeseeable circumstances will determine the eventual programme. Any community that can afford the costs demanded by a short-term development, let alone completion before occupation, will or should be outside the terms of reference and scope of Oxfam assistance. It is therefore essential for anyone with responsibilities for initiating a programme of community-based development to assist the community to establish its initial priorities. How this is done and with whom is a culturally sensitive matter for which no models can or should be provided. The method must be devised by those who assume the task.

Above all, built environments must be made and maintained on the individual components, and not as tight packages or categorical programmes.

4. Design

The selection of priorities depends partly on design so that there is a feed-back between deciding what is wanted and what form it will take. Design greatly affects costs, even more than most designers realise. Professional designers have an unfortunate tendency to dismiss traditional forms as undesirable for being 'backward' or uneconomic or both. Rural styles imported to urban contexts are often inappropriate.

In the many countries where cities are largely new and the majority of the inhabitants are in the lower income bracket, there is often a lack of appropriate designs. This is a task which professionals and local builders and their customers can and must work on together; it is unlikely to be successfully carried out by professionals working in the isolation of their own social environment. The virtually universal failure of efforts to utilise the results of international competitions by famous architects for low-cost housing supports this view. In fact, most traditional housing forms and neighbourhood lay-outs are much better than most modern ones, both socially and economically.

(i) Neighbourhood Layout

As stated above, the most important decisions are those determining the subdivision of land into different areas of use, tenures and responsibilities for management and maintenance. Even professional urban designers are often unaware of the huge variations of both initial outlay and operating costs resulting from different principles of layout design. Layouts derived from plot and block design which is the most common design procedure, generate systems that demand excessive areas of roads. Layouts which use badly proportioned plots as well, eg with wide frontages and squarish as so many are, result in costs that may be 300% higher than a well designed layout. Many planners and designers have been brought up to believe that, either by reducing the size of the plot or by increasing the height of buildings, more people can be accommodated on the same area of land. They are more than half wrong, they are only right if the layout of streets and the spacing of buildings are kept constant. If circulation is properly considered, and if all ground space is assigned full and economic use, high densities can be achieved with plots of at least 800 square feet or 80 square meters, and very high densities can be achieved with dwellings of three or four storeys.

The essentials to watch for the appraisal of layout designs are:

- (a) the ratios of public to private land, ie land open for public uses and that reserved for private and semi-private uses
- (b) the area to circulation ratio, that is the length of public streets and paths to the area served
- (c) the gross density, ie the number of persons per unit area for the whole area, including all streets and open spaces. Private land should not be less than 55%, and public streets should not be more than 25%, leaving at least 20% for other recreational, cultural and other semi-public uses. The circulation length per hectare for single-household developments should not exceed 250 metres per hectare, and the gross density per hectare should not be less than 300 in most urban circumstances.

(ii) The Design of Dwellings and Other Buildings

Small low-cost dwellings must always be designed so as to permit future progressive improvement. The test of a good design is the ease with which it is modified and adapted to changing uses and circumstances of the householders. Spaces must be laid out to provide the widest possible variety of uses; this is in direct opposition to the modern tendency of architects to design every space for specific uses. Structures must be designed so they can be added to without significant waste of work already done. And of course householders must be able to build as slowly as they wish.

In most low-income contexts little more than a roof is needed at first, along with sufficient screening for privacy. In some contexts, low-income progressive householders prefer to start with a perimeter wall around their plot and within this they set up a shack from cheap provisional or waste materials. Others may prefer to start with one more or less finished room; yet others with a provisional dwelling from materials they will use later in the permanent construction. In any case designs must allow for the widest possible variety of individual house building schedules.

Rarely can a complete house be built under emergency conditions, as compared to individual components. In these circumstances, one should beware of providing temporary materials, of "lamina" roof sheeting after the Guatemala earthquake (GUA 45). It is normally advisable to provide a plot and start with one room, which can be improved and extended at a later date.

The placing of the dwelling on the plot is also very important. There is an unfortunate tendency, resulting from copying and scaling down upper-income styles, of placing a small dwelling in the middle of a small plot. This wastes the very small pieces of land on either side, even if there is enough left at the front or the back for additions or other uses. If and when these are used, dark corridors are created between houses which are unsightly and unhealthy as well as useless. If extensions are made at the front and back, a long, poorly ventilated and lit dwelling results. Longer and narrower plots, though reducing frontage, increase the areas which individual households can afford as they reduce the need for circulation areas.

It should be added that the distinction between 'rural housing' and 'shanty towns' can be misleading. There are for instance many 'shanty' houses in rural areas. The objective in both instances should be to improve their quality, and this may be easier in rural areas if only as more land is available.

In summary, proper attention to design can result in very considerable savings in material costs, as well as differences to the health and social relations of the householders. Layout is undoubtedly the most important single item in terms of design, followed by public services and community facilities, while the houses themselves come after all these.

5. Self-Sufficiency, Dependency and Self-Management

There are an infinite number of particular ways in which homes and neighbourhoods may be built, improved and maintained but it is essential to make some assumptions with regard to the most significant and influential factors. It is commonly assumed that the difference between contracted building work and self-help is critical, for instance, or the difference between subsidised and unsubsidised housing schemes, or both of these together with the difference between sponsorship by private, public and non-government agencies. All these and many other differences are indeed important factors. What is needed is a few general categories based on principles by which any particular factor or combination can be usefully distinguished.

The three suggested below are justified by the assumption that the most critical factor of all is who decides what for whom. The significant difference between contracted and self-built housing, for example, has as much to do with who does the contracting, and who decides what shall be done by self-help and what by contractors. When householders are the general contractors, they are likely to be helping themselves to save money to a much greater extent than when they are building their own homes in a sponsored project administered by an agency over which they have no control. People in most circumstances can save as much or more by being their own contractors as by being their own labourers.

The simplest useful distinctions in the field of decision and control are:

- (i) Self-sufficiency The householders are the builders. They own resources according to their own procedures without either support or contributions from exogenous agents or sectors. Autarchy was practised in many tribal and peasant economies, and is currently to a very high degree by many urban squatters in the rapidly growing cities of newly urbanising and industrialising countries.

The poorest urban dwellers usually must settle wherever they can, even if very temporarily, and shelter themselves with whatever they can find or afford from their own very small incomes. While they may contribute a great deal to industry and commerce, they cannot afford the goods or services produced and they get no assistance from government, indeed they are fortunate if they are not harassed. Autarchy in the modern world is an anomaly but this must not be confused with self-help or autonomy which is defined below.

- (ii) Dependency on others for the supply of housing over which the householders have no control and in the production of which they have no say, is the opposite of self-sufficiency. Conventional housing projects and programmes providing centrally planned goods and services to categories of households, often decided by the same agency, are organised pyramidally with decisions flowing from the top down. Although government policies are now changing, assisted and sometimes pressured by international agencies, centrally administered 'categorical programmes' are almost universally assumed to be the alternative to the impoverished self-sufficiency of shanty towns.

This does not apply so widely to the up-grading of unauthorised settlements if they have the potential for progressive improvement. In fact, these increasingly favoured kinds of project are both less categorical and more successful, mainly because the community is already established so that their participation and their own priorities are almost bound to be incorporated.

It is still generally assumed that centrally administered projects and programmes are the only ways of ensuring adequate housing for all. It is therefore supposed that the task is to reduce the costs of products to levels which the great majority can afford. Consequently, priorities often given to technological innovation that promise to increase productivity or reduce costs, to self-help by which people can provide unpaid labour, or to sites and services projects in which recipients are left to build their own houses. However all of these innovations, which are sometimes no more than gimmicks, are means of increasing the provision of housing in ways that also increase dependency.

- (iii) Self-Management This third principle is quite different from self-sufficiency; although often confused, autonomy is not the same as autarchy. People can manage their own housing and other affairs as long as they have access to the necessary resources. Where industry and government do provide people with sufficient resources for managing their own affairs, there is the opportunity for these to be carried out by people and organisations negotiating with each other on more or less equal terms and according to commonly respected rules.

The importance of these principles of decision-making and organisation lies in their relative capacities to obtain and use resources economically and to enable people to fulfil themselves through responsible and creative activity. Although self-management is obviously the principle that most directly embodies these qualities, it is equally clear that it depends on access to fair shares of locally scarce resources and these, of course, can only be guaranteed by central planning and control. On the other hand, self-sufficiency can make major contributions to personal and social well-being as this can relieve burdens on scarce resources, reduce pollution and increase personal security and independence. In almost all situations the building and maintenance of homes and neighbourhoods demand a mix and appropriate balance of all three principles of organisation.

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NOTES: (i) See also the Bibliographies to the following:

Community Development	Section 32
Shelter in Disaster Situations	Section 52
Technical Assistance	Section 4
Water Supplies	Sections 12 and 24

- (ii) For details of Information Sheets on Oxfam-assisted projects, see Section 2 Appendix III
- (iii) AHAS Housing Advisory Service has recently set up an information retrieval system of case studies, references and organisations relating to urbanisation and urban neighbourhoods. AHAS hopes shortly to be in a position to provide an information service at a modest fee. Enquiries should be made to:

AHAS, 5 Dryden Street, London WC2E 9NW, UK.

Section 37: ECONOMIC INSTITUTIONS

<u>NOTE:</u> This Section includes items on:	<u>Page</u>
I Marketing Schemes	37-1
II Cooperatives	37-4
III Savings and Credit	37-12
IV Revolving Loan Funds	37-19

There are bibliographies on Cooperatives and on Savings and Credit at the end of these Sub-sections. The bibliography on Marketing Schemes is on page 37-22.

MARKETING SCHEMES1. Oxfam practice

Although marketing schemes are not prominent in Oxfam's overseas activities, marketing is crucial to many Oxfam projects in two ways:

- (i) Farmers will not grow crops they cannot use themselves or sell, and poor marketing/transport facilities are often a major constraint on increased food production
- (ii) The exploitation of small producers, whether farmers or craftsmen, and the exploitation of consumers, are problems inherent in many marketing systems which Oxfam is particularly concerned to overcome, eg through the formation of cooperatives.

2. The marketing chain

Marketing is a process which includes all discussions and transactions between buyers and sellers, as well as the operations of transport, storage, processing, packaging and advertising which occur in trading.

The sequence of transactions which links the producer of a particular commodity to the consumer is known as the marketing chain. Most marketing chains include various intermediaries as well as producers and consumers, the intermediaries generally being divided into wholesalers and retailers.

The marketing chain can be divided into two sections, first bulking or collecting, and second distributing. The wholesalers with most capital are more likely to deal with the stages of marketing in which relatively large loads are transported over long distances and economies of scale are possible in transport and storage. In contrast, the stages at each end of the chain are characterised by high inputs of labour and low inputs of capital, major scale economies not usually being possible. Minor processing operations such as washing or packing may take place at almost any stage in the marketing chain, but major operations are almost always conducted with bulked quantities.

3. Employment and marketing

Less developed countries are renowned for their long, complex marketing chains, the profusion of commercial intermediaries, and the large number of petty retailers,

particularly in the streets and markets of large cities. The principal reasons for this are:

- (a) shortage of capital
- (b) abundance of labour
- (c) high levels of unemployment and underemployment
- (d) low levels of education and training

Trading acts as a standby labour activity, an occupation which can be entered and left relatively easily, and which is particularly suited to the needs of women (see Section 34) and rural-urban migrants.

Most commercial intermediaries perform some useful work in storage, transport, processing or packaging, but a few simply buy and sell at the same spot without contributing anything useful to the process of marketing. These parasitic middlemen simply push up prices to the consumer. Especially in rural areas, and where there are corrupt or inefficient local officials, the more powerful trading intermediaries may collaborate to form monopolies, paying producers prices which are excessively low, and charging consumers prices which are excessively high. By their very position in the marketing chain, intermediaries have a good knowledge of both supply and demand, and this gives them an advantage over producers and consumers, who are isolated at the ends of the chain. Thus the intermediary may exploit the ignorance of his clients to his own advantage in any situation where free competition between intermediaries does not occur.

4. Objectives of marketing schemes

Marketing schemes in projects should aim to improve existing marketing channels, or to create new marketing channels. They generally have one or more of the following aims:

- (a) to increase the prices received by producers
- (b) to reduce the prices which consumers have to pay
- (c) to increase the efficiency of the marketing process, by reducing the number of intermediaries, or by improving transport and handling
- (d) to reduce wastage by the application of appropriate preservation techniques in storage, packaging and transport
- (e) to stabilise prices
- (f) to standardise and control weights and measures and commercial practices so as to reduce corruption, discrimination etc.
- (g) to reduce trading in impure, unhealthy or contraband goods
- (h) to increase the efficiency of taxation on commercial activities and/or to augment the revenue arising from it
- (i) to re-organise the locations or types of trading institution, for example through the provision of regulated markets as in India, or through the adoption of rural growth centre strategies
- (j) to diffuse information on prevailing prices through the radio, hand-bills, etc., so as to reduce the likelihood of underpayment or overcharging by unscrupulous traders

- (k) to provide or encourage the development of credit and savings facilities (see following Sub-Section)
- (l) to assist producers to control marketing activities
- (m) to encourage the promotion of cooperatives (see following Sub-Section), so as to enable groups of small-scale producers, intermediaries or consumers to obtain the scale economies and bargaining power possessed by their larger scale competitors

Several of these 13 aims are incompatible with one or more of the other aims, and it is curious that all can be labelled as reforms when one set of measures may produce unfavourable side-effects which may eventually necessitate contrary measures. Each of the aims favours a particular section of the population, and most of them are likely to prejudice the interests of other groups. Thus, for example, reform measures designed to reduce the prices paid by urban consumers for food may prejudice the interests of producers and intermediaries, and may eventually lead to reduced production and increased unemployment.

Many marketing projects are intended to modernise marketing processes through increasing efficiency and the substitution of capital-intensive methods for traditional labour-intensive techniques. Apart from the danger of creating unemployment, such new marketing chains are likely to prove most beneficial to the large scale producers or consumers because these people are generally better informed, have more capital, and can act more swiftly to take advantage of new opportunities.

Oxfam would obviously not wish to support such projects, but would prefer to assist small-scale producers and to protect the poorest consumers. Projects of this type are generally based on the formation of cooperatives, or they may involve the development of savings groups. A simple solution for small producers in certain circumstances is for them to agree between themselves on the prices at which they will sell, so that the traders cannot force prices down by playing one producer off against another (BOL 5 and BOL 13). Oxfam is also interested in helping to improve transport infrastructure, where the lack of this is a major impediment to the sale of produce by farmers or fishermen (see Section 36).

5. Questions on marketing projects

In order to ascertain whether potential contradictions between the objectives listed above have been resolved, the following questions should be considered:

- (i) Who are the people likely to benefit from the project? Are they all aware of the benefits that they will obtain?
- (ii) Who are the people likely to suffer from the project, eg traditional middlemen, competing producers etc? What action are they likely to take, and what can be done to by-pass or counter this? Do they have legitimate interests which ought to be safeguarded, eg employment?
- (iii) Is sufficient technical knowledge and capital available to deal with problems of transport, storage, processing, packaging and advertising?
- (iv) Are there appropriate contacts among officials who can assist with permits, legal disputes, and other official proceedings?
- (v) Are there any temporary or permanent representatives to deal with buying and selling in distant places? A permanent representative may be needed in a large city to sell the products and buy raw materials for a rural agricultural cooperative. Sorties to the towns by inexperienced peasant farmers are unlikely to be successful when major

transactions are being negotiated.

- (vi) How efficient is the communications network, and how flexible is the production and distribution pattern to deal with unexpected changes in supply, demand and prices?
- (vii) What measures have been taken to minimise corruption?
- (viii) Have barter arrangements been considered as well as cash or credit sales? For example a cooperative store might take in products for transport and sale in the cities, and might distribute manufactured goods and foodstuffs from other areas. The volume of cash sales could then be minimised in favour of a system of credit and barter. Similarly, communities in different ecological areas, eg wet/dry, highland/lowland, might exchange products.

COOPERATIVES

NB. For Bibliography on Marketing Schemes, see 37-22

1. General Principles

'A cooperative is one of the most complicated organisations people can choose as a vehicle for meeting their needs. But it has proved to be one of the most effective if properly organised and managed.' - The Quetzal Marketing Federation, Guatemala (GUA 24).

The cooperative idea originated in 19th century Europe. It has been widely promoted in the Third World by colonial governments and, more recently, by independent national governments and international organisations. However cooperatives in the Third World based on the Western model have more often been failures than successes, and failure of a cooperative is commonly associated with some or all of the features listed in (2) below.

The objectives of a cooperative must be some combination of the following:

- (i) to enable small-scale producers, consumers and traders to buy and sell with the same economies of scale and bargaining power as that possessed by their large-scale competitors
- (ii) to enable several individuals to share a major resource, eg an irrigation pump, a weaving loom, a piece of land
- (iii) to help a group of individuals to save money which may then be used for individual purchases, or to provide credit for members of the group, or to further other aims of the cooperative under (i) or (ii) above.

These objectives are not mutually exclusive: some cooperatives are established for a particular - and limited - purpose, others combine a number of these.

Most countries have legislation governing the establishment and running of cooperatives. Under legislation of this type all cooperative societies must register with a central Department of Cooperatives, and are then compelled to comply with a set of highly specific regulations governing such matters as: the issuing of shares, the keeping of accounts, admission to membership, and election of officers. These regulations can be - and often are - circumvented in practice, resulting in corrupt management and lack of democratic control of cooperatives. On the other hand their existence can severely restrict the development of groups which may attempt to achieve some or all of the cooperative functions outlined above, using a simpler form of organisation.

2. Problems of Cooperatives

Experience shows that failure of cooperatives is often associated with the following:

- (i) Failure to involve the members adequately in decision-making. This may be a direct effect of the complexity of cooperative regulations, which members may find it difficult to comprehend with the result that they are dependent on professional staff. It is exacerbated when the staff concerned leave and are not replaced by others of similar competence. Typically it has the result that the cooperative gets into a vicious circle of: poor member participation --- poor benefits to members --- poorer member participation.
- (ii) Use of the cooperative for a purpose determined not by the members but by politicians or officials, eg as a vehicle for a government credit or input distribution scheme, or as a monopoly buying organisation for cash export crops. Cooperatives are sometimes set up as instruments of government policy. Although it may be possible to use existing cooperatives to implement specific aspects of government policy, this depends on whether the cooperative members accept given policy measures as a legitimate objective of their society.
- (iii) A 'mismatch' between the organisational requirements of the cooperative form of organisation as laid down by cooperative law and the skills/capacity of members of the community. For example, effective participation in a formal cooperative requires literacy and numeracy skills which in many Third World communities a large proportion of adults may not possess.
- (iv) A conflict between the structure of the cooperative as an institution and the structure of the society into which it is introduced. For example, democratic elections to committee membership are likely to be meaningless in a highly stratified society. The role required of a cooperative committee member or official, for example, to control/speak out against corruption and inefficiency may conflict with his general community role and status which require him to be deferential towards those older or more politically or economically powerful than himself.
- (v) Poor or corrupt management, often caused by the failure or the inability of members to control managers.
- (vi) Breakdown of democratic control and the taking over of the cooperative from within by narrow interest groups such as large farmers or traders in order to:
 - gain for themselves the benefits of cooperative membership, eg access to input supplies, control of pumps, processing equipment
 - prevent poorer members of the cooperative from increasing their economic power
- (vii) Direct attempts to destroy the cooperative:
 - from within by those opposed to the cooperative gaining membership and then sabotaging it, eg by defaulting on large loans
 - from outside by those opposed to the cooperative, by withholding supplies, denying employment to cooperative members, using physical violence

3. Setting up and Advising a Cooperative

(i) Full cooperatives versus 'para-cooperatives'

Much experience with Western-model cooperatives in the Third World must lead development agencies and donors to ask the question 'Is a cooperative really necessary?' in relation to:

- the objectives which a particular community or group desires to achieve
- the capacity of community/group members to cope with a relatively complex organisational structure

The answer may well be that it is important to avoid establishing a fully-registered cooperative, and instead to devise a form of group organisation:

- which is appropriate to its members' needs and capacity
- which can be controlled effectively by its members
- which is not likely to be dominated either by its own professional staff or by a minority of powerful members

Much of Oxfam's assistance to cooperatives is in fact to 'para-cooperatives' or 'pre-cooperatives' of this type. Examples are:

Saveway clubs in Zimbabwe-Rhodesia (RHO 22) - single purpose savings clubs with simple procedures which are less sophisticated and more manageable by many communities than Credit Unions which are themselves registered as full cooperatives.

Village groups established in the Oxfam West Orissa Programme (ORS 20) These vary in size between 5 and 200 households but most typically consist of 8-20 households. They have been established for the following purposes: digging wells; land reclamation and improvement; irrigation works; cultivation; handicrafts and rural industry; livestock raising; fish culture; petty trading; crop processing. Groups are initiated with a loan related closely to the specific needs of the purpose for which they have been set up. Saving to repay the loan and to build up the group's assets has been achieved by savings in kind and voluntary labour contributions as well as by cash saving. Richer farmers and members of the village power structure have been successfully excluded from groups in as many as two-thirds of the villages which were included in a sample survey, either because the groups are small or because the groups' purposes give richer farmers no real interest in or opportunity for joining. Problems are that even with careful control of the amount of money advanced to each group, it has been found that some groups have been over funded in terms of their ability to manage their working capital or of their ability to repay, while others have become dependent on the project administration for finance and materials, management ideas or technology. Often over-funding and dependent behaviour can be traced to a group being pushed by a project officer into activities too ambitious or on too large a scale for the group itself to handle.

Small groups for specific purposes encouraged by local voluntary agencies eg by District Sarvodaya groups in India, BRAC in Bangladesh, FASE and MOC in Brazil, CIDR "groupements" in Francophone West Africa. Groups of this type include:

- landless and small farmers' cultivation groups (ORS 22, BD 96)

- small farmers' irrigation, drainage, flood control groups (ORS 7, ORS 21)
- informal input-purchasing cooperatives (BRZ 94, VOL 58)
- women's groups for cultivation/livestock raising, handicrafts, functional education, health and family planning (BD 76)

(ii) Use or adaptation of existing groups

In many societies groups are formed traditionally for a number of purposes. Commonly these include: saving, construction work such as houses and irrigation facilities, major social events such as weddings and funerals. It is sometimes possible to build on this tradition to create groups for non-traditional purposes. Using this approach, the same objective will not be achieved in the same form of organisation in each community, and such groups are likely to violate cooperative principles in other ways eg they may not be democratic in the strict sense. They may however prove effective in a community unsuited for formal cooperatives. An example is the cereal banks (VOL 53c) encouraged by a local voluntary agency in Upper Volta.

(iii) Cooperatives and the poor

Formal cooperatives often fail to benefit the poorest members of the community. The very nature of a cooperative requires it to pursue specific objectives which are in the interests of its members. Thus a cooperative whose members are, say, small and medium farmers is unlikely to pursue objectives which would serve the interests of poorer groups, eg sharecroppers, landless labourers and women. For such a cooperative to try to 'reach the poor' by, for example, offering membership on favourable terms would tend to be counterproductive for the cooperative and of no real use to the poor. It is much more useful to identify specific needs of particular disadvantaged or poor groups, and establish cooperatives appropriate in both structure and purpose to meet these. Examples of the benefits which have been achieved for the poor by cooperatives or cooperative-type groups are:

- creating new economic and employment opportunities by opening markets, training in necessary skills, obtaining materials and equipment, eg the Quechua Indian women's Fotrama knitting and weaving cooperative (BOL 22)
- enabling the poor to gain in economic power vis-a-vis suppliers, purchasers and landlords. For example in Brazil where a chain of cooperative stores - "minipostos" - exchanges food and basic consumer essentials for agricultural produce and handicrafts, so keeping both selling and purchasing away from middlemen who are otherwise in a position to squeeze peasants from two sides (BRZ 148).
- giving the poor access to staple products at fair prices through consumer cooperatives. Although a much larger amount of Oxfam aid goes to marketing and production cooperatives, consumer cooperatives are in some situations an effective way of assisting and preventing exploitation of the poor (BOL 32, COL 33).
- helping the poor to gain access to productive resources which is denied to them except as members of a group. Among cooperatives

and groups with this aim are:

- (a) landless farmers' cultivation groups, giving access to the key resource of land (ORS 22, BD 96)
- (b) irrigation groups giving access to and - equally important - control of irrigation water (BIH 10, ORS 7, ORS 21)
- (c) industrial and handicraft production cooperatives, giving access to capital equipment (BRZ 111, BRZ 141, BOL 22)

(iv) Education and self-awareness through cooperatives

In order for cooperatives to function effectively, an element of education for members is almost always a necessary part of their activities. In some cases the educational role of a cooperative goes well beyond what is needed simply for the cooperatives functioning, it takes on an importance at least equal to that of its commercial activities and with a wider-ranging impact.

A cooperative's educational programme may include any or all of the following:

- training in specific skills required by cooperative activities, eg crop and/or animal husbandry, weaving
- literacy and numeracy training which may be either 'functional' ie linked specifically to the requirements of running the cooperative, or alternatively be part of a programme aimed at:
- helping members to an increased awareness of their identity and their social and political role, as well as a general understanding of their physical environment and of ways of extending control over this through knowledge of health care, hygiene, nutrition.

An example of a wide-ranging programme of education connected with women's cooperative groups and developed in response to the expressed needs of members is that of the Women's Self-Reliance Movement in Faridpur District, Bangladesh (BD 76). The Fotrama Knitting and Weaving Cooperative in Bolivia (BOL 22) has an educational programme which is aimed at the specific needs of its Indian women members to develop an awareness of their ethnic and personal identity, and which uses a teaching method based on dialogue.

4. Key Features of a Successful Cooperative

One of the most successful formal cooperatives to have been assisted by Oxfam, an agricultural marketing federation in Central America (GUA 24), has put forward the following 'basic principles for the organisation and management of successful cooperatives'.

Members Member participation is crucial to the democratic principles of cooperation. It depends on the extent to which members have received concrete, identifiable benefits which in turn are directly proportional to the time, effort and money they invest.

Board of Directors The board should be composed of two independent committees - an administrative committee and a vigilance committee. Prevention of mismanagement and/or corruption depends on these committees carrying out their

duties. Officers of the board should be elected on the basis of their honesty, capacity and participation in the organisation.

Manager Although the manager should not usurp the functions of the board of directors, the selection of a competent manager is the most important step a cooperative can take in its organisational development.

Commercial enterprises The strength of a cooperative is measured in terms of the success of its commercial enterprise(s); this success requires that a useful service is provided to members, and that at the same time a profit is generated. This is most likely to be achieved if:

- the cooperative begins on a small scale with one or a small number of enterprise(s) and aims to build up the scale and scope of its activities gradually from such a modest base
- the skills of the management are equal to the scope and complexity of the commercial enterprise(s)
- credit is not extended to members until an effective system for ensuring repayment is established

Financing The shares which members buy in the cooperative are both the foundation for sound financial growth of the organisation and the basis of the spirit of self-help by which members maintain their dignity. The amount a cooperative can borrow and effectively manage is directly proportional to the amount its members have invested. The size of grant a cooperative can manage efficiently is directly proportional to the amount the members are willing to put into the project for which the grant is given, so that at no time does the cooperative become dependent on a grant. In general the cooperative must be aware of the intrinsic liabilities of grants and loans.

Accounting The sophistication of the accounting procedures and controls needs to keep pace with the growth of the cooperative's operations. The financial statements of the cooperative need to be written in a manner which members can understand.

Educational services Success of a cooperative's educational programme depends on its helping members to meet their needs. This is likely to be achieved where the programme has practical, measurable goals of value both to members and the organisation. A relevant educational programme encourages a high level of member participation, which in turn may have an outreach effect as members teach others what they have learned.

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Margaret Digby, Cooperatives, ODI, 1970.

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Orientation Programme for Colonists, San Julian, Bolivia (BOL 32 & 13)

Fotrama, Knitting and Weaving Cooperative, and Education Programme,

Cochabamba, Bolivia, (BOL 22)

Sulla Rural Development Programme: Sylhet District, Bangladesh (BAN 17)

Kaira Milk Producers' Cooperative Union, Anand, India, (869/23/3045/5111)

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Plunkett Foundation, Yearbook of Agricultural Cooperation, annual publication consisting of a collection of articles covering experience of formal cooperatives with a wide range of purposes - some developed country, some developing country.

Plunkett Foundation Study Series, useful training manuals which can also be used as general handbooks. Strongly recommended, especially No. 2.
 No. 1, Surrige and Webster, Cooperative Thrift, Credit, Marketing and Supply in Developing Countries, 1978, £1.80.
 No. 2, Wiseman, Basic Financial Control, 1979, £2.80.
 No. 3, Yeo, Basic Economic Concepts, 1979, £2.25.

B. Roberts, Organising Strangers : Poor Families in Guatemala City

UNRISD, Rural Institutions as Agents of Planned Change, 8-volume study, 1969-75, including a Review of Rural Co-operation in Developing Areas (vol 1); reports on Latin America (vols. 2, 3), Africa (vols. 4, 5), Asia (vols. 6, 7); and Rural Cooperatives as Agents of Change - a Research Report and Debate (vol. 8) United Nations Research Institute for Social Development, Palais des Nations, 1211 Geneva, Switzerland.

World Neighbours, Cooperatives, in Action Series Vol. 10, No. 4E. Based on the experience of the Quetzal Central Marketing Cooperative in Guatemala. Gives practical information on managing and organising a cooperative, and on the affiliation of small cooperatives into larger regional organisations.

Peter Worsley (ed.), Two Blades of Grass, Manchester University Press, 1971. Book of readings on cooperatives in developing countries, with especial reference to use of traditional institutions as a basis for modern cooperative development.

Peter Yeo, The Work of a Cooperative Committee : A Programmed Learning Text, I.T. Publications Ltd., London, 1979. Guide for committee members of primary cooperatives, with material for six meetings of study groups.

The following organisations are particularly concerned with the work of cooperatives in developing countries, and have publications and consultants available:-

1. International Cooperative Alliance (ICA), 11 Upper Grosvenor Street, London W1, UK.
 2. Plunkett Foundation for Cooperatives, 31 St. Giles, Oxford, UK.
 3. Cooperative College, Stanford Hall, Loughborough, Leicestershire, UK.
 4. University Centre for Cooperatives, University of Wisconsin, 610 Langdon Street, Madison, Wisconsin 53706, USA.
 5. COPAC, Via Terme di Caracalla, 00100 Rome, Italy.
COPAC have a useful Directory of Agencies Assisting Cooperatives in Developing Countries, December 1978.
6. Questions about cooperatives, to be asked in assessing applications
1. What are the objectives of the cooperative? Can these be related to identifiable needs of the community or of specific groups within the community?
 2. What is the actual or potential membership? Does this form a coherent group with a close identity of interest?
 3. What national legislation exists governing the establishment and organisation of cooperatives? Are groups established under this legislation likely to be within the capacity of the membership? (ie 'Is a cooperative really necessary?')
 4. Is a 'para-cooperative' likely to be preferable to a full cooperative? What is the legal status of such a group?
 5. Is the objective of the cooperative both commercially viable and capable of achievement within social and economic structure in which the cooperative must operate?
 6. Are the actual or potential leaders and professional managers of a calibre to make the cooperative a success?
 7. What is the educational component of the cooperative? Are the activities of the cooperative likely to have any favourable impact on non-members?

SAVINGS AND CREDIT1. General Principles

Virtually all societies have devised arrangements whereby funds accumulated by individuals or institutions (savings) can be made available for use by other individuals or institutions (credit)

The motivation for seeking credit is usually one of the following:

- necessity, eg crop failure resulting in inadequate food supply for the year; the need to spend money on a wedding or funeral
- the expectation that the funds can be used to generate income, eg as a result of buying and using fertiliser and improved seed.

In principle there can be no credit without saving, even though savers and borrowers may be widely separated from each other. For example, a farmer in a developing country who participates in a credit programme funded by the World Bank is making use of savings made by individuals or institutions in industrialised countries. It is to bring savers and borrowers together that savings and credit institutions exist. In general, the further apart they are in time and space, the more complex these institutions must be.

For the most part, Oxfam's involvement with savings and credit is in agriculture and the rural sector, so this Section takes mainly this viewpoint. However savings and credit programmes connected with housing, handicrafts and small-scale commercial and industrial undertakings have been supported by Oxfam.

2. Conventional (supply-led) Credit

It is today a very widely accepted theory that the peasant farmers of the world can only become more productive if given the opportunity to borrow someone else's money to do so. Speaking as head of the World Bank, Mr. Robert McNamara has said: "For the small-holder operating with virtually no capital, access to credit is crucial. No matter how knowledgeable or well motivated he may be, without any such credit he cannot buy improved seeds, apply the necessary fertilizer and pesticides, or develop his water resources. Small farmers generally spend less than 20% of what is required on such inputs because they simply do not have the resources."

As a result of this type of thinking, many credit programmes disburse quite large sums to small farmers, often tied to a package of inputs which enables farmers to adopt a particular agricultural innovation such as a new crop variety. Common results of this type of programme include:

- the 'misuse' of loans for consumption, paying rent and taxes, meeting existing debts, with the result of
- failure to recover loans
- the swamping of traditional savings and credit arrangements eg rotating savings groups, as access to external loans appears an attractive alternative to the smaller amounts available through traditional arrangements

- inaccessibility of loans to small farmers because: they are unable to offer security, are illiterate, are regarded as technically 'backward'
- positive damage to small farmers where the technology tied to the loan is a risky one, and where in consequence the benefits of adoption are not enough to meet loan servicing and repayment requirements.

In general, it is Oxfam's experience that it is not the amount of funds available for disbursement as credit that is critical, but rather the arrangements by which these are normally disbursed. In this situation, it is held that if the arrangements are not modified, then the peasant farmer is more likely to benefit if these sums are reduced in view of the consequences outlined above. If the system is amended to the potential benefit of the peasant farmer, then - and only then - should larger sums be made available. This point is analysed in the following Sub-section.

3. An Alternative Approach

The experience of Oxfam leads it to reject the conventional approach to credit outlined above which, as indicated, tends to be both inefficient and inequitable. More fundamentally this experience calls in question the assumption on which 'supply-led' credit is based, namely that the rural sector can generate so little in the way of savings that there is no real alternative to the large-scale injection of funds from outside. On the contrary, experience with savings clubs has shown that many small farmers can mobilise savings through appropriate institutions.

The approach now favoured by Oxfam can be regarded as having four elements:

- (i) identifying the community's credit needs, including the different needs of different individuals and groups
- (ii) identifying how these are met by existing savings and credit institutions, then
- (iii) encouraging the growth of new institutions which more adequately meet the community's needs, and/or
- (iv) devising ways of making existing institutions work better.

What each of these involves is outlined below:

A. Identifying credit needs

There are a very large number of demands made by a household on available cash, including any that becomes available through credit. The most crucial of these are those made by:

- the need for basic commodities especially food
- the need to pay rents and taxes
- the need to pay off existing debts.

Others in approximately descending order of importance, although this must vary between households and between societies, are: ceremonies including weddings and funerals, school fees, medicines and medical care, durable consumer goods such as household utensils, lamps and bicycles, gifts and loans, agricultural investment, non-agricultural productive investment.

A donor agency always prefers to see its money used for productive investment, but this often comes low on the list of priorities for a poor household.

Indeed the distinction between production and consumption credit is not always clear to such a household. It is the urgency with which credit is needed for purposes high on the list which is a major cause of the power of the money-lender. A valuable form of assistance can therefore be a liberation loan to pay off old debts. These have been given, for example, to landless artisans in Cudappah, Andhra Pradesh (AP 22) and in the Oxfam West Orissa Project (OXWOP - ORS 20). In both these cases, the artisans were dependent on advances from moneylenders at high interest rates to obtain both working materials and consumption necessities. Loans to enable storage of crops to take advantage of high off-season prices, or even to avoid selling standing crops to creditors are another form of assistance of this type. Examples are the cereal banks in Upper Volta (VOL 53c) and the loans given to groups of small farmers by MOC in North-East Brazil (BRZ 104).

B. Existing savings and credit institutions

A useful distinction can be drawn between informal institutions, and those designed to eliminate dependence on personal contact in savings and credit transactions and which operate a standard set of procedures. Village savings and credit institutions are by definition informal; formal institutions are all urban-based, although there are also urban informal institutions, such as moneylenders and traders. It has been said that intermediaries who provide services with a minimum of formalities keep people in perpetual slavery.

A checklist of the most common informal and formal institutions is given below:

Informal institutions

- For saving: Hiding money; buying valuables or livestock; depositing money/valuables with a friend or broker; reciprocal arrangements with neighbours ie lending in the expectation of a reciprocal loan later; rotating savings groups.
- For credit: friends & neighbours as part of a reciprocal arrangement; rotating savings groups; moneylenders & traders; landlords.

Formal institutions

- For saving: post office; commercial bank; cooperative/credit union.
- For credit: commercial bank; cooperative/credit union; specialist government credit agency, eg Agricultural Development Bank (see Section 13).

Any society will be served by some or possibly all of these institutions. Before intervening in credit markets, it is important to identify:

- which of these institutions are used?
- by which groups of people are they used / do they benefit?
- do they function efficiently?

For example:

- (i) traders and moneylenders may offer a reasonably efficient and non-exploitative means for small farmers to both save and borrow, as a recent study in Tamil Nadu by Barbara Harriss has shown (see bibliography). On the other hand they may be highly exploitative, as in the examples given from Cudappah and Oxworp .
- (ii) traditional rotating savings groups may function effectively.

On the other hand saving may still be achieved largely by hoarding, and the encouragement of small informal groups may be an important means of breaking away from this.

- (iii) small savers may use formal institutions such as the post office and commercial banks. On the other hand they may be prevented from this by a minimum deposit requirement, by physical distance, or by mistrust of these institutions.

C. Building new institutions

After making an assessment of savings and credit needs and the ways in which they are met by existing institutions, the most appropriate step may be to encourage the development of new institutions, whether formal or informal. These will probably be based to some extent on existing institutions, and they should be within the capacity of the people - whom they are to serve - to be able to use and control them.

Institutions of this type which Oxfam has supported are:

Saveway Clubs,
Credit Unions,
Informal ' para-cooperative' groups of various types.

Notes on each of these are below:

Saveway clubs

The Saveway clubs are a particular model for savings groups. The basis of the Saveway system (RHO 22) is the use of stamps to record deposits made by club members at weekly meetings, the cash collected being placed in a post office or bank account in the name of the club. Saving for a specific purpose such as a fertiliser/seed package provides a focus for the group's activity, and it has the additional advantage that the materials may be bought at a discount if a number of people in the same village purchase them at the same time. Supplies taken by members are paid for by physically tearing out the appropriate number of certificates from a member's book and cashing them. The scheme can be operated with only one literate member in the group to keep the books.

A recent evaluation of the operation of the Saveways scheme in Kenya, Malawi, Tanzania and Zambia, sees the scheme as a first step in the following developmental pattern of the use of savings and credit institutions:

- (i) a simple savings club requiring minimum literacy by members, and leading to
- (ii) a savings and credit union-type organisation where a greater degree of literacy is required, leading eventually to
- (iii) possession of a deposit and current account with a commercial or national bank, or post office.

In general, savings groups have the added advantage that they are a means of encouraging people to meet regularly, an event which can be used for extension/instruction in agriculture, health and child care, nutrition. Alternatively, the savings element can be grafted on to groups already meeting for other purposes such as women's groups. Savings groups should not of course only be thought as relevant to the

rural sector; they can be just as validly applied to urban activities as was indicated at the outset of this Section.

Where possible, the administrative arrangements for a savings group should be kept as far as possible under the direct control of the group's membership. It has been found that where outsiders become involved as book-keepers etc, this tends to weaken the interest of the group's members and may lead by default through lack of supervision to mismanagement and even corruption.

Credit Unions

Credit Unions are a type of formal cooperative based on a nineteenth-century German model. The International Credit Union Movement has a headquarters in the USA, and this form of organisation has been promoted in a large number of developing countries through national Credit Union parent bodies. Oxfam has assisted the Credit Unions and Savings Association (CUSA) of Zambia (ZAM 21), mainly with promotion of its educational activities.

Credit Unions tend to face similar problems to formal cooperatives (see Cooperatives earlier in this Section). They are, at least compared with savings groups, a relatively sophisticated form of organisation, requiring literacy on the part of members and professional assistance with the running of groups. They differ from savings groups as such also in that they enable credit from outside the group to be channelled into it, once the group has established itself by a period of saving. This carries the risk of bad debts and the consequent failure of the group; a risk which does not exist in savings groups. One of the reasons suggested for the failure of the savings movement in Africa to develop is that savings groups find it hard to compete with Credit Unions, partly because the latter have 'the carrot' of credit to offer, partly because national cooperative movements and credit union associations are usually keen to assimilate savings groups.

Informal groups

This heading includes groups which can be described as 'para-cooperatives' or informal cooperatives (see Cooperatives earlier in this Section). They are established for a wide range of purposes, but all of them have an element of group savings and/or use of an external loan to further the objectives of the group. Such a loan may derive from an Oxfam loan to the project holder or an Oxfam grant to set up a revolving fund. Experience with such groups indicates that:

- effective use of the funds
- a good repayment record

are achieved where:

- (i) the purpose for which the loan is made is income-generating
- (ii) repayment within a maximum period of 2-3 years is possible
- (iii) groups themselves contribute a sizeable proportion of the total cost of the project, possibly in the form of labour
- (iv) a reasonable rate of repayment is set which is within the capacity of the borrowers, preferably by discussion within the groups themselves
- (v) loans are not interest-free, and so cannot therefore be regarded as a soft option by the borrowers.

Examples of projects of this type are: the San Juan revolving loan fund in the Dominican Republic (DMR 5); loans given by MOC to sharecroppers in Bahia Province, Brazil to enable them to buy land (BRZ 104); and loans made from a revolving fund to enable small-holders to purchase farm inputs without becoming dependent on commercial suppliers (BRZ 94). The first two of these have achieved excellent repayment records; in the last, in which loans were made free of interest and without inflation-linking, repayment has been much less satisfactory. Indeed at San Juan, particularly successful groups are pointed out to commercial banks so that they may be incorporated into the formal credit market.

D. Making Existing Institutions Work Better

There are major barriers to formal commercial financial institutions, ie commercial banks as distinct from government 'agricultural development banks', making loans to the rural sector. These include:

- (i) they are not able to give loans without security
- (ii) it is very costly, in relation to the size of the loans, to administer loans to small farmers and other borrowers in villages.

One method which Oxfam has pioneered of giving small rural borrowers access to the funds of commercial banks, and in the process often liberating them from moneylenders, involves the placing of deposits with commercial banks to guarantee loans which the banks then make to approved groups. Projects receiving bank loans in this way include the Ponnur and Dindi schemes in Andhra Pradesh (AP 24N) to assist marginal farmers and landless labourers to recover from the cyclones of 1976 and 1977. All participants in these schemes have holdings of 2.5 acres or less, and would otherwise because of their small land-holdings have been totally excluded from the formal credit market. These schemes have to date achieved a 90% rate of repayment. In Gujerat, a deposit made with a commercial bank by the Rajpipla Social Service Society (GUJ 53C) has secured a loan equal to three times the amount of the deposit for a group of Adivasi (scheduled caste) dairy farmers to enable them to buy milk buffaloes and to establish a marketing cooperative. The nationalised Syndicate Bank of Manipal, Karnataka has established a subsidiary, the Syndicate Agricultural Foundation, as a means of increasing its involvement in rural development ie by 'barefoot banking'; Oxfam has funded (KN 46) audio-visual equipment for the Foundation to use in its extension work.

4. Key issues on Savings and Credit

Faced with the recognition that conventional credit programmes often have the effect of intensifying inequality in that they either miss poor farmers or lead them into commitments which they are unable to meet, voluntary agencies are concerned to implement programmes which are of genuine assistance to the poor.

To encourage savings through groups for the purpose of making a specific investment is an attractive option but will hardly meet the needs of those who are heavily indebted. To assist them may require liberation loans, which may not be for a purpose normally thought of as productive but which may well be repaid without difficulty as recipients are released from heavy interest payments.

To make loans or grants to set up revolving loan funds for informal groups is an exercise fraught with difficulty (see the following sub-Section). In spite of some notable successes, borrowers have sometimes treated voluntary

agency loans as a soft option possibly in the knowledge that the agency will not go to extreme lengths to recover debts (partly for practical, partly for ethical reasons). Experiences of this type raise the question of whether it is possible simultaneously to act as both development agency and mini-banker.

One possible way out of this dilemma appears to be to help the poor to gain access to the commercial banking sector by guaranteeing loans. However the fact that commercial banks are necessarily profit-oriented must raise the question of how widely they can be used as a means of providing credit for the poor. In the answer to this lies to a large extent the future well-being, or the continued impoverishment of the poor.

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Bank Credit and Revolving Loan Fund, Upper Volta, (VOL 31)

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Saveway Clubs. Explanatory leaflets and samples of the material are available from the Overseas Division at Oxfam, Oxford, UK. They are in English and French.

6. Questions on Savings and Credit - to be asked in assessing applications

1. What existing institutions for savings and credit, both formal and informal, exist in the community?
2. Are any particular groups including the project's 'target' group, badly served by these institutions eg charged high interest rates by a moneylender, denied membership of a credit union?
3. What are the specific needs of these groups for credit?
4. Can these needs be met by a savings group which mobilises community savings, or is the need larger or more urgent than this?
5. Is there a way in which these needs can be met by helping groups or individuals to gain access to existing institutions, especially formal institutions? eg by guaranteeing a commercial bank loan; or is it necessary to set up a new institution with a revolving loan fund, eg an informal cooperative group?

REVOLVING LOAN FUNDS

1. Oxfam Projects

This article is concerned with revolving loan funds which are designed to provide credit for farmers or craftsmen. Oxfam's general policy on loans is dealt with in Section 7.

Theoretically, revolving loan funds should differ only in one respect from a formal loan in that the money is lent by the project to the individual beneficiary, and on repayment the money remains with the project for further lending rather than being returned to Oxfam. However, Oxfam's administration of revolving loan funds has been rather casual in the past, and follow-up has been inadequate to ensure that funds really do revolve in the manner intended.

The most common use of the revolving fund money is in agriculture, with less frequent instances in the artisan or women's training field. A definite pattern emerges from experiences with agricultural funds, demonstrating the complexity of this type of aid programme, and the very high failure rate of the revolving aspect of these schemes.

2. Why loan schemes go wrong

The major reasons for failure are listed below and each should be studied when investigating new requests.

- (a) Loans are often made at times of stress, for example drought or flood, to enable farmers to make good losses of seed, livestock etc. At such times any form of assistance tends to be accepted without understanding, and there is rarely adequate time to make the recipient aware of his liabilities.
- (b) The income derived from the items purchased with the loan rarely meets the farmer's expectations of a higher income as well as giving a margin to cover loan repayments.

- (c) Many recipients have no former experience of handling a loan, so tend not to foresee possible difficulties they may face in making repayments.
- (d) Many of the agencies handling loan funds have a soft image in the eyes of the recipients, so loan repayments are not taken seriously.
- (e) Often the administrative ability of the handling agency is sadly lacking and inadequate record keeping makes proper reporting impossible and leads to confusion.
- (f) Easy access to loan funds often encourages the farmer to progress faster than his managerial abilities allow, so resulting in poor usage of the items provided by the loan.
- (g) Unless there is adequate investigation before the loans are disbursed, a farmer might find himself with only part of the inputs required to benefit from the loan. A good example of this is a loan to purchase an irrigation pump without provision being made to purchase the necessary improved seed, fertilizer and insecticide. A form of package loan seems to be the answer in these cases.
- (h) Loans for the purchase of draught animals must take into consideration the farmer's need to earn a considerably enhanced income to cover the repayments, usually entailing the cultivation of a larger area of land (see Animal Power in Section 14).
- (i) Settlement schemes often include a large loan element to cover the cost of housing, bush clearance, seeds, etc. Repayments are normally made through a single-channel marketing system, but are often so phased that an excessive burden falls on the settler in the early years. This can lead settlers to desert schemes. This suggests a need for simpler, less capital-demanding housing, roads and water supplies and differently phased repayment schedules (see Section 38).

3. Conditions for success

Where revolving loan funds have been successful, they have included what are seemingly essential ingredients:

- (a) The loans have been carefully administered with adequate supervision, record keeping and a realistic loan repayment phasing backed up by some degree of law enforcement.
- (b) There has been a face-to-face relationship between the lender and the borrower which keeps the situation on a more personal level. This severely restricts the operation both in size and geographical area but results in much greater mutual understanding.
- (c) The programme has produced a considerably enhanced income for the borrower within a short time of implementation which enables the borrower to repay the loan while at the same time increasing the income available for his own use. It is unrealistic to expect the borrower to live at a lower level than before to pay off a loan.

4. Points for project holders

- (a) A formal loan agreement in the local language must be made with borrowers.
- (b) Periodic statements of money owed should be circulated to borrowers.

- (c) Frequent visits by responsible staff must be made to build up a personal relationship.
- (d) Where possible single-channel marketing of produce should be encouraged to enable a stop order system to be implemented. Participation of borrowers in the marketing system is very important to prevent accusations of price exploitation (see earlier Sub-section on Marketing).
- (e) Village level loans committees made up of responsible people who act as a primary vetting organisation can also put local pressure on loan defaulters, and can have considerable educative value.

5. Administrative points for Field Directors

- (a) Carefully consider whether the request for a revolving loan fund would perhaps be better handled as a formal loan repayable to Oxfam. This would ensure a more responsible attitude and would put an obligation on the project to submit adequate reports. Further loans could be made subsequently based on this experience.
- (b) A smaller initial amount would lessen the risks and allow much better assessment of the administrative ability of the project holders.
- (c) Make sure an efficient reporting schedule is set up to give a complete list of all the borrowers, showing the amount borrowed, the purpose, the terms of the loan and actual repayments made.
- (d) It is acceptable for projects to charge interest to cover reasonable administrative costs and possibly bad debts. But the interest rate should generally not exceed 10%.
- (e) Could the activities for which the loan is needed be better financed by the formation of a savings group? This would take longer, but has many advantages. (See the previous Sub-section on Savings and Credit)
- (f) Where loan funds are to be used in a high-risk project and realistic repayments cannot be expected, the question arises as to whether the project is a sound one, and if it is, whether a grant would be more appropriate than a loan. However as Oxfam insists on local participation and does not give free handouts, the setting up of a local savings group might provide a more satisfactory source of the necessary finance. The alternatives of a grant given as a free handout or a loan which will never be repaid would seem justified only in emergency situations where there is not time for a savings club to become operational.

For details of Information Sheets on Oxfam-assisted projects that are available, see Section 2, Appendix III.

Editor: There appears to be a dearth of relevant literature on the experience of revolving loan funds. Suggestions of suitable references will be welcomed.

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Agriculture, Agricultural Development Council of New York, 1969.

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Note This bibliography relates to the Sub-Section on Marketing Schemes on
pages 37 - 1 to 4.

Section 38: RURAL SETTLEMENT OR COLONISATION SCHEMES

1. Misplaced Expectations from Settlement Schemes

State-directed colonisation schemes have a reputation - sometimes undeservedly - of being costly failures, whilst spontaneous settlement ventures have a reputation - also not always deserved - of succeeding. No lessons can be derived from such statements. Only analyses of cases can identify what went wrong. Sometimes success for both state and settler was seen in terms of the profitable marketing of a key cash crop. Delay in the construction of the necessary access roads led to the scheme being prematurely pronounced a failure by observers and by settlers who left when those who hung on eventually prospered. Other failures have arisen because settlers too readily accepted, or had imposed upon them, credit in amounts that were incapable of being repaid. All too often settlers' wishes were ignored either because the implementation of schemes could more easily be managed by top-down decision-taking procedures or because the settlers themselves were apparently incapable of adequately articulating their views. Or again the combination of paternalist attitudes by the organisers with a desire by the settlers for guidance and instruction led to the trauma of withdrawal and consequent disaster when support was terminated. Again, often all concerned had expectations that were incapable of realisation except in the very long term, so that the frustration born of a slowly dawning truth has led to abandonment.

Despite all these constraints, there are remarkably few areas once categorised as settlement failures which did not achieve a permanency of occupation a generation later, from which we may conclude that human ignorance - often excusable - rather than physical constraints bears the prime responsibility.

2. The Costs and Benefits of Schemes

Rural or agricultural settlement is a term misleadingly narrow in its apparent scope. What is really involved is the creation anew of all the aspects of the man-made world and the incorporation of that new world into the old. To fail to perceive that is to fail to perceive the many directions from which problems may arise.

As is commonly observed the cost in consequence is enormous, even if the level of facilities created is no higher than that in the areas from which the settlers came. Yet in fairness it should be stressed that, if the national population is rising, many of these costs would have to be incurred anyway either in the areas of origin or in the cities to which people might alternatively migrate, eg on services such as education, health, agricultural extension or industrial training. These costs are thus transferred, and are not additional ones. However the cost of access roads to new rural settlements - usually the largest item - is often greater than that of constructing rural roads in established areas for two reasons: firstly the main penetration roads linking the colony with the existing network tend to be longer, and secondly more needs to be spent per beneficiary on farm-feeder roads because colony farms are larger and hence fewer people benefit per mile of road. Furthermore greater distances imply higher transport costs to market and lower incomes than might have obtained in established areas. The opportunity cost of colonisation must therefore be examined.

3. Problems with New Modes of Agricultural Production

The settlement of new areas can involve an ignorance of what kinds of agricultural production will be technically, economically and socially feasible.

(i) Technical ignorance arises because the terrain, soils, climate and

disease and pest hazards of every area are unique and that area's potential untested. To spend the years needed for such tests prior to the arrival of settlers is not normally practicable when the pressure to settle is urgent. Even natural resource assessment from available satellite photographs and imagery may be too time-consuming; and perhaps the least that should be undertaken in that direction is to consult photographs taken at the time of heaviest rainfall in order to identify flood-prone localities. Settlers will therefore inevitably be experimenting for several years; hence for example crop diversification will be advisable to minimise risk. Aid assistance accompanying the settlement programme might usefully include programmes of adaptive research, preferably in collaboration with settlers, to determine the most suitable crops, varieties, treatments and crop combinations (see also Agricultural Guidelines, Sections 10-19).

- (ii) Economic ignorance arises especially because the very act of bringing new land into cultivation with surpluses for sale alters the balance of demand and supply in local regional, national and even international markets. Some problems arise because staple crops with a high total demand tend to have low values which make long and costly overland journeys to large and distant markets difficult to support. On the other hand high-value specialist crops - which can withstand high transport costs - have a low total demand and rapidly produce disheartening local gluts before complicated marketing systems can be created. Thus, for example, in Bolivia, twenty years of colonisation converted that country from an importer to a producer of rice and sugar in volumes that were roughly 50% in excess of domestic demand. The net cost of exporting such low-value staples, and taking into account the high cost of transport over the Andes, has largely precluded that solution. Unable to continue financing the growing rice mountain, the government had to abandon its guaranteed price scheme. At the other extreme one tiny black-pepper project in Brazil (BRZ 94) would, if implemented, have run the risk of upsetting the world market which requires only 50 square miles of planted area in all to satisfy it. Diversification is therefore advisable to minimise risk, for economic as well as technical reasons. By the same token the assumption that what is successful on a small scale can be replicated with assurance may be quite fallacious. Equally, closest scrutiny should be accorded to credit programmes which emphasise long-term investment in a limited number of enterprises, since they may serve simply to irrigate the seeds of disaster (see Credit in Section 37).

On the other hand the problem of limited local markets may frequently be overcome by processing industries which yield a higher-value and often a less perishable product. Yet all too often capital-intensive technologies requiring high throughputs for profitability are selected for such industries, leading to pressure on farmers to concentrate on a single crop without at the same time there being any certainty that the market can absorb the volume processed. A preference for intermediate technologies in processing should reduce such pressures and risks.

- (iii) Social ignorance arises because, although under new conditions the social relations of production obtaining in the home area may no longer be appropriate, we do not know what new relations will be acceptable. What, for example, is to be the role of women accustomed to marketing small surpluses in the nearest town when produce is collected by truck at the 'farm gate' and there are no towns? Will mutual labour obligations readily accepted in a traditional subsistence-oriented

community, continue in a cash economy? Will rights and obligations to participate in the economic activities of the extended family elsewhere conflict with the needs of the settler's holding and his new obligations to the colony?

The implications of such issues are that questions must be posed and answers obtained to guide programming but, since such answers cannot be definitive, structures should be devised for monitoring results in these several fields and mechanisms created for modifying programmes.

4. Settlement Involves Change and Adaptation

The right forms of support can facilitate the process of adaptation, accelerate its pace and reduce abandonment. Sound planning requires the initial diagnosis of the kinds of change involved before appropriate strategies can be prescribed. Changes may be few or many. At the least there is change in the location of the economic activity of the settler and in the location of residence. According to circumstances, other changes may include: soils and climate, types of crop and livestock, farming techniques, diet, clothing, housing, health hazards, economic opportunities, language and social structure. An orientation programme for settlers therefore needs to be tailored to specific changes and the consequential problems of adaptation.

5. Objectives Can Be a Source of Conflict

Participants in settlement schemes - the state, the aid agency and the settlers, individually and collectively - have objectives and aspirations. These may be mutually harmonious or in conflict. The State may simply wish to decant population from an overpopulated area to release social tension, without any concern for the progress of the settlers and hence be unwilling to invest in the infrastructure needed to satisfy their goals. Alternatively the State may be preoccupied with the geopolitical aim of peopling frontier areas regardless of such areas' potential for satisfying the needs of the settlers. The aid agency may seek to replicate some settlement model that is alien to the wishes of the settlers, eg replicating the individualistic pioneering of the American West when collective forms of organisation would be preferred or, conversely, attempting to establish some utopian collectivist dream when the settlers have been prompted by an individualistic get-up-and-go motivation to escape the mutual obligations of a traditional community.

Since in the long run success or failure will be judged by the settlers and in their own terms, it is necessary that planners should appraise the aspirations and objectives of the settlers. How far the planners should present the settlers with a realistic appraisal of opportunities, including the uncertainties, how far the planners should seek to change settlers' aspirations and objectives - when such actions could undermine the settlers' courage to undergo the trauma of uprooting and resettlement - are problems that cannot be avoided.

6. Settlers' Social Relationships and Obligations

Settlers' are not just individual farmers. They are members of society with ties, loyalties and obligations to parents, to nuclear families and often to extended families and other groups. The progress of settlement will therefore be affected by their retention of old ties and by the extent to which new ties are accepted and even sought. It is sometimes concluded that this problem can be solved by the transference of a whole community with its social structure intact. But this ignores the possibility that the qualities of leadership appropriate to life in a static established world may be quite inappropriate to the new, strange and evolving conditions. This is well illustrated from the experience of recent "colonos" at San Julian in Bolivia (BOL 22).

Yet there are many cases where a prior common adherence to some religious or ideological body of beliefs has provided the cement of social cohesion that has enabled the settlers to withstand early difficulties and collectively to progress eg Mormons in Utah, Mennonites in Paraguay, Welsh in Patagonia. Nevertheless the fact of such colonies often being pariah groups and therefore excluded from alternative opportunities may have been equally significant. Whether the dis-integration of such closed societies, as their members become integrated into the wider society, is a sign of failure or success is a moot point. In any case settlers of a 'normal' kind more readily perceive other options as available, eg migration to the cities or the combination of commerce with agriculture. Settlement for agricultural production is thus in competition with other ways of life. Does it matter?

7. Bibliography

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For details of Project Information Sheets that are available on Oxfam-assisted projects, see Section 2, Appendix III.

There is also literature on the experience of settlement schemes in India and Sri Lanka, and of the federal Land Development Authority (FELDA) and of the schemes for settling youth both in Malaysia.

SECTION 39: LEGAL AID

An increasing feature of Oxfam's overseas programme is the support for legal aid for poor communities. The emergence of legal aid as a legitimate part of Oxfam's declared aim to support the 'social' development of the poor brings into question the potential conflict which may exist between such programmes and the status of a charitable institution, between apparent political stances and Oxfam's non-political and humanitarian aims. This potential conflict is a natural result of the changing orientation over thirty years of Oxfam's work overseas from the mere provision of physical needs to relieve immediate suffering to the overall long-term development of the poorest and most needy individuals and communities. The element of immediate physical needs still exists but long-term development brings Oxfam into direct and day-to-day confrontation with the social, economic and political pressures and injustices which are inherent in many of the poorer countries of the world. Oxfam cannot disassociate itself from these pressures and must be able to cope with and adjust to them if its programme is to be effective. Such pressures can seriously delay and divert the aims and objectives of programmes of social development with the result that the development of the poorest is all but nullified. The question is whether such pressures can be tackled within the framework of Oxfam's declared aims.

The first important criterion is that Oxfam has always responded to need and continues to do so. Such need arises from human suffering brought about by the presence of poverty and deprivation. Response to need is undertaken irrespective of prevailing political conditions. This overriding policy is explained and elaborated in the recent paper from Oxfam's Council of Management, 'Restatement of Oxfam's Response to Need in the Context of Human Conflict and Political Oppression'. The paper re-asserts the importance of Oxfam as a non-violent organisation committed '....to a process of development by peaceful means.... This development will sometimes generate conflicts of choice both for us at home and for our partners overseas; but it must be a commitment to a process which encourages people to recognise and develop their potential and to decide their own values and priorities'. Oxfam thus cannot take part in political conflict as such while at the same time encouraging the poor to develop their own potential. Sometimes political conflict can directly affect and prohibit the development of such potential. Oxfam must then react in accordance with its concern '.... with the capacity of people to make their own choices and to influence the forces, social and material, which affect their lives'. Such forces may act, consciously or unconsciously, in opposition to the development of the poor. It is necessary to be aware of the fact that to make an impact on the relief of human suffering in the face of poverty and deprivation implies tackling the causes of such poverty and deprivation, the causes of which may be found partly in prevailing social, economic and political conditions.

If such conditions are identified as hindrances to the relief of suffering, as reinforcers of poverty and deprivation, then three further criteria must be considered. Firstly, Oxfam stands distinctly apart from any overt political stance. Secondly, Oxfam works within the rule of law in any country where it is represented. Thirdly, Oxfam has always based considerable importance on supporting people rather than organisations, although a significant number of projects aim to tackle the needs of people through small local organisations representing the people or through other agencies with a field presence which Oxfam does not have and whose aims coincide with its own.

When these criteria are juxtaposed with situations where the conditions of the poor are apparently exacerbated by the tacit and explicit actions of powerful groups and interests, it would appear that conflict exists between encouragement of the poor to recognise and develop their own potential and the effectiveness of such a policy. Repressive elements may work against such development and question the efficacy of an Oxfam presence in the first place. In some cases, as set out in the 'Restatement of Oxfam's Response to Need in the Context of Human Conflict and Political Oppression', an Oxfam response may take the form of programmes for legal aid providing that such programmes fall within the law of the country and Oxfam's terms of reference. These programmes may include funding '....development work through organisations such as peasant syndicates or trade unions, or grass-root church organisations, which are genuinely representative of the poor. The work of pressure groups, which seek through publications and other lawful means to bring injustice to the attention of public opinion, may receive our assistance provided our aid is not used for party political activity'. Provision of legal aid within the law of the land assumes that the poor have redress to a just legal system in theory, although such redress may be unavailable because of ignorance, fear and prohibitive cost. With little or no access to the law for the poor, it is easy to see how abuse and exploitation may occur when those who do have access use the law to their full advantage.

When considering legal aid programmes, it is important that the checks and balances available for the assessment of overseas grants be utilised to the full so that errors in judgement are kept to a minimum. Oxfam attempts to monitor and evaluate its programmes comprehensively and the consideration of a request for assistance which involves the provision of funds for a programme of legal aid must be subject to perhaps greater scrutiny than is normal within the grant-making procedure because of the delicate nature of these programmes.

Legal aid programmes may take different forms in detail but in general they reveal common features. The Rajpipla Social Service Society in Gujerat, for example, receives funds for the granting of legal aid to poor tribals (GUJ 53B). Its objectives are fourfold:

- (i) to provide legal aid and the education of tribals as a means to conscientisation
- (ii) to prevent exploitation by 'legal' means
- (iii) to solve cases for the benefit of the poor
- (iv) to help reach a compromise in local disputes.

The programme attempts to make tribals aware of their rights under the law, especially the right to land, and to make this law accessible to them where there is abuse.

Similarly in Chile, the legal assistance programme of the Vicaria de la Solidaridad provides assistance to "campesinos" in the face of repressive opposition to land rights, rights to work, and grass-root rural organisation (CHI 28). Here the legal work is in five areas:

- (i) to defend agricultural wage workers whose rights are not respected by landowners or employers
- (ii) to defend agricultural workers or tenants against arbitrary dismissal
- (iii) to defend agricultural workers who have been unjustly excluded from the current agricultural reform process

- (iv) to provide advice to grass-root trades unions
- (v) to give assistance in appeals.

In Brazil a variety of legal aid programmes exist particularly to help destitute urban and rural dwellers of the North-Eastern States. These programmes are not only instrumental in providing lawyers to fight cases for the poor (such as BRZ 213, BRZ 210 and BRZ 127) but also in an enlightened way by providing encouragement to diocesan legal aid centres at the local level to fight for the rights of their clients by working through local institutions such as trades unions. The Centre for the Defence of Human Rights (BRZ 224) does not fight cases itself but acts as an advisory and teaching stimulus.

The Quaker Service Legal Aid and Community Information Centre in Jerusalem (JO 53) operates on yet another level. Here the predominant objective is to aid Palestinians in Israeli-occupied territories to understand their rights under Israeli law, which is unfamiliar to them, and to use the law to protect those rights.

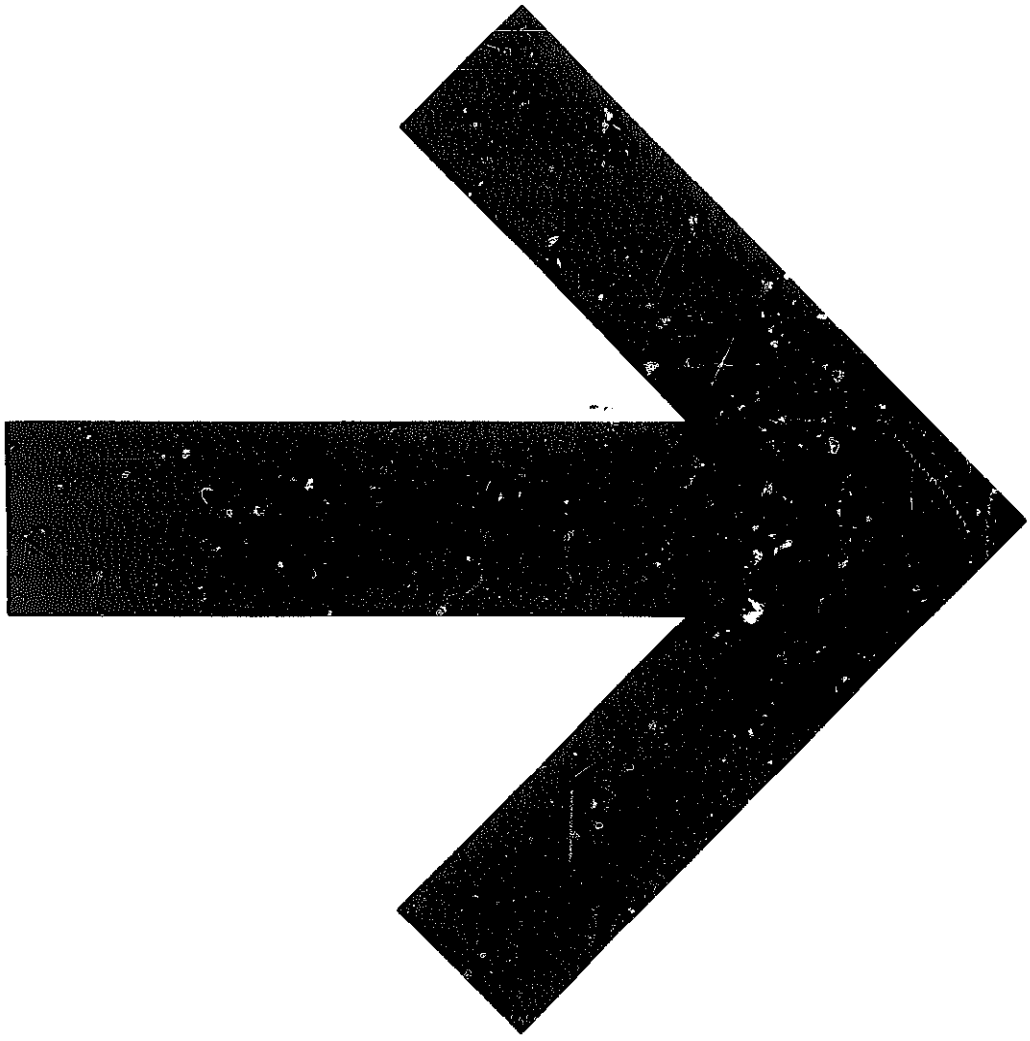
In all cases careful and continuous monitoring is of paramount importance. In particular, the support of a legal aid programme requires the following issues to be clear.

- 1) The organisation of the programme - its real extent, its personnel structure, the method of payment of lawyers.
- 2) The identification of justifiable cases as against inter- or intra-community disputes over inheritances or land boundaries.
- 3) The level of costs that are acceptable, particularly where a case has considerable spin-off in terms of the benefit to or encouragement of others in similar situations, eg a test case or a case against a dominant local landlord.
- 4) The need for back-up systems, in particular teaching people of their rights under the law and offering advice on how to secure them.

Bibliography.

- NB There appears to be a lack of appropriate references.
The Editor will welcome suggestions from readers of this Handbook.

For details of Project Information Sheets on Oxfam-assisted projects, see Section 2, Appendix III.



Section 40: HUMANITARIAN PROGRAMMES

GUIDELINES ON HUMANITARIAN PROGRAMMES

1. Nomenclature and Project Classification

There is a humanitarian motive behind all the work which Oxfam tries to do in the Third World. Indeed it was on the basis of a humanitarian concern that Oxfam was founded, and from this impulses among supporters and paid staff alike, the movement has grown. But the system by which Oxfam projects are now classified provides a major category for work which is solely humanitarian in intention, having no connection either with development work or with emergency programmes. This is defined as including all projects whose major objective is the alleviation of poverty, distress or suffering, with no teaching or other developmental emphasis. For details of Oxfam's Aid Categorisation, see Section 5.

Many projects which at first sight belong to the HUMANITARIAN category prove on closer examination to have a strong development component, usually within the major category of 'social development'. For example, projects involving handicapped people or the welfare of orphans and slum children nearly always stress the training of these people in some skill, or the development of sheltered workshops. So although these may not be very effective forms of economic development, they do represent development of people which for Oxfam is the more important kind of development, and they are classified as SOCIAL DEVELOPMENT/training (or SOCIAL DEVELOPMENT/employment where workshops exist primarily to provide employment rather than training).

The HUMANITARIAN category therefore represents a residue of programmes which aid the old, the orphaned, the sick, the disabled and the destitute, where the circumstances of these people are such that there is no opportunity for them to participate in any form of development.

2. Indigenous Welfare Agencies

However well the struggle for development in the Third World succeeds, there will always be disabled, old and sick people. Any worthwhile form of development will ensure that such people are increasingly better cared for by the communities to which they belong; and one way of gauging a community's achievements in social development might be to examine its success in caring for its less fortunate members.

The encouragement and support of indigenous welfare agencies, based on voluntary effort within local communities, ought therefore to be seen as an important part of Oxfam's social development programme. In such cases, even if the agency itself is solely dispensing relief to the poor and needy, the building up of the agency and the training of its voluntary helpers and paid staff is a very positive form of social development. The project categorisation system demands that such agencies should be classified according to the work they do, eg HUMANITARIAN/relief, but there may be occasions where Oxfam's contribution to such agencies' work should be categorised as SOCIAL DEVELOPMENT/training.

The guidelines on indigenous agencies in Section 30 apply; here we may additionally note that there are two main kinds of local welfare agency which

should be supported:

- (i) where the extended family system is effective in caring for motherless children, old people or the disabled, welfare agencies should play a supportive part, strengthening the family's ability to look after its own. The work of such agencies may include the provision of day care centres for children or handicapped people, which may carry out nutrition rehabilitation or physiotherapy for the disabled, but a major part of the work needed to support families will be casework and domiciliary visiting, with the following aims:
 - (a) to offer advice on special problems relating to various disabilities, and to the care of children or old people
 - (b) to put disabled people in touch with physiotherapy and other rehabilitation services (Section 41), or to help blind people enrol at blind schools, etc.
 - (c) to administer distress fund disbursements, eg food, clothing, or maintenance grants for families who cannot afford to maintain old or sick members
- (ii) with breakdown of extended family care - often due to the pressures of urbanisation, and where old or disabled people are no longer in touch with families who can support them, welfare agencies may have to resort to institutional care, though still with preference for day care centres rather than residential homes if at all feasible. In many cases, eg with orphans and the disabled, rehabilitation, training or the finding of foster homes can be organised so such people are kept in residential care for as short a time as possible.

3. Guidelines on Nutrition and Feeding Schemes

The category HUMANITARIAN/nutrition includes feeding of destitute people, hospital patients, handicapped people and school children; £36,284 was spent on this in 1974-5, with an additional £23,000 spent on feeding in chronic drought situations where the EMERGENCY category did not apply.

Oxfam's policy on school feeding schemes is set out in Section 22, article APPLIED NUTRITION PROJECTS. Detailed guidelines on what food to provide in other humanitarian feeding programmes are identical to the guidelines on emergency feeding, Section 51.

4. Guidelines on Health Care

- (i) Samaritan Funds (Poor patients' funds) The Asia Committee has provided the following guideline:
 - A proportion of medical aid may be allocated to help in the treatment and feeding of poor patients. Preference should be given to those suffering from the commoner diseases. Field staff should select hospitals to be so aided carefully in relation to the finances, efficiency and general attitudes.
 Such funds are classified as HUMANITARIAN/secondary health care.
- (ii) Rehabilitation of people disabled by leprosy, T.B., polio, accidents and congenital conditions is an important part of Oxfam's humanitarian work, and detailed guidelines are given in Section 41. These projects are also classified as HUMANITARIAN/secondary health care. For the training of disabled people, see the next paragraph.

- (iii) Curative health work or care for those with terminal illnesses, among destitutes, old people, refugees, etc., is sometimes supported by Oxfam; help often takes the form of provision of drugs and other medical supplies.

5. Guidelines on Helping Handicapped People

The general principle here is again to ensure wherever possible that handicapped people are cared for within the extended family system. It is therefore contrary to Oxfam policy to support homes for the handicapped, except where it is clear that no alternative whatsoever exists. Oxfam does, however, attach considerable importance to providing rehabilitation and training for such people, as far as possible on a non-residential basis. Training is classified as SOCIAL DEVELOPMENT/training.

- (i) The blind, the deaf and the dumb Training for these categories of people is often supported by Oxfam, eg schools for the deaf (KEN 13, PRU 72, KEN 12). Training blind farmers has been Oxfam's most encouraging success, see Section 33.
- (ii) The physically handicapped For rehabilitation by means of physiotherapy and the provision of walking aids, etc., see Section 41 below. Oxfam also supports sheltered workshops to help people in this category earn a living (PRU 46, KN 22); These are classed as SOCIAL DEVELOPMENT, with either 'employment' or 'training' as the purpose category, depending on which is given most emphasis in the project concerned.
- (iii) The mentally handicapped This is a potentially important subject for Oxfam because much of the mental deficiency occurring in the world today is the result of malnutrition in childhood. Medical authorities are not agreed on details, but it is clear that brain damage occurs in some malnourished children, and their development is further held back if they lack the energy to play or are too ill. Much can be done for many such children by remedial education, and in later life, many handicapped people can lead a worthwhile and productive life if given sufficient protection and support to allow them to live at their own, somewhat slower pace. Once again, it is best for such people to be cared for by their families where this is possible, but not all families are able to cope with the difficulties presented by the more severely handicapped people. However, sheltered communities in which mentally handicapped people provide for many of their own needs on a self-help basis are a possible alternative to institutional care, and advice on this kind of self-help approach can be obtained from the British charity, Cottage and Rural Enterprises, Burton Rough, near Petworth, Sussex, England. Oxfam project PRU 70 has also been very successful in training mentally handicapped people for agricultural work, particularly poultry farming. This project provides both basic education and job-training and has an effective job-placement programme.

6. Guidelines on Projects Involving Children

Very often, projects which involve children include some form of training, in which case they are categorised as SOCIAL DEVELOPMENT/training. In one home for unmarried mothers and infants which Oxfam supports (KN 8), the stress is on rehabilitation of the mothers, with training in nutrition, child care, gardening and so on. This would be classed as HEALTH/primary health care.

There is often much doubt about supporting orphanages, children's homes and adoption schemes. Guidelines have been approved by the Africa Committee

(September 1966) and the Asia Committee (July 1972), and the following is an amalgam of the two:

- (i) Before Oxfam approves support, it must be shown that the extended family system has broken down to such a degree that the proposed children's home is necessary.
- (ii) Where the customs of the country permit, support for carefully run adoption schemes within that country, and day care centres for children of the poor, is preferred to institutionalisation. Homes should not keep motherless babies for longer than necessary, but should seek foster parents in collaboration with any government welfare department. This will prevent 'homes' from becoming 'orphanages'. One adoption scheme supported by Oxfam (KR 4) arose from a post-war situation of extended-family breakdown, when many children were being abandoned.
- (iii) Homes run by indigenous agencies are preferred to those run by missions; staff should be mainly, if not wholly local. The home should be run by a suitable local committee.
- (iv) No home should be given Oxfam support unless it is also actively trying to raise funds locally.
- (v) The home should be hygienic, should comply with government standards, and should be inspected regularly by a medical officer.
- (vi) Preference is given to supporting homes which care for pre-school children where they are genuinely without parents, or handicapped children; and also homes which offer technical training.
- (vii) The number of children who can be cared for must be sufficient to justify the capital costs involved.
- (viii) Oxfam prefers to support capital rather than recurrent costs in those cases, and to phase out aid over a relatively short time so that local support is given the opportunity to take over full responsibility.
- (ix) Except where training is offered, children's homes and adoption schemes are categorised as HUMANITARIAN/relief.

7. Old People

Where old people are not cared for by their families and are left destitute, Oxfam should encourage and help local efforts to look after them. In one Oxfam project, there was a vegetable garden in which the old people helped a professional gardener (KN 13). The Oxfam field staff commented: 'I have felt for some time that Oxfam does not do enough for old people in South India, and I am glad this opportunity has arisen.'

8. Oxfam Policy and Practice

Every community has its quota of disabled, old or homeless people, and 'development' must have something in it for them. Indeed, the development of a community must mean, among other things, that the community becomes better at helping its own less fortunate members.

It is an important part of Oxfam's work to support projects which help the orphaned, the old and the disabled, but this should be done in ways which will reinforce, extend and support existing local methods of caring. The main types

of project within the HUMANITARIAN category which Oxfam supports are:

- (a) nutrition, through feeding schemes
- (b) housing; also water and sanitation where these are provided as a relief measure without any community development or self-help
- (c) relief, through indigenous welfare agencies; aid to children, old people, the handicapped, refugees, displaced people
- (d) primary health care with curative medicine in out-patients context
- (e) secondary health care, eg Samaritan funds, rehabilitation
- (f) surveys, ie surveys of welfare needs; £2,000 was spent on this in 1974-5

Oxfam has been failing in its responsibilities in this area for some years, because some Oxfam field staff are under the impression that 'welfare' projects are outside their scope. It is suggested that they ask themselves the following questions:

- (i) What indigenous agencies exist in the area for helping sick, old or disabled people? Has Oxfam taken all the available opportunities for supporting and strengthening such agencies?
- (ii) Is free medical treatment available to the poor at all the hospitals and clinics which Oxfam is supporting in the area? If not, could Oxfam be helping by means of a poor patients' or Samaritan fund? If people can get free treatment, how is this paid for? Is it over-stretching hospital finances, and should Oxfam be contributing?
- (iii) Is the extended family system able to take care of most needy members of families, or are there abandoned children or destitute old or disabled people in the area? What can be done for these people, and is Oxfam making its proper contribution? But do not include beggars who willingly adopted this way of life.
- (iv) Where disabled people and former leprosy or T.B. patients are adequately cared for by their families, is there also opportunity for their re-habilitation and training in the locality? Is Oxfam helping?

9. Bibliography

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- R. Sidel Women and Child Care in China
- B. Dasgupta Contemporary Social Problems in India
- R. Desmond Mother Teresa: Her People and Her Work, Collins.
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For details of Information Sheets that are available on Oxfam-assisted projects, see Section 2, Appendix III.

Section 41 : CARE OF THE DISABLED

(for the blind: care of - see Section 25)
training of - see Section 33)

REHABILITATION OF THE PHYSICALLY HANDICAPPED**1. Types of Physical Disablement**

There are millions of physically handicapped people in the developing countries, partly because of the prevalence of disabling diseases in the tropics. In 1971, it was estimated that the incidence of polio in the Third World had increased three-fold in the previous ten years.

Excluding blindness and deafness, the kinds of disability which are commonly encountered can be classified as follows:

- (i) congenital conditions present at birth:
 - (a) cerebral palsy including spastics
 - (b) club feet. This responds well to intensive treatment during the first 18 months of life
 - (c) spina bifida, ie spinal maldevelopment with some degree of paralysis in the lower limbs; rarely seen in Oxfam projects
 - (d) hydrocephalus, ie water on the brain; surgical treatment needed
- (ii) disablement resulting from disease:
 - (a) poliomyelitis - causes paralysis of muscles in the limbs, trunk and breathing
 - (b) polyneuritis, similar to polio but with loss of sensation also
 - (c) leprosy
 - (d) measles may lead to cerebral palsy; see above
 - (e) T.B.
- (iii) accidents:
 - (a) amputation of arm or leg
 - (b) head injuries resulting in paralysis or unco-ordination; slow to respond to treatment
 - (c) spinal injuries resulting in paralysis of lower limbs, or lower and upper limbs
- (iv) There are a small number of other types of disablement, eg when the patient has suffered a stroke or various chest conditions, which apart from T.B. are not common in developing countries.

2. Oxfam Practice and Policy

Crippled children readily evoke a humanitarian response, and this led Oxfam in its early years to support a number of expensive residential homes for the care of such children. Looked at in terms of the number of people helped, the degree of rehabilitation achieved, and the social context of the children, this approach now seems quite wrong. A policy which combines humanity with realism might include the following:

- (i) the aim of making patients as self-sufficient as possible
- (ii) this aim must be met in a way which is relevant to the socio-economic context, which may include:
 - (a) an extended family system
 - (b) a situation where cripples can make a living by begging
 - (c) limited employment opportunities even for fit and able people
- (iii) think in terms of integrated projects, eg how will disabled people fit in with other development projects being undertaken in the area?
- (iv) benefits should be spread as widely as possible among those in need. There have been too many homes which care lavishly for a dozen children in localities where hundreds of cripples receive no help at all
- (v) to this end, low-cost methods must be used wherever possible, utilising locally available materials for calipers, crutches, wooden legs and exercise equipment

Current Oxfam projects which appear to be consistent with this policy include salaries for physiotherapists (PRU 36), and help for workshops making calipers, crutches and the special shoes needed by lepers (HAI 27, AG 3, IS 31). The kind of help that might sometimes be worthwhile would be funds for a vehicle for transporting children from their homes to an outpatient or short-stay centre, as was done in a project at Mombasa (KEN 62). Transport can be crucial in giving children treatment while leaving them in care of their families.

3. Organisation of Rehabilitation Work

- (i) The team approach The best results in rehabilitation are obtained by the adoption of a team approach, eg if working with polio victims, the team would be: surgeon, physiotherapist, occupational therapist, appliance maker and fitter. If any member is missing, then treatment will not achieve full potential, eg the surgeon may operate and straighten stiff, bent knees, but without provision of the right calipers, the operation would bring no advantage, and the deformity would soon recur.
- (ii) Location of project for best use of resources This is relevant to the possibility of sharing staff between institutions and to transport of patients. In a particular situation, consider whether best results will be obtained:
 - (a) by centralisation, or by providing several centres
 - (b) by transport provision for patients
 - (c) by a domiciliary service

- (iii) Residential provision This may be needed because of the vast distances patients often have to travel to clinics. It is often better for spastics and polios to have a concentrated course of treatment for one month whilst in residential care; then patients go home and exercises are carried out by the family; patients return to the clinic at 3-monthly or 6-monthly intervals. This is better than expecting a patient to attend an out-patient clinic twice monthly when he lives 100 miles away.

However residential accommodation is costly and only caters for a few. It must therefore be limited, and should be allowed to absorb only a small proportion of the total amount of money available. Outpatients treatment may always have to be first priority.

Residential care is to be looked at purely in terms of a short-stay treatment facility, and not as a place for handicapped people to reside on a permanent basis. In India and Africa, the extended family will usually take responsibility for the care of its handicapped members. Families should not be enabled to evade this responsibility by 'dumping' disabled people in a home. If abuse is allowed, valuable treatment facilities will be blocked.

- (iv) Training Projects should be assessed according to whether they provide staff with adequate training. How will this relate to expansion of the project and the need for greater staff resources at a future date? Is training being given:

- (a) locally
- (b) linked to any government scheme already operating
- (c) if neither of these, what plans are there to begin training?

4. The Role of Physiotherapy

Physiotherapy is treatment by physical means aimed at restoring patients to as near normal life as possible. However, it also includes educational and preventive aspects which are especially important in developing countries.

The main form of treatment is by exercises, thus teaching the patient to work towards his own improvement. Some exercises do require apparatus but this should be kept to a minimum, eg mats for exercising on the floor especially with children, balls, weights, pulleys, springs, parallel bars for walking training. The reasons for minimal equipment are:

- (a) local availability - equipment is expensive to import
- (b) the patient must be able to do most of his exercises at home

Electrical treatments such as heat of various kinds, ultra-violet light, electrical stimulation of muscles, have limited application in developing countries. This sort of equipment is often wanted by institutions mainly as a status symbol. Any project involving a lot of expensive equipment is likely to be unsuitable for Oxfam assistance.

5. Appliances and Artificial Limbs

- (N.B. Prosthetics = artificial limbs
Orthotics = calipers, special shoes etc.)

Most of the many crippled people in the developing countries could be made

upright and walking if calipers, crutches and clogs and boots were available to them, though this is not necessarily desired by every patient. Others could be made mobile in wheelchairs.

In fact only about 1% had supports in 1971 because of the exorbitant cost of imported items. However if cheap and plentiful materials are used, most of the necessary items can be made locally at a fraction of the present cost.

The types of appliance needed are as follows:

- (i) Walking aids and wheelchairs should be simple, locally made and strong. Designs have been developed in Nigeria for wheelchairs which can be simply made from readily available tubing, angle iron and bicycle parts, welding equipment is needed for construction. Working drawings of the Bush Wheelchair and Invalid Carriage with Chain Drive and Brake are available from Intermediate Technology (9 King Street, London, WC2E 8HN, U.K.)
- (ii) Calipers, braces and clogs A complicated caliper or one liable to break often is quite impracticable in a country where communications are difficult. If a person requires a caliper in order to walk, he/she cannot hope to travel long distances in order to get it repaired. Readily available materials should be used for cheapness and to make emergency repairs in remote places easier.

A workshop in Uganda made these appliances from wire, iron rods as used in reinforced concrete, local leather and wood, and imported buckles. On this basis, a caliper which would have cost £10 or more to import could be made for 36p (UK currency, 1971 prices). Many of the people employed in this workshop were themselves handicapped, though one able-bodied man was always needed for heavy work. It was found to be essential not to employ technicians trained in orthopaedic workshops in Europe and America who were used only to high-cost methods.

Low-cost appliances are particularly important where children are concerned, as they outgrow calipers very quickly, and frequent replacements are needed.

Drawings of the Ugandan appliances have been published by R. L. Huckstep in *Tropical Doctor*, April and July 1971 (from Royal Society of Medicine, 1 Wimpole Street, London W1M 8AE, U.K.).

- (iii) Prosthetics Not all patients who have lost a limb want an artificial one. Sometimes, as in India, the acquisition of a leg would mean loss of livelihood as a beggar. In Jamaica, it has been found that not everybody wears the limbs provided. Levying a charge for fitting the limbs, even if only a minimal one, has been found useful in forcing the patients to decide whether they really want the prosthesis. Artificial arms have no place yet in developing countries.

Wooden legs for use in developing countries often need to cope with wet and muddy conditions, eg the solid ankle cushion heel is an asset for walking in mud. They must be made of materials understood by local shoemakers and woodworkers, who can then make minor repairs. Local production is also helpful in getting accurate fittings. (HAI 27)

6. Cerebral Palsy - congenital or due to measles

Due to brain damage, usually in earliest childhood, the development of the cerebral palsied child is retarded, or stopped and becomes disorganised and

abnormal, eg the spastic child has tight muscles and this interferes with his ability to move and maintain posture and balance.

It is often the result of difficulties during pregnancy or labour, but it can be the result of an accident or a severe attack of measles. The latter is common in the tropics.

Treatment of cerebral palsied children requires the combined efforts of doctors, therapists and parents. There are two schools of thought:

- (i) Neurodevelopmental approach The aim is to inhibit the abnormal patterns of movement and then to facilitate more normal movements. This is an easy method to use because little or no equipment is needed; it has been successful in Uganda.
- (ii) Orthopaedic approach Surgery, splints and calipers are used extensively. Therefore it is not an appropriate method because of the costs involved, and probably less effective than the neurodevelopmental approach.

7. Polio and Polyneuritis Cases

Some physiotherapy may be needed when polio is in its acute stage, but patients usually come for help long after the original illness. The question then is whether they will benefit from surgery and/or orthotics. The team approach is important in assessing potential of patients. Where orthotics is required, follow-up will be needed for repair or replacement of appliances. Some patients may need a wheelchair.

It should not be assumed that every case will be better off with this help. A patient with stiff, bent, paralysed legs may be able to cover surprising distances on his hands and bottom. If his legs are straightened and braced, it may limit his mobility or his ability to do his particular job as calipers may prove clumsy and unmanageable.

8. The Rehabilitation of Leprosy Patients

Leprosy is a skin disease resulting in nerve damage; this leads to loss of muscle power resulting in paralysis and loss of sensation. Anaesthesia of the hands and feet is what leads ultimately to the loss of these limbs, not the disease itself. Because of misconceptions about this, any leprosy project must include an emphasis on education to teach patients that ulcers and ultimate loss of limbs is preventable. Treatment in the early stages is very advantageous, but must be done strictly confidentially as people are terrified of being regarded as lepers and so becoming outcasts. Again, a team approach is important; the doctor can cure the disease itself, whereas the physio- and occupational therapists and the appliance maker must help the patient to make the most of any disability he is left with.

(i) physiotherapy in leprosy involves:

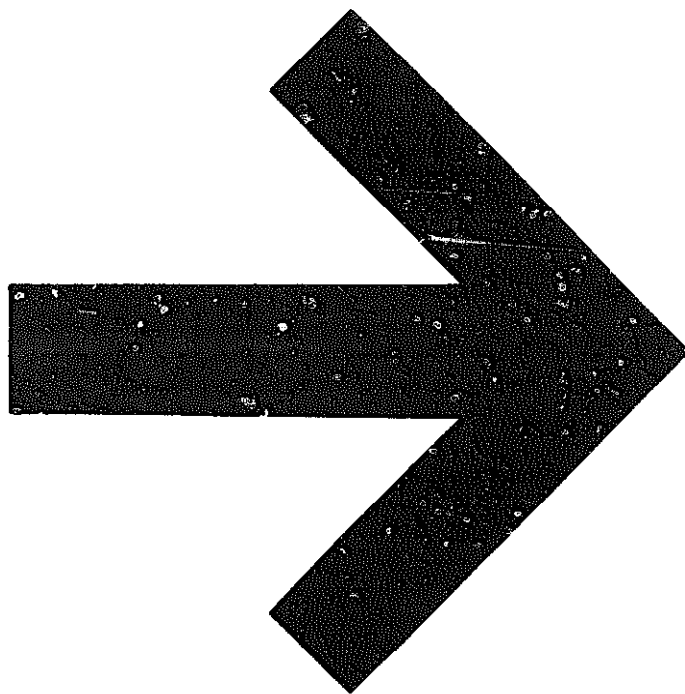
- (a) education of hands and feet
- (b) teaching simple massage and exercises for paralysed hands
- (c) special exercises after operations
- (d) exercises after amputation and training patients to use artificial limbs

- (ii) Shoes, limbs and surgery Patients with anaesthetic feet require special footwear. Materials need to be locally available and durable; the product must be acceptable in the patient's environment, and must not mark him out as a leper (IS 31). Some patients need artificial limbs, but there are cases where limbs will not be used. Surgery to correct deformities is only beneficial in a minority of cases; though eye operations are an exception to this and count as emergency treatment.

9. Bibliography

- R. L. Huckstep Poliomyelitis: A Guide for Developing Countries - Including Appliances and Rehabilitation for the Disabled, Churchill Livingstone, 1975.
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- Murray Culshaw Vocational Training for the Handicapped. Available from:
29a West Street, Storrington, Sussex, U.K.
- Commonwealth Foundation The Disabled in Developing Countries. Papers from Conference held in 1976. Available from: Marlborough House, Pall Mall, London SW1, U.K.

For details of Information Sheets that are available on Oxfam-assisted projects, see Section 2, Appendix III.



Section 50: DISASTER RELIEF PROGRAMMES

PLEASE NOTE

It had been intended to revise substantially the Guidelines on Disaster Relief for this edition of the Field Directors' Handbook.

Due to the crisis in Kampuchea in which Oxfam is heavily committed, it has unfortunately not been possible to undertake this.

Set out below is the proposed outline of the contents for the new Guidelines:

- 50 Disaster Policy and Procedures:
 - Types of Disaster
 - Disaster and Development
 - OIDU
 - Procedures
- 51 Mitigation and Preparedness:
 - Assessment of Vulnerability
 - Mitigation
 - Preparedness
 - Disaster Plans
 - Disaster Stores
 - Use of Volunteers
 - Communications
- 52 Medical Aspects
- 53 Famine and Emergency Nutrition:
 - Assessment
 - Short-term Feeding Programmes
 - Long-term Feeding Programmes
 - Food Distribution and Storage
 - Surveillance and Evaluation
- 54 Emergency Technology:
 - Agriculture
 - Sanitation
 - Water Supply
 - Shelter
 - Clothing and Blankets
- 55 Refugees

It is hoped that these Guidelines will be available by the end of 1980. If any non-Oxfam readers of this Handbook wish to receive a copy of these Guidelines, please write to Publications Officer, Oxfam, Oxford, U.K. They will be forwarded without further charge when they are available.

DISASTER POLICY AND PROCEDURES

1. Types of Disaster

Oxfam has traditionally been willing to assist in disaster situations where people are in need, and where there is something meaningful that Oxfam can do. However, in assessing Oxfam's role, it is helpful to distinguish a number of different types of disaster:

- (a) the sudden or immediate type of catastrophe such as an earthquake, landslide, cyclone or flood; the widespread outbreak of an epidemic disease.
- (b) the gradual or developing type of situation caused by drought or famine. Famine is defined as a severe food shortage accompanied by a significant increase in the death rate.
- (c) war or civil strife bringing in its wake suffering, distress and refugee problems.

Generally speaking, international and inter-governmental relief efforts have become highly efficient in dealing with earthquakes and other types of sudden calamity. However, famine or drought situations which may go on for months or years are less adequately dealt with, often because political sensitivity in the country concerned inhibits official action. Here the voluntary agencies have a particular contribution to make because they need not wait for an official appeal for help.

Oxfam's outlook as a development agency is also more appropriate to the needs of drought and famine situations than to the other types of disaster, because rehabilitation after a drought involves development as well as relief efforts, and worthwhile agricultural programmes may originate from this work. The very occurrence of a famine or drought-caused disaster represents a failure of development, and renewed or redirected development programmes are an essential part of the response.

It is Oxfam's policy in the event of a natural or man-made disaster on a major scale to send relief aid to the affected area in the most appropriate form and in the quickest possible time. This aid may take the form of money, supplies or individuals - or a combination of all three.

2. The OIDU Structure

The Oxfam International Disasters Unit (OIDU) was established in September 1974. Comprising Oxfam America, Oxfam Belgique, Oxfam Canada, Oxfam Quebec, Oxfam UK and Community Aid Abroad (in Australia), its aim is to coordinate the relief efforts of the International Oxfams when disasters occur. The costs of running the Oxford based OIDU office are shared equally between the Oxfams. The Oxford office acts as the central clearing house for information from the Field to the other Oxfams. In a disaster situation the Oxfam UK field staff, or whoever is on the scene acting as relief coordinator, is the focal point for any OIDU operation. Requests from the Field are received in Oxford, normally by telex, and forwarded to the other Oxfams. It is essential that this procedure be maintained so as to avoid individual action by any one Oxfam, independent of the others. Unless agreed with Oxford beforehand it is important that all communications be channelled through the OIDU office.

Each Oxfam is able to respond to disaster situations differently. One may be able to provide personnel at short notice, another has access to supplies not easily available in the UK or the disaster-stricken country and one may be able to

provide finance on a large scale, following a good public response in their own country. In this way, ODU provides a wider scope for helping in disaster situations both in financial terms and in terms of expertise and supplies available.

During an ODU operation, it is important that each Oxfam is kept fully informed on relief needs and developments from the field, so that they are able to assess how best they can respond to the situation. The importance of keeping the Oxfams informed was well illustrated during the Guatemala earthquake in 1976, when Oxfam Quebec constantly needed up to date information for the daily radio broadcasts which it was invited to make for its local region.

3. Oxfam and other Disaster Relief Agencies

Oxfam works closely with other voluntary disaster relief agencies and consortia such as the DEC in the UK and LIPCROSS/VOLAGS based in Geneva, as well as with official organisations including the Disaster Unit of ODA and the UN Disaster Relief Organisation (UNDRO). Close contact is also maintained with consultants specialising in disaster prevention, preparedness and rehabilitation, especially the International Disaster Institute (IDI, at: 85 Marylebone High Street, London W1M 3DE, UK) and INTERTECT (at P.O. Box 10502, Dallas, Texas 75207, USA). The addresses of the agencies and the consortia are given in Section 3 on pages 6-7 and in the Directory, Section 9. Details of the considerable literature available are given in the Bibliography to this Section.

As has been implied in the above paragraph, Oxfam's interest is not confined to the occasions on which disaster relief is required, but increasingly the emphasis is towards disaster prevention and preparedness. This is discussed further below.

4. Procedure in the Event of a Disaster

Full details of Oxfam procedures in disaster situations are set out in the separate booklet, Oxfam Disaster Procedures. Copies of this as revised from time to time should be held by all Oxfam field staff. The aim of the following notes is mainly to highlight points which particularly affect field staff.

5. Being Prepared: the Pre-disaster Phase

- (i) Liaison It is important to foster close links with people and organisations in disaster-prone countries who may be able to help in the event of a disaster actually occurring. These links would ideally include contacts in relevant government departments, and with prominent local nationals, and liaison with other voluntary organisations working in the potential disaster areas.

ODU has particularly asked Oxfam field staff to make contact with the UNDP Resident Representatives in their area so as to help set up a UNDP disaster team for pre and post-disaster situations. It is hoped that this will help to further the cooperation between UN and voluntary agencies with regard to disaster preparedness.

- (ii) Relief supplies Although Oxfam does maintain a limited stock of relief supplies and can obtain more at very short notice, it is often advantageous to obtain relief supplies within the stricken country, and it will prove particularly valuable for Field Directors to keep a register of local sources of tents, blankets and so forth. Local sources of food are particularly important since nutritional opinion now favours the use of local foods wherever possible.

6. Reporting Disaster Situations

In the course of their travels, and through reading the local press, Oxfam field staff will often become aware of the development of a famine or drought situation in its early stages, long before news reaches the outside world. In other cases, especially with earthquakes or floods, Oxfam will first learn of the situation through radio, television and newspaper reports in Britain. In these instances the field staff's own information can provide Oxfam with an essential check on the extent of the disaster, because what looks to a roving press reporter like a major catastrophe may sometimes be merely the normal seasonal disruption associated with the climate of the country concerned. There are two points to note here:

- (i) There may be occasions when it appears that the situation in a certain country is deteriorating. This may be due to natural causes such as drought or famine, or to internal political troubles, or a combination of both. In all instances, Oxfam will depend very much on being kept informed by the field staff.
- (ii) When a major disaster occurs, the Oxfam field staff will visit the area, or if they are not available someone may be sent by Oxfam, Oxford. In other cases, where the severity of the disaster is not clear, it may be appropriate for the field staff to suggest a more specialised investigation, eg by a nutritionist commissioned to make a quick survey of the degree and extent of malnourishment.

7. The Role of Oxfam field staff during a Disaster

At present, it is inevitable that Oxfam field staff will become deeply involved if a major disaster occurs in their area, but eventually it is hoped that Oxfam personnel sent out from Britain will relieve the field staff of this, so that they will not need to interrupt their normal work to administer the relief operation. They will then be asked to function mainly as a consultant, advising the Oxfam officer in the disaster area on local sources of supplies, on local contacts and government operation, on the activities of other agencies, and on the local situation generally.

Among the many duties which will fall to the Field Director in a disaster situation, the following will almost always be important:

- (i) Immediate grants Frequently the quickest and most positive way of providing assistance will be by the approving of immediate financial grants. The Field Director should use his/her own limited authority to do this where needs are very urgent; other grants will be made after an emergency meeting in Oxford and will be paid either direct to the Field Director or to a charitable organisation known to Oxfam which is operating in the country.
- (ii) Running Costs In addition to the relief funds which are allocated to the operation it will be important for Oxfam to make available to the Field Director funds for the running costs of the staff during the operation. This will normally be done by the Finance Officer cabling the funds to an appropriate Bank - usually in the capital or in a main city of the stricken country. See the Disaster Procedures for the accountancy methods to be used. During the 1976 Guatemala emergency, a finance officer from Oxfam House was seconded to help the field office with the accounts.
- (iii) Supplies In principle it will be normally preferable for the Field Director in the early stages of a disaster to make a request to Oxfam

House for the supplies required in the stricken country. This is based on the assumption that being on the spot, he is up-to-date with priority needs. There may, however, be times when certain obvious requirements are available in the UK which are not known to the Field Director and in these cases the supplies will be despatched on the initiative of Oxfam House. In all cases, the Field Director will be informed of flight details prior to the despatch of stores.

- (iv) Reporting When a disaster occurs in a country where there is a Field Director, it is hoped that one of the earliest reports to reach Oxfam House will be from him/her. Should such a report not be received, the Field Secretary at Oxford will request one by priority cable or telex. In the same message, he/she will inform the Field Director of the action being taken at Oxfam House. As the disaster situation develops, the Field Director will keep Oxfam House regularly informed. This will at first be by telex or cable, and later, when the initial emergency has passed, by regular airmail reports and photographs. It should be remembered that reports and photographs are needed by the Communications Division so that the public can be accurately informed. This may be especially important when a disaster appeal has been launched.

Should the Field Director not be in the stricken country at the time of the disaster, he/she should cable his location and movements daily until his/her arrival.

8. The Post-disaster Period

This period begins when all work relating to the disaster is passed from the Disasters Officer back to the Field Secretary and the field staff.

After the immediate relief period of a disaster there will always follow a rehabilitation phase. Where Oxfam is involved with this, it is important that a clear distinction is drawn between the two phases - the immediate relief and the long-term rehabilitation. Although one phase may well lead to the other, the two are quite different. While in relief work the emphasis is on speed, in rehabilitation the pace is much slower and there is need for careful and sometimes lengthy assessment. The latter may well involve consultants and technical advisors, and during this period Oxfam will be looking particularly to any opportunities that arise for fostering development programmes in the former disaster area. See Section 3 for further analysis of the differences between 'rescue' and 'development' assistance.

9. Bibliography and Resource Information

It is essential to remember that individual case studies are not easily transferable and to make assumptions for one region based upon studies from another is a potentially dangerous exercise.

Sources of information on disasters are limited but quite well defined.

- (i) INTERTECT, a small Texas-based consultancy, have developed a considerable expertise and probably the largest reference library on disaster recovery, particularly that relating to housing and shelter provision. This latter is an important factor because damage and death due to housing or building collapse is prominent in disasters involving earthquake, hurricanes and floods. INTERTECT produce a wide range of technical manuals and case studies. General guides include the multi-volume series Relief Operations Guidebook and Refugee Camps and Camp Planning

which are useful working documents to have available during emergencies. Case studies relate to Latin America in particular and refer among others to earthquakes, floods and hurricanes in Honduras, Chile, Peru, Guatemala and Nicaragua.

INTERTECT's Address is: INTERTECT, P.O. Box 10502, Dallas, Texas 75207, USA.

- (ii) The International Disaster Institute (IDI) in London, which was formed in 1978 to study disaster theory and practice and provide a forum for discussion, is responsible for editing the journal Disasters: the International Journal of Disaster Studies and Practice, published quarterly by Pergamon Press at Oxford. This journal has already developed into the principal medium for disaster workers and researchers and is beginning to rank as essential information. Most aspects of most disaster types and situations are covered by the journal. Special issues have been produced on 'Disaster Prevention and Mitigation' (Vol 3, No. 3, 1979) and 'Refugees' (Vol 3, No. 4, 1979). Also Vol 2, No. 4, 1978 contains an excellent and lengthy section-by-section review of the previous edition of Oxfam Field Directors' Handbook.

The IDI also produce occasional mimeographed papers based upon their own commissioned research and field work. Of these, the most important is:

Alan J. Taylor Disaster Training Institutions for Developing Countries: a Study of Needs and Possibilities, with Special Reference to India. February 1979.

IDI's address is: International Disaster Institute, 85 Marylebone High Street, London W1M 3DR, UK.

- (iii) Department of Architecture at Oxford Polytechnic has a Settlements Group which includes among its concerns the response to disaster and disaster policy-making. In April 1978, the Group organised a conference entitled 'Disasters and the Small Dwelling' at which many experts in the field presented papers of interest. Included among the topics covered were: the viewpoint of the survivors, the vulnerability of settlements, and the role of interviewers. Full proceedings of this conference are available from the Polytechnic.

Also available from the Polytechnic is a definitive book on the problems of shelter and housing following disaster:

Ian Davis Shelter After Disaster. Oxford Polytechnic Press 1978.

Two studies are available of earthquake disasters in Central America which provide good insights into the problems and complexities of relief and reconstruction programmes:-

Ian Davis Managua, December 23rd 1972: the Provision of Shelter in the Aftermath of Natural Disasters - Report on Housing Strategy, December 1972 - September 1973, Oxford Polytechnic, Oxford, undated.

Ian Davis Guatemala: Shelter and Housing Policy in Weeks 1-3 Following the Earthquake, February 4 1976. Oxford Polytechnic, Oxford, 1978.

The Polytechnic's address is: Department of Architecture, Oxford Polytechnic, Gipsy Lane, Headington, Oxford, UK.

- (iv) There are two bibliographies currently available which, though slightly out-of-date, will give some indication of the range of material:

Diana H. Manning Disaster Technology: an Annotated Bibliography, Pergamon Press, Oxford, 1976.

K. N. Westgate A Bibliography of Precautionary Planning. Disaster Research Unit, Occasional Paper No. 12, University of Bradford, 1977. Available from address as in (v) below.

- (v) The former Disaster Research Unit at the University of Bradford produced a range of material in the form of occasional papers. The topics covered related to theories and concepts of disasters and planning and case studies of disaster preparedness and hazard awareness in such locations as the Sahel, the South Pacific and the Caribbean. Some of these papers are still available from: The Librarian, Project Planning Centre for Developing Countries, University of Bradford, Bradford, West Yorkshire, BD7 1DP, UK.

- (vi) Very few organisations that deal with disaster-related problems exist within developing countries. An example is the Appropriate Reconstruction Training and Information Centre (ARTIC) in Andhra Pradesh, India. The Centre was set up following the 1977 cyclone and tidal wave to promote information-sharing and cooperation between voluntary organisations, to evaluate relief and rehabilitation programmes and to promote pre-disaster planning. Proceedings of an important post-cyclone seminar are available; also there is a growing range of other materials.

ARTIC. Seminar Report: Problems and Lessons from the Andhra Pradesh Cyclone. Available from ARTIC, Seshagirirao Street, Manithinagar, Vijayawada 520 004, Andhra Pradesh, India.

- (vii) Drought presents its own particular problems in that it is pervasive rather than intensive in effect. Any assessment of drought needs to take account of a wide variety of environmental factors while much of the literature and current analysis is concerned with the Sahel drought and its aftermath. Prominent among these are two useful publications from the International African Institute (210 High Holborn, London WC1V 7BW, UK):

Paul Richards (ed) African Environment: Problems and Perspectives. African Environment Special Reports No. 1, International African Institute, London, 1975. Also in French.

Abdul Mejid Hussein (ed) REHAB: Drought and Famine in Ethiopia. African Environment Special Report No. 2, International African Institute, London, 1976.

Also of considerable interest is:

D. Dalby and R. J. Harrison-Church (eds) Drought in Africa: Report of the 1973 Symposium. Centre for African Studies, School of Oriental and African Studies, University of London, 1973.

- (viii) For the international viewpoint and useful background information, the United Nations Office of the Disaster Relief Coordinator (UNDRO) publish a series of booklets entitled: Disaster Prevention and Mitigation: a Compendium of Current Knowledge. Although the material presented is biased towards research results from the developed countries, some useful information is contained in these volumes. Titles currently available are:

- Vol. 1 Volcanological Aspects, 1976.
- Vol. 2 Hydrological Aspects, 1976.
- Vol. 3 Seismological Aspects, 1977.
- Vol. 4 Meteorological Aspects, 1978.
- Vol. 5 Land Use Aspects, 1978.
- Vol. 7 Economic Aspects, 1979.
- Vol.10 Public Information Aspects, 1979.

Address: UNDRO, Palais des Nations, CH-1211 Geneva 10, Switzerland.

- (ix) Disaster Preparedness in the Americas. This is a newsletter prepared by the Pan American Health Organisation. (WHO, 525 23rd Street NW, Washington DC 20037, USA)
- (x) Peasant Perceptions: Famine prepared by BRAC, July 1979. A revealing, short study outlining the viewpoints held by the hungry peasants themselves on the causes of food shortages in Bangladesh; the effect of these on social relations; the peasants reactions to relief programmes; and their options and suggestions on how to improve their situation. Available from: Bangladesh Rural Advancement Committee (BRAC), 3 New Circular Road, Maghbazaar, Dacca 17, Bangladesh.
- (xi) For details of Information Sheets that are available on Oxfam-assisted projects, see Section 2, Appendix III.

Section 51: FAMINE AND EMERGENCY NUTRITIONFAMINE SITUATIONS AND FEEDING PROGRAMMES1. Types of Situation under Consideration : Oxfam's Approach

- (i) Short-term emergencies: earthquakes, floods and hurricanes. In these cases, disruption of food supplies or movement of people from their homes into refugee camps is sudden. It may also be temporary, or it may develop into a long-term problem if large areas of crops have been destroyed or the agricultural cycle disrupted.

Oxfam field staff should:

- (a) Quickly enquire what the Government, Army, International and other voluntary agencies are likely to do.
- (b) Contact Oxfam (OIDU) and set off on a brief tour of inspection of the worst affected, and/or least accessible, area including any existing Oxfam projects. Utilize any spare space to carry something concentrated and useful, eg milk powder, plaster of paris, digging tools, cash, water purifying tablets etc.
- (c) Contact local groups and in discussion with them determine whether food is a life-saving priority, and if not whether it is likely to become so in the next month. There should be many responsible people, civil servants, teachers, religious leaders etc. ready to assist and able to leave their normal work.
- (d) If the food shortage is widespread and transport inadequate, start with a cooked food supplement for 'at risk' children under a certain age as determined by height. This favours families with young children, and helps the most vulnerable nutritional group. Include any other small but highly vulnerable groups such as pregnant and lactating mothers, and social and medical institutions.
- (e) As a general rule, the larger agencies, as in 1a above, will be better able to respond to the sudden need for food. An abnormal malnutrition situation takes a few months to develop. However there will be a role for Oxfam to give immediate life-saving aid where:

the sudden disaster is of overwhelming proportions on a national scale, eg ten million refugees from East Pakistan (now Bangladesh) arriving in Calcutta, 1971.

or : a project structure exists in the area in which Oxfam has great confidence, eg. the Buddhist Provincial Social Welfare Committees in Central Vietnam (VN 15W)

or : peculiar political and/or administrative conditions prevail such that it is clear that unwarranted delays will occur.

or : where Oxfam can call upon personnel with skills not immediately locally available. In such cases the skilled person is usually seconded to the local relief structure.

- (ii) Long-term nutrition rehabilitation approach, such as is required by famines and other similar situations. The famine may be a result of crop failure due to drought, pests or other natural disaster, or it may be the result of war. There are some areas which, even in normal conditions, show a very high rate of malnutrition in the population and where feeding of children may be desirable; these are dealt with in Section 22. A heavy responsibility devolves on the Oxfam field staff to know which are the vulnerable regions in their area, and develop a network of information sources as to whether there has been any significant deterioration in the ability of the poorest people in rural areas to cope. It requires an understanding of the ecological factors involved. In Maharashtra (IS 162) Oxfam started child feeding through health centres before the famine could reach epidemic proportions. In the Ogaden in Ethiopia (ETH 81) despite a £200,000 surveillance exercise by the London Technical Group, the nutrition teams still arrived after most of the cattle had died and severe malnutrition was rampant.

Oxfam's objectives are:

- (a) To prevent severe malnutrition of epidemic proportions arising.
- (b) To institute a child-centred approach to feeding.
- (c) To treat therapeutically all severely malnourished people with food.
- (d) Fully to involve and strengthen the official social and medical services, voluntary social service agencies, and local transport systems in the execution of the relief effort. Also to involve the disaster victims in the whole relief effort, particularly with a view to avoiding the passive recipient mentality which is often an end-product of a relief operation.
- (e) To evolve an approach to the rehabilitation of the rural economy which can readily be implemented, and which will employ people, eg short-term, one-off projects may well be justified rather than brooking the delays entailed in the implementation of long-term integrated programmes.
- (f) To give back to families any responsibility for feeding themselves which the relief operation may have taken over.

2. Recognising and Assessing the Onset of Famine Conditions:

The gradualness of the deterioration process, the normality of hunger at certain times, the hope that either the next rains or the harvest will be better, and the political sensitivity of the subject, make an objective assessment of famine very difficult. General factors to observe in monitoring an impending famine:

- (a) Ask to see inside the grain stores of subsistence farming families. If there is grain in them, the food situation may be critical but it is not yet desperate.
- (b) If the main cereal crops have not yet been sown, check whether people have the necessary seed, tools and draught power. Such things are only consumed or sold when people are desperate.

- (c) Note how long it is before the next harvest, and enquire whether harvest prospects are good.
- (d) Check the employment situation in the rural area.
- (e) Check the behaviour of prices for staple foodstuffs and livestock, and whether people have been selling personal possessions, such as metal household utensils or cattle, or jewelry, or even land, in order to have money to buy food. How long have these sales been prevalent? Some communities are reckoned to be able to survive one bad year in this way, but after that they are destitute.
- (f) Check with hospitals or clinics for any increase in the incidence of severe malnutrition cases.
- (g) Ask local government, agriculture and health officials for their opinions.

3. Action: Four Rules of Thumb Based on Experience

- (i) Visit the affected area with an experienced professional person who speaks the local language, such as a doctor, agriculturalist or voluntary agency administrator. Also consider making a quick nutrition survey, see the following Sub-section. Take care to meet the local government officials.
- (ii) Discuss findings, options and doubts with Oxfam, Oxford by telex, as well as with experienced and objective local people.
- (iii) Start a limited response if the area is a remote one and it is clear that the situation is marginal or worse and could deteriorate quickly, eg supply foodstuffs for child feeding to a good local agency, preferably with medical staff, to start supplementary feeding for up to 1,000 children for two months. Food can be prescribed in clinics as medicine if it is not clear whether general child feeding is justified. Ensure that the children are measured as well as fed.
- (iv) Identify any elements which may arrest the decline of the rural economy before it has collapsed, eg when the poor people have eaten their seed capital, or their animals have starved, or they have disposed of their productive assets such as land or equipment.

Such critical elements may include:

- (a) Provision of seeds or other agricultural inputs in time for the next rains.
- (b) Food aid and food-for-work schemes. These must be properly designed: so start surveying even if you subsequently decide against implementation. See also Food Aid in Section 3.
- (c) Special financial support schemes in cash or foodstuffs to prevent price manipulation, or growing indebtedness, or to provide a guaranteed price for animals which can be driven to an area where grass is available, or an alternative market for locally produced goods.
Such intervention can only be recommended if the right kind of local institution exists to which the poorest people have easy access.

- (d) Supplementary feeding for children assists those families with the greatest number of dependents, and may save a poor family from the need to sell essential productive assets.

Make it abundantly clear from the outset that any special schemes are tied to certain dates, usually a period of three months, and that resources have only been allocated for that period. Do not be surprised if the scheme ends with a good deal of criticism: relief work often does, especially where foreigners are involved.

4. Nutrition Surveys and Food Requirements

Where detailed evidence or monitoring of the severity or extent of a famine is required, it may be worthwhile to do a nutrition survey based on examination of a sample of the child population looking for symptoms of malnutrition. Some Oxfam field staff could do the relevant work themselves by devoting a week or so to it, though it may often be desirable to use an epidemiologist, community medicine practitioners or nutritionist, either recruited locally or through the OIDU office in Oxford.

Whereas the time taken to carry out a survey should not be allowed to delay any emergency action which may be required, it does make sense if it will alert the decision-makers to their responsibilities, and make major administrative decisions such as how much food could be needed in the next three to six months more rational.

- (i) Survey Methods: Measuring children's weight or arm circumferences is the simplest and most objective method. Weight-for-height using Salter spring scales is better than weight-for-age because ages are unlikely to be known accurately.

When acceptable scales are not available (ordinary bathroom scales prove too erratic with large numbers), or where the incidence of Kwashiorkor is high, arm circumference is a better criterion. A tailor's tape measure or even a strip of X-ray film will suffice so long as it is unstretchable. It is useful to remember that the arm circumference figures for children between the ages of one and five years do not vary significantly. Thus one standard figure eg 12.5 cms about 75% of normal, can be used to assess the rough extent of the severe malnutrition risk. QUAC sticks relate arm circumference to height and can be used for children from 1-10 yrs.

Do not be dogmatic about what malnutrition is, talk in terms of high risk.

- (ii) Accuracy depends on two factors: proper sampling and careful survey workers.
- (a) sampling: concentrate on children of 1-4 yrs of age ie. under 5 yrs, who are the most nutritionally sensitive and vulnerable 9.7% of the total population. Select communities in the affected area at random. All young children in a village of 1,000 can easily be measured by two pairs of workers in a morning or afternoon. Do not forget that malnourished children will sit weakly in the corner of the house: go house-to-house either on a census, or to every 'n' houses as a sample.
- (b) supervision: spend one day training the surveyors in a local day care centre, and test their eyesight and reliability. Insist that they work in pairs, and jointly agree on any reading of measurements.

- (iii) Interpretation. The percentage of children with low scores may seem high to you as a layman, because the standards are set on average well-nourished norms, and the prevalence of malnutrition is disturbing even in normal times. Discuss the results carefully with a competent professional in this field, and communicate them to Oxford eg X% of children under 5 yrs with arms under 12.5 cms, or weight under 75% norms for height. Ideally send the surveyors on to measure one or two unaffected/typical communities. In general, if 10% or more of the child population sampled is below 75% of normal, it is time to act.

5. Types of Feeding Schemes: Oxfam's Approach

Oxfam has found the following categorisation to be the best in most malnutrition situations whether in refugee camps or villages.

- (i) General feeding: If food supplies have become scarce, then a general system must be instituted whereby each family can receive enough calories to make up a survival ration of 1,200 cal. per person per day, or preferably a ration of up to 2,000 k-calories per head per day, of which not more than 75% should be in cereals. This is the Government's responsibility, and should not be assumed by Oxfam, although Oxfam might help with bottlenecks or missing items eg. a lorry or a mechanic supervisor/trainer. The different approaches to the practical problems of how to distribute the foodstuffs are discussed in Sub-section 6 below. A general feeding system should be the first priority in the treatment of a famine situation.
- (ii) Supplementary or preventive child feeding. This is a child-based approach, although it can be widened to take in other vulnerable groups for whom the general feeding programme is dangerously inadequate, eg. pregnant and lactating mothers, destitute old people and invalids. It is essential to start this type of feeding to prevent more children falling into severe malnutrition status. Depending upon how much food is available, supplementary feeding may be extended to all children, or confined to those most at risk either due to their younger age group or their present nutritional reserves as indicated by weight. The food is usually centrally cooked and consumed on the spot, but this can be decentralised to the village level. As a part of this approach preventive malnutrition medicines may be used to enable the children better to absorb what they have eaten, and to prevent deficiency diseases. These medicines can be administered under the supervision of a medical auxiliary since they are usually on sale in the market place anyway.
- (a) worm medicine. The great majority of children have them.
 - (b) diarrhoea medicine. To be given on demand.
 - (c) vitamin A or multi-vitamin tablets.

A close relationship between measles and malnutrition could make the immunisation of all these more vulnerable children worth the visit of a public health team. This is especially true in crowded or camp conditions where infection spreads easily and the logistics of vaccination present fewer problems.

- (iii) Therapeutic or intensive feeding is designed to save the lives of severely malnourished people, mostly children, with regular in-patient feeding under medical supervision. A concentrated high-energy food, usually milk-based, is used. The children are selected because of having a weight or arm circumference of less than 70 - 75% of normal, or diagnosed by a doctor or medical auxiliary.

The facilities are very simple: a large building, and access to potable water. Latrines can be dug, a kitchen area isolated, simple utensils found, and mats put on the floor for the sick person and an attending mother or older sister. Such feeding wards usually cater for between 50-150 children. Order extra mats, blankets, cups and plates as these tend to disappear as patients are discharged. The diet in the Ogaden (ETH 81) was high-energy milk (see Sub-section 8) consumed 4-6 times per day together with some more solid diet. The feeding ward is administered by a local team of cooks and attendants. It takes about three weeks before a child can be discharged and put on to the Supplementary Feeding Scheme. A death rate of up to 10% is unavoidably normal for this kind of operation.

While feeding undernourished children is one of Oxfam's roles, it is of paramount importance to remember for planning purposes that the need for intensive feeding represents the failure of general and supplementary feeding systems. Thus the task will be endless unless a higher priority is given to the larger numbers of children at risk.

6. Methods of Distributing Food in Emergencies

- (i) The emergency food supply may be marketed at cost price, or subsidised. Where a high rate of subsidy is involved, it is desirable that the food be rationed, though this requires the issue of ration cards, and hence extra administration. The ration cards may be given to families which are known to have malnourished members.
- (ii) Free food may be distributed uncooked through community centres, clinics and schools. The system may involve:
- (a) giving food to anybody who claims it. This is appropriate in sudden emergencies and in short-term operations.
 - (b) food distribution based on nutritional screening, or clearly identifiable social categories which selects those in greatest need.
- (iii) Cooked food may be served under supervision at centres, including villages. But although this has often been successfully done, as in Oxfam's Maharashtra drought programme (IS 156/7), supervised feeding in refugee camps or otherwise should be avoided if at all possible because it removes responsibility from the individual, disrupts the family system and may encourage the spread of infection through the food or through close contact of the people gathered together for feeding. The main reasons for feeding cooked foodstuffs are:
- (a) there may be fears that the food will not reach the intended groups in the population ie. uneven distribution within the family.

- (b) fuel or utensils for cooking may not be available to people displaced from their homes.
- (c) if the food is unfamiliar eg. milk powder, there may be fears that it will not be properly mixed or cooked due to lack of knowledge or facilities.
- (d) cooked food served under supervision cannot be re-sold.

If communal feeding is necessary, special care should be taken over hygiene, provision of a clean water supply, and measurement of food in cooking and serving. Ideally, food should not be taken from the premises to be eaten elsewhere. Frequency of feeding will depend on the staff available, and also on whether the total food intake for the day is to be supplied, or only part of the daily allowance. If the sick and vulnerable groups are provided with cooked food, it will be necessary to provide at least two meals a day or to offer a take-away service for the intermediate period, because it is impossible to provide the total calorie needs of a young child in one meal per day.

7. Choice of Food for Short-term Disaster Situations

- (i) Local purchase of ingredients for the following items from nearby unaffected areas:
 - (a) A warm, morale-boosting beverage such as soup or tea with sugar.
 - (b) Staple food ready for cooking: flour or grain or noodles, one pound or $\frac{1}{2}$ kg. per person per day.
 - (c) Milk - tinned or powder - for lactating mothers and young children only.
 - (d) Salt, other spices and cooking oil.
- (ii) Make sure that drinking water and firewood/fuel are available. If not consider the appropriateness of:
 - (a) water purifying tablets, if the people will use them.
 - (b) foods which do not need to be cooked: bread, biscuits, sweetened condensed milk, groundnuts, dried fish or tinned meat.

8. Choice of Food for Long-term Situations

- (i) general feeding Cereals should be the mainstay of any long term nutrition operation. The rule of thumb is one pound of grain per person per day, and this holds true for the internationally supplied relief foods such as CSM (Corn Soya Milk) or WSB (Wheat Soya Blend). Thus 3 tons per 1,000 population is required if everyone is to be adequately fed.

N.B. Vitamins and minerals are of secondary importance but should not be ignored in the long term. Fats and edible oils are useful because they contain twice as many calories per gram as cereals or protein.

However usually everyone does not have to be fed, and the World Food Programme uses the figure of one ton per thousand affected population per WEEK on the assumption that 10% will require full

feedings, 20% half rations, 40% quarter rations and 30% nothing. This enables WFP to call forward shipments of food in the absence of any hard data: the tonnages are adjusted as the true facts emerge.

Nutritionists have worked out balanced survival and normal diets (see below), however from Oxfam's point of view we are rarely involved in such refined calculations. It is as much as we can do amidst the chaos to arrange to purchase, transport and distribute two complementary food items such as cereal and cooking oil or milk if we become involved in the general feeding.

- (ii) model survival ration (1200 K-calories) 225gms cereal; 50 gms. pulses; 15gms dried skim milk; 15gms fats; 15gms sugar. For pregnant and lactating women and children add more protein-rich foods, typically dried skim milk, fish concentrates or soya flour.
- (iii) model general adult diets (2,000 to 3,000 K-calories). Three possible diets are given. In each case, the pulses could be replaced by about one-third of their weight in dried skim milk.
- 500 gms. cereal; 40 gms. oil; 80 gms. pulses (beans, groundnuts)
 - or - 300 gms. cassava; 200 gms. cereal; 30 gms. oil; 150 gms. pulses.
 - or - 1,600 gms. fresh root; 40 gms. oil; 60 gms. dried skim milk; (pulses are not an alternative in this case)

W.F.P. recommendations are about 20% lower, and suggest dried milk for children and lactating mothers only.

General supplementary diets for adults should aim to provide about half of the calories required and a little more for those whose normal diet is root crops. Between 5 and 8% of the calories should be in the form of protein.

- (iv) The average per capita calorie requirement for all age groups is about 2,000 K-calories per person per day for the purposes of calculating a full ration for everyone. Most cereals contain about 350 calories per 100 gms. and at least 6 or 7% of protein.
- (v) Supplementary or preventive child feeding

There are two types of situation which cannot clearly be separated except by the extent of the problems facing the administrators.

- (a) Working under pressure: with a large child population at risk, a remote area, shortage of trained staff and/or local channels, limited transport, extensive malnutrition and an inadequate general feeding programme, the feeding service must be simple and selective.

100 gms. of cereal or CSM porridge plus 50 gms. dry skim milk TWICE a day.

Feed all children under five, and all thin children ie. under 10 years, less than 85% normal arm circumference or weight.

A nutritional survey, (Sub-section 4 above) would help to determine roughly how many children will qualify. As

a rough guide the total population of an average developing country will have an age distribution as follows:

0 - 12 mths.	3.3%	13 - 60 mths.	9.7%
5 - 9 yrs.	12.1%	Total under 10 yrs.	25.1% (up to 33%)

- (b) More relaxed circumstances: It may be possible to feed through village institutions such as MCH clinics or day care centres so long as these are accessible to the poorest people. School feeding tends to attract older children and exclude the poorest. Children under 5 years can probably only eat a maximum of 400 calories at one meal. A model diet in such a situation would be:

100 gms. cereal; 10 gms. pulses; 15 gms. dried skim milk and 25 gms. egg.

- (vi) Therapeutic or intensive feeding This is basically a medical question. Once the formula has been agreed then it is a simple matter to order the food stuffs. In general the objective is to feed 150 K-calories per kg. of bodyweight and at least 2.5 gms. of protein per kg. per day. The main ingredients of therapeutic food stuffs are: dry skim milk, oil and sugar. The actual formula is flexible and can be varied according to availability. UNICEF sometimes keeps a stock of K-mix II, otherwise high energy milk or DISCO can be made up on the spot using medical advice and local resources. To feed 100 children therapeutically for a month will require approximately 1.5 tons of dry skim milk, oil and sugar: very roughly equal quantities of each ingredient by weight will be needed.

Two additional interrelated problems which cause death in severely malnourished children during the middle of the night are hyperthermia and hyperglycemia. The cold temperature and lack of glucose combine to cause death. Blankets should be supplied and a high protein biscuit last thing at night. Tin foil, goats skins or the food sacks can be used as substitutes for blankets.

9. On-going Monitoring and Surveillance

Implicit in the planning of any feeding scheme should be fore-thought on how it is to be guided through its various stages and ultimately phased out, or made dependent upon local resources. The ultimate goal could be an agricultural development programme, or a maternal and child health scheme with a large nutrition education component. However it is unwise to assume that the post-relief phase is necessarily a good time to introduce a development programme as opposed to a simple rehabilitation of the status quo. For instance, the incidence of rural indebtedness will be abnormally high. See Agriculture Guidelines, Sections 10-19 and Health Guidelines, Sections 20-28.

The central disaster organisation for the affected region should have some system of surveillance, including regular nutrition surveys, typically based on at least a 25% house-to-house sample of children in a representative sample of communities. There should be realistic and objective standards for determining progress and priority areas. The surveillance programme should include the following:

- (a) Simple community nutrition surveys, as described in Sub-section 4.

Sue Peel, Selective Feeding Procedures, Oxfam, 1979. Being translated into French and Spanish. These procedures are intended as a guide to medical personnel using the Oxfam Feeding Kits; these kits are also available on request to Medical Unit, Oxfam, Oxford, UK.

B.S. Platt, Tables of Representative Values of Foods Commonly Used in Tropical Countries, HMSO, 1977, fl.00. Useful reference guide, especially for ordering food requirements.

NOTE See also Nutrition, Section 22, for further general details on the subject, including bibliographical information.

Section 52: DISASTER TECHNOLOGY

NB This Section covers: Sanitation; Water Supplies; Shelter

SANITATION

1. Introduction

Very large numbers of people in the developing countries are without adequate sanitation facilities, and many have no access to sanitation at all. Much ill-health is directly caused by this, and it is a major and serious failure in relief operations and in development work that many agencies and field workers are very badly informed about the importance of sanitation, particularly in crowded conditions. The low level of competence among many agencies in this field is unforgiveable and must be rectified.

2. Diseases Arising from Bad Sanitation

The chief way in which diseases are spread by poor sanitation is by the pollution of food or drinking water with human excreta; due to handling food or spoons or bowls with unwashed hands, due to flies settling on food, or due to direct contamination of water (see Environmental Public Health Section 24). The diseases transmitted in this way include cholera, typhoid, the dysenteries, polio, hepatitis, and such parasites as roundworm and whipworm. In addition, hookworm is transmitted by direct contact of bare feet on polluted ground, and schistosomiasis (bilharzia) by direct contact of the skin with polluted water.

All these diseases kill, maim and debilitate thousands of people each day, and the risks are greatly multiplied as urban slums grow and people crowd together without adequate sanitation facilities.

A human being with cholera can excrete or vomit up to two thousand infective doses of cholera each hour, and such a person may be infective at this level for thirty hours. The job of a sanitation system is first to contain and then to sterilise this material.

A fertile female roundworm that is well established in the human gut will lay up to a hundred thousand fertile eggs a day and these are of course passed out in the human excreta. Between 96 and 98% of the population of Bangladesh are estimated to have roundworms. This type of parasite is a major health problem in India as well. A handful of such worms in the human gut have first claim on the food taken by that human and so contribute to malnutrition.

3. What can be Done? - Some Sanitation Principles

The top priority is to provide a place for people to excrete, and for the excreta to be contained in a chosen location. The benefits of containment are many but include the control and treatment of the excreta; stopping people from excreting indiscriminately around the site concerned; and stopping rats, insects, vermin and birds having access to the excreta and carrying it off, thereby acting as vectors or distributors of disease. By containing faecal matter, the risk of it being carried into human living quarters on people's feet is also eliminated.

Human excreta under these controlled conditions will lose its disease potential over a period of time. Under normal conditions the pathogens, ie the disease-forming bacteria, are destroyed or diminished by other bacteria which are harmless to man. Our intentions therefore are to contain human excreta in a safe location and provide the best possible conditions for these harmless bacteria to do their work.

The harmless but useful bacteria which destroy the disease potential of sewage are either aerobic or anaerobic. This means that they either thrive where plenty of air is available (aerobic) or they thrive under airless conditions (anaerobic). Both kinds of bacteria are required for good sewage treatment.

The anaerobic stage of treatment is best achieved by passing the sewage through a closed tank for sufficient time. To provide the aerobic stage of treatment is also fairly simple; all we need to do is to provide plenty of air to the sewage. This is often achieved by passing the sewage over some form of filter medium such as broken stone or gravel where the sewage is allowed to trickle over the filter, allowing the harmless aerobic bacteria to thrive and play their part in the second stage of sewage treatment. Chemical disinfectants usually upset this natural treatment of sewage and should not be used.

4. Organisation of Public Latrine Facilities

Dollar for dollar, hygienic sanitation facilities are vastly more valuable than curative medicine. A latrine can save the need for medical treatment on a wide scale, but a latrine must work and it must work well all the time. Here are some recommendations for all public facilities:

- (i) If sanitation is installed it must be used by all the population of the community served.
- (ii) Always provide water for washing.
- (iii) The system must be culturally acceptable. Usually people do accept and welcome better sanitation, but one must ascertain what taboos or traditions need to be catered for. Muslim communities, for example, require particular orientation of the latrine area.
- (iv) The latrine must be pleasant to use, and must be maintained and cleaned on a full-time basis. Make it a well-paid job for some intelligent person. All too often in the past this daily maintenance and cleaning job has been left to some unmotivated, untrained person, who manages in a short period to bring the latrine into disrepute for being smelly and dirty. If sanitation is a key requisite for a community, then keeping the sanitation facilities in good condition and serviced is a key job and must be made so.
- (v) The latrine must be within easy walking distance and should be able to be seen by the population it serves.
- (vi) Separate facilities for each sex should be provided, and the facilities must be safe and usable by children. Children are likely to excrete anywhere; they can be as infectious as anybody, so it is important they are catered for.
- (vii) Lighting must be provided. One may often find latrines unusable at night because of failure to do this.
- (viii) Privacy is important for the user of the latrine. All humans prefer to excrete in private, so provide privacy.
- (ix) The latrine should not be on low-lying marsh land that floods at the first rains, nor must the latrine be sited where it may pollute the local water supply.

5. Some Simple Sanitation Techniques

If you are considering long term sanitation, enquire whether there is a local sewerage system that you can consider using. Is there a local sanitation expert you can talk to? In emergency conditions, or where some kind of sanitation has to be improvised, the following expedients are available:

- (i) Trenches and bored hole latrines. The placing of excreta straight into the ground by trench latrines or bored holes is still one of the simplest and most successful systems used. The bored hole is to be preferred as it has some definite advantages particularly with fly control and covering the hole with a squatting plate. It is difficult to improvise squatting plates for use with trench and bored hole latrines, and stocks are available in stores.

Bored holes are usually made with a hand operated auger which will cut a hole 24 cm. in diameter and up to 7 metres deep. Augers are also held by Oxfam stores. Bored holes and trench latrines are obviously not feasible where the ground has hard rock near the surface, nor are they suitable in waterlogged ground, nor where high water tables are present.

When used by the general public, these types of latrine need plenty of supervision on a daily basis, and there should be plans for making new holes or trenches as existing ones are filled. When bored holes are full to within half a metre of the surface, they should be filled in with soil and the squatting plate transferred to a new hole. After the elapse of a year it is safe to excavate the contents to use as manure. Bleaching powders and other disinfectants should not be used as they interfere with the natural process by which faeces are turned into a safe manure.

- (ii) Pit latrines are based on exactly the same principle as bored holes except that they are dug by hand instead of being bored with an auger. The minimum useful size for the pit is one metre in diameter and 2.5 metres deep. The sides of the hole should be suitably lined to prevent collapse and the top bridged by a wooden floor or concrete slab incorporating a squatting plate. This floor should be raised slightly above ground level and soil banked round it to prevent water running into the pit during heavy rains. As with bored hole latrines, a cubicle is built round the squatting plate. Such latrines should be at least 30 metres, and preferably more, away from any well or stream used as a source of drinking water.
- (iii) Aqua-privies and septic tanks. In both these systems, excreta is stored in water in a large tank. The tank is divided into two compartments with the latrine discharging into the first, and an overflow pipe from the second leading to a soakaway or drain. There is a slow movement of material from the first compartment to the second over the dividing wall, which has an overflow or siphon built into it to allow for this flow of material. Aqua-privies are cheaper to build than septic tanks because the aqua-privy tank is built directly underneath the latrine as part of the same structure. The septic tank is located at some distance from the latrine and occupies more land. Both types need desludging every three years or so. Illustrations and full details are given in most of the books listed in the bibliography.
- (iv) Emergency excreta disposal. In extreme conditions, bulldozers have been used to clean areas heavily polluted with excreta. The dozers

are used to scrape the surface and bury the waste material. Under some emergency conditions, the military have sometimes gathered excreta into a central location and incinerated it by using liquid or gas fuels. This may sound extreme, but it can be arranged instantly where there is a major disease threat.

6. The Oxfam Sanitation Unit

Arising from the problems and frustrations of trying to cope with massive refugee problems, Oxfam has produced a sanitation unit, based on several years of research and development, which can be moved into a needy situation quickly, and assembled to provide a public latrine facility for around 1,000 people. At the time of writing, 60 of these units are in use in Bangladesh; others have been sent to Ethiopia, Botswana and Guatemala; and units have been requested for Peru and India. A booklet entitled The Oxfam Sanitation Unit gives full constructional details, available from the Publications Officer, Oxfam, Oxford (also in French and Spanish).

The unit can be used as a self-contained packaged system for sanitation and sewage treatment, or it can be looked on as a kit of parts which can be used in several ways, for several different kinds of sanitation. The principle uses of the equipment Oxfam can provide are as follows:-

- (a) the unit can be used with one tank only as a short-term measure for sewage containment or storage during an emergency
- (b) when used with two tanks and a percolating filter, the unit provides continuous treatment of sewage and discharges a safe effluent - it will then provide a long-term public health facility
- (c) the squatting plates can be used separately within existing drainage facilities to improve the latrines
- (d) the tanks can be connected to existing drains to provide sewage treatment where none was previously provided
- (e) the squatting plates can be used with bored hole or trench latrines
- (f) the flexible tanks can be used for the storage of water if required.

NB. It is essential that an adequate water supply is available if the Units are to operate efficiently.

7. Costs

In Britain, the average investment per person on sanitation, drainage and sewage treatment plant is around £100 per head. In poor communities who need no less the health protection provided by good sanitation, a sum of £5 per head is often thought too much to spend. This is a nonsense philosophy and double nonsense when a highly paid field worker negligently adopts the same position. However a sum of £5 per head will provide sufficient capital for basic semi-permanent or permanent sanitation (1976 prices). It is essential to provide additional funds to provide for ongoing maintenance and daily cleaning. The Oxfam unit can be provided within this cost level.

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Ross Institute Series of Bulletins:

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E. G. Wagner and J. N. Lanoix Excreta Disposal for Rural Areas and Small Communities, WHO.

NB.(i) See also the Bibliography for Environmental Public Health, Section 24.

(ii) For details of Information Sheets on Oxfam-assisted projects, see Section 2 Appendix III.

WATER SUPPLY IN EMERGENCY SITUATIONS

1. Introduction

In a disaster situation, water is a greater necessity than food and, except in the most rigorous climates, it is also a greater necessity than shelter. The quantity of water required to maintain life is astonishingly small by comparison with the quantities used in the industrialised nations. Not all the water of potable quality is drunk or used in the preparation of food, because wounds have to be cleaned and very young children washed. For all these purposes, a supply of two litres per day can be made to suffice and in a life-or-death situation, the quantity can be even less.

2. Disinfection of water

In normal circumstances, there are many criteria by which the wholesomeness of water is judged such as organic matter, dissolved salts, hardness, matter in suspension, pH and so on (see Environmental Public Health, Section 24). In a disaster situation, the only criterion which makes a supply unacceptable is the presence of pathogenic material, and the question of whether it poses a serious risk to health.

In emergency situations, where people are crowded together, the risk of water being polluted by pathogenic material and being a hazard to health is much greater

than in normal circumstances, and the disinfection of water is therefore always advisable and often urgently necessary. There are two simple ways by which this may be done:

- (a) boiling the water vigorously for at least 5 minutes, or for longer at high altitudes where boiling point is reduced.
- (b) use of chemicals, such as proprietary disinfectants (eg Milton, Zonite, Javel Water), commercial bleaches (eg Chlorox, Dazzle, Regina), bleaching powder and water sterilising tablets.

Where chemicals are used for disinfecting water, it is important to dose the water with the correct quantity of the chemical. Detailed instructions for doing this are given in the Oxfam Technical Guide entitled Safe Drinking Water by Burns and Howard. This is an essential document which all Oxfam field staff should possess as a companion reference work alongside this Handbook, and its contents are not therefore repeated here.

3. Vessels for handling and storing water

In emergency situations, not only is the provision of water a matter of prime importance, but it should also be remembered that there may be a lack of pots and pans for cooking, for boiling water and for family storage of water. Also relevant to the use of water for hygiene may be the provision of soap and also some form of towelling, and for boiling water or cooking, fuel and matches may be needed.

4. Bibliography

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H. T. Mann and D. Williamson Water Treatment and Sanitation, I.T. Publications Ltd, 1976, £2.00.

NB.(i) See also the Bibliography for Environmental Public Health, Section 24.

(ii) For details of Information Sheets on Oxfam-assisted projects, see Section 2 Appendix III.

DISASTER SHELTER

1. Introduction

No two disasters are the same except that there are frequently large numbers of people in desperate need. Consequently in the provision of disaster shelter there is no one solution that will provide a simple answer to all eventualities. Government and local capabilities vary greatly; local materials differ; society and cultural needs make different demands on shelter design; and climate, season and terrain determine local building patterns. Flexibility on the part of outside agencies involved is therefore essential.

In most disaster situations the affected people should be permitted to utilise their own capacity to the full in shelter reconstruction. Consequently they should take the largest part, and the agencies should be in the role of supporting - and sometimes stimulating - local activities. Unfortunately in all too many disaster situations, the agencies have taken over the lead and imposed their own notions of what is appropriate.

Many housing projects have failed because the shelter provided has been too expensive for the beneficiaries, and badly planned relative to the peoples' lifestyles. However where people and local organisations have been able to get on unfettered with providing their own shelter, it has been cheap and effective.

It is important too to keep in mind the relative priorities of homeless disaster survivors. A typical listing in decreasing order of priority would be:

- (i) To remain as close as possible to their damaged or ruined homes.
- (ii) To move into the homes of families or friends on a temporary basis.
- (iii) To improvise temporary shelters as close as possible to the site of their ruined homes. These shelters will in many instances evolve into rebuilt houses.
- (iv) To occupy emergency shelters, as provided by external agencies.
- (v) To occupy buildings which have been temporarily requisitioned for housing homeless families.
- (vi) To occupy tents by taking each unit and erecting it in, or next to, their ruined home.
- (vii) To occupy tents on military style campsites.
- (viii) To be forcibly evacuated away from the affected area.

In addition, it is important to emphasise the functions of emergency shelter since once again this can be easily ignored:

- (a) Climatic protection against cold, heat, winds, and rain.
- (b) Storage of belongings and protection of property.
- (c) The establishing of territorial claims.
- (d) Promoting a staging point for future action. Providing this will include salvage and reconstruction as well as social reorganisation.
- (e) Emotional security.
- (f) A location for the receipt of services, eg medical, food distribution, etc.

2. Locally Available Shelter

Experience shows that people who have lost their homes usually go to the houses of friends or relations where possible, and that great numbers of people can be absorbed in this way. People can be helped to do this by the provision of transport, small amounts of cash and food, etc. In rural areas with plenty

of vegetation for timber structures and thatched roofs, and where material from the destroyed homes can be re-used, people quickly rebuild for themselves. This is the best situation.

Where this does not happen, another approach is to find accommodation for people in local schools, government buildings, factories, warehouses and railway stations. Such possibilities should never be overlooked.

3. Use of Local Material

The use of local materials should always be the first choice in reconstruction. Such materials are usually available for purchase and are often within the financial means of the affected people. By quickly providing or making available such materials, the people of the affected area can usually begin reconstruction of their permanent shelters without there being a necessity to provide temporary shelters. Alternatively, local materials can be used to construct temporary shelters which can later be modified into permanent shelter.

Failure to make use of local materials may occur because of a lack of organising ability by field staff or of the shortage of money at the field level to purchase these materials. A ready supply of funds, possibly in large quantities, is therefore one of the critical items for enabling field staff to buy in these materials quickly. Quality control in purchasing local material is very important; examples exist of inferior timber, bamboo, etc. being purchased at inflated prices with the subsequent result of unacceptable housing being constructed.

Pre-disaster knowledge of where building materials, tools, nails, wire, etc. can be obtained in a particular country or area will be of great value. The importance of this pre-disaster preparedness has been stressed in Disaster Procedures, Section 50.

4. Education in Building Techniques and Legal Aid

Post-disaster reconstruction offers people a good opportunity to rebuild their homes in such a way that they are better able to withstand another disaster. Education and information on improved building techniques is necessary for this to take place and programmes of this nature have been financed in Guatemala (GUA 30), and in Andhra Pradesh (AP 24) where the ARTIC centre has been set up to provide information. In one project (GUA 30) the approach has been to improve local housebuilding projects by training and influencing craftsmen and villagers. A paper has been written describing the project in detail, see Bibliography.

Another important consideration is the provision of legal advice in housing matters, possession of land, tenure, civil rights, etc. Universally the poorest sections of the urban population have been forced to occupy the most unsuitable pieces of land. Such people rarely have any legal status and are liable to and often are evicted at very short notice and with a great deal of hardship and despair. To such people legal aid is a high priority. See Legal Aid, Section 39.

5. Shelter Design Principles

The design of housing should conform to local traditions and lifestyles, use local techniques and skills, and employ local people in construction. This will lead to appropriate housing and will help to stimulate the local economy.

Improvements over traditional designs in certain structural details may well be desirable, are certainly possible and usually will not contradict local housing practice. Manuals are available illustrating simple practical improvements that can be made to traditional housing, see Bibliography. Also see Section 36.

In the event of unfamiliar materials or designs having to be used, the following may be useful guidelines subject to local cultural variations:

- (a) The covered floor area per person should provide a minimum of 1.5 sq. metres/15 sq.ft.
- (b) Cross ventilation should be provided by at least one door and one window in opposite walls.
- (c) Where cooking is likely to take place within the shelter a chimney or roof vent is desirable and the potential fire risk must be considered.
- (d) Water supply and sanitation are best supplied on the site which should be chosen with this in mind, see previous Sub-Sections.

6. Forms of Shelter Provision

(i) Tents Tents have a positive value in certain circumstances particularly where a genuine short term shelter need exists. They do however have a number of disadvantages, eg they are not cheap, and they can rarely be obtained in sufficient quantity. They are bulky for air transport and can cost as much to fly as their original cost. Shelf life is limited (5-7 years) and good, dry storage is needed. Tents also have a limited life in the field and have no role in the rebuilding process. They are unsuitable for cold or windy conditions, although if supplied with flysheets they do have a degree of insulation against heat or cold.

(ii) Plastic Sheeting Oxfam has made considerable use of black polythene sheeting. This material has the considerable advantage of being available in widths up to 10m and in any length. Sheeting in such relatively large widths is of considerable value as a roofing material because the number of seams and joints between sheets can then be minimised. Polythene sheeting is light and compact to transport and has proven value as a waterproof membrane used with local materials such as bamboo, as groundsheets, tarpaulins, damp-proofing, windproofing or for personal wear. An Oxfam Technical Guide is available giving advice on how to use plastic sheeting.

Oxfam is currently developing a low-cost tent of black plastic sheeting that is pre-joined in such a way that it can be slipped over a framework constructed from nine 3m x 1" diameter steel tubes.

(iii) Canvas This can be used as an alternative to plastic sheeting. It has the advantage of often being available locally and it has greater acceptability because of a greater potential for re-use. Its disadvantage is that it is bulkier than plastic sheeting and is not available in the large widths and lengths of plastic sheeting.

(iv) Corrugated Sheeting - "lamina" in Latin America. Corrugated sheeting has been widely used as a roofing material. This material is cheap, requires no special storage, is easily transported, and needs little support structure. It can be used for roofs, cladding and other purposes and is re-usable. It can be used with thatching for insulation. The following points should be noted:

- (a) Heavier grades are more satisfactory than the light ones.
- (b) Sheets need big headed galvanised nails for fixing to timber frames; and to drive the nails in, hammers will be required.

- (c) If bamboo is to be used as the roof frame, use galvanised wire to tie the sheets to the frame, and not nails.

Oxfam has developed the Oxfam Building Plank with the view of being able to provide a supporting structure for corrugated roofs where suitable local materials are not available. An Oxfam broadsheet on this system is available.

- (v) Block-making Techniques The use of cement and soil-cement blocks have frequently been used in post-disaster housing projects and have developed in some cases into long term schemes for better housing and other improvements.

In Brazil much use has been made of a locally developed brick-making machine but this was found to be unsuited to emergency or post emergency work (BRZ 141). It came into its own only after temporary housing had been constructed. This same technology was also transferred to Guatemala after the 1976 earthquake. Similar limitations in the using of the Cinva ram block-making technique have been experienced in Bangladesh.

7. Bibliography

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For details of Information Sheets on Oxfam-assisted projects, see Section 2 Appendix III.

Also see Bibliography to Section 36.