

Information Exchange Networking for Agricultural Development

A REVIEW OF CONCEPTS AND PRACTICES

John Nelson and John Farrington



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Technical Centre for Agricultural and Rural Cooperation (ACP-EEC)

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The Technical Centre for Agricultural and Rural Cooperation (CTA) was established in 1983 under the Lomé Convention and is based in Ede-Wageningen in the Netherlands. Its mandate is to help the African, Caribbean and Pacific countries which comprise the ACP group achieve greater food security by providing them with better access to scientific and technical information on all issues related to agricultural and rural development. Working in close cooperation with ACP and EEC countries and with international, regional and national institutions, CTA fulfills its mandate through a range of activities, including seminars, studies, publications and support to ACP documentation centres.

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Preface

Information exchange networks have been with us for some time; several examples cited in this book have been operational for over 15 years. Why then the recent upsurge of interest in networking? What different types exist? How have they evolved? What advantages do they offer? Are there inherent disadvantages? By addressing broad questions of this kind, a first objective of this book is to examine where networking stands in relation to a range of other activities, such as the publication of journals or the provision of information services. An immediate problem is that of definition: what precisely should be included in, and what should be excluded from, the concept of information exchange networking?

This ground has to be cleared before considering the book's main objective, which is to provide the growing numbers of those involved in networking, both members and coordinators, with a range of practical options for managing their activities. These options are drawn from the authors' contacts with a number of existing networks, and relate to the objectives, structure and functions that they have set for themselves.

As these case studies were being planned, two potential shortcomings became apparent. The first is the danger of over-generalisation. Each network has evolved under specific conditions. Lessons derived solely from a series of snapshots of what networks were doing in 1992 are likely to be misleading. If lessons exist, they can be drawn only from an understanding of the context in which each network was established and how it has evolved. In an effort to capture this context, John Nelson visited over 20 networks based in Europe and concerned with agricultural development, and spent long hours in discussion with their coordinators.

The second shortcoming arises from this concern with context and from the method adopted to investigate it. Resource constraints meant that it was not practicable to visit networks located outside Europe. Part of this imbalance is redressed by conversations and correspondence with numerous networks in the developing world with which Overseas Development Institute (ODI) has contact, and by studying the material on networking that a recent international workshop brought to light (ILEIA, 1992). However, in ideal circumstances, the preparation of a book of this kind would have involved stronger representation of the experience of networking practitioners in the developing world.

Very few networks are financially self-supporting. Many rely on donor funding, which is well known to be prone to swings of fashion. Networking is in danger of becoming flavour of the month and, once donor fatigue sets in, of suffering from the withdrawal of funds that has affected numerous other initiatives, such as farming systems research, whose principles are basically sound but have been distorted by combinations of muddled thinking, stereotyping and the excessive claims made by its proponents. By seeking to clarify what does and does not constitute networking, and by drawing out both its strengths and weaknesses, this book is an attempt to save networking from a similar fate.

John Nelson and John Farrington (ODI)

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PART I

Information exchange

1

Introduction

This book is concerned primarily with information exchange networking. During the preparation of the book, conversations with numerous colleagues involved in networking revealed a wide range of views and a degree of confusion over what should be included in a discussion of networking. This chapter introduces a number of definitions which help to structure the discussion that follows. The definitions fall into three main groups.

First, networking itself has to be defined. Although networking embraces many kinds of activity, if the concept is to have any analytical value, criteria must be agreed which distinguish it from other kinds of interaction among individuals or institutions. A network is not, for instance, a mailing list, nor is it the outreach programme of an institution. Networking is distinct from service provision and from the type of exchange associated with markets, whether involving barter or financial transactions. There is a need to be able to attach criteria and descriptors to networking that distinguish it from all of the above if it is not to become devalued to the point of conceptual worthlessness. Since the terms 'institution' and 'organisation' are used frequently throughout the book, the distinction between them should be made clear. According to Esman and Uphoff (1984), institutions include networks of government agencies, private agencies and voluntary organisations, and local institutions. By contrast, organisations are 'not organs of the state, nor purely social or cultural organisations', and comprise relatively smaller units of cooperation than the established laws or practices of institutions.

Second, a distinction has to be drawn between those organisations that exist primarily for the purpose of networking, which can be termed 'information exchange networks' (IENs), and those for which networking is a subsidiary activity, which are termed 'organisations with a networking function' (ONFs). The distinction is important since the objectives, structure and functions of ONFs, whilst compatible with certain types of networking, may not allow them to develop as fully as IENs.

Third, IENs need to be distinguished carefully from other types of networks. Two recent books (Plucknett et al., 1990; Faris, 1991) have focused on networks of natural scientists researching aspects of sustainable agricultural development. Both these books have made only passing reference to IENs. As illustrated in Chapter 3, some IENs have a research component, whether drawing from natural science or social science traditions. However, distinctions can and should be made between even the more research-oriented IENs and the types of research networks with which the international agricultural research centres of the Consultative Group on International Agricultural Research (CGIAR) in particular have become involved.

1.1 Information exchange networking

Information exchange networking is defined here as 'a collaborative process of information exchange, around a central theme, carried out by actively interested parties'. Information exchange may be conducted in audiovisual or written modes.

Types of audiovisual communication include conversations, discussions, workshops, broadcasts, theatre and films. They may be conducted through several media. Conversations and discussions, for instance, can be held face-to-face, by telephone or on film. Radio, television and video film have conventionally been used as a one-way means of disseminating information

but of more interest in our context of information exchange are recent developments in the two-way or multi-directional uses of these media. Radio or television programmes that involve group discussion, studio audiences and phone-ins from wider audiences are examples. Video films are a potentially powerful tool. For example, the Food and Agriculture Organisation of the United Nations (FAO) has used videos to record community histories and to outline development initiatives in order to stimulate debate in the community and amongst planners (FAO, n.d.).

There are many types of written communication, including person-to-person letters, circulars, bulletins, newsletters, network papers, professional journals, reports and books. Conventionally, these have been limited to the handwritten or printed word. Recent developments in magnetic and electronic systems have led to the use of CD-ROM (compact disc-read only memory) and other databases in bibliographic services and electronic mail (E-mail).

Networking has drawn on many of the methods of communication outlined above. Most commonly, however, it relies on bulletins, newsletters and network papers, with varying degrees of reliance on interpersonal or face-to-face contact. The key characteristic of networking is that it is a process of exchange. This rules out a one-way information flow from one centre, such as an agricultural research centre, simply seeking to inform an audience of its activities. Exchange involves an interaction which may be two-way (between, for instance, a networking secretariat and individual members) or multi-directional (between a secretariat and members, and amongst members). It is for these reasons that the word 'actively' is included in the definition of information exchange networking. Networks cannot function if they simply consist of passive recipients of information. Various network structures and the patterns of exchange they facilitate are considered in Chapter 2.

A structural dimension has to be given to the process of exchange in order to make it relevant to the present context of networking. Some procedures of interaction taking place over a long period may be termed 'information exchange', but can they be called 'networking'? For instance, scientists may provide information to farmers about a new variety of wheat, to which the farmers respond by adopting the variety. Some years later, the farmers may let the scientists know that the variety has become susceptible to a strain of fungal disease, and the scientists respond by conducting research into new, resistant varieties. Information has been conveyed in both directions and has had important practical results but, in our view, to term this 'networking' would stretch the concept beyond its reasonable limits. If, on the other hand, a wheat growers' association set up a system aimed at encouraging farmers to report outbreaks of disease to the association and to each other, and at providing a forum for the discussion of problems and potential solutions, such a system could be structured enough to warrant the term.

It is important to identify the two essential elements of information exchange networking in order to distinguish it from the daily processes of routine communication:

- A prerequisite for the exchange process is that there is self-interest among the participants in the exchange. Often, this interest is manifested in a common focus. This focus may be political. For example, Genetic Resources Action International (GRAIN) campaigns against perceived inequities arising from private commercial interests in new plant varieties; and the International Federation of Organic Agriculture Movements (IFOAM) raises awareness about the potential of organic agriculture. The focus may also be thematic, as in the case of the research network on tropical trees, Réseau des Arbres Tropicaux (RAT), or it may be geographical and thematic, as in the case of Réseau de Recherche sur la Résistance à la Sécheresse (R³S), which focuses primarily on drought problems in sub-Saharan Africa. A group of individuals or organisations actively and consistently communicating or exchanging information around a central theme is what information exchange networking is all about.
- In agricultural development the process of information exchange networking has a strong element of voluntary collaboration, which distinguishes it from networking conducted among commercial enterprises. The networks in the examples above all base their activities on voluntary collaboration and philanthropic ideals. Most of the IENs and ONFs with which this study is concerned aim to improve living standards among those seeking to make a living under difficult farming conditions, characterised by some combination of low and unreliable rainfall, poor soils and hilly topography — the 'complex, diverse and risk-prone (CDR)' farming areas (Chambers et al., 1989). This is not a competitive process in which those who are able to supply most resources (such as money, information and cooperation) for a network are the ones who receive most information from it. It is a collaborative process working to support those who wish to develop solutions to difficult problems.

Networking versus information dissemination

A number of organisations maintain mailing lists as a channel for disseminating information on specific issues or on the activities of a specific institute. Several of the international agricultural research centres, such as the International Service for National Agricultural Research (ISNAR), publish newsletters of this nature. Networking is distinguished from information dissemination of this kind by the fact that it is interactive. One of the main responsibilities of network coordinators is to facilitate and stimulate interaction among members, whether through a newsletter, the publication of a register of members, workshops or by other means.

Some newsletters distributed through a mailing list may carry some of the features of information exchange newsletters. They may, for instance, have a section reserved for correspondence which may spark interaction among recipients. The reverse may also apply. As networks increase in size, interaction among members becomes difficult to sustain and an increasing proportion of members (especially where membership is granted to institutions such as libraries or university departments) merely become recipients of information. Again, there may be grey areas in the distinction between newsletters that have a primarily networking function and those that are vehicles for information dissemination. Where doubt exists, analysis of the objectives of the coordinators or managers can be helpful. The process can be termed 'networking' only if a primary objective is to facilitate or stimulate interaction among members.

The same distinctions apply between networks and professional journals. The latter are concerned more with informing than with interacting. There is the added difference that networking places particular emphasis on the speed and informality with which information can be processed and circulated from one member to other members and a response obtained. By contrast, contributions to professional journals have to be highly polished and of specified length, factors which contribute to a publication lag of 1 or 2 years and which tend to exclude all except those with the necessary time and writing skills to meet these requirements, usually academics.

Networking versus information service provision

Newsletters distributed through mailing lists in the way described above are a centre-led form of information dissemination. Other types of centre-led information services include the supply of CD-ROM collections of abstracts, such as the collections produced by CAB International, the Technical Centre for Agricultural and Rural Cooperation (CTA) and FAO's Agricultural Information System (AGRIS), or of full texts, such as the CD-ROM collection of the CGIAR. The volume of information that a CD-ROM disc can carry is much larger than that of a single printed medium such as a newsletter. The user therefore has a wider choice within the material supplied, but decisions on what should be included in the first place rest with the centre. Information services are becoming increasingly responsive to users' needs and it is clear that the development of new information technologies such as E-mail will increase the choice offered to users by large computerised bibliographic databases. These will be supplemented by links between databases, one of the original applications of the term 'network'. The provision of bibliographic material is often an important component of networking. Those sharing an interest in a particular theme will exchange information on the literature that they have found useful; professional librarians or documentalists are being brought into networks to strengthen these functions. The services of a stand-alone library do not constitute networking in the way the term is used here, since librarians generally do not have professional or practical involvement in the themes on which they provide literature.

The question-and-answer services provided by some organisations, such as the Intermediate Technology Development Group (ITDG) (*see Box 1 overleaf*) and Technologie Overdracht Ontwikkelings Landen (TOOL), fall closer to the definition of networking used here. Those providing the answers tend to have professional or practical involvement in the issues they handle. They often attempt to link users with local contacts who may be able to provide more appropriate and relevant technological solutions. Likewise, many appropriate technology organisations are interested in encouraging local design and production, and linking local resources together. These organisational structures and their activities will be more fully discussed in Chapters 2 and 3.

Networking versus other types of exchange

A background paper for a recent workshop suggested that a network is any group of individuals and/or organisations which on a voluntary basis exchanges information or goods or implements joint activities and which is organised in such a way that individual autonomy remains intact (ILEIA, 1992a).

The example most commonly given for exchange of goods, particularly amongst farmers and non-governmental organisations (NGOs), is that of seed exchange. This may take the form of exchanging one type of seed for another or, as has been noted in the case of potatoes, trading a main crop which would not normally be used again as seed for disease-free planting material (Cromwell, 1993).

For present purposes, exchanges of this type are excluded from the definition of networking for two reasons. First, our concern is with information exchange and, although it might be argued that certain information is encoded in the product, the main reason for its exchange has to do more with the physical and biological properties of seed and less with its information value. Second, it is not clear why this process should be termed 'networking', when the term 'barter' describes it adequately. Some argue that exchanges of this kind can be encouraged by the creation of a spirit of community among farmers so that the resulting process is characterised more by philanthropic mutual support than by commercialism (B. Haverkort, pers. comm.). Cases have certainly been reported in which a strong sense of social and cultural identity has promoted exchanges of many kinds, including those of cultivation rights at different altitudes in pre-Columbian Inca society (Kopp and Domingo, 1991). However, many such customs are in advanced stages of neglect and appear to have been tempered by a keen sense of the value of the goods or services on offer. It is by no means clear that enough of the spirit of cultural identity can be recaptured by networking in cases such as these for commercial considerations to yield to philanthropy.

Finally, one of the features of exchanges of this kind is that an individual making a contribution expects to receive an immediate quantifiable benefit. By contrast, an individual or organisation engaging in networking normally does so in the expectation of receiving some largely unquantifiable benefit at an unspecified future time.

1.2 Information exchange networks and organisations with a networking function

Information exchange networks

We define an IEN as a group of individuals or institutions linked together on a voluntary basis with the primary objective of exchanging information on themes of professional interest in cost-effective ways.

A key feature of networks is their low cost. Once one or more nodes have been set up (*see* Chapter 3), network members can share information on their own experience, and benefit from that of others, at a lower resource cost to themselves than would be the case if they had to submit articles and take out subscriptions to professional journals. The channels of network communication and their degree of formality will vary according to the size and objectives of networks. For instance, a small group of professionals working on a particular theme might keep in touch with each other most cost-effectively by occasional telephone conversations or a circular letter. A more structured network will be necessary to keep larger numbers of members in touch with each other.

It is worth stressing that networks are less formal than other means of communication such as professional journals and books. The types of information exchanged through networks may therefore never be written up in ways acceptable for formal publication. This, and the fact that they stimulate interpersonal contact, must account for much of their popularity.

The basic definition provided above needs to be qualified further:

- IENs can support several methods of information exchange. An obvious possibility is an element of research which can help to generate the information to be exchanged, to bring network members together in active assignments and to focus attention on specific themes.

- IENs can use several methods of communication. Conventionally, these include newsletters and network papers, as well as workshops and symposia. But IENs need not rely on written communication at all; for instance, a case has been described in which networking is based on farmer-to-farmer visits (Guri, 1992). It is likely that electronic media will play an increasing role in networking.
- Network objectives can vary widely. They may range, for instance, from the provision of support for practitioners working at field level to the provision of policy advice to international organisations. The choice of objectives will influence the size and composition of membership of the network, the strata in which the network operates (from policy, through to mid-level institutions and to farmers) and the blend of activities undertaken.

Organisations with a networking function

Much information exchange in agricultural development is carried out not by IENs but by a wide range of other organisations which regularly exchange thematic information as a small part of their wider mandate. This group is by far the largest and most ill-defined group of networking organisations. Some of the confusion expressed by donors and development professionals concerning the concept of networking is rooted in a lack of clear distinction between IENs and ONFs. Whereas networking is central to how IENs define their structure, organisation and objectives, ONFs are structured primarily around objectives other than networking. The objectives and structure of ONFs may impose restrictions on the types of networking they can undertake.

Box 1 The Intermediate Technology Development Group (ITDG) as an ONF

ITDG is a UK-based development agency that aims to enable poor people to develop and use productive technologies and methods which give them greater control over their own lives and which contribute to the long-term development of their communities. It does this through in-country project work in rural manufacturing, agriculture, fisheries, mineral industries, shelter and agro-processing. Through this work, it has developed a broad knowledge of appropriate technology and its adoption. ITDG provides training and advice worldwide. It has a technical enquiry unit which draws on the experience of its members and their partners in order to provide free advice to individuals and organisations. It publishes, stocks and sells a wide variety of books on appropriate technology and development.

In some countries, ITDG has worked to bring together local designers, producers and users of appropriate technology in order to improve the local technology development process. Through these and other activities, ITDG is actively promoting the exchange of information on the subject of appropriate technology as only one of its many development activities. ITDG can therefore be classified as an ONF in that it does promote links in a reasonably well-defined group, but this work remains a secondary activity of the organisation.

The contributions that local organisations can make to the development process is receiving increasing attention. Bebbington and Farrington (1993), for instance, present results from a major study of the role of NGOs in agricultural development. An earlier study by Esman and Uphoff (1984) discussed how local organisations promote three main aims: efficiency, equity and empowerment. Roughly half the methods cited by which local organisations can improve work efficiency involve improving access to information. Whilst some local organisations are concerned primarily with information provision, many could also be classified as ONFs. For instance, information exchange is ancillary to the main objectives of local producers or marketing cooperatives. It is also ancillary to the activities of local organisations promoting political change.

1.4 Summary

Despite the grey areas between IENs and other groups such as agricultural research networks or organisations in which information dissemination is the central activity, the discussion in this chapter has highlighted some of the key features of IENs. In essence, IENs are:

- more interactive and focused than processes designed solely for information dissemination
- more rapid and less formal than professional journals
- less concerned with the provision of immediate and quantifiable benefit than are systems of exchange relying on, for example, barter
- less highly formalised than agricultural research networks and less concerned with the allocation of responsibilities or resources among members
- more concerned with information exchange than research (where research is conducted, it draws more on the social sciences than is the case in agricultural research networks)

These features provide the foundations for the definition of networks and networking provided earlier in this chapter. In the next chapter these definitions are expanded by reviewing conceptual and practical issues of the structure, organisation and functions of networks, and by relating them to both IENs and to ONFs.

2

Objectives and structures in networking: Theory and practice

Networks vary widely in their objectives. Some of them aim to work directly with farmers to help them respond appropriately to the problems and opportunities they face, whilst others support the grassroots organisations that work with farmers; these organisations are usually, but not exclusively, non-governmental. Other networks focus more on policy, assembling information on practical field experience and synthesising and presenting this information in ways accessible to policy makers at national and international levels. Yet others try to influence policy through advocacy, supporting the activities of members in order to exert influence on particular issues.

In an introductory book of this kind, it is not possible to analyse in depth the different types and combinations of objectives that may be encountered. What is important for the present analysis is to recognise that networks' objectives have a strong bearing on how they are structured and managed. This chapter illustrates the link between objectives and structure. The discussion focuses first on IENs, giving examples of networking models and analysing their objectives and main structural elements. It then considers the objectives and structures of different types of ONFs.

2.1 Information exchange networks

Examples of networking models

Example 1: The hub-and-spoke networking model

The four networks operated by the Overseas Development Institute (ODI) — Irrigation Management, Pastoral Development, Agricultural Research and Extension and Rural Development Forestry — have multiple objectives whose relative importance varies from one network to another. Their objectives are:

- to facilitate the exchange of field experiences between members and so increase efficiency by allowing ideas that have succeeded in one location to be tried elsewhere, and by discouraging the replication of those that have failed
- to facilitate the testing of existing concepts and theories against these experiences, and stimulate new conceptual development
- to draw lessons from these experiences which shed new light on the policy and strategy options facing public sector agencies and non-governmental organisations (NGOs) at local, national and international levels which implement or finance activities designed to enhance rural livelihoods

ODI's emphasis on the second two objectives distinguishes it from other networks and has a strong bearing on its structure, which is similar across all four networks. The main features of this structure can be summarised thus:

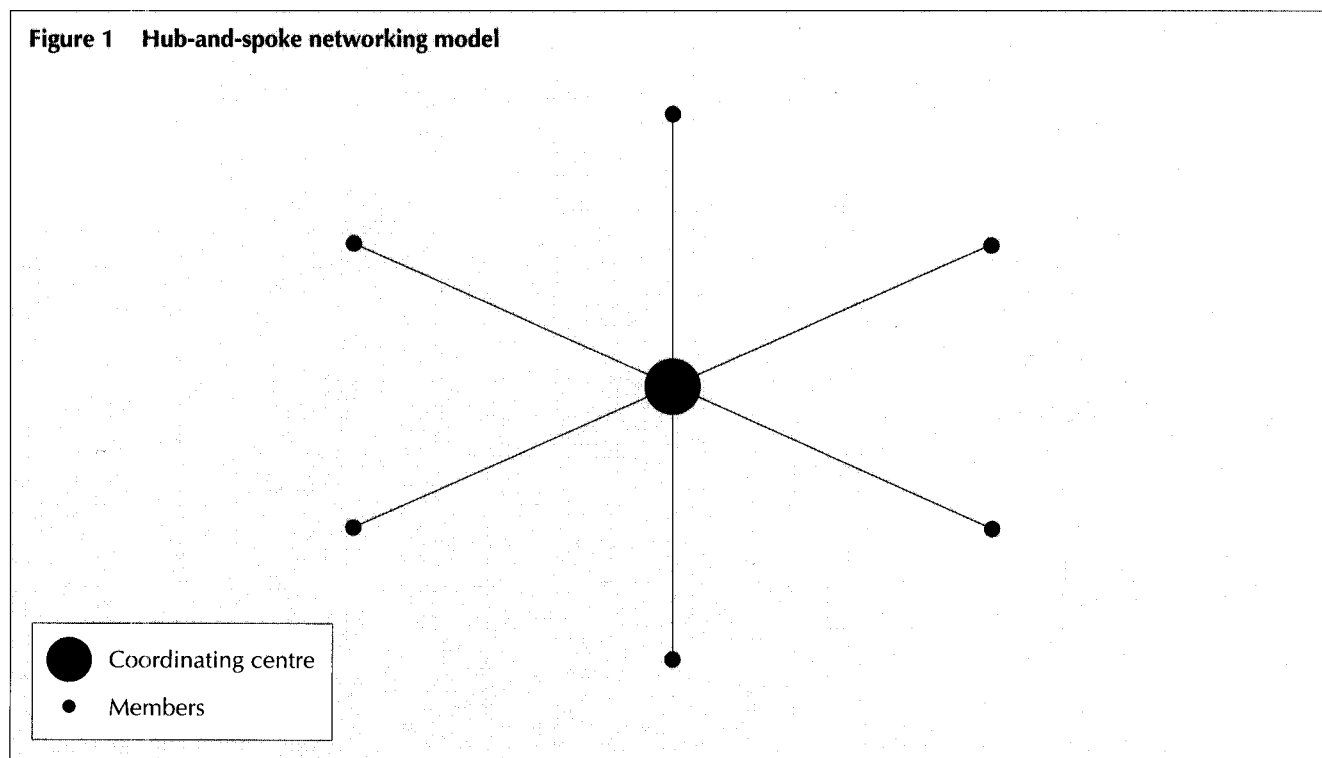
- Strong central coordination with each network is the responsibility of at least one full-time professional person, with research assistance and secretarial support. The network coordinator consults network members on the themes to be pursued within the network and on other strategic issues, but is ultimately responsible for policy on issues such as network membership, the themes to be pursued, and the editing and publication of newsletters and network papers.
- The centre compiles a register of members, including their thematic and geographical interests, professional qualifications and recent professional experience. The registers are published once every 2 years, mainly to facilitate contact between members.
- As a condition of free membership, network members send in reports on their experiences and these reports are kept in a specialist library at ODI. The library's collection and its computerised database are, in turn, made accessible to members.
- The centre facilitates research on themes of interest to network members by providing professional and, occasionally, financial support to those wishing to document their experiences. The coordinator aims to bring these experiences to the attention of policy makers by publishing them directly as network papers or by publishing syntheses within the network and elsewhere.
- Collaborative research has, in some instances, led to longer-term collaborative links between ODI and networks in the developing world.

The objectives of the ODI networks determine both the composition of membership and the structure of interactions between the centre and members, and between members themselves. Members are based mainly in the developing world (over 60%) and comprise mostly the middle/senior research and management staff of national and international public sector agencies and NGOs. A small number of academics (under 15%) from both the developed and developing world are included. All members stand to benefit from network output, but in different ways. Academics benefit from access to case study material for teaching purposes and for testing concepts and theories. Policy makers in international or bilateral development-assistance organisations may not contribute strongly to the networks' research or information exchange programmes, but they benefit from new policy insights. Staff of organisations based in the developing world contribute strongly to, and expect to gain considerably from, the networks' research and information exchange activities.

A centralised network structure is necessary if the expectations of these diverse groups of network members are to be met. This is illustrated in Figure 1 as a hub-and-spoke configuration. In the ODI case, the role of the centre has been to identify principal themes of concern to network members, to find resources to assist members in documenting their experience, to edit and publish documentation received from members, to draw lessons from their experience and to use these as a basis for reassessing existing concepts and testing new ones. Since financial resources for the operation of networks are rarely provided without strings attached, the themes identified for the network usually have to be compatible with the objectives and strategies of the network's funding agencies. The hub-and-spoke model is also characteristic of numerous agricultural research networks (Plucknett et al., 1990) in which such activities as multi-locational trials necessarily require good coordination.

It should be stressed that network structures of this kind do not imply an authoritarian style of management. Themes for research and information exchange, as in the ODI case, can be chosen in response to the wishes of network members. What is implied is that, once themes are chosen, an efficient way of pursuing them and of drawing out lessons for senior administrators is through the provision of support to those preparing material and synthesising and disseminating this information.

It should also be noted that the emergence in recent years of research and networking organisations in the developing world has encouraged ODI to collaborate with them in an increasing number of research and networking programmes. The emerging pattern at ODI is of a rim-effect network of the type depicted in Figure 2 (*page 14*), in which partner organisations within particular geographical locations in the developing world are as closely in contact with each other as with the secretariat. Parts of the rim are already in place, but there remain gaps.

Figure 1 Hub-and-spoke networking model**Example 2: The rim-effect networking model**

The Arid Lands Information Network (ALIN) is an IEN which is managed by Oxfam from its office located in Dakar, Senegal. This network is made up of more than 1000 field-based project officers working at sites spread across the arid zones of Africa. These network members are working mainly at a practical level implementing projects. Most of them do not have access to other IENs.

ALIN works to encourage increased contact and information exchange among this widely dispersed membership in three main ways:

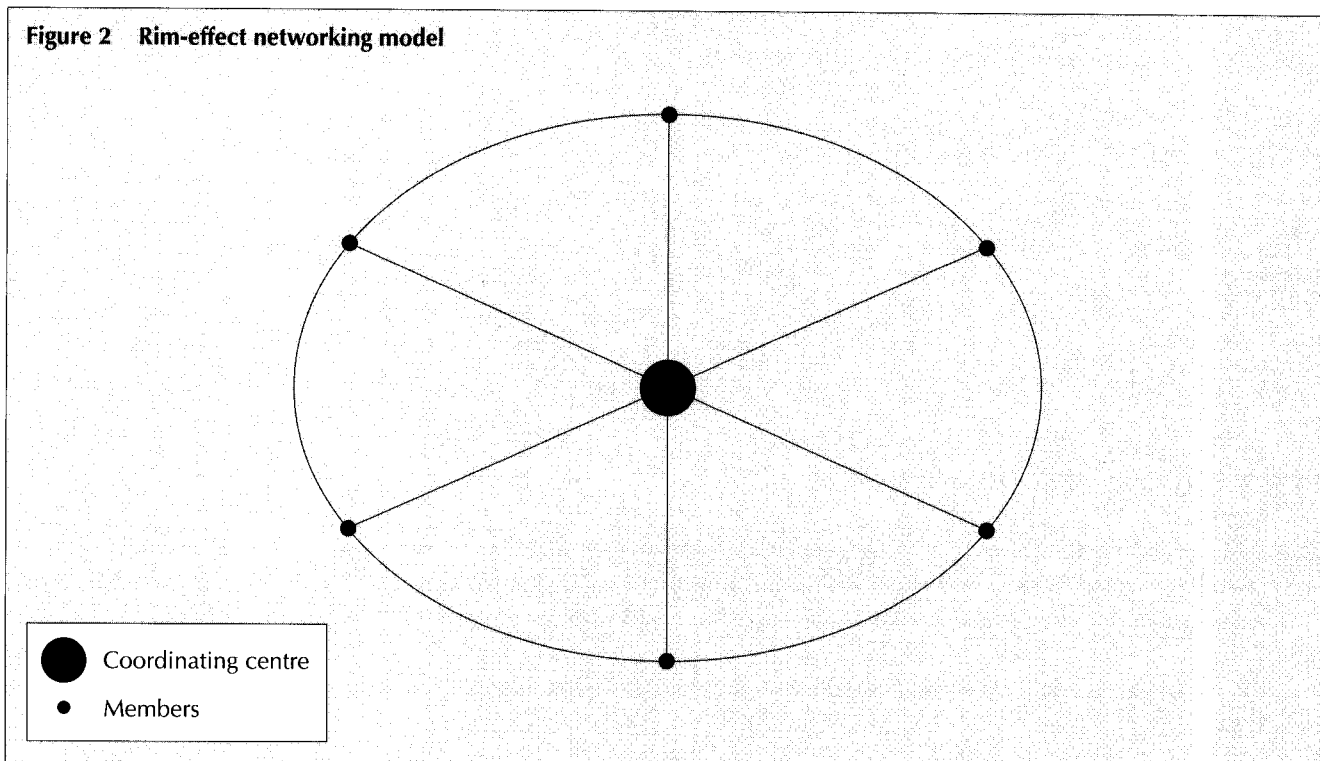
- *Publication of a newsletter:* In order to circulate information amongst the membership, ALIN staff publish a newsletter, *Baobab*, which contains network member names, information about projects and useful tips gathered from the field. All the material in this newsletter is gathered through the network.
- *Exchange visits:* ALIN staff encourage exchange visits between network members. They are able to foster this direct exchange by providing low levels of funding for exchanges and by sponsoring regional meetings between interested networkers.
- *Other publications:* ALIN has been able to produce several short practical booklets explaining in detail particular activities. These have a wider audience, such as cereal banks or paravets. Most of the information for these booklets is found within the network community.

ALIN emphasises the importance of personal contact between the members themselves and between network coordinators and members. The coordinating office provides a low level of support to members for activities such as exchange visits and regional meetings, and encourages the formation of local member groups.

Balance is a key aspect of ALIN's work. Most of the material in *Baobab* is either contributed directly to the editor by members or gathered by the network coordinators from members during extended trips in Africa. Much of the material is gathered, literally, from under the tree in discussions between project worker members and ALIN staff. ALIN staff have worked hard to define the network structure in relation to the need of the network for central coordination that fosters the efforts of the participants and increases exchange among the network members.

The structure of this network is best described by the rim-effect networking model depicted in Figure 2. In decentralised networks of this kind there is far less dependence on the centre, and strong emphasis is placed on providing individual members with the opportunity to establish their own links with other network members. This model fosters members' skills and knowledge in a practical way — sharing is carried out through active collaboration.

Figure 2 Rim-effect networking model

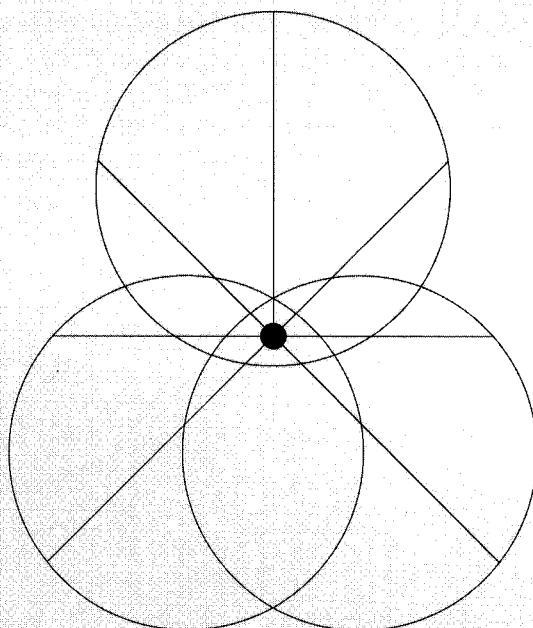


Variations on the rim-effect model include the clover network model adopted by Réseau de Recherche sur la Résistance à la Sécheresse (R³S) and Réseau Recherche-Développement (RRD) (see Figure 3). R³S and RRD are based in France, working in the field of agriculture and aiming to increase the exchange of information between their members. Both networks encourage their members to group around topics most closely related to their work and interests.

RRD encourages members to join working groups on topics such as training, land management and irrigation. These groups focus on particular topics, organise seminars and put together publications for circulation. The RRD coordinator works to facilitate greater interaction amongst the groups through a network newsletter.

R³S is a research network and the mainly African-based researchers are encouraged to work and correspond with other researchers working in similar agroecological zones and technical fields. This helps researchers who are isolated in their work to make comparisons with and complement the work of other researchers who, although working on similar themes, may be geographically distant. At the same time, all researchers have access to the wider network and all research initiatives are coordinated under an umbrella framework, ensuring the network's focus and helping researchers secure funds for their work.

In both these networks, although each working group and research cluster works mainly with a smaller group within the

Figure 3 Clover networking model

network, all members identify with and adhere to the global network. It is an important responsibility of coordinators of networks of this type to ensure that members are given the opportunity to exchange information between the 'leaves' and the 'clover'.

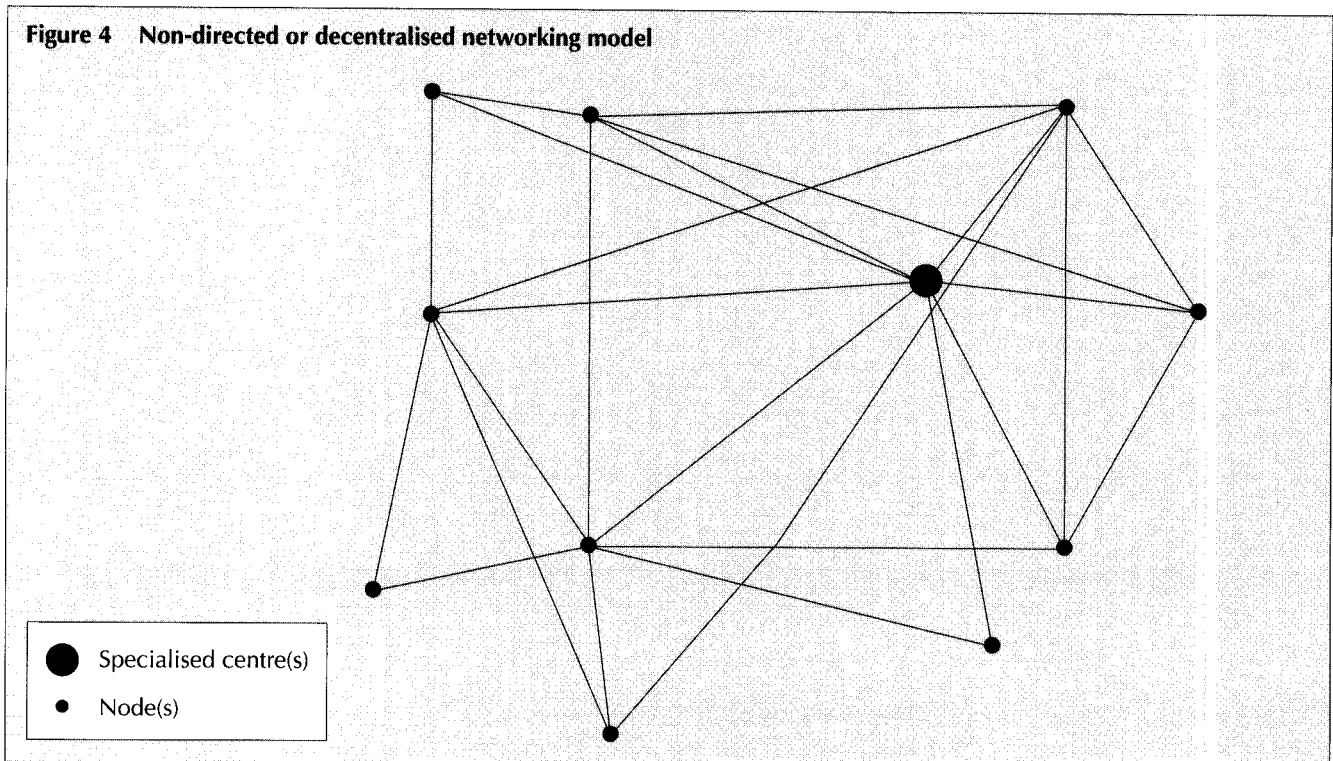
Example 3: The non-directed or decentralised networking model

Many of the networks seeking free exchange of information amongst network partners see this structure as an ideal. In this model, members actively and regularly communicate amongst themselves, and derive support only through the motor of the association. Participants know who is doing what, the resources of each member and how to reach them. Channels between individual nodes may become active or latent according to individual need, implying an informal organisational approach (Fernando, 1989). A node in this context can best be defined as an intersecting point of information exchange, such as the network coordinator or an active network member, who receives information, synthesises it and passes it on. The coordinating node may be regularly rotated within the network community and there is no great distinction amongst the membership other than in interests and objectives.

The conceptual framework adopted by Innovations et Réseau pour le Développement (IRED) approaches this model, at least in the latter stages of its evolution. Created in the early 1980s, IRED is an international association of individuals seeking to promote relationships within the developing world. It works with grassroots groups, local support organisations and financing agencies through informal structures in order to foster its partners' decision-making abilities (Vincent, 1986). IRED's philosophy is based on the idea that development can best be achieved by strengthening the autonomy of grassroots associations, by enabling these associations to make their own decisions and by exchanging experiences and information through networking activities.

The primary objective of the IRED-Asia network is to discover innovations within the network community and to communicate these to other sub-groups of the community to whom they are likely to be relevant. IRED-Asia believes that a

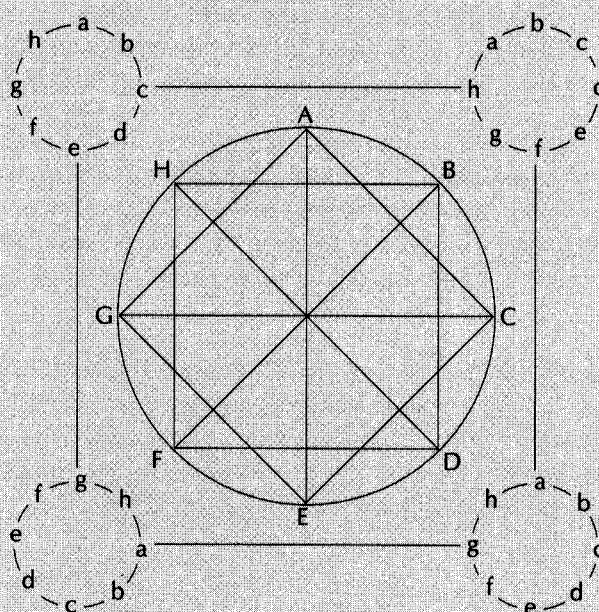
network exists where organisations recognise their links with other organisations, and that these links are constantly fluid and changing. The role of the coordinating centre is intended to diminish as the network develops, and close-knit or dense sub-networks are formed. By close-knit or dense, IRED means that a large proportion of the members know each other independently of the centre. The network structure helps this process by identifying those who share common interests and so might form networks of their own, and by facilitating common work to respond to the shared objectives. Although this process is in its early stages, ultimately the Asian centre will become just another focal point within the wider network (*see* Figure 4).



The decentralised model is very difficult for networks to achieve without the original network itself disappearing as an organised structure, because as this ideal objective is approached, the structure of the original network inevitably becomes less important. Ideal networks of this type will not be dealt with in any great depth in this book. This model is introduced as an ideal concept that serves as a goal for some IENs and ONFs. What is interesting about the model is that it is an accurate portrayal of how people generally communicate with each other. One difference between the work of IENs and routine communication is that IENs attempt to organise the exchange of information around themes. Many ONFs which are less concerned with structure and hierarchy see this as an ideal state, and many of their activities can be categorised in this manner.

Example 4: The devolved secretariat model

The Animal Traction Network for Eastern and Southern Africa (ATNESA) committee envisages a network model which is coordinated through a secretariat with devolved responsibilities (Starkey, 1992). The committee is seeking to ensure that the formation of a secretariat does not lead to a centralisation of power and ideas, but rather provides for flexibility of operation and a more manageable information exchange process (*see* Figure 5).

Figure 5 Devolved secretariat networking model

Source: Starkey (1992)

Potential advantages and constraints of networking

Advantages

IENs and ONFs are seen as important tools for agricultural development. They build on the principles incorporated in the informal networks that have long existed in rural societies. A recent study has identified over 100 networking organisations active in four African countries: Burkina Faso, Mali, Niger and Senegal (Sow et al., 1991).

There is wide agreement that networking can bring a number of potential advantages:

- *Exchange:* One of the principle advantages of IENs and ONFs is that they promote the exchange of ideas and information between individuals and groups who would not otherwise regularly communicate with each other. Networking provides a stimulus to making useful unpublished information widely available and to ensuring that such information is written down in the first place. This provides workers with increased access to the experiences of others and to alternative perspectives on problems similar to their own, opening up their awareness of other experiences and the range of choices available to them. It promotes interaction and exchange among the networking community, often providing an active forum for debate. This exchange may be horizontal (between similar types of individuals or organisations) or vertical (between farmers, researchers, policy makers and international agencies) (Starkey, 1992).
- *Focus:* A network helps to focus the efforts of an often dispersed and hard-pressed community of development workers. Practitioners at the cutting-edge of development can rarely find time to share their experiences with others or to search out experiences relevant to their own work. Networks can play an important role in this context. They can also provide a common direction for collaborative efforts. Groups can join together on a limited agenda while maintaining their autonomy. An important spin-off from networking is the institutional channel it provides for such activities as soliciting funds for cooperative ventures, pooling funds for bulk purchases and providing the critical mass needed to promote new agendas.

- *Management:* Networks are often able to combine simplicity of operation with structural flexibility in order to foster a rapid response to the needs of their members. Many networks offer light, decentralised administration with no set form. This provides an alternative development strategy for many practitioners and administrators who are trying to move on from outdated top-down approaches. Networks are often able to facilitate participation by rural people in the design of processes of change, thereby enhancing their likely relevance and increasing the likelihood that any assets created will be owned by the people.
- *Resource use:* Networks have the potential to prevent the duplication of effort in such activities as experimentation, documentation and publication. They are able to match local needs with resources and reduce the risks faced by individuals who are working in difficult environments. As the example of the ODI Irrigation Management Network described in Appendix 1 demonstrates, the quantifiable benefits attributable to networking can be high compared with their operating costs.
- *Synergy:* Networks offer the opportunity to use the synergy of a group to find solutions to common problems (Haverkort and Ducommun, n.d.). They are able to act as a catalyst in encouraging new ideas and forms. Their flexibility promotes an adaptive logic; many technocratic structures could benefit from an understanding of how social structures such as networks respond to problems. As has been seen with the work of ILEIA, networks are able to validate local knowledge in a way that is beneficial to the process of agricultural development (Reijntes et al., 1992).

Constraints

International networks are susceptible to two main problems — heterogeneity of context and heterogeneity of membership.

The social, political, economic and agroecological contexts facing members drawn from numerous countries are highly diverse. As a result, most members may have difficulty in relating to the experiences reported from individual locations. A further problem is posed by the treatment of themes in such heterogeneous conditions. Network coordinators may be tempted to underestimate the situation-specificity of particular findings and to over-generalise the relevance of results arising from particular case studies or syntheses.

Heterogeneity of membership often characterises international networks. These networks often try to reach many types and levels of actors in the development process, such as project directors, academics, aid administrators, government extension workers and NGO field staff. The difficulty arises in identifying themes, levels of analysis and modes of communication equally accessible to all.

Other constraints facing international networks include:

- low levels of exchange between the coordinator and much of the network membership, and a tendency for coordinators to work most closely with a smaller, more accessible group within the network
- a tendency for the network secretariat to become simply a publishing organisation with a wide range of worldwide contacts on which to draw
- an inability to discover how relevant the work of the secretariat is to the rest of the network, and difficulty in determining what results, positive or negative, are attributable to network activity
- inadequate criteria for membership selection, resulting in a diverse membership about which little is known (membership can grow out of control, especially in those organisations fortunate enough to have the resources for this kind of growth, with the result that a high proportion of members are simply passive recipients of information)
- a bias in the language of newsletters and publications against particular groups (this is common when the emphasis of a newsletter shifts towards policy issues and begins to use jargon unfamiliar to, for example, field workers)

National or local networks within developing countries face some of the constraints to which international networks are susceptible, such as those relating to monitoring or evaluating impact, but they may also be constrained by:

- intrusion from the developed world, either in the form of insensitive expansionism by networks from the developed world into territory (spatial or thematic) which those in the developing world regard as their own, or in the form of excessive interference by funding agencies in network operation or agenda setting
- inadequate financial or technical resources for the satisfactory coordination and operation of networks
- inadequate coordination with and learning from other networks
- inadequate infrastructure (for example, postal and telecommunications services) to allow information handling consistent with the network's communication requirements
- political suspicion, particularly if the government is sensitive to the themes treated by networks

Preconditions for successful networking

The coordinator of any established network can identify the main precondition for success. During the preparation of this book, coordinators were asked to list the factors they considered crucial to successful networking. A comparison of these factors reveals numerous similarities; these are summarised here. There is no suggestion that all networks should meet all these preconditions, simply that network coordinators and members should be aware of them, since many will be important during some stages in the evolution of a network.

Widely shared problem or goal

This is the factor most commonly highlighted as a key to network viability. To generate interaction among individuals working in different institutional and geographical settings, an issue of common interest must be identified. For instance, the development of alley farming methods in the context of a search for sustainable farming systems is the issue which links the widely differing institutions in the Alley Farming Network for Africa (AFNETA). The perceived need to develop principles and practices in low external input and sustainable agriculture (LEISA) is one of the bonds linking NGOs participating in CAME; another is the need for training in these practices. Government institutions are attracted to CAME by their perceived need for policy guidelines to promote this type of farming.

Realistic strategy for working towards solutions

Networks benefit from clear objectives, and network activities cannot simply be random. They should be guided by a strategy which offers viable prospects of achieving set objectives. This strategy may be outlined in a well-formulated conceptual framework, such as that developed by IRED (outlined in Example 3, *page 15*) (Vincent, 1986), or be more pragmatic, being based on existing advantages and constraints.

Capacity to contribute

In the eyes of many network coordinators, members must have the capacity to contribute resources, time or information if the network is to operate effectively. This is a logical necessity of any collaborative action. Members should use their individual

comparative advantage in certain areas to complement those of others. For example, institutions with the basic communication infrastructure (telephones, typewriters and word processors) necessary to bring network participants together may be able to complement the efforts of smaller organisations who may have field personnel with access to a wide range of experiences. A range of resources and skills can be brought together in this way to produce a well-balanced and consolidated network.

Development of skills

Networkers' skills may develop as a by-product of membership. For instance, simply reading about experiences in farmer participatory research may encourage members to try out participatory methods in their own work. Often, however, networks may make specific arrangements for training. Examples observed include training in issues addressed by the network such as rapid rural appraisal (RRA) methods or the development of skills to allow members to get more out of the networks themselves, including the use of new information technologies such as bibliographic database management, electronic conferencing, bulletin boards and other types of E-mail. Concrete network activities help to consolidate networks and raise the confidence level of individual members.

Balance between structured and flexible management styles

Networks seeking to achieve particular objectives by sharing out work among members so that each contributes to the whole will need highly structured management processes of the kind that characterise the agricultural research networks mentioned in Chapter 1. Some IENs seeking to make an impact on a particular audience will also need structured management processes. For instance, the ODI Agricultural Research and Extension Network has sought to do this through research and information exchange on interactions between NGOs and government research and extension services. In other cases, particularly with local, grassroots-based networks, the emphasis is likely to be on loosely structured network management which allows sufficient flexibility for the diverse and rapidly changing perspectives and experiences generated through close interaction with the rural poor to be captured in the network and shared. This is also important to ensure that initiative within the network framework is not restrained in any way. It is the encouragement of spontaneous contact that many smaller networks hope to foster. For example, AGRECOL's approach to building up relationships with contacts works in a very personal and spontaneous manner, which is important for an organisation working with relatively scarce resources.

Motivational stimuli

This is an important component of the ethos of an active IEN, particularly one that is working to consolidate some regular exchange process ('active' means that at least two-way exchange is taking place). It is important to stimulate and facilitate members' involvement through exchanging information and resources, communicating regularly and sharing in management (Vincent, 1986). Through the experience of interaction, the most appropriate network processes will begin to emerge, and a strongly motivated membership will identify and overcome the practical problems that are bound to occur.

Balanced partnerships

This is a vital and often a clearly stated principle for many of the more decentralised IENs and ONFs, particularly those based in the developed world which want to ensure that they keep a low profile and prevent the development of unequal power relationships. ILEIA is clear about its regionalisation intentions. It aims, for instance, 'to support the establishment of regional LEISA networks in the tropics, and associated small libraries and information/documentation centres' (Reijntes et al., 1992).

A further example of a strategy to decentralise power is promoted by El Taller, an international network of NGOs. El Taller has developed a system whereby voting rights on important network issues are distributed by continent, so that single regions will be unable to dominate the network's overall development. A balance between the nodes of the network is important in order to realise the full potential both of the network and of the individual participants. Networks by nature take on the character of their participants. Dominant actors run the risk of marginalising the efforts of individual sources of information and experience.

2.2 Organisations with a networking function

The example of the Intermediate Technology Development Group (ITDG) provided in Chapter 1 illustrated some of the ways in which ONFs are distinguished from IENs by their wider range of activities. ITDG, for example, whilst promoting information exchange and interaction between groups within countries of the developing world, also promotes information dissemination through a question-and-answer service and is concerned with research into appropriate technology equipment and tools. It would therefore be unreasonable to expect organisations such as ITDG which have multiple objectives and functions to be structured solely around information exchange.

A selection of other types of ONFs is examined in this section, and conclusions drawn concerning their structures and activities.

Types of organisations

Information-provision and service organisations

Increasing awareness that specific information needs must be met if technology development is to make progress has led to the emergence of many organisations of this type. These organisations work at several levels. Our interest is primarily in those that promote interaction among partners. ITDG and the AGROMISA question-and-answer service run by volunteers in the Netherlands both offer an information service to many developing country groups and individuals. They maintain computerised databases of users' queries which make up ITDG's technical briefs and the popular AGRODOK series published by AGROMISA. Both publication series provide concise explanations and references which direct the reader to sources of further information.

To some extent, AGRINET, an association of European-based networks concerned with agricultural development, is a service organisation of this kind. It is dedicated to improving the operational efficiency of individual networks through the organisation of linking activities, such as informing the wider group about the activities of the individual networks and opening up access to the various small documentation centres to the wider network community.

All these organisations are interested and active in encouraging more interaction among their partners. ITDG provides training and information for project partners and others who are trying to develop and use production technology and methods appropriate to locally available abilities and resources. It has offices worldwide and works to link producers of appropriate technology to those looking for technologies which suit specific production systems. AGROMISA, like many other organisations, refers some queries to local contacts, so that more location-specific interventions or solutions may be devised.

Activist networks

These are advocacy organisations, made up of a diverse range of local and international associations which group together for mutual support and information exchange and actively pursue changes in policy through the political process. They include organisations such as Genetic Resources Action International (GRAIN), Pesticides Action Network (PAN), the International Federation of Organic Agriculture Movements (IFOAM) and the International Baby Food Action Network (IBFAN).

GRAIN was established to launch a new decade of popular action against the erosion of genetic resources, seen by many as a threat to sustainable development in many countries in the developing world. This decentralised organisation is managed by a small number of full-time staff based in Spain and aims to stimulate public awareness of the problem, to increase knowledge and understanding of the causes of genetic erosion and to stimulate activities and policies to address the problem. It does this by supporting individuals, local institutions and public interest groups worldwide, by facilitating communication and cooperation amongst them, by providing current information and by initiating special projects addressing key areas of the political debate, which often result in persuasive publications. GRAIN is active in information monitoring and dissemination and works hard to establish links between campaigning and research organisations in the developed and developing world. It has no active documentation programme, although it tends to collect information on a needs basis and publishes several newsletters to provide information about both the campaigning activities and the worldwide programme.

IBFAN is noted for its decentralised nature, being described by one observer as 'jellylike' (Allain, 1991). Most advocacy networkers stress the decentralised nature of their organisations and view this characteristic as one of the principle strengths of their movement. ONFs of this type have become increasingly active over the past decade as grassroots organisations group together to strive for long-term change.

Strategic networks

Strategic networks differ slightly from activist networks. They have generally developed from the perspective of local NGOs, and most of them work to change unresponsive institutions through direct processes (Korten, 1990). Activist organisations adopt a high profile in order to influence legislation and the wider community. Strategic networks, however, tend to maintain a lower political profile whilst looking for common ground with other NGOs and groups. Korten (1990) cites the example of the Project for Ecological Recovery (PER), a Thai environmental NGO which was able to find common ground among local people, students, environmentalists and journalists in order to form a network that was instrumental in preventing the construction of the Nam Choan Dam.

Local organisations

This group may be the most important and diverse type of ONF. It includes many local organisations, such as farmer groups and interest clubs. Such groups are growing in number as it becomes more widely recognised that processes of change must be owned by local communities and groups if they are to be sustainable. According to Esman and Uphoff (1984), local organisations are especially suited to fostering the development process because they are able to provide more accurate and representative information, adapt programmes to local conditions, promote group communication, mobilise local resources, provide a source of local technical knowledge, assist in the utilisation and maintenance of facilities for local programmes and promote cooperation.

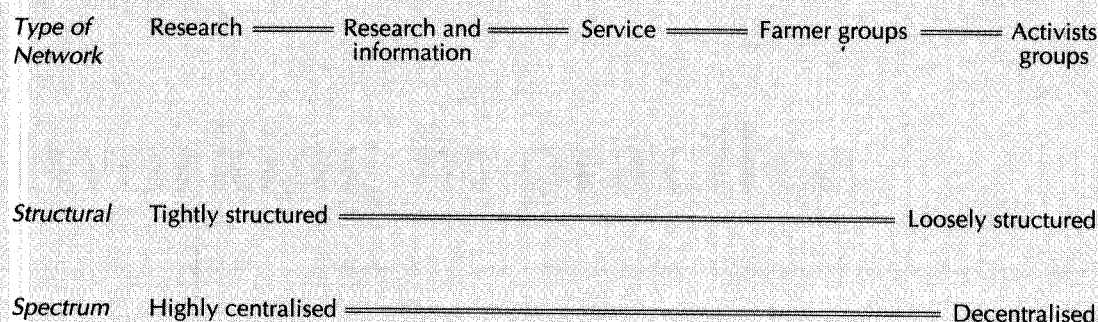
This type of local organisation includes such groups as the Mampong Valley Agroforestry Association in Ghana and the Land Stewardship Program in the United States (ILEIA, 1992a). Both these initiatives are rooted in farmers' organisations and attempt to link farmers facing similar problems and constraints through meetings and outreach programmes such as exchange visits or the production of videos addressing particular themes. The Mampong Valley Agroforestry Association was established by a group of farmers in Ghana who were already promoting various agroforestry activities in the local area and who saw the need to share ideas and experiences with local communities. After meeting, they decided to set up an association with the specific goal of sharing experiences and promoting regenerative agricultural technologies. The group began to hold local meetings and organise field visits to other farms in the country and to compare farming methods and results with other farmers. It is collaborating with other formal organisations and farmers' groups in the region for similar purposes. At both local and national levels, it is widely recognised to be making significant progress in developing locally appropriate and sustainable agricultural practices.

Many local organisations have become formally registered, partly since official status is required by some funding organisations. External donors rarely have the capacity to identify which groups merit support for which activity. Increasingly, therefore, they channel funds through international NGOs and rely on them to identify, prepare, monitor and evaluate projects jointly with local organisations (Bebbington and Thiele, 1993).

Organisational structure

In principle, the structure of networking activities of ONFs may be based on the hub-and-spoke, rim-effect, decentralised or devolved secretariat models characteristic of IENs. In practice, however, many of the ONFs examined in this study lie at or near the unstructured and decentralised end of the spectrum, as the above examples indicate. This is illustrated in Figure 6.

Figure 6 A comparison of the structure of the networking activities of IENs and ONFs



2.3 Summary

For IENs, the elements of fundamental importance include:

- a widely recognised problem or need and a commonly understood objective
- an evident self-interest by participants in the existence and operation of the network
- realism and focus in the network strategy
- a dynamic network coordinator or facilitator
- flexible and active channels of two-way exchange

The structures of IENs are intimately related to objectives. Day-to-day objectives include exchanging information, analysing and influencing particular issues and considering how power is shared within the network. It is also important to bear in mind the role of the centre in developing the activities and capabilities of the members, and the type and extent of links that might

develop between members, both within the network and independently of the coordinator. Four broad types of IEN structure were identified in this chapter: hub-and-spoke, rim-effect, decentralised and devolved. The fact that not all networks fit neatly into this classification means that it must be interpreted with caution, but at least it provides the basis for an analytical framework.

For ONFs, information exchange is only one of numerous objectives, and thus their structures are unlikely to be determined by the requirements of the networking component alone. Whilst generalisation is difficult, many ONFs, even those operating at international level, appear to be located at the loosely structured end of the spectrum.

3

An overview of networking activities

This chapter presents an overview of the types of information exchange and support activities undertaken by IENs. It shows that, despite differences in structure and objectives, numerous similarities exist in the types of activities undertaken by IENs and that the information exchange activities of ONFs draw on many of the same components as those of IENs. It then considers networking activities on a conceptual plane, demonstrating that these activities derive from the perceptions of individual networks and their objectives and that the types and combinations of activities undertaken will evolve over time.

The different objectives and structures of the networks described in Boxes 3, 4 and 5 generate some of the differences in activities undertaken and in the emphasis placed upon these activities. There are also a number of features held in common. Most networks publish newsletters and organise workshops. Many produce publications, both for circulation within the network and for commercial publication. Several networks have accumulated library collections which they refer to in their work and make accessible to members. Details of membership are kept on computerised databases in many networks; in some cases, these are published, together with details of interests and experience, and distributed to members.

Box 3 AGRECOL

AGRECOL was established by a Swiss ecological centre to promote autonomous agricultural development in the developing world. It aims to facilitate access to existing practical and theoretical knowledge on ecologically sustainable farming methods and systems by developing countries. AGRECOL's activities include:

- establishing developing country contacts through informal channels
- a question-and-answer service
- promoting and using local knowledge
- diffusing practical literature
- initiating a multi-lingual documentation centre specialising in collecting practical small-scale technology information
- a visitor service for Europe

Workshops have become an important aspect of AGRECOL's work, with staff using a low-profile approach and dispersed contacts to establish links with developing country partners. AGRECOL encourages partners in developing countries to organise meetings with other developing country organisations interested in low external input technology, to share experiences and to organise group activities. It has also begun a project to help active partners establish their own small libraries.

Box 4 The Natural Farming Network

The Natural Farming Network is an informal grouping of NGOs and Zimbabwe governmental organisations which are collaborating to promote natural farming methods. The formalisation of this network was necessary in order to maintain links between different groups with this common goal. In 1990 the network organised an exchange visit between Kenyan and Zimbabwean farmers and extensionists. This exchange was seen as an effective linking experience which also provided a rare opportunity for farmers and extensionists to exchange both practical and theoretical knowledge in an open forum. A network coordinator has been appointed to take charge of future network activities, including outreach to other NGOs, additional national, regional and international exchanges, and other activities to promote natural farming in Zimbabwe.

Box 5 The Alley Farming Network for Tropical Africa (AFNETA)

AFNETA is a formal network established to promote research and development activities on sustainable cropping systems, based on alley farming and general agroforestry principles. This network includes researchers, with both individuals and institutions taking part. The network coordinator works to promote exchange between members through correspondence, the production of a newsletter and the organisation of conferences, and promotes training for individuals within projects and for groups at one of the four regional training centres. AFNETA is developing a programme of collaborative research projects between national agricultural research systems in the region and is actively seeking donor funding for this work. The formal network structure is seen as a useful tool for achieving common goals for its workers.

A number of decisions have to be taken (*see* Box 6) before the activities of a network can be determined. These decisions relate to objectives, orientation, the context in which the network operates and the constraints it is likely to face.

Box 6 Decisions to be taken prior to determining network activities

		<i>Examples</i>
One or more objectives; these may be:	<ul style="list-style-type: none"> • general • specific 	<ul style="list-style-type: none"> • promote agricultural development • stimulate indigenous technology development
A broad orientation has to be determined; this may be:	<ul style="list-style-type: none"> • geographic • thematic 	<ul style="list-style-type: none"> • arid zones; francophone Africa • LEISA; research methods; role of NGOs
Understanding is needed of the context in which the network is to operate:	<ul style="list-style-type: none"> • historical/cultural • political • economic 	<ul style="list-style-type: none"> • cultural/ethnic identities; colonial influences • internal: forces for and against democracy • external: conflicts between countries or regions • foreign trade dependencies; structural adjustment pressures
Understanding is needed of conditions and constraints in:	<ul style="list-style-type: none"> • resource availability • client heterogeneity 	<ul style="list-style-type: none"> • relative availability of finance and practical experience • literacy levels; mix of policy practical focus

Box 7 illustrates how the analysis of objectives, themes, context and constraints has led to the selection of a set of activities which will meet the perceived needs of the membership. The networking activities suggested in Box 7 include meetings and group discussions, visits and exchanges, policy research workshops, training, and the publication of newsletters and network papers. These activities, together with the more routine support and management tasks with which networks are faced, are discussed here and then analysed in detail in Chapters 4 and 5.

Box 7 Network objectives, themes, context and constraints, and activities

Example 1: Red de Agricultura Ecológica (RAE)

Objectives:

General: To promote ecological agriculture as part of an eco-development strategy

Specific: To promote information exchange among individuals and institutions engaged in aspects of the theme

Themes:

Peru. The conservation of soil fertility. The avoidance of the use of agrochemicals. Social, economic and technical sustainability.

Context and constraints:

Members mostly NGOs with rural development programmes. Local groups already exist. Interest from many heads of staff, teachers and extensionists already evident. Agronomists, biologists, economists and sociologists.

Activities:

Focus on the coordination of member programmes, human resource development, provision and exchange of information, and influencing public opinion. Activities include: the elaboration of common bases and guidelines about scientific and technical principles, the production of a member register which includes information on the activities and experiences of members, the establishment of working groups around particular themes, the development of training courses and materials, the establishment of a library and a newsletter, and the organisation of workshops and larger conferences.

Example 2: Information Centre for Low External Input and Sustainable Agriculture (ILEIA)

ILEIA was established to gather information on the experiences of indigenous farm technology development in developing countries in order to:

- gain evidence of the methodology and viability of low external input agricultural systems
- share this information with the development community
- bring the concept of low external input and sustainable agriculture (LEISA) to the international policy agenda

A contact list was established and through active communication by the project staff this list began to grow quickly, resulting in a register. The ILEIA documentation centre was initiated to collect the experiences and information about LEISA technologies and the many examples of farmer participation in technology development. The ILEIA newsletter circulates to subscribers in the developed and developing world. A series of workshops have been held around popular themes and a small library project is encouraging the more active members in developing countries to start their own documentation centres. There is also a policy of actively supporting the emergence of networks based in developing countries.

3.1 Network activities

Once the central theme and objectives of a network have been established and the potential participants identified, the activities of the network can start. The broad categories of activities that may be undertaken include exchange activities, production and dissemination activities, and management activities. This classification is based on that devised by Innovations et Réseau pour le Développement (IRED), modified to highlight management activities according to our broader definition of networking.

Exchange activities

Most activities undertaken by IENs and ONSs are directly related to the exchange of information, experiences or people. It should be noted that some networks, such as those operated by ODI, also aim to conduct some of the research needed to generate new information. Many of these activities take place through a variety of media. These must be appropriate to the level of participation in the network, the network culture and the stated objectives of the network.

Some of the ways in which information is exchanged in a network are:

- *Word of mouth:* This is the tool of information exchange most commonly used by networks. Most networks are informal and personal, and speaking directly to another person is the quickest and most efficient way of sharing information.
- *Working groups:* RRD's working groups draw on the larger network community. These groups focus on specific sub-sectors within the network's mandate to provide a forum for discussion around certain topics, including irrigation, land management and training. Workshops are the most common means deployed by these groups for carrying forward work proposals.
- *Workshops and seminars:* Most networking organisations use workshops and seminars to provide opportunities for small group discussions in order to refine the work of the network. Workshops are short (from half a day to a week) interactive meetings of network members who gather to address particular ideas, themes or problems facing the sector. They are also useful in bringing individuals from different technical disciplines together to work on particular ideas, which helps to bridge the gaps that often exist between disciplines. More information on workshops is given in Chapter 4.
- *Postal services:* Postal services provide another common form of communication within networks, particularly between the developed and the developing world, when personal contact is rare and telecommunications expensive. Most organisations which operate question-and-answer services, such as German Appropriate Technology Exchange (GATE), AGROMISA and ITDG, communicate with their clients in the developing world almost exclusively through written correspondence.
- *Electronic telecommunications:* Electronic telecommunications include telephones, facsimile transmissions (faxes) and E-mail. The use of these media is expanding within the developing world and between the developed and developing worlds. As the technologies develop, infrastructure will be built up, and costs reduced. More information is given in Chapter 5.
- *Exchange visits:* Exchange visits provide a valuable opportunity for network members to gain a wider perspective on common problems. Farm visits and staff exchanges promote real sharing between network members.

Production and dissemination activities

The production and dissemination activities of a network range from producing publications to providing training. The most common activities are:

- *Newsletters:* Newsletters are a popular means of sharing experiences and ideas in many networks. They represent a tangible output of the network and help to establish its identity.

- *Special papers, discussion papers and network papers:* Often the result of workshops or the experiences of network members, papers provide an opportunity to explore particular issues in greater depth. Their circulation to the larger group can spark further discussion through the newsletter and may be used by other organisations looking for well-documented experiences. ODI's *Network Papers* and GRAIN's *Disclosures* fit into this category; both tackle particular topics in greater depth than would be possible in a newsletter.
- *Publications:* Much network output results in the publication of technical booklets, workshop syntheses and longer books. Publications of this type make the results of research available to a wider audience than the network membership alone.
- *Training:* Training provides a useful vehicle for sharing the experiences that have been accumulated by network members, especially in the implementation of particular methods or techniques. Since members expect to have equal status within a network, the focus may be less explicitly on training and more on training workshops, which implies an interactive rather than a didactic approach.

Management activities

Network coordination staff need to monitor the network's performance at regular intervals. Apart from routine administrative and financial monitoring, regular reviews are needed of how productive the exploration of particular themes has been. This may lead to some change in the balance of particular media used to address the theme; for example, it might be necessary to move away from written communication towards workshops, or vice versa, or it may involve shifts towards new themes.

Network coordinators will also be required by funding agencies to participate in a regular evaluation of network output. This is best treated as self-evaluation which can be used as an important learning mechanism, as discussed in Appendix 1.

Regular re-registration of members is essential to ensure that network output is not sent to those whose interests or functions have changed or to addresses that have become redundant as members move on. ODI networks were among the first to publish and circulate registers of members. These registers were derived from a computerised database in a format subsequently adapted by ILEIA and others. They contain information, by country, on the interests, disciplines and recent professional experience of members.

3.2 The evolution of a network

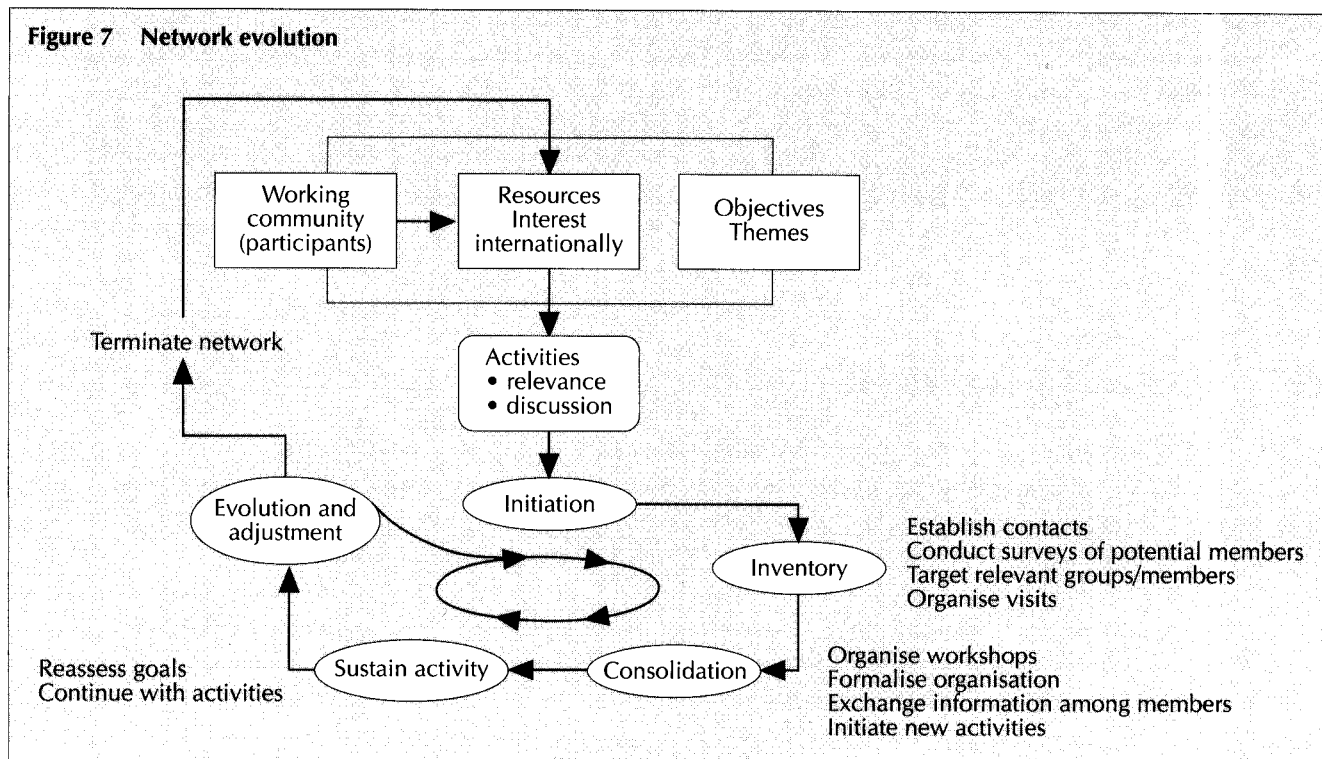
From a review of the literature and from discussions with IEN coordinators, it appears that IENs pass through an evolutionary cycle as they mature, reach objectives and change their activities or cease operating. Five stages in this evolutionary path are outlined here. It should be emphasised that these are not stages through which all IENs must pass. They are simply presented as a guideline for those wishing to set up networks. Figure 7 (*overleaf*) illustrates the process.

- 1 *Initiation:* The initiative is often taken by individuals, but it may also be the result of discussions between a group of organisations or individuals who recognise the common needs and objectives of the group. This commonly occurs during or after a workshop, when workers are meeting around a theme of specific interest to all the participants. This core group may formalise their association in some way (for example, through the definition of a common mandate); it is important that such a definition be flexible at this stage so as not to exclude potentially relevant organisations or activities that may come to light later.
- 2 *Inventory:* At this stage the core group begins to identify other participants who have the potential to contribute to and gain from the activities of the network. Sometimes this involves questionnaires and visits to farms or institutions by motivated actors, as the core group attempts to target particular areas of activity. It is important to focus on clearly identified issues and to design the network's structure around them so that the objectives do not become too vague.

- 3 *Consolidation*: At this stage members of the group begin to act together. Meetings and workshops are organised, rules of association are discussed and drawn up, exchanges and study tours are organised, and a need begins to emerge for some regular means of communication between members.
- 4 *Sustain activity*: It is at this point that the network begins to mature. Certain activities are being carried out regularly and experience in working together is highlighting strengths and weaknesses in the network. There may be a cycle of shifting responsibilities amongst network participants, as individuals adapt to its operation. A core membership is maintained and new participants are regularly identified and included. A newsletter is regularly circulated to exchange views and experiences, and this may stimulate a further expansion of the network membership.
- 5 *Evolution and adjustment*: Once a regular set of activities is being implemented, the network will be evaluated in some way, formally or informally (*see* Appendix 1 for a discussion of network evaluation). Strengths and weaknesses are identified and the relevance of the initial objectives are examined in light of experience. It may be found that the goals of the association have been reached and the more formal activities of the network may be terminated, although this is rarely the case. More commonly, networks shift their priorities and move on to new activities.

At this stage, many networks begin to consider decentralising or devolving activities and responsibilities to network members or member institutions. This is a common consideration in cohesive networks which want to avoid a bias towards information dissemination by encouraging greater member participation.

Figure 7 Network evolution



Examples of network evolution

RAE, the network highlighted in Box 7, provides an excellent example of how a network forms, operates and evolves over time (ILEIA, 1992a). Another example of network evolution is provided in Box 8.

Box 8 Development of the User's Perspective with Agricultural Research and Development Network (UPWARD)

UPWARD was born out of discontent in the agricultural development community and a desire to incorporate a more holistic appreciation of the effects of new agricultural technology. It was a response from within the International Potato Centre (CIP) to redirect research and development so that it would gain more benefit from, and ultimately be of more benefit to, new technology users (direct and indirect) and the environment, through greater use of an adaptive logic and farmers' perspectives to the new technology generation. This Asian research network is philosophy-based. Steps undertaken since the network's launch in 1990 include:

- an inaugural meeting of interested researchers, professors, research administrators, NGO representatives and policy makers
- a statement of willingness to support young, independent researchers, innovative research and novel approaches to agricultural problems; funds made available for this effort were secured from the Dutch government
- hands-on training and interdisciplinary workshops to upgrade research capacities, and in-country and regional training on farm household diagnostic skills
- encouragement at echo-seminars by trainees
- attempts to influence research directions and public policy externally through the newsletter, *Notes from the Field*; consideration was given to the publication of research reports as working papers
- organising conferences, including the annual UPWARD conferences, and regional conferences (such as the Asian Farming Systems Conference and the Homegardeners Conference)
- monetary awards for research papers embodying the UPWARD philosophy
- review of research proposals for funding
- clarification of research agenda

UPWARD remains an informal research network of about 50 members, linked only by common activities and philosophies. It actively promotes dialogue between natural and social scientists, and between old and young researchers. It looks forward to consolidating its programme and transferring work initiatives to the wider UPWARD membership.

Initiation

The initial network concept for RAE came out of a national conference on ecological agriculture in Peru in 1989, where participating NGOs decided to promote ecological agriculture as part of an eco-development strategy and to constitute a coordinating group of NGOs to support and implement network activities with other NGOs.

Inventory

The coordinating group, known as Coordinadora Nacional de Agricultura Ecológica (CONAE), carried out much of the initial work without specifically assigned personnel or financial resources.

The work which was completed before the second national conference took place included: the preparation of papers for the conference; the formulation of proposals for experimental work, experience registers and training courses; lectures and workshop participation; coordination and exchange with other regional networks and network membership; and the preparation of the proceedings from the first workshop.

Consolidating and sustaining activities

At the second conference, the formal constitution of RAE was ratified and a plan of action for 1991 to 1992 was approved. This plan emphasised the strengthening of ecological agriculture within the regions, mainly through information sharing and training. The activities carried out included: documentation of the experiences of conference participants; establishment of a library service; publication of a newsletter; encouragement of regional networking; fund-raising; translation of training materials; encouragement of training for network members; organisation of workshops; preparation for a conference on organic food production and trade; and search for finance.

Evolution and adjustment

An evaluation was recently carried out by CONAE which concluded that earlier work on a register of members would have had more effect than the documentation of the theoretical principles of agroecology, and emphasised the importance of understanding the realities of traditional agriculture. A third conference should focus on understanding this reality through the presentation of members' experiences. It was also suggested that the formation of regional groups should be encouraged, in order to avoid the dominance of CONAE.

RAE has discovered the importance of good communication facilities in promoting teamwork. It has also noted that inventories of potential members and their information needs should be primary concerns of the coordinating group.

3.3 Summary

This chapter has provided an overview of the types of networking and support activity undertaken by IENs. Differences in structure and objectives inevitably result in the selection of different activities. Nevertheless, some activities are common to many networks, whether IENs or ONFs. The combination of activities undertaken will vary according to the stage reached in the evolution of a network.

4

Publishing activities and workshops

This chapter discusses two important channels of information exchange that many networking organisations undertake: the publication of network material for wide circulation, including the production of newsletters, and the organisation of workshops. The discussion highlights the importance of these channels in relation to the information exchange objectives of many networks.

Most IENs and ONFs seek to spread information through dissemination channels such as newsletters, workshop proceedings and books. The advantages to be gained from these activities may be tremendous in reaching niche groups at the grassroots level and in supplying these groups with relevant and useful information. The incentives for networks to publish are strong. However, it is important that the target group is identified very carefully.

It is clear from the data in Table 1 (*overleaf*) that literacy rates vary greatly between countries, and these rates are very likely to vary within countries as well. For example, illiteracy rates among women are consistently higher than among men. Other variations are likely to exist between social classes and income groups.

Publications cannot be equally accessible to all groups. Most network editors are aware of the tension between supplying information and the inability of any one medium to satisfy many different groups. Editors design publications for particular groups. For example, the Food and Agriculture Organisation of the United Nations (FAO) subsidises groups in Asia to translate their technical publications into local languages, and encourages adaptation of the material to make it more appropriate to local users (K. Richmond, pers. comm.). FAO works to produce other prototype material to serve as 'a basis for translation, adaptation and replication, and as a model end-result' (Zielinski, 1987). The information is published for use by local groups in the formats which are most effective in getting the message across.

Given that the network target group could benefit from gaining access to published network material, editors must consider several issues. The International Rice Research Institute (IRRI), in its publication entitled *Editing and Publication: A Training Manual* (Montagnes, 1991), highlights questions that need to be answered when planning to publish:

- Who is going to read or use the publication?
- Where is this publication to be used?
- What are the editors trying to say?
- What is the message?
- Why publish?
- Is this the best way to achieve the goal?
- When is the material to be used?
- How should the material be put together?

Table 1 Adult illiteracy in selected African, Caribbean and Pacific (ACP) and European Economic Community (EEC) countries, 1990

High (more than 65%)			Medium (35-65%)			Low (less than 35%)		
Country	Female	Total	Country	Female	Total	Country	Female	Total
Benin ^a	84	87	Burundi ^a	60	50	Belgium	<5	<5
Burkina Faso ^a	91	82	Cameroon	57	46	Botswana	35	26
Chad ^a	86	76	Central Af. Rep. ^a	75	62	Denmark	<5	<5
Guinea ^a	87	76	Congo	56	43	Dominican Rep.	18	17
Mali ^a	76	68	Côte d'Ivoire	60	46	France	<5	<5
Mauritania ^a	79	66	Ghana ^a	49	40	Germany	<5	<5
Mozambique ^a	79	67	Haiti ^a	53	47	Greece	11	7
Niger ^a	83	72	Liberia ^a	71	61	Italy	4	3
Sierra Leone ^a	89	79	Nigeria ^a	61	49	Kenya ^a	42	31
Somalia ^a	86	76	Papua N. G.	62	48	Madagascar ^a	27	20
Sudan ^a	88	73	Rwanda ^a	63	50	Netherlands	<5	<5
			Senegal	75	62	Portugal	19	15
			Togo ^a	69	57	Spain	7	5
			Uganda ^a	65	52	UK	<5	<5
						Zaire ^a	39	28
						Zambia ^a	35	27
						Zimbabwe	40	33
Average	84	73		63	51		18 ^b	14 ^b

Note: a Low-income economies
b Rates of <5% calculated at 5%

Source: World Bank. 1992. *The World Development Report 1992: Development and the Environment*. Oxford, UK: Oxford University Press.

This raises other questions, such as format (book, newsletter or circular), degree of formality of language and style, technical level of the material, the language to be used and the possible need for translation, and quantity and cost considerations.

4.1 Books, workshop proceedings and research papers

Network coordinators face a tension between the desirability of circulating ideas and experiences accumulated within the network to as wide an audience as possible, and the limit which funding agencies often place on the overall size of network membership. Even the larger networks find that the potential audience for their ideas and experiences is much larger than the maximum manageable size of network, especially those working in popular areas such as low external input agriculture. Some coordinators have sought to resolve this tension by distinguishing the interactive function from the dissemination function and devising separate strategies to deal with each. Dissemination strategies may typically include commercial publications.

The Information Centre for Low External Input Agriculture (ILEIA) has published several books of material initially published by the network as a direct result of its activities. *Joining Farmers' Experiments* (Haverkort et al., 1991) was made up of a collection of case studies gathered from several workshops organised with the Institute of Development Studies and from the 1988 Participatory Technology Development workshop organised by ILEIA. Some of the papers appeared in newsletters prior to being published in book form. *Farming for the Future* (ILEIA, 1992b) draws on experiences and ideas

received by ILEIA from worldwide networking contacts. It is a good example of how information gathered through a network can be drawn together in an informative, permanent form. Réseau Recherche Développement (RRD) regularly derives publications from its working groups. For example, the book *Formations Rurales* (RRD, 1990) contains 41 case studies and an analysis of experiences in education in rural communities derived from the work of the Training and Education Working Group.

Multiple publication strategies are desirable in some cases. For example, the Agricultural Research and Extension Network of the Overseas Development Institute (ODI) was from 1990 to 1992 the coordinator of a detailed study of the work of NGOs in the development of agriculture-related technologies and management practices. It sought particularly to document the types of interaction taking place between NGOs and government services, and to identify whether, and under what conditions, closer links with governments might be desirable. The small number of coordination staff were required to provide support to collaborating individuals and institutions in the preparation of over 70 case studies from Africa, Asia and South America. Over 20 case studies were produced as network papers (monographs, 20-40 pages long). Summary papers were presented at international conferences. Several articles were published in academic journals, and the final output was published commercially in four books. To make the published material more accessible to workers in the developing world, a grant was obtained to allow the buy-back and free distribution of 1500 volumes of the final publication. Proceedings from three regional and four national workshops were published locally, and the commercial publisher of the final output is being asked to make the camera-ready copy available to publishers in the developing world.

4.2 Newsletters

By far the most common method of information dissemination used by IENs is the production and circulation of newsletters. This is particularly true of those IENs whose members are spread over a wide geographical area spanning international boundaries. Newsletters are also produced by national and regional organisations which have a low frequency of network meetings but need to maintain regular contact within the group. Most newsletters are produced quarterly and are the most important channel of written communication in a network. However, networks whose main effort to disseminate information is through other channels (for example, discussion papers) may produce newsletters at less frequent intervals.

The purpose of a newsletter can be general, but usually relates to the ultimate objectives of the network. In developing a plan for a newsletter, it is vitally important to define this purpose at the outset (*see* Chapter 3). The purpose of producing a newsletter may be to:

- give a new or emerging network an identity
- convey the network's name and philosophy to a wider group, which may encourage new membership and closer cooperation with other organisations
- circulate information about the activities of the network and other topical information relating to the work of the network members (for example, it could include information about new technologies, experiences of individuals and groups implementing new methods of participatory technology development, details of forthcoming conferences and workshops, and information about other sources of information, such as new books)
- provide a forum for debate using letters to the editor and articles specifically chosen for their controversial nature
- provide an important opportunity to air alternative opinions of common situations, enabling members to share their views

Types of newsletter

There is a wide range of types of newsletter. Some are very comprehensive, discussing all the activities of the institution within which the network operates, in addition to network-focused activities, and are sent to a very wide group. Others are more specific,

focusing on single topics or themes (*see* Box 9). Content may cover a variety of subjects or may consist almost entirely of literature reviews. Appendix 2 provides more information about the range of network newsletters.

Box 9 Special-purpose newsletters

Forest, Trees, People (FTP) is an international networking organisation based in Sweden which stimulates discussion around particular themes by encouraging members who receive the newsletter to respond to articles. The newsletter has become a forum for debate in which many of the network members participate.

Newsletter production

It is important to consider the potential budget that will be available for the newsletter. This will determine its length, quality and circulation number. There are two main elements of a newsletter budget: production costs, which include editorial, secretarial and library costs, layout and printing charges; and distribution costs, covering the production of mailing lists, labels, envelope filling and postage costs.

Several questions will arise when considering the budget. For example, will the costs of the newsletter be funded out of the current operating costs of the network, or will special finance have to be secured? Will participants be charged for the newsletter? In an effort to prevent the wastage associated with the free-goods mentality and to stimulate interaction, some networks insist that those wishing to join should send in reports on their experiences at least annually. This is a precondition, for example, of joining the ODI networks. Some networks (such as ILEIA and ODI) have begun to charge those members who can afford to pay. The costs of administering such schemes often exceed the revenue received, so that charging policies may be no more than a gesture to funding agencies. A newsletter can be an expensive endeavour, and it is important to consider cost implications beforehand. The process of newsletter production and distribution is described briefly here.

Targeting

Early in the preparation of a newsletter, it is important to determine the target group of the newsletter. Some important questions need to be answered. Is the newsletter to be specifically for the individuals and organisations directly involved in the information exchange activities of the network? Or will it be available to a larger group? How will this affect the budget? Will the newsletter be relevant and useful to a larger group of individuals who are not directly involved in the network's information exchange activities? Will expanding the subscription list move the newsletter's content and discussion further away from the core group of network partners?

The newsletter editor should also consider how to reach potential members. To identify these may not be difficult for networks which are small and cohesive and maintain more regular contact with their partners. In this case, they are likely simply to send out a specific number of copies to their close contacts, or to send out a registration form to the potential membership they have identified.

Defining the limits of network membership is not easy. Some networks have grown to about 5000 members. Whilst this may enhance the network's prospects of achieving its objectives, it is not without problems. The larger a network becomes, the higher the proportion of non-interactive members it is likely to contain (*see* Box 10). The newsletter of a large network may become more of a vehicle for dissemination of information than for interaction. Problems caused by a shift in the epicentre of networks as their size increases have also been noted.

Box 10 Problems of shifting focus in a growing network

ILEIA, a successful worldwide networking project working for the promotion of low external input and sustainable agriculture (LEISA) and indigenous technology development, produces a newsletter with an expanding subscription list which has begun to attract more middle- and upper-level development workers. A member of the editorial team recently noted in an interview that she felt that the discussion within the newsletter was moving away from its initial practical level as it was becoming more of a forum for discussion of programme and policy development. She had received letters from some older members who questioned the use of some of the jargon that was beginning to appear in articles and letters. She was concerned about the movement the newsletter was making away from its initial goals and questioned the immediate relevance of some of the newsletter discussions to the target group.

Role of the editor

The newsletter editor is responsible for collecting material relevant to the newsletter and for ensuring that the selection is in a form appropriate for communication with the readers. The manner in which he/she chooses the material will vary according to the newsletter's style and objectives and the availability of information. Some editors simply print whatever is sent in; others follow specific guidelines developed by the network management.

Editorial policy dictates the kind of material that will appear in the newsletter. It will be directly related to the objectives of the network in general and the objective of the newsletter in particular. Editorial policy should also outline who will make the ultimate decision on content and style, and how the appropriateness of material submitted is to be judged. These policies may be explicitly stated or simply implicit in the style of the network.

IRRI has produced some general guidelines for newsletter editors (Montagnes, 1991):

- *Use examples.* Editors should encourage those writing material for a newsletter to use plenty of examples to illustrate meaning and to maintain reader interest.
- *Give the newsletter a personality.* A newsletter should have a style and content that is consistent and readily identifiable, so that readers will identify with what the newsletter is trying to do, and know what they can expect.
- *Plan well in advance.* All too often, newsletters are put together in a rush to meet a printer's deadline. This can often result in a lack of cohesiveness and focus.
- *Make the newsletter interesting and concise.* Say what needs to be said in as few words as possible. Do not bore readers with jargon, a maze of acronyms, or extended discussions of administrative details.
- *Provide opportunities for reader feedback.* Encourage readers to contribute to the newsletter through letters to the editor and by providing short descriptions of their situation and needs. This is particularly important for two-way information exchange. Print as much unsolicited material as possible, so that readers become aware that their efforts will not be wasted.
- *Provide information about the network and newsletter.* In the first issue describe the activities and goals of the network. In subsequent issues always include a description of the goals of the newsletter, as well as contact names and addresses, so that readers will know who to contact for their special topic.

Many editors choose a theme for each newsletter, based on the availability of material or on issues that are topical. There may be a risk of bias in the content of the newsletter if there is no clear policy on content or themes. This is particularly important

for larger international newsletters, whose editors may be far removed from the readership. What is important to an editor located in Europe may be very different to what is important to a reader in a tropical wet climate in Africa, and vice versa.

Those interested in pursuing this topic should refer to specialised texts such as *Editing and Publication: A Training Manual* (Montagnes, 1991). This publication can be used as a primary resource for those intending to set up a newsletter or publish papers or books. The guide was developed over several years for a course specifically dealing with this topic.

Format

It is often best to start with a small and informal newsletter, perhaps consisting of a few typewritten pages stapled together. This format is useful in that it is cheap to produce and circulate. If enough interest does exist in a newsletter of this kind, the next step may be to expand the length, while maintaining the newsletter's low-cost informality. *RRA Notes*, a popular newsletter produced by the Sustainable Agriculture Programme of the International Institute for Environment and Development (IIED) and dedicated to circulating information on regional approaches to participatory agricultural development, began as a newsletter of this kind. It consisted of material written mostly by members, which was photocopied at IIED, stapled together and posted to subscribers — simple, cost effective and accessible to a wide range of readers.

Some editors assemble the information they intend to include, put it into a form appropriate for publication, and then hand over the work of setting up the newsletter to production professionals. In the past it was then necessary to liaise with both typesetters and printers. As the cost of personal computers has fallen, more newsletter editors are preparing the material and laying out the pages themselves. It is then necessary simply to send the disk to the printer. This is cheaper, faster and easier, once the desktop publishing system has been mastered. *Low Cost Printing for Development* (Zeitlyn, 1988) is an invaluable guide to low-cost methods of printing newsletters.

Before incurring the expense of producing a full edition of the first newsletter, it may be useful to produce a dummy. This edition will not be sent to subscribers but will be circulated among a smaller group who can recommend changes to the format. In this way, editors are able to avoid both a waste of sparse resources and dissatisfaction with or outright rejection of the chosen style, format and content.

Content

Every newsletter has its own style and format. A newsletter commonly contains:

- Table of contents
- Newsletter contact names and addresses
- Letters to and from the editor
- Network news
- Important general news items relevant to network work
- Leading articles, perhaps on a topical theme
- General articles
- Short accounts of work experiences
- Regional reports
- Bibliographies, often containing short abstracts of the material
- Abstracted references
- Book reviews
- Dates of forthcoming workshops, conferences, seminars and other events
- Calls for information and papers
- Technical tips and discussion of technical issues
- Worker contact names and addresses

Some editors employ innovative approaches to enhance the appeal of their newsletter. These include:

- *Qualitative abstracts.* The newsletter, *AlterAgri*, published by GEYSER, has a similar format to its predecessor, *AGRIcultures Actualités*, and has continued the practice of reviewing alternative literature on ecological agriculture, which includes recommendations about the relevance or usefulness of some material.
- *Regional reports.* The magazine *Ecology and Farming*, produced by the International Federation of Organic Agriculture Movements (IFOAM), features reports on the activities of IFOAM partners by region.
- *Contact names and addresses.* Previous mention has been made of the membership registers of ILEIA and FTP. Both these registers first appeared in the network newsletters. *Baobab*, the newsletter produced by Oxfam and the Arid Lands Information Network (ALIN), includes a network tree which lists the African members.
- *Letters to the editor.* The FTP 'Letters to the Editor' section, in particular, provides a forum for debating current issues.
- *Reports from antennae.* Réseau des Arbres Tropicaux (RAT) has attempted to encourage regular contributions from members by identifying local partners and asking them to provide regular news about the region.
- *Contests and crosswords.* Both RAT and Oxfam have offered T-shirts in exchange for interesting contributions. Contests provide an incentive to encourage a more interactive forum.
- *Field notes.* ODI's *Pastoral Development Network Newsletter* includes a section with short descriptions of current field-work.
- *Employment opportunities.* *Echos du Cota* regularly includes announcements of new job vacancies.
- *Technical diagrams.* Collectif d'Echanges pour la Technologie Appropriée (COTA) and German Appropriate Technology Exchange (GATE) publish technical diagrams in their newsletters. The Intermediate Technology Development Group (ITDG) regularly produces technical sheets explaining equipment. These sheets are available directly from ITDG.
- *News from across the language barrier.* *Haramata*, the IIED Drylands Programme newsletter, is published in both English and French, and regularly includes news from both anglophone and francophone zones of Africa, providing readers with alternative perspectives to development.
- *Forum for other networks.* IRED provides a space where other networks are able to provide news and views.

It is not necessary to use any of these features in new newsletters. Each organisation has its own style and approach. It is clear that innovative features which catch the eye are more likely to engage readers in the newsletter's message, thereby satisfying its purpose.

Sources of material

Many editors rely on information sent in spontaneously (*see Box 11 overleaf*) or received in response to a request in the newsletter. Others commission key individuals to write about their work. Many editors draw heavily on other newsletters, perhaps received as a result of exchange agreements, for information on new publications, workshops and news items.

Editors also draw on their own work and experience, which underlines the importance of finding an editor who is not only knowledgeable about the subject but who is also able to communicate effectively. A full-time professional editor may be able to produce an attractive and cohesive newsletter, but without an active interest and knowledge he/she may not be able to maintain the necessary focus. A particularly important requirement for a network with a research element is that the editor should have substantial research experience in a relevant field.

Most editors also benefit from the use of specialised libraries, located in or near the network coordinating office. These will inevitably contain unpublished material sent in by network members and will serve as a resource for staff in the coordinating office. Efforts are increasingly being made to make these libraries accessible to the wider membership. Libraries are discussed further in Chapter 5.

Box 11 Spontaneous submissions

The results of editorial appeals for submissions from network members on particular themes are not always problem free. Submissions are usually too long and often contain detail which is of little interest to the wider membership. They may lack relevance to the network theme; and they may contain assertions or recommendations that do not appear to be adequately supported by the evidence available. In these cases, substantial work is required by the editor. Even in the simplest cases it may be necessary to obtain the author's approval for editorial changes or to obtain additional material in support of the article, (for example, diagrams and photographs). Measures that can be taken to reduce the proportion of unsuitable submissions include establishing a policy to limit membership of the network to those likely to produce useable submissions and to give support to authors during the preparation of their papers. This second option is inappropriate in the case of spontaneous submissions but it does have the advantage of permitting a more focused approach since material can be prepared in a research/networking mode.

Legal issues

All editors must consider copyright when seeking to publish material already published elsewhere. Permission must be sought for reprints and credit must be given when necessary. For instance, *Ecology and Farming*, produced by IFOAM, is primarily a collection of reprinted articles dealing with issues related to organic agriculture, and the editors always obtain permission for these reprints before publication.

Some newsletters, such as those published by ODI, waive copyright restrictions to material in their newsletters but request that those making bulk copies of the material should keep the editor informed. The main aim of this policy is to provide feedback on the usefulness of material circulated in the networks.

Distribution

Newsletter distribution costs are high, particularly when posting overseas. This should be considered when choosing a paper weight for the newsletter, and in deciding the length. It will also partly determine how extensive the circulation of the newsletter can be.

4.3 Workshops

Workshops are regularly organised by IENs to promote the exchange of ideas between workers and to provide an opportunity to work out problems together. They provide an excellent opportunity for people to step outside their work context and examine their own perspective on problems and processes in relation to the experience of others.

There are many types of workshop and each of them has specific goals. Some are organised simply for the sake of raising awareness of particular issues. Others are used to assess programmes and projects and to look for ways of improving the efficiency of programmes in the field. Some donors use this forum to bring workers, donors and government services together in order to identify possible areas of cooperation. The result may be a specific project or it may be an agreement on policy (USAID, 1988a, b).

Other workshops are organised to define concepts and to bring different groups together in order to introduce particular ideas and discuss their potential usefulness. This is common for networks intent on changing donor approaches to particular issues, such as ecological agriculture and farmer participation. Workshops can be effective tools in developing a consensus on particular issues and identifying trends in thinking.

Workshops are appropriate for all kinds of participants: farmers, researchers, project implementers, policy makers and donors. They are an effective forum for bringing together workers of the same level to discuss common issues and to share ideas. They are also an excellent way of bringing together workers from different disciplines, to share different perspectives on identical problems.

Organising a workshop

If a workshop is to be effective, considerable effort must be made in advance by an organising committee or by one person assigned the task. The purpose of the workshop should be determined and potential participants informed well in advance. The objectives of a workshop may include:

- the development of plans for common work agendas
- the exploration of new ideas or conceptual frameworks, or the improvement of existing ones
- the strengthening of commitments between organisations
- the planning of books and other publications
- the assembling of experiences or data
- the provision of the opportunity for workers to broaden their horizons

The choice of objectives will have a bearing on the participant mix, the workshop logistics and its duration, particularly the period needed for participants to become familiar with each other.

Activities during workshops commonly include:

- case studies
- the delivery of papers and a discussion of the issues raised
- discussion groups, for greater focus and direct interaction
- a plenary session, often at the end, when a consensus can be sought and future plans made
- field visits
- small group activities and small group problem-solving
- an evaluation of the workshop, possibly including a questionnaire

The duration of a workshop will depend on its theme and on resource availability. A workshop consisting entirely of local participants need not, if the theme and objectives allow, take more than half a day. However, it is rarely worth bringing together participants from several countries for less than 3 days, and many find it convenient to travel over weekends, so making available a full 5 days. It is extremely difficult to sustain momentum and interest over a full week.

The organisers should also allow themselves several days before the workshop starts to ensure that all arrangements are in hand. They should check that equipment is in working order and that materials such as paper, flip charts, pens, overhead projectors and transparencies are readily available. For workshops lasting several days, registration is best done in the evening of the day before proceedings begin. This can then usefully be followed by a social evening to allow participants to meet each other.

Principles and flexibility

The achievement of constructive interaction requires that all participants be treated as equals. Organisers and chairpersons have specific tasks which are often goal-related, but these should be conducted in ways consistent with participants' expectations and possible reservations. Participants' views must therefore be sought repeatedly by consultation throughout the workshop and must be incorporated into an iterative planning process. A workshop programme is prepared in advance, but this is best regarded as a working draft to be changed to suit opportunities and constraints as they arise.

Flexibility is a key concept and organisers must allocate time in the evenings or early mornings to take stock of each day's events and draft options for the following day's programme. These can be offered to participants in an opening, plenary session each day. The organisers should be prepared to delay lunch and coffee breaks and to allow sessions to run into the evenings if particularly stimulating discussions have begun. One of the most difficult aspects of running a workshop is to know how far to allow extended sessions to encroach into refreshment breaks or into the remainder of the programme. It is equally difficult to know at what point to abandon the formal programme. In almost every case, sensitive organisers will wish to abandon at least parts of the programme as events unfold.

Preparatory work with participants

As a general rule, the smaller the number of participants, the more interactive a workshop is likely to be. Hard and fast rules are impossible to apply as size might vary from five to 30 participants, depending on the theme and on the knowledge and skills of the participants. Success can be achieved with workshops of up to 100, but the number of sub-groups must be increased; this, in turn, will increase the demands placed on careful planning and preparation.

The more diverse the origins and background of workshop participants, the more stimulating the discussions are likely to be. After all, a workshop would have to be abandoned during the first morning if all participants had such similar backgrounds and perspectives that they reached agreement on everything. However, the diversity argument also has its limitations. There is no point in bringing together participants of such diverse backgrounds and experience that they find it impossible to relate to each other. The workshop organisers must be confident that all those invited have something which they can contribute to the theme of the meeting. The richness of diversity can also be jeopardised by mutual rivalry that diverse political or ethnic groups might bring to the workshop, or by the inhibiting influence that the presence of an authority, such as a senior government official, might exert.

The type and amount of preparatory work with participants can vary widely according to circumstances. Brief and informal brainstorming workshops rarely require detailed written submissions by participants. However, where workshops are longer and involve expensive travel from participants' home areas, written presentations prepared in advance are often desirable, particularly where a detailed analytical account is required of participants' experience in relation to the theme. Instances exist where potential participants have asked organisers to comment on concept notes and on subsequent drafts of papers. Resources of time, finance and expertise have to be found to meet these needs, but improvements can justify the effort made. For example,

in preparation for a regional workshop on links between government agencies and NGOs in agricultural research and extension, held in 1991, a representative of ODI, the organising agency, made three visits from the UK to five countries in South America between 1990 and 1992 to provide support for the preparation of papers to be presented at the workshop (Bebbington et al., 1992). Efforts of this magnitude are justified only where the issues are complex and clarity of presentation is essential for full understanding.

Ideally, copies of draft papers for the workshop should be distributed to participants well in advance. In practice, delays in preparing the material are almost inevitable but even the distribution of only part of the material is worthwhile. In workshops where the volume of material is large, a collection of one-page abstracts prepared by the authors, or by the organisers with the authors' permission, provides participants with a quick reference to the main points. This gives participants time to familiarise themselves with the material, thus maximising time for discussion.

Language differences can be a severe barrier to interaction. Large-scale international conferences usually opt for simultaneous translation as a solution to this problem, but high costs place this beyond the reach of many workshops. It is, in any case, a far from ideal solution, unless the quality of translation is particularly high. An option that is being increasingly adopted in workshops is to try to ensure that participants have at least a passive knowledge of each other's languages. Each participant can then speak slowly and carefully in his/her own language, with informal simultaneous translation by an organiser or another participant where it proves necessary. The difficulties of running a workshop of this kind should not be underestimated. Very careful preparation is necessary, particularly to ensure that all participants have seen each other's presentations beforehand.

A different kind of problem is posed where participants have varying fluency in the language agreed for the workshop. The problem is compounded where those with a good command of the language are also typically the more self-assertive. In a recent workshop held in India (Asia Regional Workshop on 'NGOs, Natural Resources Management and Links with the Public Sector'), strong chairing was necessary to limit the time taken in discussions by South Asians and so allow Thai and Indonesian participants the opportunity to express their views.

Selecting a location

Workshops vary in size, scope and duration. A small one-day workshop for local participants can be held almost anywhere. Often the tools and materials required need be no more sophisticated than flip charts and visual aids as used in participatory rapid appraisal workshops of the kind described by Mascarenhas et al. (1991). As workshops increase in size and duration, higher standards of food, accommodation and recreational facilities are required, and the number of suitable locations is correspondingly reduced (*see* Box 12). They are further reduced by increases in the proportion of international participants who require

Box 12 Selecting a workshop location

An ideal location for a medium-sized workshop lasting 2-5 days and comprising both national and international participants is characterised by:

- an out-of-town location or location in a minor city
- on-site overnight accommodation of acceptable standard
- a canteen prepared to accommodate different tastes (for example, vegetarian), to allow some flexibility in meal times and to prepare packed lunches for field trips
- a large hall for plenary sessions and smaller rooms for group discussions
- a reliable enough electricity supply to allow photocopiers and other equipment to function when required
- sports and entertainment facilities within easy reach

easy access to air transport, telecommunications, banks, travel agencies and translation services. Locating international workshops in capital cities where these facilities are readily available is a temptation, but large cities also offer a wide range of distractions for less diligent participants. The offices of a high proportion of local participants are also likely to be located here, so increasing the likelihood that the workshop will not have their undivided attention (*see* Box 12.)

It is also important to choose a neutral location for the workshop, in the sense that it should not favour one particular ethnic or professional group. Sensitive choice of location is particularly important when bringing together groups who may have been in conflict for some time. The venue for a meeting between NGOs and government officials, for instance, should not be on the territory of one or other, but on neutral ground such as a university or college.

Managing a workshop

The overall purpose of a workshop is to achieve deeper and more rapid interaction on specific issues than is possible through written communication. The task faced by organisers is to harness the energy released by face-to-face contact. Careful preparation is a precondition of a successful workshop but, as with an accomplished athlete or actor, the performance should show little sign of the preparation that went into it. Over-zealous organisation can stifle the creativity that workshops are intended to stimulate.

Workshop organisers essentially aim to facilitate the process of interaction. Careful monitoring of the themes emerging from discussions is particularly important so that adequate time can be allowed for discussion of relevant issues that emerge but which may not already be on the agenda. This may result in an over-full agenda, and difficult decisions may have to be made to drop some items. It is rarely possible for organisers to obtain a sufficient feel for the mood of participants and for important emerging themes by attending only the plenary sessions. They should also participate in group discussions and in informal conversations during breaks and in the evenings.

Plenary and group discussions

Workshops conventionally comprise two main activities — plenary sessions and group discussions. Group discussions serve several purposes:

- they increase the number of themes or sub-themes that can be discussed
- they allow deeper and wider discussion within a particular theme
- they make it easier for participants who might normally be reticent in plenary sessions to express their views
- reporting back from group discussions to the plenary sessions may stimulate further discussion as different perspectives emerge

Numerous permutations of plenary sessions and group discussions have been tried. Perhaps the most conventional is to have plenary sessions at the beginning of the workshop, followed by group discussions on the emerging themes and rounded off by further plenary sessions.

A second option is to split each day into plenary and group sessions, with presentations given each morning followed by a discussion of issues arising in the afternoons. A danger of this approach is that group discussions might be too rigidly tied to the morning's themes, and might be guillotined by the need to move on to new plenary presentations the next day. This disadvantage became apparent when this configuration was tried at the South American workshop mentioned earlier (Bebbington and Thiele, 1993).

A third option, which saves time, is to dispense altogether with the presentation of papers in plenary, and to ask participants to summarise the main points of their experience in group sessions. These points are then reported back to plenary. A

disadvantage of this method is that participants may feel somewhat disillusioned by being allowed only a few minutes in small group discussion in which to make their presentations, particularly if they have been asked to prepare detailed papers (which the organisers will have requested if they plan to publish proceedings). This drawback was evident at the workshop 'Networking for LEISA' (ILEIA, 1992a).

Group work

Group work thrives in flexible conditions, but the organisers require skill and experience in making decisions on whether more or less time than that allocated is needed for group discussions and on whether a plenary session should split up into short, brainstorming, spontaneous groups in order to address issues as they arise.

Procedures for allocating workshop participants to groups present a number of potential hazards. If groups are to discuss different themes, it may be appropriate to allow individuals to choose the group they wish to join. Freedom of this kind can fail to generate an adequate mix of knowledge and experience within groups so that discussion remains narrowly based. Participants are often therefore directed by organisers into groups. This can be done crudely, by simply circulating a list, or more subtly by seating individuals in a certain order in the plenary, and then dividing them into groups in such a way that group membership is pre-determined. Occasional changes in group composition are generally desirable, and are necessary when the discussion changes (for example, from thematic to geographic or institutional issues).

Group size should ideally be between four and 10 participants. In larger groups there is a danger that less assertive individuals will be reluctant to express their views. Groups that are too small may run out of ideas.

Two sets of factors may prevent group work from realising its full potential:

- Groups need to have a clear grasp of what is expected of them. The topic they are to discuss should be written out in full, preferably on individual sheets, as should the areas in which they are expected to reach conclusions. Ample time should be allowed in a prior plenary session for groups to clarify their tasks.
- Groups should be required to report back to the plenary session in a detailed and consistent fashion. Each group should select a rapporteur, who has the responsibility of noting down the main points arising from the discussion and presenting them in an agreed format. Cards on which group members can note the points they wish to make, which can be pinned to a board and organised into themes, are a valuable aid to group discussion. Because of their small size, however, such cards are impractical for use in plenary sessions. Groups can be given flip charts or overhead projector transparencies onto which the rapporteur can write the main points of the group discussion for presentation before reporting back to the plenary session. Every effort should be made to avoid the delay that will occur if participants have to sit in plenary waiting for findings to be written out.

A facilitator should be identified for each group and, ideally, should be someone other than the rapporteur. The facilitator should be briefed by the organisers on ways of ensuring that the group addresses its tasks and that everyone has a chance to express their views.

Field trips

Some workshops include field trips to provide a break from deliberations. These events can be a two-edged sword. Participants may be reluctant to settle back into the workshop, particularly if a field trip involves gruelling travel and takes more than half a day. An alternative is to allow proceedings to finish early on several evenings to allow sightseeing and shopping, and then to draw the workshop to a close on the evening of the fourth day, so that on the fifth day the options of early departure, sightseeing, shopping or a field visit can be offered.

4.4 Summary

This chapter has provided an overview of two channels of information exchange for networking:

- publishing activities, including the circulation of newsletters and of material generated within the network
- workshops

For each of these channels, the chapter has given details of some of the key points that should be considered by networkers in order to ensure that opportunities for information exchange are maximised.

5

Libraries, databases and finance

This chapter reviews the activities and mechanisms which support networking. It focuses first on libraries and then moves to the management of bibliographic databases. The chapter concludes with a discussion of financial issues.

5.1 Libraries

As mentioned earlier, editors commonly use the network library as a reference source when producing newsletters. Members of the network will also regularly use the library in their work. Many networks establish a specialised library from the outset in order to catalogue and store the large quantities of information they receive from members. These libraries become a valuable resource for otherwise unavailable grey literature. They tend to be highly specialised within the subject area of the network.

Box 13 contains an account of one NGO's successful attempt to establish its own library.

Box 13 The network as a source of information

The networks coordinated by the Overseas Development Institute (ODI) — Irrigation Management, Pastoral Development, Social Forestry, and Agricultural Research and Extension — all stipulate that network membership carries with it an obligation to keep the coordinator up-to-date with events and experiences likely to be of interest to other members. Members are asked to send in all types of information (such as annual reports, evaluation results, unpublished reviews and reports of field experiences). After being reviewed by the coordinator, these materials are passed to the ODI library where they are catalogued and filed. There is now a large collection of grey literature at ODI which is used by network coordinators in the production of network papers and newsletters. ODI researchers also use this resource, as do network members and visitors to ODI who are able to request keyword searches of the bibliographic database.

Establishment and organisation

There are two main issues to be considered when designing a library or documentation centre:

- understanding the goals of the library
- assessing the resources available

To determine library goals, the librarian will have to determine the type of information to be collected, its potential use, the technical level required and the range of topics to be covered. The language of the material will also need to be considered. For example, there is considerable duplication of effort between francophone and anglophone technical literature, and it would be wasteful to collect both unless the end users speak only one of the two languages. On the other hand, some francophone approaches to development differ from and complement anglophone ones, and so these could merit inclusion.

An accession policy should be devised which includes the library goals, so that material is collected that fulfills the requirements of the users. Few libraries are able to take in everything, so priorities must be determined. Given the scarce resources of many libraries, primary sources of information should be carefully chosen early on to protect the focus of the documentation centre. Although valuable, material sent in by network members alone will rarely be enough to constitute an adequate library. Commercially published books will also be necessary but these are expensive. Copies might be obtained for review in the newsletter and these could then be deposited in the library.

Resources include not only finance, personnel and infrastructure, but also the ability of the IEN to exchange newsletters and papers with other organisations. Most small networks will be able to collect a large amount of information from a wide range of sources through exchange agreements. For instance, the combined ODI network library has relied on its networks to generate a large proportion of the 12 000 items (8000 of them unpublished) in its library.

Many libraries develop their own systems of organisation. Some simply depend on a good librarian with an excellent memory, whilst others number items as they arrive, recording the title in a book. These systems are sufficient for small collections, but as the numbers increase it becomes too difficult to locate specific titles. Systems of this type are also vulnerable to changes in library staff.

The classification devised by the Socially Appropriate Technology Information System (SATIS) is the one most commonly used by European-based IENs involved in agricultural development. The SATIS classification is a structured listing of topics, which is useful for small organisations looking for a numerical method of organising shelved material. There are problems with the classification, however, particularly when storing material on ecological or sustainable agriculture, which usually encompasses more than one classification. It is most useful as a manual shelving system.

Small libraries projects

Several IENs, including AGRECOL, the Information Centre for Low External Input and Sustainable Agriculture (ILEIA), and German Appropriate Technology Exchange (GATE), have initiated small library projects which aim to increase local capacities in the developing world by providing seed money for book purchases, abstracted bibliographies for book selection and subsidised delivery. Others encourage increased use of CD-ROM and computer technology. Several issues need to be addressed when IENs or ONFs, particularly those based in the developed world, are considering encouraging the establishment of local libraries. These are highlighted briefly here, with more detail given in Appendix 2.

Choice of domain

There is a wide range of material that organisations in the developed world may regard as useful for libraries in the developing world. But partners in the developing world have the right to choose. International networks always need to avoid dominating small organisations in developing countries. Determining the exact requirement can be difficult and it is impossible to cover all the material available. It may be easier to choose a limited number of titles within a general domain.

Summarising and presenting material

If they are to be accessed easily by users, publications which have been chosen for inclusion in the library database need to be given keywords. If resources are available, they should also be abstracted in a manner that allows for clear interpretation of

content, and it is useful to give some evaluation of quality and relevance to particular groups. Qualitative abstracts are rare, but are particularly useful for regional and local development workers who are interested in obtaining material that will be useful, especially when there are limitations in the amount of material they are able to collect.

Material provision

Many groups in the developing world are unable to spend large sums on establishing a library, so it is important that they should be given clear information on relevant material. Once a shortlist of publications has been requested, organisations in the developed world may be able to provide this material free of charge. Some resist this temptation, as they are keen to respond to demonstrated interest and need, and charge subsidised prices for publications. Box 14 provides an example of a small library project. AGRECOL has a similar programme with its Communication, Information Documentation Packets (KIDS), an initiative to support the establishment of local documentation centres in the developing world.

For those interested in establishing a local library or documentation centre, GATE supplies the book *Documentation Made Easy* (Phillips, 1991) free of charge to developing countries.

Box 14 The ILEIA small library project

In 1988, ILEIA compiled a list of 140 titles in the field of sustainable agriculture. These books had been included in an abstracted bibliography previously published by ILEIA and AGRECOL. The list and bibliography were distributed to ILEIA subscribers who were encouraged to apply to become part of the project. Potential libraries were given a budget of US \$425 and were encouraged to choose a selection of books from the list. Preliminary results indicate that the small libraries receiving books have appreciated this project and have found the books useful additions to their collections.

5.2 Databases and electronic telecommunications

Advances in computer technology offer the opportunity to store large bodies of information effectively and allow improved access to this information. Databases vary in size, scope and sophistication, but are ultimately designed to enable workers to use information stored in libraries more easily. Electronic telecommunication is making it easier to transmit information over long distances and is providing wide access to large agricultural databases, such as CAB International. A summary of the main issues is presented in this section; for more detail, the reader is referred to Appendix 2.

Databases

Hard copy such as books and reports can be stored in libraries under a number of classifications, so that someone searching in one place will not find an item that has been classified in another. For example, would a book entitled *Participation in Resource Management: An Agricultural Perspective* be classified under 'participation', 'land management' or 'agriculture'? Or would 'sustainability' be more suitable?

To overcome these problems, many libraries turn to the use of database systems which employ keywords to classify hard-copy sources which discuss broad and complex topics. It is difficult to use keyword systems manually since this requires a choice between different catalogues for each keyword. Early efforts to overcome this problem have included hand-held computers, such

as the one previously used at AGRECOL. This system employed a limited number of keywords and a stack of computer cards which could be sorted with a needle inserted into reference category slots in the cards. There are several problems with manual databases, including repetition of effort, the need for cross indexing by hand, and slow and laborious working methods.

Computerisation has made it easier for libraries to store this kind of catalogue information in a manner that is easy to use, search and access. Computerised systems are easy to change, it is possible to make quick, itemised searches and there is the opportunity to use other sources of information such as CD-ROM technology, large international databases and E-mail. For more information on this, the reader is referred to Lohle-Tart and Gachie (1990).

The standardisation of keywords is important if a computer-stored database is to be used effectively. Several thesauri have been developed, most notably by Unesco and the Food and Agriculture Organisation of the United Nations (FAO). These thesauri are useful in helping small libraries to conform to international standards. This is important for IENs which are interested in sharing information and databases with the wider development community. Other efforts are being made to expand these lists to include more ecological agriculture terminology. For example, the network of European Organisations Promoting Low External Input and Sustainable Agriculture (EULEISA) is currently working on a trilingual thesaurus relating to low input agriculture methods and technologies.

Computers

Choosing computers for use by IENs is not a subject to be dealt with lightly. Whether computers are an appropriate technology that should be encouraged in what are often low-technology, resource-poor environments is a leading question. The assumption has to be that computers are likely to be used in a given situation. Several issues need to be addressed when choosing computers (Lohle-Tart and Gachie, 1990). These include:

- *Logistics*: Should computers be bought locally or imported? Will there be a difference in quality and cost? Are there guarantees and maintenance contracts? What brand should be bought? Is compatibility with IBM-operated systems essential?
- *Environment*: Climate, reliability of electricity supply, static electricity, dust.
- *Working details*: Portable computers, memory size, speed, printers, diskettes, hard disk, keyboards and screens

Software

Software (the programmes that make a computer run) is just as important as the computer itself. In selecting software, libraries need to take into account the type of database to be established, the database size and potential growth, record structure, type of information that will be sought by users, form of output necessary, and the proficiency of users. Further information on this subject is provided by Rowley (1990).

Benefits of standardisation

A wide variety of databases has been developed commercially which could be used by small libraries. There are at least a dozen different library database packages used by IENs and ONFs in Europe alone. There are two main problems with the use of a great variety of database programmes, even though each organisation may require a specialised database. The first relates to the difficulties for non-expert users in sharing databases which are compatible but which are different in form. The second, and more difficult problem, relates to the difficulties in sharing incompatible databases, which may have to be converted to a special language (ASCII) before they can be read by another database.

CDS/ISIS

CDS/ISIS is a textual database package developed by Unesco which can be used effectively in libraries. It is distributed free by Unesco to developing countries. MicroISIS and MiniISIS are variations of CDS/ISIS which can be used on smaller personal computers. Although difficulties have been encountered by users who have little computer experience, a new version is due for release which promises to be more user-friendly (more information is given on this in Appendix 2).

IRC has successfully downloaded MiniISIS databases to MicroISIS databases in developing countries, and can provide regular updates to widely dispersed information centres by mailing disks. GATE has worked with its partners to promote regional documentation centres by providing parts of its database (CDS/ISIS) to its partners, most of whom are using one of the ISIS databases.

The International Development Research Centre (IDRC) has set up many free MiniISIS Resource Centres (MRCs) in non-profit-making organisations in developing countries to provide training and advice to MiniISIS users (Akhtar, 1990).

Recently, AGRECOL has begun to use an ISIS cataloguing programme, primarily because most Latin American partners use this programme.

CD-ROM

CD-ROM systems are used primarily for the distribution of bibliographies and abstracts but they can also be used for full texts. These systems can be interrogated by using keywords to limit searches, and they provide a useful method for disseminating information collected by the larger libraries. This is being done by the National Agricultural Library (USA), CAB International, the Technical Centre for Agricultural and Rural Cooperation (CTA) and the Consultative Group on International Agricultural Research (CGIAR), all of which have implemented CD-ROM projects (Frierson, 1990). The NAL and Agricultural Information Systems (AGRIS) databases are going to be widely available in CD-ROM format, and many universities are already using CABI CD-ROM bibliographic databases. In France the Sesame CD-ROM is used widely as a resource for agricultural workers. The IDRC has concluded that CD-ROM has a high potential for users (Stone, 1990), and it has been noted by others that these robust systems offer substantial economies of scale (Frierson and Lindsey, 1990).

Large databases

Some of the large libraries have considerable amounts of agricultural information available on electronic databases and many are working to support regional databases through the development of CD-ROM systems (Frierson and Lindsey, 1990). In addition, some are helping smaller libraries directly by supplying carefully selected portions of their own databases to regional centres in developing countries. In cooperation with Réseau de Recherche sur la Résistance à la Sécheresse (R³S), the Institut de Recherches Agronomiques Tropicales et des Cultures Vivrières (IRAT) provides monthly updates to the RESADOC library in Bamako, Mali. Using agreed accession policies, IRAT makes regular searches of the database held by the Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), and periodically provides discs directly to RESADOC, which now has over 10 000 references in the Bamako office. More information on this is provided in Appendix 2.

FAO has developed the AGRIS/Agricultural On-Line Access (AGRICOLA) database, which was originally an attempt to merge the large CAB International and NAL databases. The project began to look at a possible framework for improving worldwide information. The AGRIS project has now developed a formula for information-sharing which responds to global needs and places no country in a position of dependency (Stone, 1990).

AGLINET is an agricultural library network which is working to improve document delivery between the large agricultural libraries of the world, in addition to promoting regional decentralisation of these libraries. Another source of information is the Arab League Documentation Centre (ALDOC), which specialises in agricultural problems facing Arab countries.

These large databases offer users in developing countries the potential to access these sources of information directly from their own computers, providing the users have the appropriate programmes and telephone link equipment. IENs in the developed world are already connected to the larger national databases, and use them as sources for specialised bibliographies, although most of these references are not abstracted. The IBISCUS database is the French equivalent of the CAB International databases, and organisations such as the Groupe de Recherche et d'Echanges Technologiques (GRET) use these systems to locate references which are otherwise unavailable.

Sharing library resources and databases

Most IENs and ONFs have a comparative advantage in particular topic areas but are limited in their ability to expand the scope of their documentation. They could potentially complement the work of each other by sharing their computerised databases to determine where there is overlap. This would help ensure complementary effort and maximise the use of limited resources.

EULEISA is working on a system which would enable member organisations to receive documentation updates from other member libraries. Documentalists are now exchanging database samples for experimentation. Two important issues related to the sharing of library documentation have come to light from this experience:

- *Thesaurus development:* Much of the work of the EULEISA documentalists has involved developing a common keyword thesaurus. Without a common method for storing and retrieving references, sharing computerised databases would be difficult, if not impossible. Although such standard library thesauri do exist in some fields, they have yet to be developed in the domain of low external input and sustainable agriculture (LEISA). This subject area does not fit neatly into any of the standard thesaurus categories, so that most of the EULEISA documentation centres have had to adapt existing thesauri or develop their own. Alleviating the problem of coordinating thesaurus development and influencing the larger documentation centres to adopt their thesauri has been difficult. Ultimately, EULEISA intends to approach the larger documentation centres with their newly developed thesaurus, in order to start lobbying for its inclusion in standard library references.
- *Different computerised databases:* Within EULEISA there are four organisations which document their library collections on computerised databases. These four organisations are using four different database packages for document sharing: GATE uses ISIS, which it shares with partner organisations; ILEIA uses Cardbox, a read-only version available for distribution; ODI uses INMagic; and AGRECOL uses a MacIntosh-based library programme, initially chosen for its simplicity. Latin American documentation is now stored on ISIS. These four database packages are unable to read each other without conversion, and although conversion programmes do exist, they pose difficulties for non-experts. This is particularly true between the IBM and MacIntosh-based systems. This problem highlights the importance of choosing widely available and widely used database packages.

EULEISA has been able to open the documentation centres for use by many member organisations. Its information-sharing process has underlined the time and resources necessary for such an undertaking. Effective coordinating mechanisms are essential even for a network of members who are actively interested in linking together. Some organisations may resist the attempt to link because of their desire for autonomy. Others may not want to share databases because of their need to solicit contracts based on their comparative advantage, often largely based on a combination of database size and breadth, contacts and experience. Efforts to coordinate are easily retarded by the lack of a common thesaurus and the need to allocate time and resources to ensuring a viable sharing process.

Electronic telecommunications

A step on from simply accessing some of the larger databases using computers and modems is communicating with a wider body of individuals directly through a computer. Electronic mail (E-mail) is being used increasingly by international research

networks and advocacy organisations to provide quick, low-cost international communication. In developing countries, communication by post can often be difficult and slow. Telephone communication, where available, can be expensive. Telefacsimile messages (faxes) are a relatively new development for the hard-copy transmission upon which many organisations in Europe and North America have become heavily dependent. Faxes have a high potential for the direct transmission of small quantities of hard copy quickly down telephone lines.

E-mail may one day displace telexes, faxes and couriers. Telex and fax messages can cost up to 25 times the equivalent E-mail messaging. New digital microwave links, improved telephone lines and modems, packet switching systems and satellite earth stations may in the future provide more opportunities for potential E-mail users to link with international communication systems (Frierson, 1990). Using E-mail results in a significant cost saving on communications, and messages can easily be reviewed directly on word processing equipment, thus also saving time. For example, draft texts could be transferred from author to author, each making editing changes, on the same copy, saving time and the cost of postage. For more information on E-mail and electronic networking in general, *Communications for Progress* (Lane, 1990) contains an excellent introduction to many aspects of electronic telecommunication.

For all its advantages, however, certain fundamental issues must be considered before a firm commitment to E-mail is made. The most important of these is that E-mail functions adequately only where reliable telecommunication systems are already in place. Whilst it operates well throughout the developed world, its operation in many other countries is restricted to major urban centres. It does not yet operate successfully even in the capital cities of some countries. The urban bias implicit in E-mail suggests that workers in the poorer and more rural areas of developing countries will be disadvantaged as E-mail expands relative to existing means of communication. Acknowledgement of these disadvantages by organisations such as Inforum which had initially proposed to use E-mail widely has led to an awareness that structures must be created within developing countries to allow those without adequate telecommunications to have access to the enhanced flows of information likely to be stimulated by E-mail.

Inforum

Inforum was created at an international workshop on sustainable land use systems held in India in 1990. It is an independent, non-profit-making global forum governed by an international Board of Direction with a Science Advisory Committee and is concerned with information exchange and cooperative research on the development of sustainable land use systems. A particular objective of Inforum is to take advantage of new communications technologies such as computerised databases, CD-ROM and, in particular, E-mail and electronic conferencing facilities, in order to enhance the flow of information on an equal-partners basis among scientists, development specialists and decision makers on sustainable land use.

Inforum currently has three programmes:

- a policy action programme that will seek to influence national policies which have a bearing on land use systems (for example, land tenure and price support)
- a programme for the development of sustainable land use research methodology, managed by a Chile-based network, RIMISP, which is concerned with the development of production systems research methodology; the programme links scientists working in different agroecological zones on the application of a technical matrix that includes the concepts of critical resources and sustainability constraints; projects are under consideration for research on methods to measure and monitor soil productivity, economic techniques for internalising environmental externalities and prediction of the effects of policy incentives on changes in land use systems
- a programme to promote information exchange which initially proposed electronic conferences, a CD-ROM database and reference library project, and an internal digest; this programme aims to assemble information from both developed and developing countries on initiatives in sustainable agricultural research and development, and to disseminate it electronically and in hard-copy form in English, French and Spanish

provide resources, but may also have ulterior motives for doing so. For example, they may want to take advantage of the network's coverage in order to make their products more widely available. Networks themselves could also develop small business initiatives in order to generate revenue.

- *Crossover sources:* Mother institutions have long supported networking initiatives. Collaborative research networks are based within universities and research institutes, NGOs, research stations and government ministries, institutions that have played a key role in providing core logistical and communications support to many networks. Without their support, many networks would not exist. It is important to point this out because many of these institutions receive the bulk of their funds from the public till, and are using a portion of these funds to exchange information through networking. Universities and research institutes can also support networks by providing basic support, and by working on research programmes with networks so that each can benefit from the comparative advantages of the other. Networks based in NGOs can benefit greatly from such research programmes, especially if they carry with them resources which the NGO can incorporate into its own programme. Networks can also generate income from selling the services of their members, who represent a pool of expertise, to public and private institutions. Many networks in the developing world could offer these services at competitive rates because of low travel and overhead costs coupled with relevant local expertise. However, the costs of pursuing revenue in this way may be high, so prudence is necessary.

Many alternative financial strategies exist and the approach taken will vary depending on the context of network activities and on the long-term goals of the information exchange programme. Many networks thrive under uncertain and short-term funding, and some view their ability to adapt to funding constraints as an integral part of the networking process. Networks are well-placed to diversify their funding, and the consequent gain in stability would encourage the pursuit of a wider range of activities.

5.4 Summary

This chapter has reviewed some of the activities and mechanisms which support networking. It highlights the importance of establishing libraries or documentation centres, but emphasises that coordinators must set clear goals for the library if they are to maximise its use. Computerised databases can be used to make library resources more accessible and offer ways of accessing information sources outside the network. The chapter also reviewed some approaches to financing network operation.

6

Conclusion

Important tensions inherent in networking, in both IENs and ONFs, emerged during the preparation of this book. These tensions, aspects of which have been referred to in earlier chapters, can be grouped into three categories: leadership versus responsiveness in coordinators, the degree of formality found in networks, and the need to define boundaries and target network membership.

6.1 Leadership versus responsiveness

There is a close interaction between the objectives and structure of a network and the role of the coordinator. To achieve certain tasks efficiently, a high degree of structuring and centralisation appears to be necessary, as Figure 5 indicates. This implies an element of leadership in the functions of the coordinator. Particularly where research is concerned, the coordinator must have a good grasp of current research being conducted in the thematic arena of the network. This will enable him/her to identify requirements and opportunities for further investigation that can be met from the network's resources. This does not, however, imply that the selection of topics for research and networking should be hierarchical. Members will also have views on issues requiring investigation, and it is the coordinator's job to set up mechanisms so that these can be elicited and taken into account.

Some proposals from members will merit serious consideration and incorporation into the portfolio of potential projects for the network. It is unlikely that the network will have the resources to undertake everything that is suggested. There is also the possibility that the suggested work has already been done elsewhere, that it lies outside the mandate of the network or that it is based on incorrect technical premises. The coordinator will need to consider and prioritise suggestions, ask for clarification, suggest modifications and indicate what resources are available. Where possible, this should be achieved through a process of consultation, ideally involving direct interaction at workshops.

Those networks which are primarily concerned with the promotion of new networks in the developing world, following similar themes but in a specific geographical setting, are likely to be more loosely structured. The role of the coordinator will be largely to respond to requests from partners in the developing world. Leadership, as described above, is likely to be inappropriate. However, it may be implicit in the guidance and support that the coordinator is able to offer. He/she may, for instance, be able to provide such partners with information on the way in which similar initiatives have worked in other settings, helping to prevent the recurrence of pitfalls.

At these extreme ends of the structure spectrum, the appropriate balance between leadership and responsiveness is easy enough to outline in broad terms. For networks whose structures do not lie towards the extremes of this range, there remain important tensions between leadership and responsiveness which are at times difficult to detect, and almost invariably difficult to resolve. Two examples serve to illustrate this point:

- *Dominant interest groups*: An interactive coordinator will seek the views of members on the future course of the network. On occasion, minority groups may emerge which seek to shift the course towards their own interests, which may be at odds

with those of other members. Potential conflicts of this kind are time-consuming and difficult to resolve in a democratic fashion. The coordinator, in consultation with network members, will have to form a view on the extent to which the network can be pulled towards minority interests. One solution may be for the main network to support the minority group in forming a new network to cater for their particular interests.

- *Small, interactive networks versus large, passive networks:* The coordinators of any network with the potential for rapid growth will be aware that large networks are likely to be less interactive than small ones. Yet the larger a network becomes, the greater the prospect that it may influence opinion in line with its broad goals. Again, this type of dilemma is difficult to resolve. One solution may be to make a clear distinction between interactive networking and dissemination functions, and to devise alternative means of communication to fulfill the latter. This may include commercial publication of articles or books in the developed world, or preferably collaborative publishing ventures involving the developed and developing worlds. Another solution may be to pursue a policy of regionalisation (that is, to support the establishment of networks focusing on similar themes in particular regions of the developing world; regionalisation of this kind is central to the strategy of ILEIA, for example). The issue of interaction versus size has preoccupied many networks. The discussions on the future orientation of the Arid Lands Information Network (ALIN) following its recent evaluation are an example (ILEIA, 1992a).

It cannot be overstressed that organisations and individuals in developing countries are increasingly aware of the influence that resource imbalance can exert on relationships within networks that seek to bridge the divide between the developed and developing worlds. Without adequate consultation and participation, information from networks based in the developed countries may become supply driven, and their agenda determined in ways which do not adequately reflect the interests of members in the developing world (Sow et al., 1991).

6.2 Degree of formalisation

‘We are not a network — as soon as you are institutionalised into a network, you will begin to reduce the supply of information in circulation because of the attempt at control.’

A French networker

‘Many people — from practitioners to policy makers — each with different information requirements, different skills and different perceptions of the problem, need to act if desirable change is to take place on a sustained basis. Newsletters and network papers can be an efficient means of keeping the various groups aware of new evidence, new issues and emerging perspectives.’

John Farrington, Overseas Development Institute (ODI)

Tensions surrounding the extent to which a network should be formalised were hinted at in the discussion of Figure 4. There can be little doubt that a small, informal network (for example, a group of professionals sharing an interest in the same theme) is the most productively interactive. Perhaps the fundamental reason for this is that each member of a group of colleagues is likely to know what will most interest the others and will pass on only what is likely to be relevant to these interests. Similarly, what is received will command particular attention. Networks of this kind are likely to have limited impact on an overall objective, such as the promotion of low input agriculture or a change in policy, unless the interaction takes place among a group of key actors. Change can often take place only when substantial evidence has been assembled on the desirability of change; when large numbers of individuals at different levels in local, national and international hierarchies acknowledge the desirability of change; and when they begin to create the necessary conditions for its implementation, as local-level practitioners, mid-level officials, policy-makers and aid donors. Small, informal networks are insufficient for tasks of this magnitude. A degree of formalisation is essential to ensure that adequate membership records are kept, that newsletters are compiled in ways which summarise information on key issues and events in an accessible form, that themes treated by the network follow agreed paths, and that consultative procedures are established to identify future directions for the network.

Informal networks can operate without agreed financial mechanisms only as long as they remain small. As the volume of information to be transmitted increases, financial provisions have to be made. In some instances, these can be met almost entirely by network members, as in the case of the International Federation of Organic Agriculture Movements (IFOAM). More frequently external resources have to be sought, generally from donors, especially where the proportion of members from developing countries is high. A network which is formalised has a better prospect of ensuring that the accounting, monitoring, reporting and evaluation required by external funders are met.

To achieve impact among a multiplicity of actors, whether at field or policy level, a high degree of credibility and visibility is necessary. Networks can establish this image only if they are formalised. Perhaps the only exceptions to this generalisation are those types of network, such as AGRECOL, which aim primarily to support the emergence of initiatives in developing countries, and are consequently reluctant to enhance their own profile.

6.3 Defining boundaries

Boundaries have to be defined in several dimensions of networking:

- objectives must not be so ambitious as to be beyond the reach of the network within a reasonable time frame
- themes must be defined clearly enough to allow focused discussion, analysis and action
- boundaries need to be defined both geographically and agroecologically
- limits need to be set on the average size of membership, on the balance between different disciplines, between practitioners, administration, academics and policy makers, and so on
- boundaries need to be drawn around the size and scope of various channels of communication (such as newsletters, network papers, workshops and training courses) and a balance found between them

Boundaries and balances may be erroneously interpreted as implying rigidity. Whilst they do confer a necessary degree of stability, it is important that they should not stifle the flexibility and innovation necessary to allow new initiatives to be taken up as suitable opportunities emerge.

APPENDICES

APPENDIX 1

Evaluation of networks

Self-evaluation

The coordinators of many networks undertake frequent evaluation of their activities, whether implicitly or explicitly. Evaluation may be arranged according to a time schedule, perhaps as part of an annual planning process, or it may occur at the end of a particular phase of work. The strategy and plan of work that have been devised for a network may benefit from evaluation once initial efforts have been made to implement them. An overall evaluation of output or impact may be made at the mid-point or end of a process of implementation. Short-term activities can also be usefully evaluated; for instance, participants at a workshop can be asked to give their views on the usefulness of the workshop, probably on the final day.

The lessons from internal evaluations of this kind, when incorporated into the development of future activities, will help networks to meet the requirements of their beneficiaries. Most networks, however, receive external financial support and can expect to be evaluated at intervals, if only to establish that funds have been used for the agreed purposes.

External evaluations

Most external evaluations go beyond the attempt to establish financial accountability. They are concerned not only with whether funds have been used for agreed purposes, but also with how far the activities have contributed towards agreed goals. They are thus seeking to incorporate some measure of output or impact.

Before considering the various evaluation methods that might be adopted, it should be noted that external evaluations are increasingly being conducted in a way designed to make them as useful to the coordinators and members of networks as to the agencies which finance them. Much of the output of networks is qualitative in nature, and this is likely to be a hidden benefit unless network coordinators and members participate actively in the design and implementation of evaluations.

Discussions with network coordinators in the preparation of this book suggest that no single method of evaluation will be adequate for any given network. Neither is it possible to use the same method with equal effect across widely differing networks. These points are illustrated in Table 2, in which the relevance of four evaluation methods to four types of network are classified by objectives and structure. This represents a distillation of the much wider range of network types discussed in Chapters 2 and 3. The evaluation methods selected are representative of those widely used in recent evaluations, including those of the Overseas Development Institute (ODI) in 1988 and 1992, and the Information Centre for Low External Input Agriculture (ILEIA) in 1990. These include surveys of the network membership and reviews of currently held information.

Surveys of network membership. Surveys of the network membership commonly take the form of questionnaires designed to establish how much of the network output was used, by how many people and in what ways. The response-rate to questionnaires and to individual mail shots (*see* Chapter 3) in itself provides some indication of the interactive qualities of the network. The response rate to the 1988 ODI evaluation questionnaire was 40%. More routine applications of brief questionnaire surveys are also possible. For instance, many networks require members to re-register at regular intervals (for example, once every two years) to weed out those no longer interested in participating and to keep address lists up to date. These generally produce a high response; ODI, for example, typically obtains responses of 70-80%. A questionnaire attached to the re-registration form can be expected to generate a similarly high response, probably higher than could be obtained from a free-standing postal survey.

Questionnaires can be used in a postal survey only if there is a high level of literacy among members. Any survey of the membership of a farmers' network would have to be conducted orally (*see* Table 2 *overleaf*).

Questionnaires have the advantage of providing potentially useful cross-sectional overviews. But respondents are often pressed for time and will rarely provide detailed cause-and-effect information on how network output has been used. It is, however, notoriously difficult to frame questions to capture this type of information.

Table 2 Possible applications of a range of evaluation methods to different types of networks

	Membership survey	Review of existing information	Peer group and key informant reviews	Citation indices
Local network among farmers (e.g., ECASARD in Ghana ^a)	Oral interviews only	Review documentation of farm-level changes attributable to network	Obtain views of non-network farmers, local research and extension staff and NGOs	n.a.
International network concerned with field-level development; aiming to decentralise (e.g., ILEIA ^b)	Oral/postal questionnaires	Case studies/surveys of farm-level changes attributable to network; evidence of new networks being established	As above, but also obtain views of senior social scientists and agricultural scientists; consult coordinators of newly emerging networks	n.a.
International advocacy network (e.g., GRAIN ^c)	Oral/postal questionnaires	Evidence of impact on policy from newsletters, press, radio, etc.	Obtain views of internationally known social scientists and agriculturalists, of those at various levels in less developed countries, and of farmers	n.a.
International policy research network (e.g., ODI ^c)	Oral/postal questionnaires	Evidence of changes in others' research agenda in training and in policy and practice as a result of network; evidence of demand for publications	Obtain views of international policy research and agricultural research institutes, and of donor and implementing agencies; consult universities and training institutes	Give a picture of output (but incomplete)

Note: a The Ecumenical Association for Sustainable Agriculture and Rural Development (Guri, 1992)

b For an up-to-date summary of ILEIA philosophy and practice, see ILEIA (1992b)

c For a summary, see Chapter 2 and Farrington (1992)

Reviews of existing information. Evaluators may obtain important insights from a search through the types of information that many networks accumulate for internal monitoring purposes. Such information will vary according to network type. For example, farmers' networks will commonly hold reports of surveys and field visits indicating the types of change taking place on members' farms, possibly comparing them with those on the farms of non-members, and identifying how far they are attributable to innovations introduced through the network.

International networks concerned with field-level development aiming to decentralise will probably document changes in the size, geographical distribution and composition of membership; volume and quality of contributions from the field; and the extent to which new networks in developing countries have grown from the original network. International advocacy networks will also note characteristics of and changes in membership; volume and quality of correspondence; and the extent to which network activities and output have been reported in the media and have influenced policy decisions. International policy research networks will monitor characteristics of and changes in membership; volume and quality of correspondence; sales of research reports; extent to which the research agendas of other organisations have been influenced; and changes in policy and practice resulting from network activities.

Existing information of this kind can be combined in a number of ways with specific, supplementary questions to key informants in order to provide deeper insights into the impact of networking than can usually be obtained from questionnaire surveys. One example is provided by attempts to trace the sequence of events through which network impact has been achieved. An illustration of this technique derived from the ODI Irrigation Management Network is given here.

The benefits of networking: A tracer study

A network with a sectoral (for example, agriculture) or sub-sectoral (for example, irrigation or crop processing) mandate generally operates more closely with ultimate beneficiaries (in this case, those deriving livelihoods from agriculture) than those concerned with generic or cross-cutting themes such as methods of agricultural research or extension. Because the latter necessarily operate at several stages removed from ultimate beneficiaries, conditions must be right in each of these stages before any innovation produced through the

network can have an impact on ultimate beneficiaries. For instance, the promotion of participatory methods of agricultural research will benefit farmers only if researchers have the resources to work on the themes they identify, produce results and succeed in disseminating these through an extension service.

Input supply and marketing, not to mention more intractable issues such as land tenure, will also have to be right if farmers are to reap full benefit. It is therefore extremely difficult for networks having a cross-cutting mandate to demonstrate impact on ultimate beneficiaries. By contrast, networks with a sectoral or sub-sectoral force often have more direct links with ultimate beneficiaries and may be able to demonstrate impact more easily.

Example of network impact: ODI Irrigation Management Network

In 1984 the ODI Irrigation Management Network initiated discussion among members on how the costs of providing irrigation to farmers might best be recovered. Notes and papers were received from, among others, an Indian economist and a British researcher based in Bangladesh. This was followed by a paper produced by the network coordinator which drew together lessons from this and from other material. A network member who had just become Executive Engineer of the Barind Integrated Development Project began designing a cost-recovery system for tubewell irrigation based on the principles discussed in the network. Realising that farmers would be unwilling to pay for water unless deliveries were reliable, he provided staff with clear operating procedures and with training in the servicing and repair of equipment. He also ensured that equipment was immobilised at the end of each season, so preventing unauthorised use. Equipment was put into action for the following season only when the previous season's payments had been made.

Ensuring in this way that farmers received a high quality of service in return for their payment contributed to exceptionally high rates of repayment (90%) and to an expansion of the scheme from 600 farmer groups in 1986-87 to over 2100 in 1988-89. Payments were set at a level to cover operating costs (including the salary of the pump operator), to contribute to project overheads (including maintenance) and to make a small contribution to capital cost recovery.

Further gains in efficiency were made when the engineer persuaded the government to allow payments to remain with the project rather than be paid into the central government treasury. Rice production rose from 21 000 to 203 000 tonnes between 1986-87 and 1988-89. The reformed cost recovery system is now bringing in some £240 000 per annum more than the average obtained from similar projects elsewhere in Bangladesh. The benefits derived from implementation of this innovation alone were therefore sufficient to outweigh the operating costs of the network, which at the time amounted to some £50 000 per annum.

APPENDIX 2

Organisations contacted for this study, and other IENs, ONFs and databases

AERDD. Agricultural Extension and Rural Development Department. John Best, AERDD, University of Reading, London Road, Reading RG1 5AR, Berkshire, UK. Tel. (44) 734 318872, telex 847813 RULIB G, fax (44) 734 314404.

The *AERDD Bulletin* is aimed at those who have been involved in the AERDD study programme and is a means to support programme alumni through the ongoing discussion of current issues and literature in rural development. Advising, training and consultancy work are carried out by AERDD staff. The documentation centre at AERDD specialises in natural resources, agriculture, community education, extension, sociology, economics, research methods, management and literacy.

Africa Comnet. African International Network of Documentation Centres on Communication Research and Policies. Rahab Gatura (Documentalist), PO Box 47495, Nairobi, Kenya. Telex 25148.

Comnet promotes the exchange of information on mass communication policies and assists in the establishment of regional, subregional and national documentation centres. It is working to strengthen documentation activities in Africa in mass communication.

AFSTINET. African Scientific and Technical Information Network. P. Lissouba (Director), c/o Unesco Regional Office for Science and Technology in Africa (ROSTA), PO Box 30592, Nairobi, Kenya. Telex 22275.

AFSTINET facilitates the exchange of information between information specialists and promotes the exchange of resources between these groups. It provides opportunities for African information specialists to explore the potential of data and computer sources outside Africa.

AGLINET. Agricultural Library Network. Contact FAO for additional information (for address, *see* FAO).

Established in 1971, AGLINET's goal is to facilitate more efficient document delivery through flexible cooperation among the large agricultural libraries of the world.

AGRALIN. Wageningen Agricultural University, PO Box 9100, Wageningen 6700 HA, The Netherlands.

The Wageningen Agricultural University library catalogue (AGRALIN) is held on MiniISIS and can be searched by modem on payment of a subscription.

AGRICOLA. Agricultural On-Line Access. National Agricultural Library, United States Department of Agriculture (USDA), District of Columbia Reference Center, Room 1052, South 14th and Independence Avenue SW, Washington DC 20250, USA.

This was the first database to be commercially available on CD-ROM and is relatively inexpensive because of US Public Information Domain Rules.

AGRECOL. c/o Oekozentrum, CH-4438 Langenbruck, Switzerland. Tel. (41) 62 601420, fax (41) 62 601640.

Since 1983, AGRECOL's goal has been to facilitate communication between farmers and to facilitate their access to existing practical and theoretical knowledge on ecologically sustainable farming methods and systems. It does this through the organisation of a specialised documentation centre, the organisation of regional workshops, support for emerging local networking initiatives and building partnerships with local groups, a question-response service, and a European visitor's service. It is also involved in promoting KIDs (Communication, Information and Documentation centres) in several African countries. It supports the production of some regional newsletters and produces other practical publications and abstracted bibliographies addressing specific themes.

AgREN. Agricultural Administration Unit. Research and Extension Network, Overseas Development Institute (ODI), Regent's College, Inner Circle, Regent's Park, London NW1 4NS, UK. Tel. (44) 71 487 7413.

AgREN is concerned primarily with the generation and dissemination of new technology, particularly for the areas of the developing world where farming conditions are poor. Its focus is on organisation and management issues in technology development and on the links between research, extension and farmers. Within this area, it provides a forum for the exchange of ideas and experiences between practitioners in developing countries, and between developed and developing countries. The network produces discussion and network papers on this subject and a biannual newsletter describing recent developments in the organisation and management of research and extension, including abstracts of recent literature. It also publishes a register of members describing their professional interests, intended to facilitate contact between members.

AGROMISA. Postbus 41, NL-6700 AA, Wageningen, Netherlands. Tel. (31) 8370 12217.

AGROMISA is a 50-year-old question-and-answer service, born out of the needs of overseas missionaries for technical agricultural information, which now targets the less privileged, working through local organisations and development workers. It aims to improve the situation of the poorest sections of society in the developing world by increasing self-reliance through the transfer of practical technical knowledge concerning all aspects of agriculture and agricultural development. Operated mainly by volunteers, many of whom are students at Wageningen Agricultural University, AGROMISA works with CTA to provide books for development workers in developing countries, and collaborates with small library projects in developing countries and in the production of *AT Source*. Usually in collaboration with CTA, it also produces a series of low-priced practical manuals in English and French called *AGRODOKS*.

ALDOC. Arab League Documentation Centre.

ALDOC specialises in information collection, processing and dissemination, and improving general access to information. It is developing a regional information network.

ALIN. Arid Lands Information Network. Oxfam, 274 Banbury Road, Oxford OX2 7DZ, UK. Tel. (44) 865 311311, telex 83610, fax (44) 865 312600. Senegal address for network: Olivia Graham, BP 3, Dakar-Fann, Senegal. Tel. (221) 251808, fax (221) 254521.

ALIN is working to encourage increased contact and exchange among field-based project officers in the arid zones of Africa. This interactive network publishes a newsletter, *Baobab*, containing the experiences and views of members. Much of this material is gathered in the field. ALIN also encourages exchange visits between members and produces practical publications covering particular topics in greater detail.

ANEN. African NGOs Environment Network. S. Muchiru (Director), PO Box 53844, Nairobi, Kenya. Tel. 28138, telex 25331, fax 335108.

Working to strengthen the capacity and technical competence of African NGOs and community groups working in environmental action, ANEN promotes environmental considerations in development projects and local participation. It works throughout Africa, has a documentation centre, produces publications and training programmes and organises seminars. It also publishes the bimonthly bulletin *EcoAfrica* in English and French, and has a small grants programme.

ANTENNA. Antenna Advisory Group. INTERDOC, c/o Michael Polman, Postbus 1513, 6501 BM, Nijmegen, Netherlands. E-mail: GeoNet Geo2:Antenna-NL, GreenNet antenna 1, Alternex antenna.

INTERDOC is a global advisory network for NGOs on electronic information exchange. It is an international partnership of NGOs and NGO networks. ANTENNA is the technical advisory group and facilitator, aiding support, training and coordination of the network.

APC. Association for Progressive Communications. Asia-Pacific: Pegasus, Box 424, The Epicentre, Byron Bay 2481, New South Wales, Australia. Tel. (61) 66 856 789. Europe: Greenet, 23 Benenden Street, London N1 6BH, UK. Tel. (44) 71 608 3040.

This umbrella organisation of seven non-profit E-mail networks is funded to provide low-cost, reliable electronic mail and conferencing to NGOs and groups working on such issues as peace, environment and human rights.

ATNESA. Animal Traction Network for Eastern and Southern Africa. Department of Agricultural Engineering, Sokoine University of Agriculture, PO Box 3003, Morogoro, Tanzania. Tel. (255) 56 3259, fax (255) 56 3259.

The ATNESA network links researchers working to develop and promote animal traction in eastern and southern Africa.

ATOL. Patrick Vanderhulst, Blijde, Imokamststraat 9, B3000 Leuven, Belgium. Tel. (32) 016 22 45 17, fax (32) 016 22 22 56. Coordinator, Rob Brusten.

ATOL is working to provide technical information on appropriate technologies to developing countries. Much of its work is focused on central Africa. It aims to help people to use information more efficiently, to learn how to evaluate the effects of technology and to find better ways to transfer technical knowledge. It promotes the development of local documentation centres, encourages the use of computer and CD-ROM technologies, develops training for documentalists and produces some manuals. It has collaborative links with many intermediary institutions and local appropriate technology-related institutions. At the centre there is a question-and-answer service and documentation centre.

AT Source. PO Box 41, 6700 AA Wageningen, Netherlands.

This small-scale technology and appropriate technology newsletter is written in collaboration by ATOL, CICAT, TOOL and AGROMISA, and is published in English and French.

BIOSIS. Biological Abstracts, 2100 Arch Street, Philadelphia, Pennsylvania 19103-1399, USA. Tel. (1) 215 587 4847, fax (1) 215 587 2016.

BIOSIS is an independent, non-profit publisher of abstracted databases for the life sciences. Much of the material is available on CD-ROM. It is also available on-line from Dialog, and in *Biological Abstracts*.

CAB International. Wallingford, Oxfordshire OX10 8DE, UK. Tel. (44) 491 32111, telex 847964 COMAGG G, fax (44) 491 33508.

CAB International has a literature reference database with over 2.5 million references, all abstracted. The database is available in CD-ROM, CDS/ISIS, D-Base II and IV formats. Up to 3 years of abstracts are available on one CD-ROM. Also available on-line from Dialog. Its document delivery service is supported by a network of libraries. It produces *CAB Thesaurus*, a keyword index for agriculture.

Cardbox Plus. Business Simulations Limited, 30 St James Street, London SW1A 1HB, UK. Tel. (44) 71 925 0636, fax (44) 71 925 0638.

This group produces relatively inexpensive MS DOS micros and information management systems which are simple, powerful and versatile. There are 52 fields and 500 000 records.

CDR. Centre of Development Research. Jannik Boesen and Claus Jespersen, Environment and Rural Development, CDR, Ny Kongensgade 9, 1472 Copenhagen, Denmark. Tel. (45) 33 145700, fax (45) 33 140125.

CDR is a research institution focusing on the socioeconomic, political and cultural processes of development, with a view to achieving sustainable growth with equity. CDR works in five research areas: relationships between developing and industrialised countries; agricultural development and the environment; gender, social inequality and social change; industrialisation and local development; and local institutions and rural development. CDR is working to promote more communication between researchers in this field within Denmark. There is an extensive documentation centre focusing on development issues at the centre, and CDR regularly produces publications and organises workshops and seminars.

CGIAR. Consultative Group on International Agricultural Research. Pauline Zoellink (Manager), CGIAR CD-ROM Project, 924 Kelly Road West, Boulder, Colorado 80302, USA.

This project maintains an international network database of literature produced by the international agricultural research centres, and the CIMMYT maize germplasm database. The database is available as a CDS/ISIS application. CTA intends distributing a hard copy of the database. The project also produces the CGIAR *Compact Library*, which contains a full text library of 1350 documents on CD-ROM, the equivalent of 191 000 pages.

CIDARC. Centre d'Information et de Documentation en Agronomie des Regions Chauds. Avenue du Val de Montferrand, 34032 Montpellier Cedex, France. Tel. (33) 67 61 58 46, telex 480762, fax (33) 67 61 58 20, E-mail Box N Transpac (1) 34070328.

As part of CIRAD, this organisation specialises in producing databases and operating a question-response service.

CIKARD. Center for Indigenous Agricultural Knowledge and Rural Development. 318 B Curtiss Hall, Iowa State University, Ames, Iowa 50011, USA.

CIRAD. Centre de Coopération Internationale en Recherche Agronomique pour le Développement. 42 rue Scheffer, 75116 Paris, France. Tel. (33) 1 47 04 32 15, fax (33) 1 47 55 15 30.

CIRAD produces a bibliographic database, coordinates the documentation network at Agropolis, runs a question-and-answer service, and provides on-line access to international databases and a selective dissemination of information service. It also produces the *Sesame* CD-ROM collection and publishes scientific and technical journals and books.

COTA. Collectif d'Echanges pour la Technologie Appropriée. Jean Louis Schmitz, COTA, 18 rue de la Sablonnière, 1000 Bruxelles, Belgium. Tel. (32) 2 218 18 96, fax (32) 3 271 32 59.

COTA works to collect information on technical development and operates a documentation centre for study and research on appropriate technology. It specialises in project evaluation and renewable energy issues and conducts seminars and training courses. It also has a question-and-answer service, and produces a newsletter, *Echos du Cota* and a new publication yearbook.

CTA. Technical Centre for Agricultural and Rural Cooperation. Andries Dusink, PO Box 380, Wageningen 6700 AJ, Netherlands. Tel. (31) 8380 60400, fax (31) 8380 24262.

CTA is working to improve the access of ACP countries to scientific and technical information in the field of agriculture and rural development. It publishes and supplies free to these countries textbooks, journals, bibliographies and directories, and organises seminars and conferences. It has a question-and-answer service on agricultural information and operates a book presentation programme which provides selections of books to regional libraries. It organises training for documentalists and supplies CD-ROM equipment to ACP agricultural libraries as part of its ongoing CD-ROM project.

DCFRN. Developing Countries Farm Radio Network. Jennifer Pittet, 40 Dundas Street W., Box 12, Suite 227, Toronto, Ontario M5G 2C2, Canada.

Dialog. 3460 Hillview Avenue, Palo Alto, California 94304, USA. Telex 334499.

Dialog is a commercial database host. A database catalogue is available.

Drylands Programme. Dr Camilla Toulmin, International Institute for Environment and Development (IIED), 3 Endsleigh Street, London WC1 0DD, UK. Tel. (44) 71 388 2117, telex 261681 EASCAN G, fax (44) 71 388 2826.

The IIED Drylands Programme works mainly in the arid and semi-arid regions of Africa, and takes part in collaborative research programmes, training workshops, building bridges between research organisations and local NGOs, information networking and advocacy work on key issues, and support for the development of the African NGO sector through the small grants fund. Its topical focus includes pastoral land tenure, wetlands and drylands review, risk, indigenous soil and water conservation technologies, and common property management. In conjunction with the Southern Networks Programme, it publishes the quarterly newsletter, *Haramata*, containing news and reviews from anglophone and francophone Africa, and the occasional *Drylands Reports*, a skills register and other case studies.

ELCI. Environmental Liaison Centre International. Dr Masharia and Douglas Rigby, PO Box 72461, Nairobi, Kenya. Tel. (254) 2 562 015, telex 23240, fax (254) 2 562 175.

This is INTERDOC's African branch. It aims to strengthen cooperation among NGOs working in environmental development and to promote environmental awareness and education. ELCI has a question-and-answer service, and documentation, publication, training and computer information systems. It produces two monthly magazines, *Ecoforum* and *News Alert*, and other directories, manuals and papers.

El Taller. PO Box 137, 1002 Belvedere, Tunis, Tunisia. Tel. (216) 334 46 56.

Established in 1989, El Taller is an NGO working to establish an international study and meeting centre for NGOs and their staff, to promote exchange programmes between NGOs worldwide, and to set up an accessible documentation centre to promote research relevant to the needs of the NGO community. It does this work through think-tank discussions, in workshops, with national support groups, through animators, and in working groups. El Taller produces a newsletter, *Banyan*, and the issue papers *Reflexions*.

EULEISA. Network of European Organisations Promoting Low External Input and Sustainable Agriculture in the Tropics and Subtropics. Contact one of the member networks for information.

EULEISA is a network of European organisations promoting low external input and sustainable agriculture (LEISA) by small-holders in the tropics, subtropics and Mediterranean area. The ultimate aim of all members (including AGRECOL, GATE, GEYSER, IFOAM and ILEIA) is, through the promotion of LEISA, to contribute to the development of rural livelihood systems which are socially, economically and biologically sustainable.

FAO. Food and Agriculture Organisation of the United Nations. Via delle Terme di Caracalla, I-00100 Rome, Italy.

FAO accumulates statistical and technical data and promotes national and international action to improve production, marketing, processing and distribution of agricultural products, the conservation of natural resources, credit and commodity policies. It provides technical assistance as requested and helps countries obtain investment for agricultural development.

FAO-RAPA. Regional Office for FAO for Asia and the Pacific, Maliwan Mission, Phra Atit Road, Bangkok, Thailand.

CARIS. Current Agricultural Research Information System. CARIS promotes the decentralisation of a network of regional documentation centres in developing countries.

SPAAR. Special Programme for African Agricultural Research. This joint World Bank/FAO project has established a database of African researchers.

the world, focusing on ecological agriculture. It works with Pasos in Mexico on methodological issues, and with Page-Paca on germplasm issues, including conservation. There is a joint project with ITAB to make abstracts of publications primarily from the developed countries. The association is involved with APM (Agriculture, Paysanne and Modernisation) on the exchange of ideas about development. These are published in *Alter Agri*, a newsletter of qualitative reviews, including brief descriptions of the alternative agriculture press. GEYSER is involved with the Groupe de Recherche et d'Echanges Technologiques (GRET) to produce the AGRINNOV database of French agricultural innovations, which will eventually be available on Minitel.

GRAIN. Genetic Resources Action International. Henk Hobbelen, GRAIN, Jungueres 16, 6^o D, E-08003 Barcelona, Spain. Tel. (34) 3310 5909, fax (34) 3310 5959.

GRAIN grew from the seeds' campaign of the International Coalition for Development Action (ICDA) and is the European contact point for the Seeds Action Network (SAN). Founded in 1990, it is an advocacy organisation fighting against genetic erosion. It is working to increase public awareness and stimulate support for the movement through three main programmes: the Fight for Rights, lobbying for change; Conservation in the South, collaborating with local groups and the CGIAR system; and Conservation in the North. GRAIN is working to promote communication between advocacy groups and to coordinate the efforts of the movement. It publishes a newsletter *Seedling*, discussion papers (*Disclosures*), and occasional briefs and books.

Headfast. Head Computers Ltd., Oxted Mill, Spring Lane, Oxted, Surrey RM8 9PB, UK.

This MS DOS text retrieval system is very user-friendly to non-expert users.

IBISCUS. 1 bis, rue de Havre, 75008, Paris, France.

This is an information system on developing countries and is available on-line.

IBFAN. Infant Breast Feeding Action Network. c/o GIFA, CP 157, CH-1211, Geneva 19, Switzerland.

This network campaigns against the marketing practices used by transnational corporations which sell baby milk.

IDRC. International Development Research Centre. Head Office of the Information Sciences Division: PO Box 8500 Ottawa, Ontario, Canada K1G. Southeast and East Asia: Tanglin PO Box 1, Singapore 9124, Republic of Singapore. Eastern and Southern Africa: PO Box 62084, Nairobi, Kenya. Middle East and North Africa: PO Box 14, Orman, Giza, Cairo, Egypt. West and Central Africa: BP 11007, CD Annex, Dakar, Senegal. Latin America and the Caribbean: Casilla de Correos 6379, Montevideo, Uruguay.

IDRC promotes library access to information about development issues, with the emphasis on research in adapting scientific and technical information to the needs of developing countries. It also provides small grants for information-related activities around the world. It sets up MiniISIS resource centres free in NGOs in developing countries, providing kits, training and advice.

IDRIS. InterAgency Development Research Information System. Mary Cambell (IDRIS Project Coordinator), IDRC, PO Box 8500 Ottawa, Ontario, Canada K1G.

IDRIS provides a database of information describing research activities in or concerned with the developing world.

IFOAM. International Federation of Organic Agriculture Movements. Benward Geir and Franz J. Frey, IFOAM, Oekozenstrum Imsbach, D-6695 Tholey-Theley, Germany. Tel. (49) 6853 5190, fax (49) 6853 30110.

IFOAM coordinates the efforts of its members and member organisations to promote the cause of organic agriculture worldwide. It is a regionalised organisation working to provide an international platform for information exchange and provision, member representation, and the development of organic standards. It organises workshops, scientific conferences, working groups and a member accreditation programme. It has a question-and-answer service, a small documentation centre and publishes *Ecology and Farming*, a periodic review of organic agriculture literature.

IILRI. International Institute for Land Reclamation and Improvement. Ir Naber (Head Librarian), PO Box 5, 6700 AA Wageningen, Netherlands.

ILRI provides research, training, and advisory services, organises conferences, and produces documentation and publications dealing with irrigation, land drainage and remote sensing.

ILEIA. Information Centre for Low External Input Agriculture. Ann Waters-Bayer, PO Box 64, 3830 AB Leusden, Netherlands. Tel. (31) 33 943086, telex 79380 ETC NL, fax (31) 33 940791.

ILEIA is working to gather information on the experiences of indigenous farmer technology development in developing countries, to share this information among the development community, and to bring the concept of low external input and sustainable agriculture (LEISA) to the international policy agenda. It does this through networking, publishing a newsletter, organising thematic workshops and facilitating the emergence of networks in developing countries by providing information, training and support for local documentation centres.

IMN. Irrigation Management Network. Overseas Development Institute (ODI), Regent's College, Inner Circle, Regent's Park, London NW1 4NS, UK. (44) 71 487 7413.

IMN's members represent a wide range of disciplines and experience and have a common interest in planning, designing and managing irrigation schemes. The network acts as a forum for research dissemination and the exchange of ideas on irrigation. Its members receive a newsletter as well as network papers several times a year. The network papers are based on research conducted at ODI and other institutions, and on the practical experience and observations of IMN members involved in irrigation planning, design and operation. IMN also produces *News from the Field*, a publication which carries a selection of shorter articles written by network members, submitted in response to a mailshot and focusing on a particular theme.

INMagic. INMagic Limited, 2067 Massachusetts Avenue, Cambridge, Massachusetts 02140, USA, or Soutron, Jerome House, Mallam Fields Road, Ilkeston, Derbyshire DE7 4BH, UK. Other dealers located worldwide.

To access this biblioguide and text retrieval service, users need an MS DOS system, and a minimum of 384 RAM hard disc. There is no limit on record length, and there are variable length fields. The evaluation version, Testmagic, is also available.

Intermediate Technology Publications. 103-105 Southampton Row, London, WC1 B4HH, UK. (44) 71 436 9761.

Internet. A.M. Rutkowski (Vice President), Internet Society, Reston, Virginia, USA, or Director, Technology Assessment, Sprint International Communications Corp., Reston, Virginia, USA.

A global network of information networks linked via E-mail, Internet provides global applications including electronic mail, file transfer and on-line access to databases.

IRED. Innovations et Réseau pour le Développement. Fernard Vincent, Secretary-General, IRED/Forum, 3 rue de Varembe, cas 116, 1211 Geneva 20, Switzerland. Tel. (41) 22 734 17 16, fax: (41) 22 740 00 11.

This international association of individuals and NGOs works to promote relations between countries of the developing world. Its philosophy is based on the idea that development can best be achieved by strengthening the autonomy of grassroots associations by enabling these associations to take their own decisions, and by networking to exchange experiences and information. IRED does this by fostering networking links, providing a global framework for this activity, and publishing the *IRED Newsletter*.

ISER. Institute of Social and Economic Research. University of West Indies, Kingston, Jamaica.

ISER is involved in a Unesco-financed project to assess library and information manpower needs in the Caribbean.

ISIS. Giampaolo del Bigio, Division of Software Development and Application, Unesco, 7 Place de Fontenoy, 75700 Paris, France.

Supplied free by Unesco, CDS/ISIS is well distributed in the developing world and is quick and expandable. It is usually used on IBM or IBM-compatible microcomputers. MiniISIS and MicroISIS are smaller versions of CDS/ISIS.

ISNAR. International Services for National Agricultural Research. Library and Documentation Centre, ISNAR, PO Box 93375, The Hague, 2509 AJ, Netherlands. Tel: (31) 703 496100, telex 33746.

ISNAR specialises in agricultural research, the organisation of research and research institutions, and research policy.

ITAB. Institut Technique d'Agriculture Biologie. See GEYSER.

ITDG. Intermediate Technology Development Group. P.M. Mulvany, Myson House, Railway Terrace, Rugby CV21 3HT, UK. Tel. (44) 788 60631, telex 317466 ITDG G, fax (44) 788 540270.

ITDG aims to enable resource-poor people to develop and use productive technologies and methods which give them greater control over their own lives and which contribute to the long-term development of their communities. ITDG does this through project work with partners, by providing training and advice worldwide, and by publishing and stocking a wide variety of books on appropriate technology and development.

KIT. Koninklijk Instituut voor de Tropen (Royal Tropical Institute). Information and Documentation, KIT, 63 Mauritskade, Amsterdam 1092 AD, Netherlands. Tel. (31) 20 568 8290, telex 15080 Kit NL, fax (31) 20 568 8444.

Focusing on rural development and tropical agriculture, KIT gathers and disseminates information on the tropics and subtropics, with particular emphasis on developing countries. Its activities include organising seminars, implementing research programmes, offering training and documentation services, publishing, and organising exhibitions and theatre. KIT has a large bibliographic database with on-line services (derived from printed versions), a question-and-answer service and a document delivery service. Many abstracted references are available on CD-ROM and in the ATA and RURAL abstracts journals, *Tropag* and *Rural*.

National Academy of Science. BOSTID, National Research Council, 2101 Constitution Avenue, NW, Washington DC 20418, USA.

The publications from NAS are available to developing countries.

NGONET. Contact ELCI for further information.

This is an African project initiative of ELCI, aimed at building an electronic NGO network.

NRI. Natural Resources Institute. Pembroke House, Central Avenue, Chatham Maritime, Chatham ME4 4TB, UK. Tel. (44) 634 880088, telex 263 907/8 LONG G, fax (44) 634 880066/77,

The principal aim of the NRI is to alleviate poverty and hardship in developing countries by increasing the productivity of their renewable natural resources through the application of science and technology. Its main areas of expertise are resource assessment and farming systems, integrated pest management, food science and crop utilisation.

ODI. Overseas Development Institute. Regent's College, Inner Circle, Regent's Park, London NW1 4NS, UK. Tel. (44) 71 487 7413, telex 9408 2191 ODI G.

ODI is a non-governmental organisation concerned with promoting discussion and the exchange of information on economic and social issues. The four networks operated by ODI working are on Agricultural Research and Extension, Irrigation Management, Pastoral Development, and Rural Development Forestry. At ODI there is a large specialist library on these areas including many unpublished papers. It is able to publish topical bibliographies and is open for use by network members. ODI is actively involved in research and in the publication of bulletins, discussion papers and books, and regularly organises conferences and workshops.

OECD. Organisation for Economic Cooperation and Development. Colm Foy, Information and Publication Unit, OECD, 94 Rue Chardon-Lagache, 75016 Paris, France. Tel. (33) 1 24 82 00.

OECD conducts research on economics, governance, environment and agriculture in developing countries. It has a documentation centre, and is engaged in information dissemination and publication, seminars, bibliographies and development dialogue.

OTA. Office of Technology Assessment (United States Congress). US Government Printing Office, Washington, DC 20402-9325, USA.

Packet Radio. A telecommunication system whereby countries without links to international networks are able to enter into international networking. Current links to the CGIAR-CGNET are available from Burkina Faso, Côte d'Ivoire, Ethiopia, Kenya, Mali, Niger and Zimbabwe.

PAN-Europe. Karen Snyder, 23 Beehive Place, London SW9 7QR, UK. Tel. (44) 71 274 9086, fax (44) 71 274 9084.

PAN-Europe is one of six regional groupings of international advocacy and exchange organisations which are opposed to the irrational spread and misuse of poisonous pesticides. PAN has been influential in promoting the FAO *Code of Conduct* on pesticides, *Prior Informed-Consent Rules* on pesticide use and the *Dirty Dozen* campaign. As a facilitating organisation, PAN organises international meetings and workshops and produces the occasional newsletter.

PDN. Pastoral Development Network. Overseas Development Institute (ODI), Regent's College, Inner Circle, Regent's Park, London NW1 4NS, UK. Tel. (44) 71 487 7413.

The PDN links individuals and organisations throughout the world who have a professional interest in pastoral peoples, livestock and rangeland policy in developing countries. The network provides a forum for debate on policy issues, dissemination of research findings, publication and the exchange of ideas and information amongst members, as well as a wider readership. The interactive *Pastoral Development Newsletter* enables participants in the network to inform other members of work in progress and interim research findings through notes, letters and articles, and to correspond with each other on current programmes and initiatives. The network also publishes a series of topic-focused network papers and a periodic register of members.

Peace Corps. Information Collection and Exchange, Office of Training and Program Support, 1990 K. St. NW, Washington DC 20526, USA. Publications available from: National Technical Information Services (NTIS), 05285 Port Royal, Springfield, Virginia 22161, USA.

The publications available from the Peace Corps cover such topics as appropriate technology, agriculture and project planning.

POPTEL. 25 Downham Rd, Hackney, London, N1 5AA, UK.

This global NGO mailbox host operates a national and international communication and information service for NGOs. It is now only a point on the GEONET network and is no longer part of GREENET.

PUDOC. Publishing and Documenting Agricultural Information. Hugo Besemer (CDS/ISIS adviser), Postbus 9, NL-6700 AA Wageningen, Netherlands. Tel. (31) 83 70 84 511.

PUDOC is the documentation and publication organisation of the Dutch Ministry of Agriculture. It provides on-line access to AGRALIN, AGRIS, CAB International and other agricultural databases. The *Pudoc Bulletin* is input into AGRIS. PUDOC conducts literature surveys, provides selective dissemination, conducts literature searches and organises document delivery.

RAT. Réseau Arbres Tropicaux. SILVA, 21 rue Paulbert, 94 130 Nogent sur Marne, Paris, France. Tel. (33) 48 75 59 44, fax (33) 48 76 31 93.

RAT is working to promote communication among field agents in the francophone world, particularly in Africa, on tropical forestry. It provides a forum for reflection, policy making, and information exchange and diffusion. It has a question-and-answer service, organises workshops, conferences and study trips, and sets up working groups to encourage discussion on tropical forestry. It publishes a newsletter, *Le Flamboyant*, technical guides and manuals, and takes part in other topical studies.

REAPER. Réseau Euro-Africain Sur Les Petits Ruminants. Dr Elyazid Selmi, REAPER Secretariat, c/o GTZ, Division 422, Postfach 5180, D-6236 Eschborn, Germany. Tel. (49) 6196 794104/03, 1454/62, fax (49) 6196 791115.

REAPER is an international network which is attempting to coordinate the efforts of regional livestock research centres, to avoid duplication of effort and to make complementary use of existing resources, results and experiences. It conducts training and workshops in both English and French, and works to identify frameworks for common projects. It is decentralised and works to strengthen functional relationships between African and European researchers and to improve the supply of documents and research results to all researchers. It publishes a monthly newsletter and a directory of livestock researchers in the EEC and Africa. Much of its core support is provided by GTZ.

RESADOC. Réseau Sahélien d'Information et de Documentation Scientifique et Technique. Samba Aw (Documentalist), Institut du Sahel, BP 1530, Bamako, Mali.

RESADOC is an example of the work of CIRAD's selective information dissemination programme. It is a service that provides regular searches of CIRAD agricultural databases, using firm acquisition rules and regular diffusion to regional documentation centres. RESADOC receives these regular database updates and, in turn, provides a regional question-and-answer service. It is building up its documentation centre, produces publications, and organises conferences and seminars.

Réseau Erosion. Eric Roose, ORSTOM, BP5035, 34032 Montpellier, France. Tel: (33) 67 76 17 65.

Réseau Erosion (Erosion Network) is an international network whose membership comprises research teams, trainers and development workers who are interested in erosion issues. Its activities are aimed at increasing the rate of information exchange on erosion issues through the organisation of meetings, and the publication of a regular newsletter and an annual bibliographic review.

Réseau Parcours. c/o CIHEAM/IAM-M 3191 Route de Mende, BP 5056-34033, Montpellier Cedex 01, France. Tel. (33) 67 04 60 00, fax (33) 67 54 25 27.

Réseau Parcours is a pastoral network which collects, diffuses and produces information on pastoralism issues, and supports better relationships between researchers and development workers. It produces a quarterly newsletter, *Parcours Demain*, and promotes the integrated use of forests for pasture and wood production.

R³S. Réseau de Recherche sur la Résistance à la Sécheresse. F.N. Reyniers, c/o IRAT/ORSTOM (CIRAD-ORSTOM), BP 5045, 34032 Montpellier Cedex 01, France. Tel. (33) 67 61 74 23, fax (33) 67 54 78 00.

R³S is a research network which aims to organise and coordinate research in arid zones around better-defined themes. It has a regional organisational structure and is attempting to bring a more global perspective to the efforts of individual researchers. The network works with the RESADOC database in Bamako, Mali to provide more and better information to researchers, and organises conferences for the discussion of the major research issues facing arid zones. It helps to identify sources of finance for a progressive and coherent research programme, and publishes a newsletter and members' yearbook.

RRD. Réseau Recherche Développement. Jean-Michel Centres, RRD, GRET, 213 rue la Fayette, 75010 Paris, France.
Tel. (33) 1 40 35 13 14, telex 212890, fax (33) 1 40 35 08 39.

RRD is a forum for the exchange of information and ideas between those working in agricultural research, extension and training in developing countries. It is working to facilitate the communication, discussion and evaluation of field experiences by bringing together donors, researchers, trainers and decision-makers with common concerns, to stimulate exchange and break down institutional barriers. It organises three working groups concerned with irrigation, formation and land management, organises seminars, and has a question-and-answer service. It publishes workshop proceedings, books and a regular newsletter.

RZA. Réseau Zones Arides. CNRS BP 5051, 34033 Montpellier, France.

RZA is a research network promoting scientific research in arid zones, and working to build links between researchers working on common themes. It does not seek to coordinate research, but only to inform and facilitate the flow of information between researchers, through the organisation of annual meetings and the publication of bulletins, yearbooks and other collective works.

SAIP. Sustainable Agriculture Information Project. Agroecology Program, University of California, Santa Cruz, California 95064, USA.

SAP. Sustainable Agriculture Programme. c/o International Institute for Environment and Development (IIED), 3 Endsleigh Street, London WC1H 0DD. Tel. (44) 71 0388 2117, telex 261681 EASCAN G, fax (44) 71 388 2826.

SAP promotes and supports the development of socially and environmentally aware agriculture through research, training, advocacy, networking and information dissemination. It collaborates with institutions in developing countries by refining participatory rapid appraisal (PRA) methods and by supporting the exchange of information on the subjects of: indigenous knowledge and resource management; participatory planning and development; PRA and institution-building; agroecology; and LEISA. SAP publishes an interactive newsletter, *RRA Notes*, an informal journal of field experiences, and the *Gatekeeper*, a series of briefing papers.

SATIS. Global Union for Technologies for Environment and Sustainable Development. BP 2664, Dakar, Senegal.

SATIS works on developing classification systems, thesauri, software, training and databases, and publishes catalogues, newsletters and resource guides.

SATISNET. c/o GEONET, 25 Downham Road, London, N1 5AA, UK.

This network comprises a large group of development-oriented subscribers on the GEONET network.

SESAME. Service Central de l'Information Scientifique et Technique (SCIST), CIRAD, BP 5035, 34032 Montpellier Cedex 1, France.

This is a French language bibliographic database available on a single CD-ROM which contains 6500 bibliographic records, mainly from the literature of CIRAD and ORSTOM, but also from many other smaller databases, making it a unique kind of database with information from a wide variety of sources.

SKAT. Swiss Centre for Appropriate Technology. Varnbelstrasse 14, CH-900 St Gallen, Switzerland. Also contact via ITDG.

TOOL. Technologie Overdracht Ontwikkelings Landen. Roel Koolhof (Technical Enquiries), Erica Goedheer (Librarian), Sarphatistraat 650, 1018 AV Amsterdam, Netherlands. Tel. (31) 20 626 4409, fax (31) 20 627 7489.

TOOL specialises in technology transfer and development cooperation, with the aim of ensuring a process of technological transfer to farmers that is appropriate to local conditions in developing countries. It has an information, question-and-answer service, collaborates in producing *AT Source*, operates a bookshop and mail order service, and has consultancy capacity. Its large

documentation centre specialises in renewable energy, water, agroforestry, fisheries, food processing, manufacturing and management, construction and building materials, civil engineering, health care, development communication and training, and women in development. It also redistributes information between developing countries and participates in small library programmes.

TWIN. Third World Information Network. 4th Floor, 5/11 Worship St., London EC2A 2BH, UK. Tel. (44) 71 837 8293, fax (44) 71 833 1341.

TWIN works to help small organisations in developing countries establish themselves in international markets. It assists these groups to develop trade links and provides advice, information, market feedback and commercial support. It promotes information equity through its Trade Development Project, publications, information services, consultancies and the organisation of conferences and seminars. TWIN Trading helps with technical support, commercial trading partners and the wholesaling of distributed products, in addition to providing aid to the product research and development process. TWIN produces a quarterly newsletter, *Network*, and publishes other papers and guides relevant to its work.

USAID. United States Agency for International Development. Library Room 105, SA-18, Washington DC 20523-1803, USA, or 1601 North Kent Street, Room 105, Arlington 1, Virginia, USA.

USDA. United States Department of Agriculture. District of Columbia Reference Center, Room 1052, South 14th and Independence Avenue SW, Washington DC 20250, USA.

UUCP. UNIX-to-UNIX Copy Program. For more information contact E-mail no. uucpmap@rutgers.edu.

UUCP is a transport protocol developed to allow remote command execution and file transfer on UNIX systems. It can also be used to transmit electronic mail.

VITA. Volunteers in Technical Assistance. 1815 North Lynn Street, Suite 200, Arlington, Virginia 22209-2079, USA.

VITA produces practical technical manuals and provides technical advice.

APPENDIX 3

Bibliography

Abstracted journals

- Alter Agri*. Published by GEYSER and ITAB. Qualitative abstracts in French.
- AGRINDEX*. Published monthly by FAO.
- AGRITROP*. Using databases of CIDARC and ISRA, published in collaboration with KIT CD-ROM collections, TROPAG and ARDT. About 50% in French.
- ARDT*. Abstracts on Rural Development in the Tropics. Published by KIT.
- ATA*. Abstracts on Tropical Agriculture. Published by KIT.
- BIOSIS*. Biological Abstracts. Abstracted databases for the life sciences. CD-ROM, on-line Dialog.
- CAB International. Abstracts available on-line as a single database, but also printed as abstracted collections in many different volumes.
- IBISCUS. Produces a variety of bibliographic bulletins.
- IDA*. International Development Abstracts. Available through GEOBase. Bi-monthly coverage of current development literature.
- RDA*. Rural Development Abstracts. Quarterly journal published by CAB International. Also available on-line and on CD-ROM.

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A large quantity of this type of material exists. For a more complete listing, contact one of the networking organisations listed in Appendix 2

Library organisation and library technology

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