

Rebuilding Africa's capacity for agricultural development

The role of tertiary education

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Promoting integrated natural resource management training and education through networks

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Abstract

A review of literature on partnership and networks reveals that there is no uniformity in the terminology used: the three most widely used terms are alliances (mostly referred to as strategic alliances), networks and partnerships. Other terms used to define similar relationships include cooperation, collaboration, coalition and joint venture. Although these terms may have their own peculiarities, one common characteristic is that they all refer to inter-institutional relationships. The Australian Government Publishing Service (1995) provides one of the most comprehensive definitions of networks in the simplest terms: "multi-partner cooperative arrangement between more than one organisation or firm". Powell (1998) notes, "when uncertainty is high (e.g. as resources of African universities dwindle), organisations interact more, not less, with external parties in order to access both knowledge and resources. Hence, the locus of innovation is found in networks of learning, rather than in individual firms."

Using the experience of the African Network for Agroforestry Education (ANAFE), this paper focuses on the potential of networks as an instrument and mechanism for promoting integrated natural resources management (NRM) training and education. It also highlights some of the key aspects that make or break a network. These are mainly foundational and sustaining elements of a network as well as processes such as goal and priority setting, acquisition of inputs, planning of activities, delivery of outputs and coordination. The case of ANAFE sets the example of network governance as an effective and viable structure to keep pace with change and strong specific activities dependencies.

Changing realities require new approaches to development. This paper argues that regional networking of universities and technical colleges has proved to be an effective way of strengthening integrated land use education in Africa.

Introduction

Stakeholders in a given area of interest working together to achieve a common objective may define networking as a strategy. The building blocks of a network are individual persons or institutions and organisations. The stakeholders assume that working together is more beneficial and effective than working independently, and that there is a need to link up with others in order to accomplish the goals. Networking is linked to change, decision-making and leadership processes. Through networking, participants:

- Build up their knowledge bases.
- Understand the processes through which they can promote their joint values.
- Translate their understanding into action (Hosking 1990).

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The origin of the networking idea is not well documented, but recently there has been a rapid growth in the number of networks in practically every field of human endeavour. Boje and Wolfe (1989) say that complex problems require new organisational forms for their solution. Inter-organisational networks among public, private and grassroots organisations have emerged to meet this need. The processes of mobilising new networks, changing existing networks and reframing the collective definitions that bind networks together are referred to in the context of trans-organisational development.

The African Network for Agroforestry Education (ANAFE) was established in April 1993 by African colleges and universities teaching agriculture and natural resource sciences. The objective of ANAFE is to strengthen multidisciplinary approaches to land-use education, especially by incorporating agroforestry into teaching programmes. ANAFE puts emphasis on linking institutions, as well as individuals. The network coordination unit is based at the World Agroforestry Centre (ICRAF). This allows the network to benefit from the latest advances in agroforestry research. Membership in the network is free.

In this paper we present some of the key aspects that make or break a network. We present our experiences with ANAFE, with a focus on key technical aspects of establishing and sustaining a network. Our objective is to share information and experience with the global community on some elements that we have found to be fundamental to the success of ANAFE and with potential for application elsewhere. We recognize that there are social, political and cultural factors that can influence the success or failure of networking. These factors are beyond the scope of this paper.

Network typology

Eade (1998) identifies four types of networks by structure:

- **The bicycle wheel**, in which the hub is the coordination point and the spokes represent members.
- **The family tree**, in which the source of information is the top, and information spreads downward with little communication among members and across generations.
- **The spider's web**, in which a coordination point gives guidance but there are many links among members.
- **The fishing net**, in which the coordination point can shift according to need, but there are many other nodes supporting communication.

Notably, all these structures are descriptions of where the coordination centre or centres are in relation to members. Whether or not the members have linkages among themselves is not clear. First, it is important to realise that functionality is more important than structure. The design of a network should focus primarily on functionality. Second, size matters. A network covering a large region and with many members must have several coordination points (or nodes) to be effective. Whether or not members communicate among themselves depends very much on the nature of activities of the network and access to communication resources and facilities. However, this is a very important aspect of networking.

Over the 10 years since its inception in 1993, ANAFE has evolved in structure. ANAFE started as a continental network with a single coordination point based at ICRAF. Within two years members realised the need for more contact points and proposed the establishment of eight focal institutions. This expanded the contact points to nine. In its fourth year ANAFE decided to establish four semi-autonomous regions.

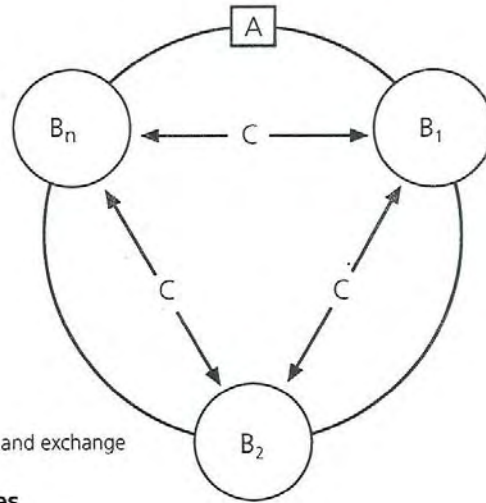


Figure 1: Network definition, domains and exchange

Network stakes and processes

Networking appears to be an attractive way of bringing together stakeholders in a given area of interest. One of the reasons this mechanism is growing in popularity is the fact that in a networking mode all participants enjoy equitability, at least in principle. They have the choice to join or leave the network and they have a say in its management. This is perhaps one unique feature that distinguishes networking from other forms of partnership. The absence of contractual obligations that bind members to a pre-defined code of conduct is significant. Boje and Wolfe (1989) bring forward a theory of 'negotiating context' within which networks operate. A negotiation process in which participants collectively define their problems and develop mutual understanding of their common issues defines this context. Within this context, stakeholders carve out different domains which are composed of a range of self-interest issues. Some of these domains overlap with those of other stakeholders, while others may not.

Defining collective stakes is a basic essential task in networking. The stakes of network participants are also important. All stakes are dynamic and negotiable. Each participant experiences three interdependent forces that define their interest and continued participation in the network. These are illustrated in Figure 1.

The big circle labelled A defines the boundary of a network's stakes. Each member has the responsibility to contribute towards the network's overall goals. These goals are collectively negotiated and agreed upon when the network is formed, but may be modified at an appropriate forum of the networkers. Circles B_1 , B_2 up to B_n represent the stakes or domains of individual members of the network. These are the activities and benefits that are the 'home turf' for each member 1, 2, ..., n. Note that some activities of members can fall outside the boundary of the network. The arrows labelled C represent the sharing and exchange among members facilitated through the network. Boje and Wolfe (1989) refer to A, B and C as *collective definition*, *domains* and *exchange*, respectively.

Essential elements of a network

Networks can collapse if some of the basic elements that hold them together are either ignored or overlooked. To establish and sustain a network, one needs to have:

- Interested stakeholders.
- Jointly identified goals (purposes) of networking.
- Clear strategies for achieving the goals of the network. Normally this translates into defining the network structure and modus operandi, prioritising activities, allocating responsibilities and setting accountability requirements.
- Good coordination capacity. A network coordinator is a key person, who keeps members active. A self-driven, innovative and highly motivated person should be appointed.
- Quality information — this is the lifeblood of a network, without which the network appears bankrupt. The information must be focused on the goals of the network, and be regularly updated and shared regularly with members. ANAFE benefits from three main sources of information. First, members have access to and tap ICRAF's knowledge pool and scientific expertise. This ensures that the latest advances in agroforestry would be available to colleges and universities. Second, ANAFE organises periodic reviews on the status of agroforestry training and education at member institutions. This makes members confident that the network would address their needs, and serves as an incentive for members to demonstrate their interest by taking actions to stay abreast of agroforestry education. Third, a newsletter, *Agroforestry Education News*, is produced and circulated every six months to inform members on network activities and links.
- A good balance between formal and informal communication: A highly formalised system tends to bring with it heavy bureaucracy and drudgery, which delays action and makes meetings boring. This is true at all levels of communication, but it is especially important between members and the coordination node(s). Highly formalised meetings and communication may also reinforce inequity among members by intimidating weak ones.
- Resources: The need to have resources (human, time, material and financial) to respond rapidly to needs of members should never be underestimated. It is ideal for each member to make a contribution (in kind and/or in cash) towards the management of the network. Such contributions secure members' stakes. Sustainability is compromised right from the start if stakeholders cannot make their contributions.
- Experience from ANAFE shows that there are five key processes that help to define any organisation. These are goal setting, acquisition of inputs, activities or processes, outputs and outcomes. The relationships amongst these processes are articulated in Figure 2. It is noteworthy that the goals need to be reviewed periodically. Networkers are involved in all the processes, but, as we will see in the next section, the extent of participation may differ.

Why networking is helpful

Networking can be an important instrument for educational change, because of its potential

- As a capacity enhancement strategy.
- To collectivise the bargaining power of networkers.
- To overcome social, political, cultural, linguistic and organisational barriers to collaboration.

Capacity enhancement

One of the key objectives of networking is to share knowledge and skills to achieve a development level that would be hard to reach through independent action by any of the

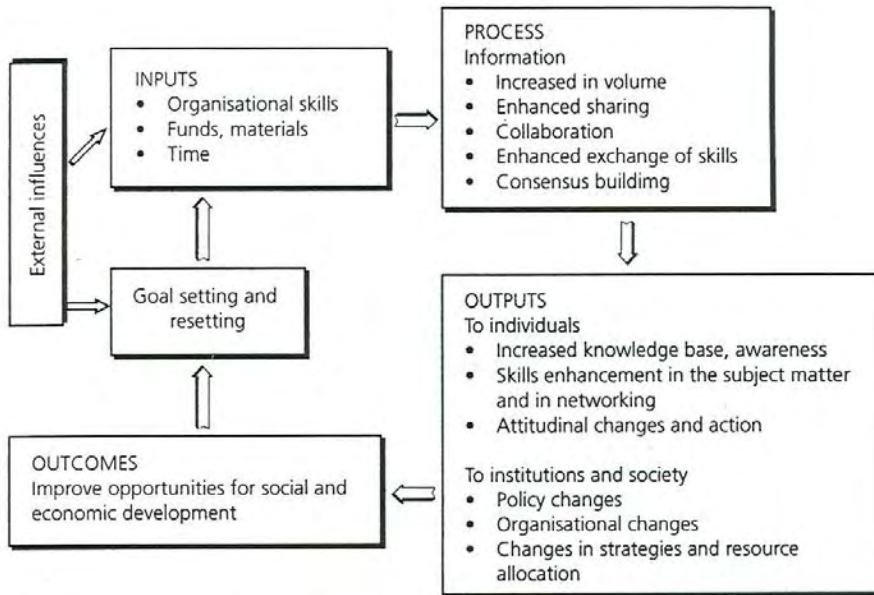


Figure 2: Key processes in a functioning network

individuals or institutions involved. In other words, the goals of a network are well beyond the reach of its individual members acting alone. In the case of ANAFE, the network has been a mechanism for sharing knowledge and skills in curriculum development, training of teachers, and development of teaching materials, using agroforestry as a platform. Through a human resource exchange programme, networkers are able to pool available capacity into a critical mass of human resources that can be deployed where the greatest needs are. This approach has the potential to expand the horizons of the persons involved and foster long-term collaboration.

Collectivising the bargaining power and policy advocacy

A network is better placed than an individual institution to pool information, share it among stakeholders and mobilise its members to adopt a common position on some specific issues. The strategy applied by ANAFE is to hold network meetings at colleges and universities where action is needed and inviting the decision makers to open and participate in the deliberations. Experience shows that many education policy makers and managers enjoy and benefit from direct discussions with educators on issues of policy nature. This enables them to support policy changes, while creating space for faculty to participate directly in the process. Holding such discussions at venues where the problem can be seen has an added advantage.

ANAFE's approach is to select an educational institution as a venue, and where possible, an area nearby that could be visited to demonstrate the importance of agroforestry. This way potential stakeholders gain tangible knowledge that helps them to buy into a new

idea or innovation. ANAFE experience provides excellent success stories in this area. First, the coming together of several institutions to form the network attracted donor support. Second, agroforestry was little known and much less understood by education policy makers and managers. Collective action by the network engendered peer pressure among institutions and even among departments within institutions to discuss the merits and demerits on agroforestry in their educational systems. Third, as a result of ANAFE's efforts agroforestry is finding space in agricultural and natural resources education programmes in many countries and institutions. The long-term outcome is better integration of land use education.

Overcoming barriers to collaboration

Social, political, cultural and linguistic differences or organisational structures can become stumbling blocks to collaboration. For example, ANAFE discovered that there were barriers to staff and student exchanges between anglophone and francophone institutions. The key barriers were:

- Ignorance of the academic standards (curricula and qualifications achieved) used by the different educational systems.
- Criteria for appointment and promotion of academic staff.

ANAFE developed a document that helped to translate and compare agricultural and natural resource education in the two systems, with emphasis on these two key issues, among others. Using the document educators and students were able to assess academic programmes at different levels of education and to take part in exchanges across the two education systems. It is interesting to note that language was not the key barrier.

ANAFE structure, modus operandi and leadership

A simple, flat organisational structure, thin on bureaucracy is recommended. The chain of command must be short and effective. ANAFE adopted a three-layer operational structure, which is depicted in Figure 3. At general meetings held once every four years members elect the steering committee, who hold office for four years, but they may be re-elected. To ensure continuity, 50% of the steering committee members are retained at every election.

One of the first problems ANAFE faced arose from the fact that the network grew extremely fast in membership, reaching well over 120 universities and colleges in 35 African countries. It became necessary to find a mechanism for ensuring effective participation of members in network activities. This was resolved by establishing four semi-autonomous regional agroforestry training and education groups (RAFTs). These are closely linked to ICRAF's Agroforestry Research Networks for Africa (AFRENAs). Regional coordinators of the AFRENAs are ex-officio members of RAFTs. These arrangements ensure that members of ANAFE easily access agroforestry research and development activities in a given region.

Each RAFT plans, budgets and implements its own activities, provided it follows the basic principles set by the continental steering committee of ANAFE. One of the main functions of the coordinator is to guide the RAFTs and to link them to agroforestry field research activities in the four agroforestry research networks (AFRENAs) located in their sub-regions, namely eastern and central Africa, southern Africa, the Sahel and humid west Africa (Figure 3).

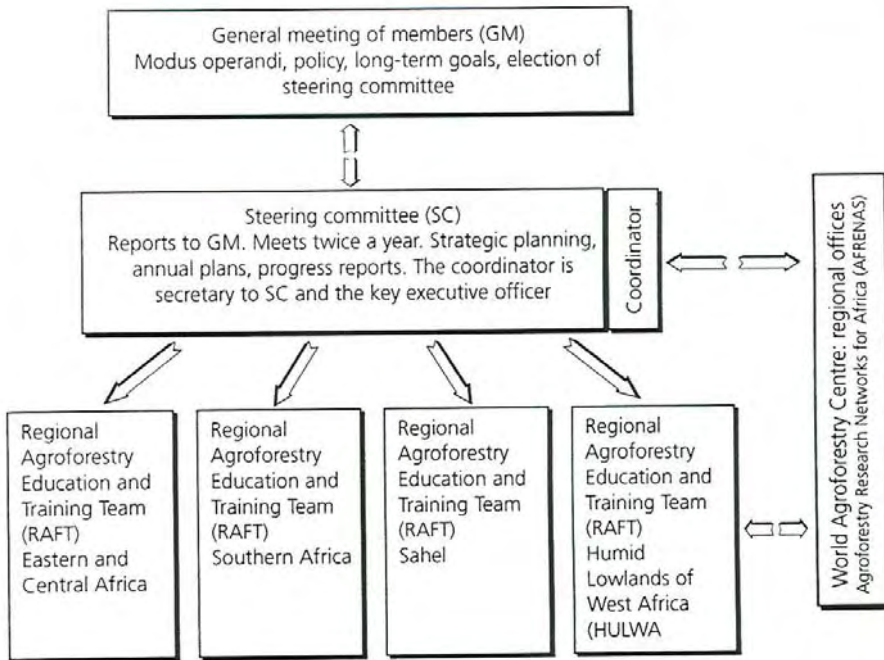


Figure 3. Operational structure development by ANAFE

In addition, within each RAFT two focal institutions were identified and given the mandate to 'lead' agroforestry education and training for the region. The training capacity of focal institutions was strengthened first, mainly by training of the trainers, supplying training materials and establishing agroforestry demonstration plots.

Other factors that influence the structure include available resources, the geographic spread of members, communication facilities and nature of activities. For example, if a widely spread network needs to hold frequent meetings of members it might have to develop a mechanism for members to make their contributions without having to meet physically, or through meetings held at focal points.

Monitoring network performance

A network must be able to undertake a self-assessment to establish indicators of its successes and failures. Here are some actions that may be applied in such assessment:

- Participation index of members in meetings and in network activities. The index is taken as the ratio of actual versus expected participation. If the overall ratio is 0.3 or less, the network is not functioning well. This is a standard set by ANAFE.
- Volume and flow of information in the network. A system should be put in place to monitor the amount and direction of information flow (sharing) and utilisation. A simple system is to have a questionnaire that gives feedback to the coordinator on a regular basis. Another way is to undertake periodic surveys.
- Production and circulation of a newsletter and periodic technical and financial re-

ports. It is also very useful to produce a report at the end of each substantive activity. All meetings must have minutes that show clearly what was achieved and what follow-up actions are required and of whom.

- Asking members at meetings to evaluate the performance of the network. This should be done anonymously and preferably be administered by a person who is not directly involved in the management of the network.
- Seeking external evaluation of the network. This must be done at least once every three years.

Agreeing on elements of sustainability and ownership

This is perhaps one item that is missed out in the establishment of many networks. It is deceptive to assume that as long as the objectives of the network have been fully achieved the network will live on. Even with lots of resources this may not be guaranteed. The basic elements for sustaining a network can be summarised by the following statement:

"A network must be owned and run by its members."

All network functionaries should take note of this statement. To own and run a network, the members must:

- Meet regularly as stipulated in the network modus operandi. Skipping or postponing meetings gives the impression of bad organisation, irresponsible leadership and, sometimes, outright unaccountability. A network coordinator must make very intensive consultations with members before taking such action.
- Choose their leadership. If members have no say in who will lead them, their confidence in the network is likely to be diminished. Members must also be able to remove incompetent leaders. Provisions for this should be made in the modus operandi.
- Decide on and prioritise activities and allocate resources to activities.
- Generate resources for network activities. Member contributions help to secure the stakes of members in the network.
- Access the network machinery. Members have a right to fully understand the way the network is managed and to receive expenditure reports.

One of the sensitive areas of network management is the sharing of information on how resources are spent. Some organisations find it difficult to reveal the actual expenditures, especially where international staff salaries may be included. The fear arises from the fact that such salaries are high and could constitute a significant proportion of network resources, triggering negative reaction from members. ANAFE's experience has shown that this is not necessarily true. ICRAF releases a full financial report to all members and ANAFE members have appreciated this level of transparency. This is partly because right at the start of the network transparency was recognised as a virtue to be observed by all members.

Success factors and how to assess success

Key success factors

Our experience shows that the following factors can influence success:

- **Building and nurturing group mind.** Members should be assisted to maintain a common focus of interest. This can be achieved through a range of activities, policies or approaches, including:

- Frequent meetings that keep the networkers informed and maintain interest.
- Sensitivity to the interest of all members.
- Participatory decision-making mechanisms and implementation of activities.
- Swift and non-bureaucratic decision-making process.
- Regular 'recharging' of the network with new ideas and challenges. New ideas are important in the life of a network. The network is operating in a changing environment, so it must learn to adapt itself to external and internal realities.
- Links: Networks thrive through appropriate links to the outside, including to other networks, both for keeping abreast of current trends and for capturing resources and information.
- Proactive identification and resolution of points of contention. This cannot be over-emphasised. Networkers are bound to disagree on some points. Swift detection and management of points of contention or conflict is one of the key jobs of the coordinator.
- Recreational and creative approaches in handling activities: Members must enjoy what they are doing.

Any form of conflict or slackening of activities can cause the dispersion of members or dampen interest in the network. The coordinator must never drop his guard on this.

- **Setting long-term goals.** It is always useful to have short-term goals and outputs that can keep members motivated. However, the survival of a network depends on sustained interest in longer term objectives.
- **Securing a resource base.** At the early stages, networks are very fragile institutions. They are very prone to dispersion due to lack of or inadequate resources. Having a strong funding base for at least the first five years will allow enough time for members to settle down. One creative way of doing this is by instituting a member contribution system. Members of a network should be able to contribute in cash and/or in kind towards network activities. This helps to demonstrate their interest and underpins sustainability.
- **Never promising more than the network can deliver.** Very often networks are over-ambitious. They want to achieve too many things in a very short time. A modest target is a key to successful networking.
- **Limiting membership.** Networks with popular goals tend to attract too many members. This may stretch resources and communication systems beyond rationally acceptable levels, eventually leading to inefficiency and reducing the capacity of the network to deliver on its promises.
- **How to assess success.** A good network should establish milestones that help to monitor its progress towards agreed goals. Then there should be internal as well as external systems for evaluating performance. But for good monitoring it is necessary to establish baseline data on desired areas of improvement. For ANAFE baseline data were collected on the status of agroforestry training and education in each participating institution. With this as the basis it was easy to assess and monitor progress towards the establishment or better delivery of agroforestry training and education.

Assessing the success of the network is necessary to ensure impact of activities and to monitor network performance. Indicators of success include:

- **Number of members.** Do not shy from this quantitative measure, but try to qualify it. For instance, you can classify members by their level of participation in activities (e.g. very active, moderate or passive). You can also present members in terms of their contributions to network initiatives. Remember that people or institutions belong to networks because they see benefits in doing so.

- **Participatory decision-making and network management.** The lower the level at which decisions are made and implemented, the better for a network. This must be matched with resource allocation, responsibility and accountability. Top-down oriented networks are very unlikely to succeed.
- **Fair attribution of success.** Very often the coordinator or whoever is the chief executive of a network is praised when the network performs well. It is important that such success be attributed to members, otherwise their roles appear to glorify an individual.
- **Risk avoidance and management.** A good network should regularly monitor the key success factors as well as risks, and take remedial measures as necessary.

Networking with individuals versus institutions

Networks can be placed in one of two basic categories — those that link individuals and those that link institutions. The first seek to enhance individual interest while the latter focus on institutional development. The paradox is that in both cases one has to deal with individuals, either representing themselves or their organisations, as the case may be. Networks focused on institutions have the following challenges:

- How to deal with political and organisational differences among member institutions.
- Changes in institutional representation in the network tend to slow down progress, as new representatives have to be updated on past developments and they sometimes have completely different interests.
- Consensus building. It is sometimes not clear whether an idea is coming from an individual or if it represents a consensus of the institution that he or she represents. ANAFE encouraged member institutions to establish agroforestry committees to overcome this difficulty.
- It takes a lot more resources and time to network institutions than individuals. Institutions have to overcome their bureaucratic inertia (especially internal consultations) in every communication. It is important that the institutional commitment is gauged at different stages. The initial stage is the application for membership. Other stages may include development of institutional agendas, reports, and surveys or evaluation by network leaders.

Despite these challenges, successful networking with institutions is possible and can bring about major achievements in policy, organisational structures and allocation of resources. Institutions also have a greater potential to contribute to networking expenses when they consider the network as their own.

Some risks and threats to successful networking with institutions

Networking with institutions involves some risks and threats that may not occur in networks of individuals:

- **Poor external communication.** Institutions with poor or expensive communication facilities risk being marginalised in the network. For instance, the lack of email and Internet connectivity is a serious constraint, which ANAFE is addressing in order to enhance the communication and participation of weak institutions.
- **Poor internal communication.** Initially, a key contact person is elected to represent an institution. Efforts should be made to develop a team within the institution so that in the absence of the designated contact person it is still possible to reach out to the institution.
- **Too early withdrawal of external resources.** Sufficient time is needed for the network to reach maturity and to source its own funds from multiple sources.

Conclusion

Changing realities require new approaches to development. This paper argues that regional networking of institutions — in this case, universities and technical colleges — have proved to be an effective way of strengthening land use education.

Agroforestry education development needed new organisational forms not commonly encountered in sector-oriented educational institutions. It required knowledge and skill from, and collaboration across, disciplines and countries. The African Network of Agroforestry Education (ANAFE) is an example of trans-organisational development where institutions jointly address a common need for educational change.

ANAFE itself has evolved, due to increasing membership and changing external environment. As a consequence, the network structure has changed considerably. It has changed from a continental network with one coordination unit, towards a decentralised set-up with four sub-regional networks that are semi-autonomous.

Active participation of members has been and is essential for the success of the network. During the launching process, the members articulate their needs and their willingness to share knowledge, skills and resources. Members lead the management of the network through their participation in the General Meeting and the Steering Committee. The members initiate activities of the network, and they also contribute to these activities in cash or in kind.

External resources are required during a certain period of time, in particular during the initial phase and until the network has consolidated its structure and agenda. ANAFE has received financial support from the Swedish International Development Cooperation Agency (Sida) during its launching and consolidation phases. With time, ANAFE strives to broaden its financial base, including members' contributions.

External resources for ANAFE work also come in the shape of technical and strategic links with research and extension systems and with the policy framework. ICRAF, through AFRENA, provides a valuable resource for ANAFE members. Collaborative research and information exchange are among the gains for ANAFE. Stakeholders, in particular policy and decision makers provide needed inputs in network activities and can help advocate ANAFE's agenda, for instance by influencing national curricula.

Literature cited

- Australian Government Publishing Service. 1995. *Beyond the firm: an assessment of business linkages and networks in Australia*. Research Report 67.
- Boje DM and Wolfe TJ. 1989. Transorganizational development: contributions to theory and practice. In: Leavitt HJ, Pondy LR and Boje DM. *Readings in Managerial Psychology*. 4th ed. The University of Chicago Press, Chicago. p 733–754.
- Eade D. 1998. *Capacity building – an approach to people-oriented development*. Oxfam GB 274 Banbury Rd, Oxford OX2 and DZ UK. 226 p.
- Hosking DM. 1990. Leadership processes: the skills of political decision-making. In: Wilson D and Rosenfeld R. *Managing organizations. Texts, readings and cases*. Berkshire, McGraw-Hill.
- Powell WW. 1998. Learning from collaboration: knowledge and networks in the biotechnology and pharmaceutical industries. *California Management Review* 40:228–240.