

SOME PRINCIPLES AND ISSUES IN IMPLEMENTING
AGRICULTURAL RESEARCH NETWORKS

Roger A. Kirkby

Agronomist/Coordinator, Eastern Africa Bean Programme
CIAT, P.O. Box 67, Debre Zeit, Ethiopia.

Networks have become a widely accepted means of facilitating and supporting agricultural research across ecological zones, countries and continents. The concept is applied to many situations and for various purposes.

A simple, centric ("hub and spokes") organisational model describes, for example, the series of two-way linkages between a main research or documentation centre and outer locations. The initial phase of an international germplasm nurseries programme of an international agricultural research centre (IARC) may take this form. Later, linkages among the national programmes that cooperate in this IARC programme develop through workshops to review nursery results; this may be described diagrammatically by a wheel (CGIAR Secretariat, 1983).

Most networks are evolutionary in nature but are still in their early stages, at least in Africa. At the present time many may show an inherent contradiction. On the one hand they attempt to provide linkage mechanisms that enable a group of countries, institutions or researchers to accomplish more through collaboration than they could hope to achieve individually. On the other hand, most networks have their origin and driving force in an institution, such as an IARC or a donor organisation, this is markedly different from most collaborators in the network (e.g. national agricultural research systems, NARS). A workshop is commonly used by the initiator to launch and gain support for a new network and, provided that there is enough common interest, some priorities among activities can be established at that time. Operating principles and mechanisms, however, do not necessarily arise from general debate and are more likely to be based on unilateral decisions.

Several principles were described by Plucknett and Smith (1987) as underlying successful networks. These may be summarised as follows:

- focus on a defined problem and research agenda;
- a widely shared problem provides the strong self-interest among participants that is necessary for collaboration;
- participants should be willing to commit resources;
- outside funding is usually required to establish linkage mechanisms;
- participants should have sufficient training and expertise to make a contribution - a network cannot substitute for training in the development of strong national programmes;
- networks need to be guided by strong and efficient leaders who have the confidence of participants to operate with flexibility and

without coercion.

From these principles arises the common practice of incorporating network development into the activities of a regional research programme, which can provide certain elements - training, locally relevant upstream research - that networks may not be intended to carry out.

However, the above analysis may be unduly oriented to the interests of IARCs. Networks become stronger, and probably even more effective, when they serve wider interests of collaborating partners. Training does not need to be an IARC preserve, although a number of training-the-trainers programmes have been less than fully successful. Peer-group planning, monitoring and evaluation is often a most effective form of informal training, and can be readily encouraged in network activities. For this to happen requires network members to feel they have sufficient input to identifying, designing and implementing those activities. Undoubtedly there will be occasional disagreements, for example on relative priorities among potential research topics, so a degree of flexibility is needed also on the part of "centres of excellence" and donors. Most of us try to learn from our mistakes, and may learn less if never given the opportunity to make one. This consideration is similar to that faced by an expatriate within a NARS; he needs to strike an appropriate balance between trying to make the fastest possible research progress and encouraging national scientist colleagues to take over decision-making in anticipation of his departure.

Research cooperation among network members is often thought of as facilitating evaluation or adaptation of technology across a wider range of conditions. Less commonly mentioned is the potential for complementary activities among members. Examples are given in the review of the African Bean Network in this workshop. Countries of the Great Lakes region share similar sets of agroecological conditions, but their principal research stations are located in different zones and their research manpower is limiting. They therefore agree on a common set of germplasm for disease screening, and each takes responsibility for screening against a different disease, selecting the one that is best expressed under their station's conditions. The second example concerns the development of integrated pest management for the beanfly, in which various countries of Eastern, Central and Southern Africa focus, according to their relative strengths in breeding and entomology, upon the IPM components of host-plant resistance screening, studies of pest ecology and the effects of crop management, and insecticide recommendations.

Some Issues

Too many meetings?

Undoubtedly this can become a problem by limiting the time available for research at home base, but is sometimes a matter of perception, aggravated by the extra time needed to obtain exit clearances. Coordination among networks would be helpful where scientists work on more than one commodity. More precise definition of the intended participation for each network activity also assists NARS in selecting

the appropriate person for each activity. Certain disciplines have been relatively neglected and warrant increased attention within networks.

Overburdening national research capacity

This is probably less of a problem than it used to be, particularly as NARS become more genuine partners in networks and are more specifically consulted on their needs, for example for germplasm introductions. Greater use of segregating or other materials selected for specific conditions, rather than reliance by IARCs upon uniform nurseries, also helps here.

Concentration upon stronger members of a network

Smaller NARS may have the most to gain from network participation (Plucknett and Smith, 1987), yet IARCs and donors often prefer to concentrate upon larger NARS because of their greater capacity to produce research results quickly. Flexibility in form and extent of participation may be helpful in assisting smaller or less developed NARS to close the gap. Benefits of a different type may accrue to the larger members, which as key sites may be assisted in developing methodology or in conducting studies in greater depth (Carangal, 1988).

Decision-making within the Network

Active participants will want to help determine the activities and development of the network. This will lend further professional motivation to participate, and provides the argument in favour of a network steering committee comprising key scientists of the network. The more experienced the scientists the better this works.

Some networks prefer advisory panels of NARS directors and outside specialists. Does this improve national commitment and lead to more policy feedback? Alternatively, does it discourage leadership by active scientists?

Cooperation among Networks

A scientist or national programme may need to belong to more than one network. For example, there are separate networks and IARCs for beans, cowpeas and groundnut, whereas these crops are normally the responsibility of a NARS grain legumes programme. Agronomists involved in cropping systems research also work with several species.

Sustainability of Networks

This is perhaps the most crucial issue, for which long-term planning is necessary by NARS, IARCs and donors. If networks evolve as the strengths of NARS grow, what can Africa learn from Latin America and Asia? Should different management approaches be used for different networks in Africa, even for the same field of research?

At what stage should a network pass to local coordination or be phased out of existence? How should coordination be provided? Would NARS agree to a scientist taking on this role, temporarily or for longer?

Who would provide the support services to ensure that the coordinator remains in touch with research, rather than becoming bogged down in making travel arrangements?

This issue raises specific questions about the commitment of ICRISAT to long-term existence of networks and their future form and function. At present, some network coordination units are perceived primarily as donors, particularly by NARS that are poorly supported by governments. Economic pressures are eroding the salaries of national researchers and the funding for operational expenses in many countries. There may be little that a network can do to influence this situation, beyond emphasising applied research and its impacts on production, farmers and consumers. Collectively, agricultural research networks, their participants and donors, may be able to draw more attention to this problem.

Future Role of IARCs in Networks

The future role of international organisations is likely to be greatly influenced by the sustainability issue. Choices need to be made, for example between maintaining a long-term coordination role and changing to a role of liaison with an indigenous network in order to ensure its continued access to results of upstream research.

How would upstream research that requires specific agroecological conditions be conducted? In an environment of indigenous networks, should IARCs develop key research locations or contract this type of research to network participants?

While some of this may appear still far off, present planning decisions within networks may well influence their evolutionary direction.

Acknowledgements

I am grateful to Drs Ann Stroud and Douglas Pachico, and many other present and former colleagues, for discussions that have contributed to my thinking.

I alone am responsible for views expressed here; they do not necessarily reflect those of CIAT.

References

- Ampuero, E., 1981. Cooperation between national research organizations and international centers: opportunities and limitations. Cornell International Agricultural Mimeograph 87, Cornell University, Ithaca N.Y. 14p.
- Carangal, P., 1988. Asian Rice Farming Systems Network - A Report. ICRIAR Food Legume Newsletter, 8, 8-10.
- CGIAR Secretariat, 1983. Networking in the CGIAR. Part 1 in 1983 Report

on the Consultative Group and the International Agricultural Research it supports: an integrated Report. Washington, D.C. 1-39.

Plucknett, D.L. and Smith, N.J.H., 1987. International Cooperation in Cereal Research. Ch.1. in Advances in Cereal Science and Technology, Vol. 8, 1-14.