

Serving National Agricultural

Research Systems:

Lessons from Country Experiences, 1980-84

The logo for ISNAR is rendered in a bold, italicized, sans-serif font. The letters are filled with a dense, stippled or halftone pattern, giving it a textured appearance. The 'I' and 'S' are particularly prominent due to their size and the slant of the font.

International Service for National Agricultural Research

The International Service for National Agricultural Research (ISNAR) began operating at its headquarters in The Hague, Netherlands on September 1, 1980. It was established by the Consultative Group on International Agricultural Research (CGIAR), on the basis of recommendations from an international task force, for the purpose of assisting governments of developing countries to strengthen their agricultural research. It is a non-profit autonomous agency, international in character, and non-political in management, staffing and operations.

Of the thirteen centers in the CGIAR network, ISNAR is the only one which focuses primarily on national agricultural research issues. It provides advice to governments, upon request, on organization, planning, manpower development, staff requirements, financial and infrastructure requirements, and related matters, thus complementing the activities of other assistance agencies. Additionally, ISNAR has an active training and communications program which cooperates with national agricultural research programs in developing countries.

ISNAR also plays an active role in assisting these national programs to establish links with both the international agricultural research centers and donors.

ISNAR is supported by a number of the members of CGIAR, an informal group of approximately 30 donors; it includes countries, development banks, international organizations, and foundations. In 1985, funding for ISNAR's core program was provided by:

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ISNAR

International Service for National Agricultural Research

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I. INTRODUCTION

Helping countries to strengthen their capacity to organize, manage, and conduct agricultural research is ISNAR's basic goal. As a starting point for this task, ISNAR has identified a set of basic requirements and relationships needed for efficient and effective research (1). These include:

- an appropriate policy environment, providing the necessary resources and incentives for research to take place and for technologies to be adopted;
- an organizational structure which properly reflects a country's characteristics and resources;
- a set of effective operational processes with which to develop and implement the necessary research programs.

In working to promote these desirable characteristics, a standard procedure cannot be used in all countries, since national characteristics, problems, needs, and resources vary widely. In some cases structural changes are needed. In others, it is possible to work within the existing structure to improve some of the essential processes in a research system such as planning and programming, human resource management, or monitoring and evaluation.

Taking action to improve a NARS is a national responsibility, provides an analytical capacity to review a system's strengths and weaknesses or tackle a specific problem and can help implement the ensuing efforts to improve its performance. The responsibility for change, however, is not ISNAR's but that of the country itself. At the same time, the capacity to improve the efficiency and effectiveness of research does not always lie within the NARS. Often it involves decision-making processes for which research is a marginal, often poorly understood, component. In these circumstances the success of attempts to improve the NARS is highly

dependent on how the system-building process is organized, at what level, and what instruments are brought into play.

There are cases, however, where even a greatly strengthened research system may not have a positive effect on agricultural development because of inhibiting factors in the overall policy environment which discriminate against agriculture in general, and food production in particular (pricing policy, exchange rates, etc.). We believe it is a function of a research system to be able to identify factors that inhibit its functioning and to work to change them. It is part of the task of ISNAR to work with NARS to identify such factors and to propose changes. Ultimately, however, they must be dealt with locally by the different interests represented in the policy-making process.

No single country example illustrates all aspects of the process involved or the tools required in research system building. It is not feasible to discuss actions in detail in each of the 28 countries with which we have worked between 1980 and 1984. We can abstract from our experience, however, to discuss the nature of the system-building process and the instruments used.

An essential part of our approach is to develop a cooperative relationship with a country. This is important in developing a mutual confidence between the country and ISNAR, which work together as partners in efforts to strengthen the research system. In general, a four-part process is involved in this work. First, we develop an appreciation of the context in which the system works. Next comes problem identification. This is frequently done by a country review mission which examines the existing system. In some cases, however, we assist a system with a very specific problem and field a specialist person or team to work on the problem. (See Table 1.) The third stage is developing appropriate recommendations for strengthening the NARS. The final stage involves working with the country to assist it in implementing the recommendations. Some recommendations may be implemented

(1) A full discussion of this is found in "Considerations for the Development of National Agricultural Research Capacities in Support of Agricultural Development", ISNAR, 1984, The Hague, Netherlands.

TABLE 1: YEAR AND TYPE OF INITIAL ISNAR/COUNTRY INVOLVEMENT

Year	Country*	Type of Involvement
1981	Bangladesh	3
	Costa Rica	1
	Kenya	1
	Indonesia	1
1982	Burkina Faso	3
	Fiji	1
	Guyana	1
	Ivory Coast	1
	Malawi	1
	Pakistan	2
	Papua New Guinea	2
	Rwanda	1
1983	Cameroon	7
	Colombia	6
	Dominican Republic	1
	Madagascar	1
	Somalia	1
	Sri Lanka	4
	Sudan	7
	Thailand	7
	Western Samoa	1
	Zimbabwe	7
1984	Argentina	6
	Cyprus	5
	Ghana	5
	Morocco	1
	Panama	3
	Zaire	4

immediately with visible results, while others will only be implemented over a period of many years.

When making reference to different country experiences we talk about achievements and improvements of different kinds. We do not claim that changes are taking place solely because of ISNAR's presence in a country but rather that ISNAR can be and is an important factor influencing the direction of change in national agricultural research, where a country wishes it.

In the remaining sections of this paper we discuss the tools ISNAR uses in its work with developing countries and the process of system building, drawing lessons for our methodological approach and program development process. We expect these will also be useful to NARS themselves when seeking assistance for the development efforts and to other institutions concerned with increasing agricultural research capacity in developing countries.

* Countries are listed alphabetically

Key to Type of Involvement:

- 1 ISNAR Review and Planning Mission covering the entire research system
- 2 ISNAR Review and Planning Mission restricted to some components of the research system
- 3 Joint Mission ISNAR/other international organization
- 4 Joint Review ISNAR/national institution
- 5 ISNAR participation in Mission led by other organization
- 6 Non-Mission relationship: advice on research policy
- 7 Non-Mission relationship: human resources issues/ research management training needs

II. INSTRUMENTS FOR PROMOTING CHANGE

ISNAR aims to use the available instruments flexibly, in a way which optimizes our resource use and provides adequate continuity for the client country. The combination used depends upon the particular circumstances, but we are able to draw some general conclusions about them from our experience so far.

ISNAR Review Missions

ISNAR's review and planning missions are usually the starting point for ISNAR's continuing relationship with a country. Seventeen had been completed by the end of 1984. They are conducted according to terms of reference agreed with a country during exploratory discussions. Review missions normally deal with a review of a whole system, although in some countries, for example, Indonesia, Madagascar, and Morocco, they have dealt with a National Agricultural Research institution. In one case, Papua New Guinea, the review was confined to crops research.

These missions serve a number of purposes. The main one is analytical, to review and analyze the system's strengths and weaknesses and propose ways to strengthen it. But usually they also represent the initiation of the strengthening process itself, since the presence of a mission in a country helps call attention to research. It may help mobilize interest and concern both within the system and outside it by bringing in the opinions and views of all parties involved in research. In some countries the ISNAR mission represented the first attempt to put research in its development context.

ISNAR always works with and through national scientists and leaders in the countries with which it is cooperating. However, the particular relationship varies with the circumstances. In some cases working with such national leaders during a mission, as happened in Morocco, the Dominican Republic, and Zaire, improves the analytical skills of national scientists in review methodology and has contributed to establishing a firm basis for follow-up working relationships.

Our approach to missions has evolved from the early missions in Indonesia and Kenya, which tended to be rather informal, to a more structured, comprehensive approach in later missions. Part of this process involved the development of internal ISNAR guidelines for conducting missions, which have been in use since 1983. Our work on methodology development has moved into a longer-term phase with ISNAR's joint participation with Rutgers University in a study in Panama with support from a major donor. The study aims to develop a methodology to identify opportunities for interventions to support a research system and link its impact to organization and management variables.

In two countries, Sri Lanka and Zaire, ISNAR worked closely with national task forces in reviewing their own national research system. This does have one possible disadvantage, in that criticism of certain aspects of the system may be more difficult. On the positive side, a joint review effort helps increase the likelihood of acceptance and actual implementation of the recommendations.

A final benefit a mission can bring is that of helping to develop links between members of the national system and scientists from other institutions like the IARCs. Staff persons from these are involved in a review where appropriate; for example, in Papua New Guinea members of HTA and AVRDC were on the team; in the Ivory Coast from CIMMYT; and in Guyana and the Dominican Republic from CIAT.

Joint reviews with third parties are another alternative which has been used. In Burkina Faso, ISNAR joined efforts with the World Bank and FAO. Each organization had become involved in Burkina Faso and had an interest in the research system. The country wanted a thorough examination of its research system, and the three interested parties combined to carry it out. This avoided unnecessary duplication of effort and established the basis for longer-term cooperation and support on the part of all parties, to the benefit of the country.

Some limitations of this approach have become apparent and must be considered in the future. Such a mission is more difficult to organize than a pure ISNAR mission and often involves more compromises on recommendations and follow-up strategy than in a single-organization mission. Different organizations have different operational styles and that affects the focus of both the review and the follow-up processes. For instance, donor and lending agencies such as the development banks have a tendency to emphasize investment issues; ISNAR, while recognizing the importance of these issues, takes a broader stance which may lead to sets of recommendations not even touching the investment component or making it subordinate to other types of actions. A further issue arising out of the experiences with joint review missions is that of responsibility for leadership of the follow-up and providing continuity of support in that process.

Mission reports

A review report provides the particular country with recommendations upon which it can act and a tool that can be used to argue for measures within the country to strengthen the system and secure funds for it, often from external sources. The early experience with the Indonesia and Kenya reports helped ISNAR develop the format that is now used. We verified the importance of a document that recognizes both strengths and weaknesses of a system in order to present a balanced perspective of the system.

From the national point of view, the reports must also be usable by donors. Early feedback helped guide ISNAR on the amount of information needed in these reports to enable a full picture of the research system to be obtained from the report without losing the main issues in a mass of detail. As a result, documents are now more self-contained than were earlier reports, but have sections which summarize findings and recommendations for those who may not be concerned with the full report.

Another important role of the report is to provide an element of continuity while the institutional change process matures, as has been the case in the Dominican Republic.

There, the report's comprehensive analysis and clear-cut improvement strategy represents a bench mark around which much of the discussion has evolved over the following two years while legislation has been prepared and passed to deal with the report's key recommendation. This called for a new research structure to be built around a new institution that could only be set up by legislation. Such a process is lengthy, and the report not only provides a bench mark for action but also for subsequent evaluation.

In Rwanda, the review report provided the basic discussion document for the seminar to discuss the whole research system. It provided a framework for the more technical presentations from the scientists at the seminar and an effective way to trace the impact of individual suggestions on the efficacy of the whole system.

Where we have produced a joint report with a national team, as in Sri Lanka, we have found this takes longer and requires close working relations with the team. As noted before, in such cases there is also a limit to the amount of criticism acceptable in the report, as well as style constraints. However, once agreed, the report is already absorbed into the national system: it is not an outsiders' report, and it allies ISNAR closely with the country.

On the whole, our experience confirms the value of the comprehensive reports as instruments for system building; even where there has been little direct follow-up to mission reports by ISNAR, owing to a variety of circumstances, as in Malawi, Papua New Guinea, Guyana, and the Ivory Coast. The reports have been used to guide development of the research system by the national leaders and international organizations working with them.

Seminars, workshops, and conferences

Creating opportunities for interaction among the different parties connected with research is an important element in developing national agricultural research systems. ISNAR has used various types of meetings to achieve this at both the national and international level. ISNAR's role has been to provide the logistics and background for such meetings and, sometimes, to be a catalyst for discussions that none of those directly involved could initiate on their own.

Four regional conferences, in Africa (1981), Asia (1981), Latin America (1982), and the Near East and North Africa (1983) (2), have allowed ISNAR to increase awareness among national policy-makers about the requirements for successful agricultural research. Several country initiatives to seek ISNAR assistance have resulted from the personal contacts established during these regional conferences.

Seminars to increase the understanding of NARS leaders about crucial issues in the planning and organization of research have also been organized, for example on training needs (3). Another use for seminars has been to discuss possible ways to strengthen and improve the NARS as a follow-up to a review mission. The content and attendance varies in these according to the particular circumstances. In Rwanda, the follow-up seminar allowed researchers in the national system to review their aims and develop new priorities with the ISNAR mission report as a basic background document. It also provided a relatively isolated research system which had been dependent on fairly narrow external links with an opportunity to expand its contact with international sources of research advice and assistance (4).

In the Dominican Republic, a major seminar was used to brief senior legislators and key decision makers on the new law to create a semiautonomous central coordinating body for agricultural research which resulted from ISNAR's recommendations. In this case, it was organized locally but with assistance from a consultant.

In Indonesia, however, ISNAR input has been through cooperation in the existing annual management seminar and scheduling of seminars to discuss the findings of a series of program evaluations, themselves a follow-up to ISNAR's review mission, which began in 1984. An added bonus from almost all the meetings is the attention that is turned to agricultural research in the country in which they are held. This itself is part of a more general awareness of need for an appropriate policy environment for research. Where appropriate, publications are produced following the meeting.

These meetings are important in developing research systems. Initial assessments of the follow-up seminars after mission reviews, such as the one in the Dominican Republic, suggest that they are extremely effective. However, to be successful, the background materials must be specific. This takes resources, and attempting to organize and run such seminars from a distance is a daunting and time-consuming task. In Rwanda, ISNAR recruited a staff person to work full-time to take responsibility for the seminar and the subsequent editing of the proceedings in two languages, French and English. In the Dominican Republic an ISNAR consultant working with the Ministry in promoting the implementation of the mission's recommendations gave considerable assistance in preparing the seminar. An additional factor in promoting this latter event was the existence of a local institution with experience in development management which assumed the responsibility for the organization of the meeting.

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- (2) Strengthening National Agricultural Research Systems in Africa. Kenya, 1981.
Strengthening National Agricultural Research Systems in Asia. Philippines, 1981.
Selected Issues in Agricultural Research in Latin America. Madrid, 1982.
Technical Consultation on Agricultural Research Cooperation in the Near East and North Africa. Cyprus, 1983.
 - (3) Training Needs in National Agricultural Research Planning and Management. Netherlands, 1982.
 - (4) Agricultural Research in Rwanda: Assessment and Perspectives. Rwanda, 1983.

Training workshops

In several countries ISNAR's involvement has come solely through skills development in research management. Three regional workshops have been used to train research managers in Africa, and one national workshop in research management, in Cameroon, was held in 1984.

These management training workshops are a response to a strongly felt need, and there are increasing demands for such workshops. These workshops require a range of management training materials for which ISNAR has developed some specific case studies.

Experience so far suggests that regional workshops are best geared to meeting the needs of research managers from a similar level, whereas national workshops can assist research workers, managers, and policy-makers from a number of different levels within the system. However, ISNAR can only meet a part of the demand and will look to others who are prepared to work in this area of management training or who are already working, in order to share in the task.

Network support

While each research manager works in his or her own research system, there is a need for research managers from different systems to meet and exchange ideas and experience. This has been clearly highlighted in the training workshops, where the participants themselves have a major training contribution to make as they share their experiences. Recognition of the value of such exchanges has led ISNAR to support the development of networks of research managers. The primary vehicle for this is the International Federation of Agricultural Research Systems for Development (IFARD), for which ISNAR provides the secretariat.

As well as encouraging research managers' networks, ISNAR has also taken part in reviews of several regional research networks in Central and South America (e.g. PRECODEPA) and

offered support to others. Regional cooperation, where countries either take a common approach to research in a particular area and designate network members as research leaders in particular areas, as in PRECODEPA, or where they share information, as in REIDINAA and CONOSUR, are valuable ways of strengthening a national systems capacity to tackle research problems.

Research organization and management issues

The effort to improve available information and understanding of national agricultural research systems constitutes an integral part of ISNAR's program. Early activities have been geared mainly to the development of the methodological approach to be followed by ISNAR in its efforts to strengthen NARS. The publication "Considerations for the Development of National Agricultural Research Capacities in Support of Agricultural Development" and "Guidelines for ISNAR Reviews and Evaluations" results from these initial activities. As follow-up and the implementation of mission recommendations have progressed, research studies have become more specific and country-oriented; the analysis of our experiences from which this paper results and work in the field of manpower planning and conditions of service in Sri Lanka, Jordan, Argentina, and Thailand are examples of this trend.

Other research projects being undertaken to generate much-needed information as a service to NARS and to benefit ISNAR: the development of a data base on national research activities and a study of the management problems of on-farm research activities. The data base will provide comparative data deemed useful for the planning and day-to-day management of NARS; the management study will contribute information required as a basis for improving the handling of this crucial but too often weak component of the research chain.

Staff flexibility

ISNAR's basic resource lies in its staff resources for working with a national system. The way in which staff are deployed has evolved during the first few years. The aim has been to maximize the multiplier effect each person, both core staff and consultants, can have on a system.

ISNAR's strategy has been to have one person provide continuity with any specific country or organization. This experience has reinforced ISNAR's view that continuous contact with a country is essential for building mutual confidence and for gaining the full benefit of other ISNAR staff, according to country needs. The key ingredient is the flexible use of ISNAR staff and consultants to meet specific needs.

The specific way this is done has varied. Normally, a staff member who participated in the initial review mission or special assistance project is assigned as the country contact person. However, in a few cases a different approach was tried; for example, in Indonesia continuity has been provided by a consultant.

As our relationship with national systems develops there is an increasing need for specialist support. For the first two years in the Dominican Republic, for example, a staff person has been able to provide the continuity and support. However, as full implementation of the new research institute recommended by ISNAR approaches, the need for assistance in specific fields has emerged, and the continuity role is being passed to consultants who can provide the needed specialized knowledge. ISNAR's staff contact person is moving into more of a coordinating role. Similar patterns can be seen emerging in Rwanda, Madagascar, and Morocco, where there is the need for assistance in research planning and programming and other specialized activities.

In both Rwanda and Madagascar this need was met by ISNAR agreeing to post a staff member in research planning and programming to work with the directors of the national research institutions, in addition to the regular

involvement of its country-contact person. In Rwanda, a request was also made for ISNAR to post a person into line responsibility. This was unacceptable, as it would have created dual technical and political allegiances which might have jeopardized ISNAR's independent advisory position.

In general, we believe that frequent short-term visits by the same consultant or staff person can often meet the needs for cooperation in a national program. However, flexibility of response to needs will continue to be a cornerstone of ISNAR's procedures.

In Somalia, Kenya, the Dominican Republic, and several other countries, special-focus follow-up missions have been carried out as part of ISNAR's continuing cooperation with the country after the report and recommendations have been accepted. In these missions, more detailed research program reviews were carried out as part of the implementation of the earlier recommendations. These have provided greater opportunities for involving relevant external research institutions, like the IARCs, with local researchers. In Somalia, for example, four other IARCs took part in the various missions to work on planning specific research programs. Responsibility for organizing these special missions normally rests with the country contact person on ISNAR's staff.

The use of consultants rather than ISNAR staff to provide continuity is an important development. In Indonesia, a consultant, who participated in the mission, has been used since 1982. The success of this approach has shown that it is possible, with a long-term commitment from a consultant, for ISNAR to get the same result as with a permanent staff person. There are potential pitfalls. Where a consultant is used, that person should be able to take his or her experience to other countries with which ISNAR works and share it with other staff. The cross-fertilization that ISNAR aims for has been achieved in this case through the consultant's involvement in the training and conferences activities and through various staff meetings. Success in Indonesia might not have been possible had the consultant not

participated in the original mission, or if he had been affiliated to an institution and not been able to gear his work to the ISNAR/Indonesia relationship. However, there are still some

questions about this approach as regards maximum interaction with ISNAR staff and benefits accrued from work in other countries which might be applicable.

III. THE PROCESS OF SYSTEM BUILDING

The process of developing a national agricultural research system, at the risk of stating the obvious, is a national process. It is designed to produce a NARS which meets the needs of the country. A successful research system needs to be adaptive, able to meet the changing needs of a country's farmers; it needs to be linked into policy-making levels, national and international scientific circles, and to extension and farming. The system requires competent researchers and good management to draw the most out of them and ensure that they are dealing with the right problems.

Development of such a system requires a mixture of time, resources, political will, a broad range of support, and power to achieve the goals. The precise mix will vary depending upon the country, the form of government, and the scientific resources. Within the system an analytical capacity is required to monitor its own actions and alert its users to agricultural research needs and products.

Our experience as an outside agency asked to assist in this process leads us to suggest that there are a number of necessary conditions for successful use of outside agencies in research system building. These must be borne in mind by both parties in the process, although some may apply to one more than the other.

For ISNAR to play an optimal role in the process the following factors are crucial: the context and level of involvement, the time scale, flexibility of response, and our resource commitments.

Context and level of involvement

The context and level of involvement have profound effects on the viability of the process. The key issue is whether or not there is a clear conviction that research is a useful tool for the solution of the problems facing the country. An outside agency like ISNAR can, in the right context, help relate a desire to overcome specific food and agricultural problems to areas where research can make a contribution and can advise on how this might be achieved. It can be a force

to support desired developments in research but only as a counterpart to local will to do so.

Unless research is seen as a priority and the existing organization and management structure is perceived to be in need of improvement, the chances for change are slight. This may be demonstrated by a growing realization of the need for reform of the research system and high-level interest in science and technology in national development, as was the case in the Dominican Republic, or it may be shown by a ministry seeking outside support for the research system, as in Rwanda, Morocco, and Madagascar. In some cases, such as Indonesia, a substantial research system had been developed and interest lay in reviewing progress to determine guidelines for further growth.

Whichever of these applies, ISNAR is best involved before decisions are taken on further action so that its analysis and advice can support the national decision-making process. Many of the key actions and decisions needed to affect the efficiency and efficacy of the NARS lie outside its control. In general, our experience suggests that to have the most impact it is necessary for ISNAR to report to the political levels that can make decisions and initiate action on all matters relevant to strengthening the research system. This normally implies that the request for ISNAR's involvement must come from ministers or cabinet-level positions, although, of course, ISNAR will be working most closely with institute or system leaders. They are the essential counterparts with whom ISNAR works.

Where our level of involvement or the level of origin of the request has not been sufficiently high in the political system, only the operational recommendations that do not affect the structure of the system tend to be implemented. Frequently, we find that research system leaders are able to and do take action on recommendations about processes within their direct control. They are unable, however, to act on key constraints which affect the structure of the system or certain key aspects of it, like

conditions of service, which are frequently a civil service issue.

The ability of ISNAR to work with a country in developing its national agricultural research capacities is also affected by the timing of ISNAR involvement. System building is often a highly political process, particularly if it involves structural change. As such, continuity of relationships and commitment on the part of the country's policy-makers is an essential requirement. For this reason, the nature of the country's political process and the point in time of ISNAR's intervention are important determinants in the success of a project. In a highly unstable environment it is obviously an extremely difficult task to develop the framework for mutually reinforcing interactions needed to carry out the system building efforts. Even more important are those situations in which the country is undergoing a period of change, such as the election of a new government or administrative restructuring, within the normal cycles of the political process. Timing is of the essence, because a mistake can be extremely costly in time and effort, even to the extent of precluding all possibility of positive change. In the experience of ISNAR, when the initial involvements take place in the early stages of a new administration or immediately prior to extensive administrative restructuring, the chances of successfully implementing the mission recommendations are much higher, since there is a greater possibility of integrating them into the network of other policies being introduced.

Time scale

Research system development is a dynamic process and must be approached with a long-term perspective. The time scale over which it takes place is measured in years and decades. At the time ISNAR enters into contact with countries, the level of development of a research system may be quite different, ranging from negligible to fairly well-developed. Even in some fairly well-developed systems, such as Indonesia, more than two years went into

supporting the next World Bank project preparation process, ISNAR involvement in the program evaluations is continuing over a three year period, and this is only a beginning. In Kenya, where the review mission occurred in 1981, it was followed by a review of manpower and training needs in 1982. Two years later, after considerable reorganization in the administration in Kenya, ISNAR was asked to field a follow-up mission to assist the newly merged Ministry of Agriculture and Livestock to develop a national agricultural research strategy and plan. Even where ISNAR is working on a very specific problem without a review mission, as in Thailand, where we are assisting with the examination of conditions of service for research workers, a two- to three-year period is required, which may be expected to lead to an expanded and long-term agenda.

While much is happening in these periods, there are few concrete results as yet as a direct result of ISNAR intervention, for insufficient time has elapsed for the activities to yield lasting results. Time is needed to turn recommendations into proposals which are acceptable to research system leaders and others, including universities, extension, and policy makers.

The Dominican Republic is a case in point. ISNAR's activities started just as a new government was taking office with a four-year term. Just promoting the needed legislative action to achieve the structural change recommended by the review mission has absorbed two years. Despite having the same government, there have been several changes in the senior officials since the initial ISNAR review and mission, and a series of visits has been necessary to brief them as well as to provide assistance in promoting the legislation and to prepare for the establishment of a new research institution.

Flexibility

The problems confronted by different countries vary significantly due to their different

agricultural, historical, political, and organizational backgrounds. The strategy to follow in developing the system and the nature of the actions to take are also highly variable both among countries and through time in any given country. Consequently, ISNAR's response has aimed to be flexible to match each country's needs.

Although our main approach to providing assistance is through a system review, so far carried out in 17 countries, we have had more limited, direct involvement in 11 others, through the provision of management training for nationals, as in Cameroon and Sudan, advice on research policy, as in Colombia and Argentina, and assistance with specific problem areas, as in Thailand, with conditions of service.

Flexibility to adapt to needs in space and time in follow-up work has been particularly important. We see a trend emerging where, in time, the adjustments we recommended are in the direction of providing more and more specific expertise. In many countries an initial mission has led to further, more specific missions on more detailed research planning and programming. In Rwanda and Madagascar ISNAR staff in this area have been posted, while in Indonesia consultancy assistance for developing loan project preparation and evaluation methodologies has been given.

The effect of ISNAR's flexibility has been enhanced by the continuity it has provided in many systems. This continuity and contact enabled ISNAR to fine-tune its actions. Such an approach also has resource implications.

Resource requirements

The comprehensive system review, flexible approach, and providing continuity have high costs, given ISNAR's modest resources. They are indispensable to ISNAR's catalytic role. A review mission, itself, takes on average about 18 person months. Thereafter, the key country-contact person or back-up person must be available for travel, be involved in a permanent gathering of information, keep in contact with

key people, and be prepared to visit the country simply to keep in touch and encourage the work along. Depending upon the level of follow-up required this may take up to 9 person months per year.

Follow-up capacity is essential. ISNAR's first work with a country helps create the right conditions for an improved system to emerge, but resources must be available to take advantage of these conditions and nurture the process. Considerable follow-up contact appears to be required to obtain the most benefit from a review mission and its report.

There are two dimensions to the follow-up issue. One is with available staff time and the other with funds. The long-term nature of the process means that staff time must be committed over several years; the need for continuity means that specific staff must be reserved for specific countries; and the need for flexibility of response over time means staff time must not be totally committed years ahead. While ISNAR does pride itself on being able to respond quickly to the needs of the countries it serves, unfortunately it is not able to respond quickly to those countries requesting its assistance now. Some have already been waiting for over a year for a review. If this trend continues the conflict between flexibility and resource constraints will become the key problem for ISNAR in the future.

A further issue with staff deployment concerns the posting of resident ISNAR staff to national programs. This will require ISNAR to develop more formal procedures for hiring and briefing such staff and providing subsequent support. Both activities have resource implications. A more structured approach would be needed together with a range of tools to support the staff person in the field, including regular field visits by ISNAR core staff, return visits to ISNAR by the staff person, materials and training modules that can be used locally, etc. In some of these requirements, ISNAR's country programs need strong support from its research, training, and communication sections to generate, for example, training materials and

evaluation guidelines. To date, progress has been made in bringing all these activities together with a country focus. However, the experiences are still limited to a few countries, and the long-term program implications remain to be worked out.

Funding problems are another emerging issue. An increasing amount of staff time has had to be devoted to finding funding support for the implementation of recommendations. In many countries ISNAR has assisted the government in trying to procure funds from donors or in the design of plans for using such funds. One problem to arise concerns the funds needed to support some of the early steps of the system-building process. The problem is in the time lag involved in getting donor support for some specific actions, and in the consequences this lag could have on the success of the process. In the Dominican Republic, for example, creating a new institution requires specialized support and training for the staff involved. This requires resources, both for consultants in some

specific fields and for short-term training activities, usually in the form of in-house training or short trips. Donor support for these types of activity has been difficult to secure. In other cases, where ISNAR's involvement was prompted either by other donors or followed major donor involvements, follow-up funding has confronted fewer problems. The contrast highlights an important area of concern in the future: access to funding sources and the limits of ISNAR's impact when acting independently of traditional donor sources.

The staff time taken to develop funding requests for follow-up is lost to other countries that could make use of our services. But the need to expand our service to other countries and provide a growing level of specialist support puts other operational constraints on ISNAR. It may be that core staff will move to a coordinating role in the later stages of follow-up, but this requires an administrative ability to choose consultants and outposted staff and places greater demands on central resources.

IV. SUMMARY AND CONCLUSION

Over the past four and a half years ISNAR has worked with more than 25 countries. Even though the objective has always been the same - strengthening their agricultural research capacity - the strategies followed and the instruments used have been varied and evolving. They have varied in response to the different types of problems each country faces; they have evolved because ISNAR is in its early stages of development, and learning from experience is one of the key aspects of its program development process.

Some of the lessons, such as that of the time dimension involved to achieve the desired changes, are neither new nor surprising. Nevertheless, they are important because of what they say about what we can expect to achieve in the overall task of improving NARS. Others, such as those relating to the level and opportunity for involvement and the need for proper counterpart commitment, are important because they highlight that no matter what the external pressures and assistance may be, strengthening NARS is a national process. Too often in the past, donor interest and support has

been used as a substitute for real national interest and commitment, with meagre results. This also emphasizes the need for flexibility and resources to support, not substitute for, those nationally based processes.

At the operational level, several instruments and approaches have been tried. The experience gained has in most cases already been incorporated into subsequent expansions of the coverage of ISNAR assistance and improvements in our methodology. As confidence between a country and ISNAR grows, the country is often willing for ISNAR to develop an independent broker role, seeking to promote beneficial interactions with international research centers and with donors to provide support and funds. This is an important consequence of our approach. Our ability to sustain this depends on both our staff and the resources available to us.

ISNAR's continuing experience will guide its future program, which will change and evolve to meet the changing needs of national agricultural research systems.

ACRONYMS AND ABBREVIATIONS

AVRDC	Asian Vegetable Research and Development Center	IARC	International Agricultural Research Center
CIMMYT	Centro Internacional de Mejoramiento de Maíz y Trigo (International Maize and Wheat Improvement Center)	IFARD	International Federation of Agricultural Research Systems for Development
CIAT	Centro Internacional de Agricultura Tropical (International Center for Tropical Agriculture)	IITA	International Institute for Tropical Agriculture
CONOSUR	Programa Cooperativo de Investigación Agropecuaria. Convenio IICA-BII)/Cono-Sur (Agricultural and Livestock Cooperative Research Program)	NARS	National Agricultural Research System
FAO	Food and Agriculture Organization of the United Nations	PRECODEPA	Regional Cooperative Potato Research Program
		REDINAA	Red de Investigación para la Amazonia (Amazon Agroecological Research Network)