

Annual Report '81

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 national governments in strengthening agricultural research. It is a non-profit autonomous agency, international in character, and non-political in management, staffing, and operations. Most of its funds are provided by an informal group of approximately 30 donor countries, development banks, foundations, and other international organizations which make up CGIAR.

ISNAR is the youngest of the 13 centers in the CGIAR network, and it 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 infra-structure 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.

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Annual Report'81

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International Service for National Agricultural Research

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Dr. Gamble

Foreword

It is with great pleasure that ISNAR presents its first annual report – or rather a report covering the first 16 months, from September 1, 1980 through December 1981.

The principal tasks assigned to ISNAR are these:

- *to assist in the strengthening of national agricultural research systems;*
- *to assist in the development of more effective linkages between national programs and the international agricultural research centers; and*
- *to assist national programs and donor agencies to match needs and available support.*

These tasks are challenging and timely. The establishment of ISNAR at the start of the 1980s appears to coincide with a recognition by national leaders and the donor community of the importance of agricultural research for development, and a resultant commitment to support agricultural research in the developing countries.

In its initial period of formation and program development, ISNAR has followed closely the recommendations and guidelines of the Report of the Task Force on International Assistance for Strengthening National Agricultural Research, which formed the basis of the action by the Consultative Group on International Agricultural Research to establish ISNAR. The report will continue to serve as a reference as ISNAR develops its program and tests the guidelines which were set forth in the report.

On behalf of the Board of Trustees and the staff of ISNAR, I express appreciation to those who had the vision of the need for ISNAR, to those who participated actively in its formation, to those donors who have generously provided the support to make ISNAR a reality, and particularly to the leaders of national agricultural research systems who have enthusiastically welcomed ISNAR to the international scene.

ISNAR welcomes the opportunity that it has as a part of CGIAR. The report that follows will, I hope, assure the founders that ISNAR is responding positively and appropriately to the challenge.

William K. Gamble
Director General

Contents

Board of Trustees	4
ISNAR Staff, 1981	5
Introduction	6
Chapter 1. The Development of Strong National Agricultural Research Systems	8
Preliminary Observations on National Agricultural Research Systems	9
Main Issues in the Five Missions	10
Costa Rica	13
Institut de Recherche Agronomique et Zootechnique	15
Kenya	18
Indonesia	22
South Pacific Review for ADE	25
Chapter 2. Training	28
Strengthening National Agricultural Research Systems	29
Rural Social Sciences in Africa	35
The Role of International Associations in Strengthening National Agricultural Research	36
Chapter 3. Research on Organization and Management	42
Chapter 4. Communications and Information	44
Chapter 5. Summing Up	47
Chapter 6. For the Record	49
ISNAR Publications of 1981	49
Other Participation	50
Consultants to ISNAR in 1981	51
Origin and Chronology of ISNAR	53
Glossary of Organization Often Cited by Acronym	55

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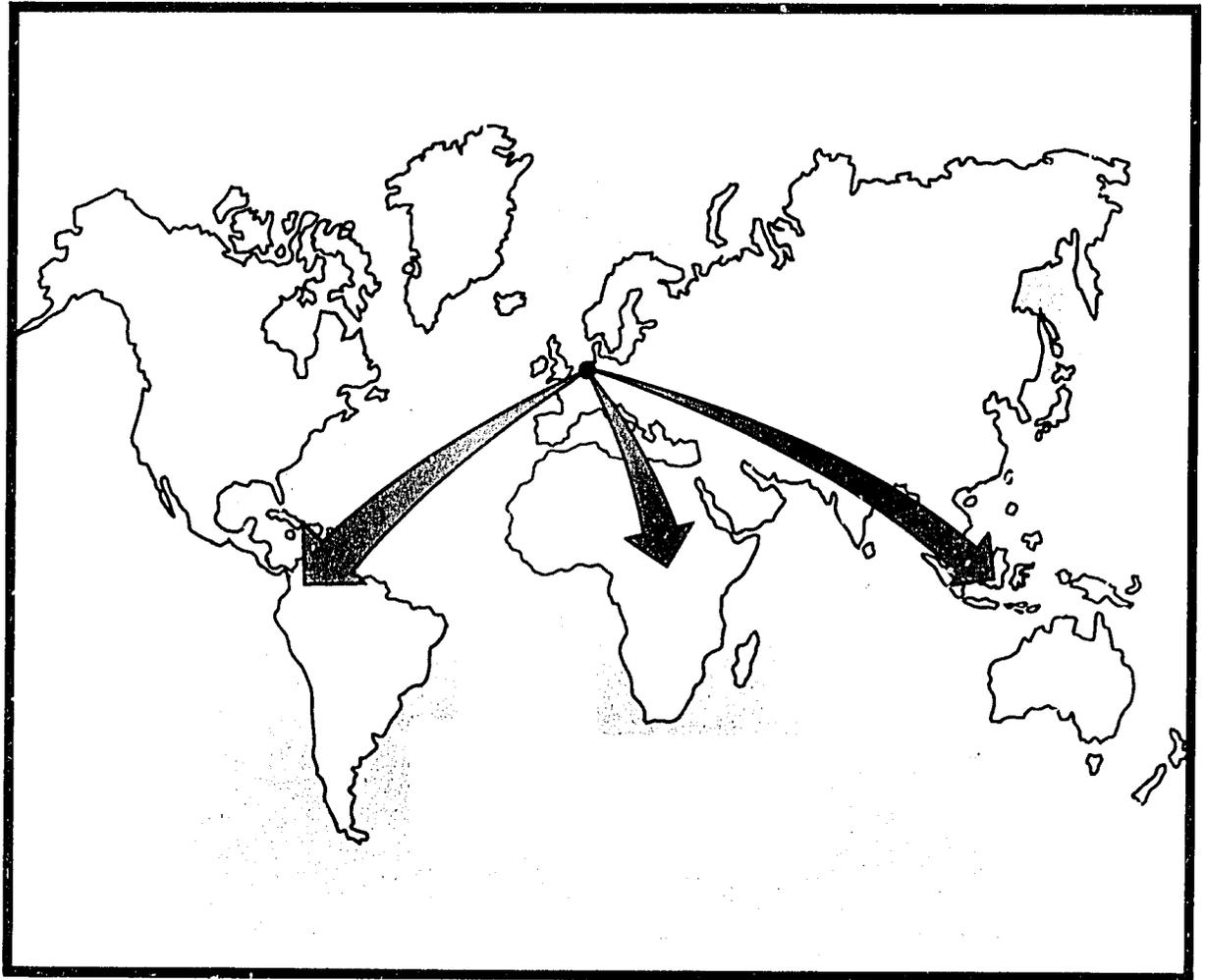
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Introduction



The new service occupies two floors in a new building in The Hague, Netherlands.

ISNAR, the International Service for National Agricultural Research, began its active life on September 1, 1980. Its origin came in the confluence of two lines of needs expressed from different sides of the world's agricultural research community.

The decade of the 1960s had seen a concentration of effort by many government and foundation donors to create and support international agricultural research centers (IARCs). The IARCs put major thrust behind work to improve production of leading food crops through plant breeding and supporting packages of practices. When journalists attached the label "green revolution" to the results of this work and reported them, the emergence of powerful new technologies in some crops became known around the world.

But researchers in the IARCs could not tailor-make varieties and packages of technology for each production situation for all the farmers of every country. It was apparent that another link was needed in the chain of agricultural research. That link was research competence in the country where improved technologies were applicable. It was essential for testing the elements of the new IARC technology under the specific agro-climatological and socio-economic situations that existed. Without local testing – and adaptation in the technologies in most cases – the potential improvement from IARC work fell short of its potential. A stronger national research ability was needed in many countries.

National agricultural research leaders were equally aware of this dilemma. They felt needs to develop their own national agricultural research system to be able to study and solve national agricultural development problems. And they understood the need to upgrade their own capability to capitalize on advances coming from the creative work of the international centers.

These two lines converged in the last half of the decade of the 1970s.

The Consultative Group on International Agricultural Research (CGIAR) – the donor consortium that had emerged as coordinator of the dozen IARCs that then existed – directed its Technical Advisory Committee to consider possible actions to strengthen the interface of IARCs and national agricultural research systems. ISNAR was the result of deliberations triggered by that action. (Key features in that development process are chronicled in another place in this report.)

The Facets of ISNAR Programming

ISNAR's program services and activities are divided into four elements: (1) the development and continuing support of strong national agricultural research systems; (2)

training, which includes such events as conferences and seminars as well as preparation of materials on research management; (3) studies on effectiveness of research organization; and (4) communications and information, including both organizational relations and the collection and sharing of literature on research management.

Activities were initiated in all four areas during the first year's operation. Emphasis in the different topics varied because each represents a different level of priority within ISNAR's mandate, and each calls for a different set of resources. These four program elements provide the organization followed in this report of ISNAR's first year.



Much work is person-to-person. These Brazilian researchers conferred with ISNAR at its headquarters.



The ISNAR team observes national research fields in East Java, Indonesia.

The need that ISNAR was created to serve was defined in terms of national agricultural research systems. ISNAR's role in relating directly to these systems has been given highest priority for its use of resources. Up to 60% of the effort is directed there. The area attracted immediate attention as the new service was established and staffed and as program activity was begun.

Unlike the other CGIAR centers, which have world or regional mandates for given subject areas, ISNAR's focus is on individual national systems, with major emphasis on the broad area of research organization and management. The individual systems, of course, are unique products of their own history and the special forces in their own environments.

Still it is reasonable to expect that even in separate systems some similar problems may be solved by similar actions. So ISNAR searches for verifiable principles that may provide general guidance in organizing and managing productive agricultural research.

Some insights into national systems problems are found in group discussions (as reported from the Nairobi and Los Banos sessions). But the specific knowledge needed to appraise an individual system, and to work supportively and creatively with its managers, doesn't come from general contacts.

When ISNAR is invited to establish a working relationship with a country, an early step to develop the base for interaction is a systematic review of the nation's agricultural research system.

The research systems of 11 developing countries came under ISNAR review during this first year. All were not reviewed with equal intensity. Three – Costa Rica, Kenya, and Indonesia – were studies in depth of the full national agricultural research systems; one review, Institut de Recherche Agronomique et Zootechnique (IRAZ) in Africa, focused on a cooperative effort involving parts of research systems of three countries; and one was a regional mission that examined relatively underdeveloped systems in seven Pacific island countries. The geographic spread touched parts of Central America, Africa, Asia, and the South Pacific.

Some patterns began to appear. Similar systems seem to be hosts to similar problems. But solutions may not be the same, even to the same problems.

Numerous hypotheses emerged from the first year's contacts with national agricultural research systems. Some are set out below. At the same time, there were unique findings in each review mission. Some commentary on those fea-

tures also follows. Each review generated a written report, and all are available upon request from ISNAR (a citation is given with the respective digests that follow).

Preliminary Observations on National Agricultural Research Systems

As ISNAR staff and consultants visited and talked with many persons about research systems this year, they saw similar things in different places. The individual perceptions began to sort themselves into possible patterns. By the end of the year it was possible to formulate, for testing and verification, a number of observations:

- *National agricultural research systems are surprisingly complex.*
- *More problems of agricultural research systems are based on human or political than on technical issues.*
- *The social, cultural, or historical environment of a research system constrains in many ways the changes that it may be able to make.*
- *Agricultural research systems often do not have well-developed plans for their research programs, especially regarding their needs for manpower and other factors of research productivity.*
- *Although few developing countries have more than a fraction of the scientists they need, most lack systems that fully utilize available scientists (promotion schemes give the highest rewards to persons in administrative posts, or the system fails to supply needed technical and administrative support persons and research supplies, or there are conflicting requirements for administrative and scientific work).*
- *Staffing and leadership for agricultural research programs, particularly in Africa, have not grown with the increasing demand. Many national programs actually appear to have fewer well-qualified staff than they had a few years ago. Staff development and staff retention have not kept pace with staff attrition.*
- *Some countries are overextended in their commitment to local support costs and staff for bilateral aid projects. There are too many cases where international lending bodies pushed their particular projects on an*





Researchers need links to farmers' fields, such as to this family garden in the highlands of Papua New Guinea.

ad hoc basis without sufficiently considering the real ability of the recipients to meet commitments.

- *Links between national agricultural research systems and policy units of the government are often not used effectively to establish the importance of adequate investment in agricultural research for national development.*
- *Agricultural research systems in developing countries have relatively few direct links with the production sectors in agriculture, especially with small-scale farmers.*
- *In few developing countries are the interactions between agricultural research systems and agricultural universities sufficiently close and collaborative.*
- *Agricultural research systems often need to improve two-way communication among and between units to coordinate research activities.*

Main Issues in the Five Missions

Each of the five missions in the first year was unique in one or more specific issues. While helping to define the varied parameters of agricultural research management in the developing country context, these special situations called for individualized recommendations.

Two of the countries have national coordinating agencies of fairly recent creation: the Agency for Agricultural Research and Development in Indonesia (AARD), which began operations in 1976, and the Consultative Commission for Agricultural Research (CONIAGRO) in Costa Rica, which was formed in 1980. Formation of a similar body, a comprehensive organization for planning, executing, and evaluating agricultural research, was recommended by the ISNAR team that reviewed Kenya.

Research Planning

Research planning has received considerable attention within AARD in Indonesia. The agency was commended for steps it had taken to strengthen the processes of planning, especially for creating an administrative unit with research programming responsibility and for strengthening its socio-economic research unit. Further attention was recommended for planning to relate the mandates of research stations to the areas throughout the country where they are being developed; for quickly and efficiently bringing back into service the many future scientists now sponsored in advanced

studies in Indonesia and abroad; and for strengthening the information and communications support system.

Reviewers in Costa Rica recommended that a single national body bear responsibility for agricultural research and the transfer of technology. Under that wider rubric, it was pointed out, the one body would be able to (1) create, (2) adapt, and (3) transfer new technology for the nation's agricultural sector.

Transfer of Technology

The addition of technology transfer to the mission of one coordinating body in Costa Rica was proposed as a means to strengthen the linkage between research and the field. This same weakness has been found in all the systems analyzed. However, terms of reference for other reviews limited attention to the linkage of research to the dissemination systems, which are typically in other departments and sometimes other ministries. The need for stronger links was clear in both Kenya and Indonesia. In the former, the team recommended a new department in the research coordinating agency, with specific responsibility for liaison with extension and other units that disseminate agricultural technology. The Indonesia team proposed steps to strengthen the delivery of research to extension units through expanded training and communications contacts.

Manpower and Training

The training – and retaining – of competent personnel was encountered as a need in all ISNAR missions. The Kenya team, for example, noted the short tenure of scientists in government research units (average of 2.5 years in one study), suggesting that concentrated manpower development efforts over the next decade would be necessary to meet the system's needs. The Indonesians are already embarked on a massive training effort, mainly for scientists; but construction of many new research facilities throughout the nation brings a parallel need for many more well-trained technical and support staffs. Scarcity of support staff (for example, in Costa Rica the reviewers found an average of about one technician per scientist) means that many scientists must devote time to other activities.

A constraint common to all of these systems traces to the fact that their government scientists are employed under public service regulations that are often not congruous with the work of scientists. ISNAR teams have recommended either special exemptions for government scientists or semi-autonomy of the national research agency, which would permit it to develop personnel policies that are more likely to attract and hold highly productive scientists.



Agricultural research is aimed toward improving production; Indonesian rice production tells one success story.



Developing countries are finding benefits from cooperating with others with similar ecological conditions.

Regional Cooperation

The two multicountry reviews did not take the teams as deeply into national operations. They focused on issues of a different nature.

IRAZ was formed by governments of Rwanda, Burundi, and Zaire. Its intended role covered two facets: to support and coordinate agricultural and animal science research of the national agencies of the three countries and to undertake research on its own. ISNAR and the International Institute for Tropical Agriculture (IITA) shared this review of IRAZ. Issues were found to touch areas ranging from political to technical, and recommendations dealt with similarly broad matters. The institute was advised to develop fully its coordinating role within the common ecological region before attempting to carry out research of its own. Suggestions were made to encourage interaction among researchers of the three nations in planning, sharing results, exchanging information, etc.

The Pacific Islands mission (not sponsored by ISNAR but led by the Director General of ISNAR) took a team into a region where food crops research has a short history. Populations are relatively small, and resources (especially national agricultural scientists) are limited.

The sponsor of the mission, the Asian Development Bank, wanted specific advice concerning an earlier mission's recommendation that an international agricultural research center be set up to serve the South Pacific. The team found few positive factors in support of establishing an international center, such as commodities in which all or most nations have a deep interest, or the same agro-climatic conditions in all countries. It found there are limited numbers of competent researchers in different countries, but they tend to be isolated from work of colleagues with similar concerns.

The team did not support the recommendation for an international center; instead it proposed that resources be put behind region-wide initiatives that would better serve the present systems. These could include a regional library and information center, more advanced quarantine services, market potential studies for possible export crops (before steps are taken to establish them), and inter-island transport. The team also proposed the innovation of a small regional research support group that could activate and support these regional activities.

External Assistance

The need for and utilization of external assistance showed up as an issue in each of the 1981 review missions of ISNAR. Continuing activities in all countries are expected to include calls on sources of technical and financial aid. Part

of the ISNAR role is to serve as advocate with the leaders of a national agricultural research system, seeking sources of aid and helping develop strengthening projects. By the end of the report year, none of the relationships had advanced to the point of specific projects and activities. Those will develop in the year ahead.

Costa Rica

ISNAR's first country review took place in Costa Rica. The official request was received in November 1980, within weeks of the start of ISNAR operations in The Hague. The team of one ISNAR staff member and two consultants went to the field in March 1981*.

ISNAR was asked to advise the Government of Costa Rica on actions that would strengthen the national ability to plan, coordinate, and carry out agricultural research programs. Special attention was directed to the Consultative Commission for Agricultural Research (CONIAGRO), which had been created recently. Transfer of technology to farmers was also cited as an area for analysis by the team.

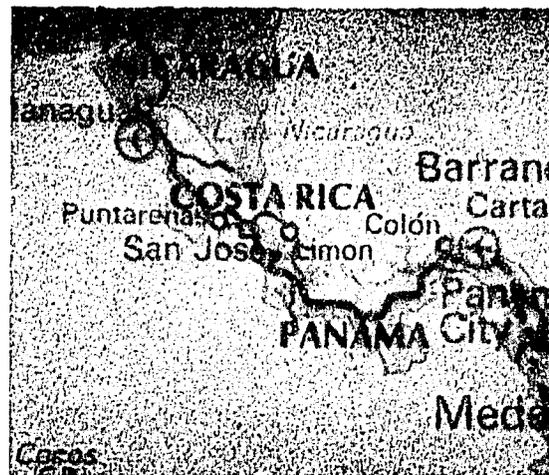
In the course of the mission, the ISNAR reviewers made personal contact with key Costa Rican persons and institutions involved in agricultural research and transfer of technology. They studied the main national and regional organizations, and they visited staffs and facilities representing work at the field level (cantons).

Agriculture fills a central economic role in Costa Rica, accounting for 20% of the gross national product and engaging 30% of the working population. Agricultural products generate about 70% of the currency earned by the nation's exports. Just over 60% of the country's surface is considered to be under agricultural operations.

Call for 4% Annual Growth

Costa Rica expects a lot from its agricultural resources: the current national plan calls for a 4% annual increase in agricultural output. That level of productivity growth will require use of technologies that are not yet adopted, and new technologies will be needed that have not yet been developed. Still the present investment rate for agricultural research is modest.

The outstanding success story in Costa Rican agricultural research is in coffee, the nation's leading export crop. Past research efforts have been greatest in the export crops, where productivity has continued to improve. The record has not been as bright for the crops that contribute most to the internal food supplies, such crops as rice, maize, beans, sorghum, vegetables, and fruits.



ISNAR's first country review mission took a team to Costa Rica.

* The mission report, in Spanish, is: El Sistema de Investigacion Agropecuaria y Transferencia de Tecnologia en Costa Rica. ISNAR-R2(s), July 1981.



ISNAR's review team found a variety of institutions and organizations involved in some aspects of agricultural research; various units within the Ministry of Agriculture; national, regional, and cantonal stations or centers; commodity units; universities; and more. The team found commendable evidences of both research results and activities designed to strengthen the research system. It concluded that more effective national policy is required to guide agricultural research.

The Resource Gaps

Allocations of resources to create and transfer agricultural technology have grown in recent years. The review team concluded, however, that present resource levels in the two separate institutional units are insufficient; they do not reflect the emphases implied in national policies for agricultural development.

The number of staff in scientific posts is considerably below the needs, with low proportions of those personnel having had high academic training. The team noted the low ratio of middle-level technicians to professional staff (about one to one), which was interpreted to mean that many professionals are carrying out tasks that could be performed by less highly trained technicians; professional capabilities would thus appear to be utilized at something less than the maximum.

As is true in many developing countries, professional research personnel in government are appointed under national service regulations. In the team's view, this means some inflexibilities in selection, promotion, and assignment that may get in the way of optimum research performance; and the salary system does not encourage stability of personnel, especially of the most productive.

Recent moves have stimulated regionalization of research activity in Costa Rica, which the review team commended. They found that regional experiment stations appeared to be adequate for present needs, but they noted needs for both more personnel and facilities for what are called "micro-zones" – sites where trials can be made under agro-climatic conditions different than at the regional sites.

While recommending that certain areas be regionalized, the team proposed that some activities be centralized to achieve higher performance (such as key laboratory services and certain management and support services).

Combine Research and Technology Transfer

The ISNAR review team recommended the establishment of an institution (as part of the Ministry of Agriculture and Livestock) that would integrate all functions in-

volved in creating, adapting, and transferring agricultural technology in Costa Rica.

That recommendation is based on a perception of a single coherent process in which (1) the needs and situations of farmers are represented, (2) research is designed and carried out in search of appropriate technologies, (3) those technologies are validated and adapted to real production situations, and (4) the knowledge and techniques are effectively made available to producers.

This review team believed that a single institution offered the correct solution to sectoral problems that now constrain the process at different stages. It went on to spell out responsibilities, suggested structure (including coordinated networks of laboratories and experiment stations), relationships with numerous non-government and university research units, and financial implications.

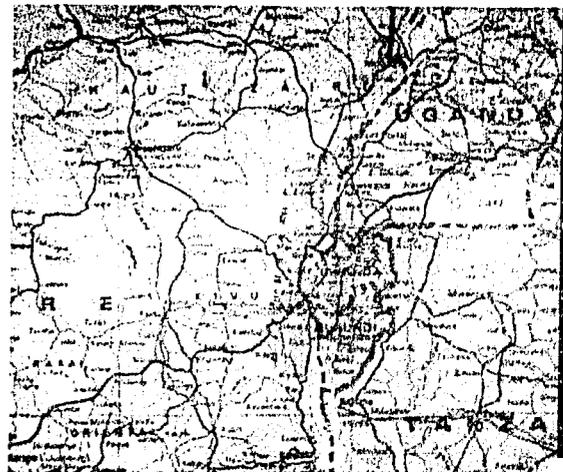
Continuing Contact

The ISNAR review team discussed its findings and main recommendations before departing from Costa Rica. In addition to person-to-person talks with officials of the government, who had requested the review, the team met with officials of international agencies interested in the work in that country. These preliminary discussions indicated probable acceptance and approval of the recommendations by both groups. And ISNAR seemingly will retain a continuing cooperative role of consultation and advocacy for actions to strengthen the system for development and transfer of agricultural technology in Costa Rica.

Institut de Recherche Agronomique et Zootechnique

Burundi, Rwanda, and Zaire make up the Economic Community of the Countries of the Great Lakes. Late in 1979 heads of those three governments created an institute that would have the task of rationalizing agricultural research in their states. This institute for agronomy and animal science research was seen as a means to strengthen cooperation between the respective national agricultural research institutes (while autonomy of each was safeguarded). Subsequent actions included the development of organizational structure, staffing, and adoption of a constitution – which among other things stipulated that the headquarters be established at Gitega, Burundi.

Early in 1981 a request was made to the International Institute for Tropical Agriculture (IITA), Ibadan, Nigeria, for a mission to examine the mandate and proposed scope of activities of the young three-nation institute. After consul-



ISNAR and IITA joined to advise IRAZ, formed by Burundi, Rwanda, and Zaire.



Two senior research officers represented ISNAR in the IRAZ study.

* The review team report is available in French and English: Report of an ISNAR/IITA Mission to the Institut de Recherche Agronomique et Zootechnique of the Communauté Economique des Pays des Grands Lacs (Burundi, Rwanda, Zaire). ISNAR-RI(e) (English), ISNAR-RI(f) (French). July 1981.

tation with ISNAR, which had recently begun operation, the Director General of IITA responded to IRAZ that the mandate of ISNAR was more germane to his request than was that of IITA. Subsequent exchanges between the directors general of IRAZ, ISNAR, and IITA resulted in the formation of an exploratory mission*.

A Two-Centers Mission

Two staff members of ISNAR and one from IITA carried out that mission in late May and early June. The team reviewed documents related to IRAZ and research activities of the different countries, visited research stations and faculties of agriculture, and conferred with government leaders as well as the management committee of IRAZ. In July the team reported back.

The team concentrated on preliminary proposals for the short and medium term, with emphasis on the role that IRAZ could play as a coordinating influence. Its recommendations were divided into four categories: the mandate and scope of IRAZ, geographic area, proposals concerning the program, and a suggestion on the location of IRAZ headquarters.

Recommendations

On mandate. Each of the countries involved in IRAZ has its own national agricultural research institute. The mission team saw the greatest contribution from IRAZ being in strengthening those institutes, rather than in undertaking specific research projects on its own. (It stated specific agreement with the IRAZ General Assembly position excluding project execution.) The team suggested that IRAZ support the existing institutes through background studies and surveys, by stimulating new initiatives on regional research, and by providing support services.

Geographic coverage. Nearly 98% of the territory of the Economic Community of Countries of the Great Lakes is within Zaire. About 95% of the area is ecologically unlike most of Burundi and Rwanda. However, the two smaller countries plus an area of eastern Zaire have many ecological, agro-climatic, and socio-economic similarities. These similarities, in the view of the team, suggest a focus for activities of IRAZ. Recognizing that the final decision on area of service would be made by the three governments, the team recommended that IRAZ concentrate on an area made up of Burundi, Rwanda, and the zone of eastern Zaire that is ecologically similar.

Program proposals. Agricultural development objectives for the three countries were found to be similar: satisfying basic food needs of their people; intensifying crops for

export and for local agro-industries; and promoting modern methods of animal production. The team saw two categories of activities for IRAZ: (1) support services to the three national institutes and (2) coordination of research programs among them.

In support services, IRAZ could function in various catalytic, coordinating, and supporting ways (the team made 10 specific suggestions). The focus of coordination would be on the several key commodity research efforts now conducted in parallel by the three institutes – with little coordination and much duplication. Activities could include convening inter-country technical meetings; promoting the sharing of skilled manpower, services, and physical infrastructure; plus taking the lead in seeking more research resources.

Location of headquarters. The location of IRAZ headquarters at Gitega, Burundi was set out in its constitution, but a means was provided for transfer to another location within any of the three countries. The mission team found serious constraints related to operations from the Gitega site, many related to the necessity for travel to Bujumbura (the capital) for most communications, supplies, and services. The team stated a recommendation in this way. "It is recommended, therefore, that serious consideration be given to accommodating IRAZ headquarters at Bujumbura until such time as Burundi's central administration will have moved to Gitega; as a minimum action, the mission recommends the setting up of a liaison office in Bujumbura, linked by two-way radio to the IRAZ premises in Gitega."



Cooperation with IARCs

Mission members saw a number of potentially productive relationships between international agricultural research centers and various units and programs coordinated under IRAZ. Specifically suggested were:

Potato, with the International Potato Center (CIP), Lima, Peru.

Sweet potato and cassava, with the International Institute for Tropical Agriculture (IITA), Ibadan, Nigeria.

Grasses and fodder legumes, with the International Center for Tropical Agriculture (CIAT), Cali, Colombia.

Maize, with IITA and the International Maize and Wheat Improvement Center (CIMMYT), Mexico City, Mexico.

Grain legumes, with CIAT, IITA, the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Hyderabad, India, and the International Development Research Centre (IDRC), Canada.

Cropping and farming systems, with IITA.

Continuing Association

The ISNAR/IITA mission report was subsequently discussed with IRAZ officials. In the ensuing months, ISNAR was called on for consultation. Among areas where ISNAR provided assistance were the IRAZ manpower development plan, advice and background material for developing documentation services, and biomass and agro-climatic analogs. The consultative relationship continues.

Kenya

At an estimated rate of 4% increase per year, Kenya's is one of the fastest growing populations in the world. About 85% of the people are involved in agriculture, which is under growing pressure to keep up with the food demands of more than 16 million persons. With less than 10% of its land classified as "good" for agriculture, the nation's food production resources are divided broadly into six ecological zones, each with different problems and potentialities.

Agricultural research in Kenya has a long and varied history. Work began in colonial times, with major emphasis on export crops as grown on relatively large farms in areas of high agricultural potential. Population pressure and a trend to smaller farms cause research to be concentrated now more on problems of smallholders who apply intensive practices on land of marginal productive potential.

Since achieving independence in 1963, Kenya has devoted considerable attention to agricultural development and agricultural research related to it. A number of ministries, foundations, boards, and institutes are involved in such research. Earlier Kenya had received some specialist research services (which had been considered too costly for a single country) from regional institutions under the East Africa Community (EAC) prior to the breakup of the community.

Institutional Structures

The Kenya National Council for Science and Technology (NCST) was created and given the leading advisory role on science and technology, including agriculture; the National Agricultural Sciences Advisory Research Committee was formed to serve the NCST. Kenya units remaining from the EAC institutions appear to have been a factor leading to the reorganization of the research system. An act of 1979 provided means to facilitate statutory research institutes. However, there has not yet emerged a comprehensive and cohesive organization with responsibility for planning, coordinating, executing, and supervising agricultural research.



Agricultural research in Kenya has a role in helping the nation feed its fast-growing population.

ISNAR was asked by the Government of Kenya to review the nation's agricultural research system*. The terms of reference, approved by the Director General of ISNAR and the Secretary of NCST, covered study of the structure and management of the agricultural research system; its internal and external relationships; its methods for determining research projects; and its methods of disseminating findings. The review also was to assess the state of agricultural research in Kenya, to assess national policies and priorities for agricultural research, and to search for gaps in agricultural research, support services, and training programs.

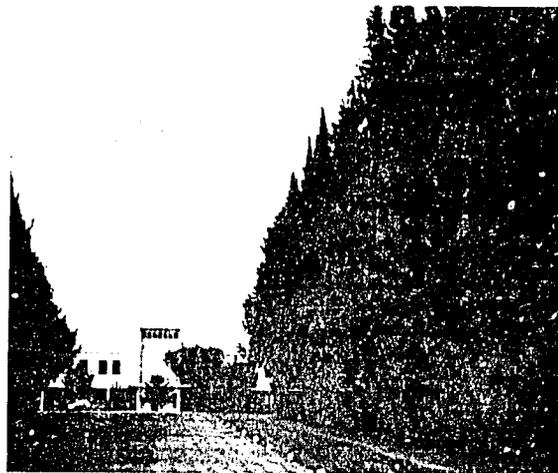
An ISNAR team of five specialists (two staff and three consultants), joined by three representatives of Kenya's NCST, carried out the four-week review in June and July 1981. The team's observations and conversations covered 18 research stations, 3 major laboratories, 2 foundation research and 2 service installations, plus faculties in 2 educational institutions and officials in 4 government ministries. The group interacted with representatives of six international research services which have programs in Kenya (five are part of the CGIAR system: IITA, ILRAD, ILCA, CIMMYT, and CIP).

The review team found an extensive array of agricultural research resources and many evidences of success. The team noted many points at which steps could be taken to strengthen the agricultural research system. Suggestions or recommendations were offered in a number of areas of organization or operation.

Recommendations

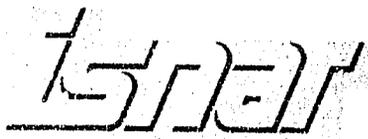
A comprehensive national agricultural research organization (as envisaged in the 1979 act) was recommended as a body that could better coordinate the wide range of planning, execution, and evaluation tasks for the entire agricultural research system. Such an organization, created as a semi-autonomous body, would have the independence thought to be needed to develop conditions of employment — appropriate scheme of service, reward system, and productive research environment — that would encourage more stability in staff than now occurs. It could effectively address matters of allocation of resources and assignment of research responsibilities among research stations that currently vary widely in facilities, capabilities, and objectives.

This body could become the focus for a better articulated process of establishing research objectives and priorities and translating national development policies (with the input of farmers and many other interested parties) into



The Kenya Agricultural Research Institute is one of many research units.

* The full report of the Kenya mission is available by request from ISNAR: Report to the Government of Kenya: Kenya's Agricultural Research System. ISNAR-R2. September 1981. An executive summary of the report bears the same title. It is publication number ISNAR-R2a.



programs and projects to attack major problems. Among the challenges would be finding ways to give more attention to research into the real problems of smallholders – on whom rest much of the potential to meet the nation's rising need for food.

Increased capability in socio-economic research, well integrated with technical agricultural research, was seen as an important development within the national research institute. The team recommended that such a group be established and that it also deal with socio-economic analysis and statistics to assist more systematic planning and allocation of resources. The unit should have department status, in the view of the team, for effective interaction with the several ministries and institutes with which it would work.

To strengthen the delivery of research findings to the extension services and other disseminators, the team proposed formation of a department of agricultural extension research liaison and communication. Its tasks would include stimulating two-way flows of information within the research system (outlying stations with central units, for example) and between the research system and the extension system. In the latter case special attention would be placed on getting problem-definition information from the field as well as feedback on the results of field trials to test technology. A new role was envisaged in this area for communication, information, and training.

Funding for agricultural research was considered in several aspects. The team found some difficulty in relating government-planned budgets and expenditures specifically between agricultural development and agricultural research activities. It suggested that this situation could be improved through the use of program budgeting.

Funds for support of some agricultural research comes from annual levies in certain industries. These research establishments, however, do not generally have forward budgets, and the total funds available may vary with the value of the commodity marketed. The team was of the view that long-term budgetary planning for industry-supported research efforts could help reduce these year-to-year uncertainties.

Significant support for agricultural development in Kenya has come from external donors; most has been devoted to specialist services, with only small amounts spent directly on agricultural research. However, the associated demand for counterpart funds and personnel has sometimes diverted resources from projects considered to be of higher national priority. The team suggested that it would be desirable for assistance project funds to be matched more carefully to the priorities approved by the National Agricultural Sciences Advisory Research Committee.

Training for research staff was seen as a significant need in Kenya, as in most developing countries. The lack of adequately trained manpower is seen as possibly the main constraint there to greater efficiency and impact of agricultural research. Although much emphasis has been placed on graduate studies abroad and strengthening advanced training programs in Kenya, the research service has been unable to attract and retain staff. The result is a relatively small number of well-trained, dedicated research staff and a relatively large number of young graduates who lack research training and experience.

The team rated training as the most important input for Kenya's national agricultural research; a systematic program of appropriate training over the next 5 to 10 years will be needed to overcome the manpower constraint. The team recommended efforts to add further strength to the relevant postgraduate programs in the University of Nairobi; furthering expansion of training for support staff, at the diploma level at Egerton College; and a program to aid training in research management for about 25 senior scientists over the next five years plus special courses for research station directors and officers in charge.

A cadre of well-trained scientific and technical personnel is seen as key to the effective use of the existing network of research stations and facilities. The team suggested a two-pronged approach: one, accelerated training for local officers and, two, selective use of expatriate personnel through technical assistance programs. A major role of this cadre would be in orienting and training young graduates as they enter the profession. They could also fill a role needed now, the periodic review of research programs by experienced scientists -- outside experts from the world scientific community could also contribute here.

Although the team found treasury officials responsive to strong research proposals, it considered that some aspects of budgetary procedures were constraining. The centralized payment system of the government has sometimes been the cause for interruptions in the flow of goods and services essential to the research program.

Continuing Contact

The ISNAR review of the Kenya agricultural research system was forwarded to representatives of the government in the latter weeks of 1981. The schedule called for person-to-person discussion early in 1982. At that stage, the Director General and the team leader from ISNAR would confer with the officials who requested the review. If asked now by the appropriate Kenyan officials, ISNAR will continue to cooperate as the country implements recommendations of the review.

The logo for ISNAR (International Service for National Agricultural Research) is displayed in a stylized, italicized, outlined font. The letters are interconnected, with the 'I' and 'S' being particularly prominent.

Indonesia

Indonesia is the world's fifth most populous country. Its rate of population growth ranks among the lowest in its region, but still the increase in demand for food puts pressure on the nation's production resources. A relatively large share of the population lives on a relatively small share of the land area. Vast areas of sparsely populated lands are to be found within Indonesia, but the productive capacity of most for food crops is limited – not at all comparable to that of the intensively farmed soils of Java.

With fewer than 40 years behind it as an independent, self-governing nation, Indonesia has recently made decisive moves to encourage the development of agriculture. The tradition of research goes back many years in this island country, but major emphasis in the pre-independence period was on improvement of export crops. A little more than a decade ago, the nation undertook (with IRRI collaboration) a thorough and well-calculated effort to increase rice production. For a number of years Indonesia has imported 15% or more of its annual consumption of this favorite cereal. By the end of 1981, however, it was accurately reported that for three consecutive years Indonesian rice farmers had produced enough to supply all the rice demanded by the people.

A Success Story in Rice

The rice success story was made possible by a combination of national policy goals, in-country and external support for research as well as for dissemination and for meeting both production input and marketing needs, and adaptation of the best world technology for irrigated rice production.

Planners have identified agriculture as a key sector in the expected development of Indonesia. It has a role to play in at least three of the five great aims of the society. Planners also recognize the role that research plays in agricultural development; its needs have been central in the allocation of development funding for the next decade or more.

Organizational innovations were made in the middle 1970s. The Agency for Agricultural Research and Development (AARD) was created to bring together the scattered units then involved in research on food crops, livestock, fisheries, forestry, estate, and industrial crops. It was the Director General of AARD who invited ISNAR to review his agency and recommend ways of strengthening agricultural research in Indonesia*.

ISNAR's largest review team to date was organized to respond to this invitation. Three staff members and five international consultants comprised the team that spent the month of August 1981 in that southeast Asian country. In



Agriculture is prominent in plans for development in populous Indonesia.

* The report of this review mission is available by request from ISNAR: The Agency for Agricultural Research and Development in Indonesia. ISNAR-R4. October 1981. An executive summary bears the same title. It is publication number ISNAR-R4a.

this instance, ISNAR was asked to analyze the strengths and weaknesses of a relatively young organization (AARD began operating in 1976), but one with an encompassing mandate for agricultural research.

The specific terms of reference called for a look back at the program and progress of AARD in its first 5 years; then a look to the next 3 to 5 years in terms of the program objectives and priorities, organization, staffing, allocation of resources, and need for external assistance; suitability of the AARD structure; efficacy of procedures of setting research objectives; and the efficacy of the links between research and farming practices.

Roster of Achievements

In its retrospective look, the ISNAR team found evidence of contributions of agricultural research to development in Indonesia. Research is a long-term and relatively unpredictable activity, and many of the recent successes were based on work begun before AARD. However, the team noted commendable achievements attributable to AARD. Massive programs have been launched, with judicious use of external grants and loans, to build research complexes and undertake advanced training for the scientists who utilize them. The dispersion of the complexes will take the researchers into the Outer Islands, where most of Indonesia's future gains in agricultural production will come.

Literally hundreds of able young men and women have been placed in graduate studies (about 50 in foreign centers and nearly 10 times that number with Indonesian faculties in agricultural sciences). Earlier patterns of research activities, which were limited within separate directorates general, have begun to be replaced by commodity- or problem-oriented efforts. An important step in supporting services was taken with formation of an AARD-wide library and information center. With the rapid growth in size and responsibilities, AARD has also established a center for research programming – an important innovation, in the view of the ISNAR team.

Among areas of greatest need of strengthening, the team cited the lack of interdisciplinary approaches to problems, especially in terms of existing farming systems, prompt and responsive communication among the scattered units, and the quality of linkages with the extension services. These areas came in for special attention in the forward look required by the mission terms of reference.

Recommended Actions

The ISNAR team identified actions in four broad areas which, it judged, would fit AARD better to meet the



AARD director general (right) and ISNAR team leader chair opening of mission review in Indonesia.



Research staff train field-level extension workers to speed the flow of improved agricultural technology.

challenges placed before it by the Government of Indonesia. The areas, each with specific recommendations, were in (1) programming and allocation of resources – especially through strengthening the programming center and supporting it with a reinforced socio-economics unit; (2) manpower resources – developing longer-range plans to utilize persons now in training and to identify the areas of continuing need for scientific and support personnel; (3) structure and organization – recasting more broadly the mandates of institutes serving ecological regions toward integrated, multicrop missions, adding some resources to aid the top officers in administering the expanding and far-flung agency, and undertaking major steps to improve the adequacy of information flow between and among the many units; and (4) links to food production via extension services and other intermediaries – improving the quality of contact with field extension units to get their help to define farmers' problems and to strengthen the channels by which research findings reach the farmers' fields.

In the Indonesian mission, the ISNAR team was asked to consider in what ways external assistance could be utilized effectively in AARD. The agency has been aided by many donors and lenders – so many that the needs for administrative attention and counterpart staffing have sometimes diverted resources from high-priority programs.

The team endorsed the AARD conception of grouping various externally supported programs into "umbrella" projects as a means of (1) conserving administrative resources and (2) building links between related efforts.

One of the recommended projects dealt with organizational changes – more strength for the programming and socio-economic units, and possible moves to improve communications and information services. Another group of projects embraced several natural resources and land use programs. Still another would bring together concerns at the farm or field level, such as water management, machinery, fertilizer efficiency, and ecological impact of intensive agriculture.

The team also identified a number of other areas as especially in need of external support – in some cases financial, and in other cases personnel. Requirements appeared to go beyond present domestic funding ability in such areas as agricultural research support for transmigration (the national program that helps persons move from areas where there is heavy pressure on resources to new opportunities in other parts of the nation); attention to mechanization where labor is short, with emphasis on more efficient hand tools and small machines; increased research attention to such potentially important food crops as cassava, sweet potato, and maize, and such industrial crops as coconuts, cloves, pepper, and cotton; an enlarged mandate and capacity for soils

research, especially related to the fragile forest-derived soils being brought under cultivation in transmigration projects; and manpower development, notably for research managers and for experiment station operators.

Using Expatriate Personnel

Two added points were made by the review team concerning use of expatriate personnel in AARD programs. Good use could be made, in the team's opinion, of repeated short-term consultancies with specialists who are not available for the usual several-years contracts. And it was noted that other developing countries represent an important source of technical assistance, especially from countries that have problems or conditions similar to those of Indonesia.

Continuing Contact

Indonesian research leaders were utilizing the ISNAR mission report as the program year ended. A number of recommendations were relevant as plans were being developed for new projects in agricultural research. It is expected that, upon request from AARD officials, ISNAR will have active continuing cooperation.

South Pacific Review for ADB

In an exact sense, the spring 1981 review of agricultural research in seven South Pacific countries was not an ISNAR mission. However, the leader of that three-person review team was the Director General of ISNAR, the review approach and criteria were those utilized in the early ISNAR activity, and the insights and experiences became part of the body of knowledge that ISNAR is seeking to create. So it was really part of the year's activities of ISNAR*.

This mission was undertaken at the request of, and under funding by, the Asian Development Bank. That body has sponsored a succession of studies guiding its activities with member countries of the area. In this case, it focused on the agricultural research systems and programs in seven of its developing member countries: Cook Islands, Fiji, Kiribati, Papua New Guinea, Solomon Islands, Tonga, and Western Samoa.

Terms of reference for the review emphasized existing research facilities and needs in the individual countries, with main emphasis on food and industrial or export crops — livestock and fisheries were excluded.

A specific assignment called for determining the desirability of an agricultural research center established to serve the South Pacific area. (Such an institution, based on



AARD has moved to strengthen planning through an agency-wide Centre for Agricultural Research Programming.

- * The report of this mission is available by request from ISNAR: South Pacific Agricultural Research Study: Consultants Report to the Asian Development Bank, June 1981. A single volume includes all the individual country reports. The detailed report on a single country, plus the executive summary of the full mission report, may be obtained by requesting only the specific country report: Cook Islands, Fiji, Kiribati, Papua New Guinea, Solomon Islands, Tonga, Western Samoa, or Other Countries and Organizations.

the general model of the international agricultural research centers, had been proposed in an earlier study.)

Seven Pacific Island Countries

In the five weeks of the mission, the review team visited the seven target countries plus a number of places, agencies, and organizations that relate to agricultural research in the region.

In its most encompassing finding, the team recommended against the establishment at this time of an international research center for the area. It found many and varied needs for stronger systems and programs for agricultural research; but the team did not find sufficient promise that a single center could contribute effectively to countries with such wide diversity in topography, land capability, fertility, and rainfall, as well as great differences in crops and farming systems. (Sweet potatoes have major importance in Papua New Guinea and the Solomon Islands, for example, but they are of little interest in Fiji, Kiribati, and Western Samoa; sugarcane ranks of high significance in Fiji, of some in Papua New Guinea, but of little in others.)

An earlier study had also emphasized a need for additional basic research. However, this team saw that existing research establishments in Australia, New Zealand, France, and many universities could be more productive as contractors for basic research than might be achieved by creating new basic research capacity in these countries. The greater need, in the view of these reviewers, was for personnel and facilities that could emphasize applied research needs keyed to specific ecological conditions.



Pacific Island countries comprise many different crop environments, from sea-level atolls to high plateaus.

Recommendations

The central recommendations, which were supported by a majority of local scientists and administrators, took a different approach. A number of areas were identified where some regionwide initiatives would be useful: a regional library and information center; a more advanced quarantine service (probably provided throughout the region from a single point); studies of potential domestic and export markets for new or expanded areas of crops before investments are made in changes in production; and inter-island transport within the region as well as for trade outside the area (an issue under consideration by ADB).

This review team put emphasis on a country approach combined with the development of networks among national programs. This approach would take into account the existing institutions and personnel now involved in agricultural research; it would strengthen these resources through more promptly and widely shared information, advisory services,

and training. It would seek links outside the region as well as within it. Many sources of relevant research information and support are to be found; a partial list would include: FAO; DSIR of New Zealand; CSIRO of Australia; France's ORSTROM, IRAT, and IRHO; Lever Solomons Ltd.; and universities of the South Pacific, Papua New Guinea, Guam, Hawaii, Queensland, and Australian National. International agricultural research centers of the CGIAR system and others can provide contacts and training opportunities in a number of important areas.

A Regional Support Team

A regional research support team (RRST) is an innovation recommended by these reviewers. It would be comprised of an administrator plus subject matter specialists in root crops, tree crops, and agricultural economics.

Independent of any regional or international institution functioning in the area, the RRST would assist national programs and provide linkage with international institutions. It would identify national scientists for additional training. The RRST would travel extensively among the countries and would play a central role in stimulating joint planning, observation, and evaluation of research. It would support workshops and training efforts. Although little infrastructure would be required to launch the RRST, its program efforts would require funding. The review team saw this response as potentially cost-effective and practical.

Within a short time after the South Pacific mission, ISNAR was approached for individual country reviews. Subsequent invitations came from the governments of Papua New Guinea and Fiji, and both were scheduled for 1982.





No factor is more vital in an agricultural research system than human capacity. Human resource development is an integral part of ISNAR strategy for helping strengthen national agricultural research systems. ISNAR defines this area broadly to include planned activities that lead to increasing human capacity for more productive research. It may include conferences, workshops, meetings, seminars, training courses, and more, depending on the needs of the national systems.

In this first year of operations, ISNAR approached this area of concern through both informal and formal means. Each country review team gathered information and experience concerning strengths and weaknesses in available human resources; these help define national system needs and suggest development efforts required.

Two conferences under ISNAR leadership were specifically designed to probe development needs. A significant study in Africa provided information on a specific category of human resources, social scientists; and a subsequent conference deepened this base of knowledge. In cooperation with the International Agricultural Development Service (IADS), ISNAR helped stage an inquiry into the role of international associations in strengthening national agricultural research.

During the year much planning effort went into formulating a variety of efforts for 1982. Headline activities will include: regional conferences to identify and examine key subjects in research organization and management, with sessions planned in Spain (for Latin America), in Indonesia (for Asia), and one yet to be sited (for the Middle East, in cooperation with ICARDA); preparation of more research management cases (as were begun with CIMMYT cooperation in 1981); and a seminar with the Educational Development Institute of the World Bank to develop a course dealing with the management of agricultural research.

This report concentrates on four formal activities from this first year of ISNAR activity. Two were discussions in depth of national research management needs, and two were conferences that dealt with specific topics: social scientists in Africa; and the role of international associations in strengthening national agricultural research systems.

Reports of each of these issues conferences have been published by ISNAR. Each is available to persons interested in the substantive matters they address. The appropriate reference is given with each of the reports that follow.

Strengthening National Agricultural Research Systems

In a period of two weeks in March 1981, two small teams of ISNAR staff spent two days each in discussions with national agricultural research system leaders from 31 developing countries (13 in Asia and 18 in Africa). ISNAR was created to work with national research systems, and this was its first opportunity to talk in depth with the representatives of those systems and to gain firsthand knowledge of their interests, problems, and priorities.

The International Federation of Agricultural Research Systems for Development (IFARD), which was organized out of the same stirrings that led the CGIAR to consider and establish ISNAR, was co-sponsor in these sessions. One was held in Nairobi, Kenya, in which the Kenya National Council for Science and Technology was the local host, and the other in Los Banos, the Philippines, with SEARCA as local host. The two sessions immediately followed CGIAR review discussions at the same sites (which conserved time and travel resources of the persons involved).

Both sessions were open, exploratory discussions. Five topics derived from principal ISNAR responsibilities provided a framework for the talks:

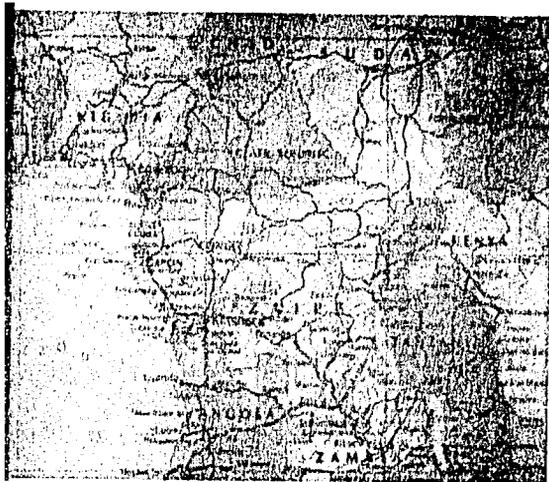
- *organization for national agricultural research*
- *development of research manpower*
- *linking research and production*
- *international cooperation and technical assistance to national systems*
- *ISNAR's role in strengthening national agricultural research*

The aim of ISNAR was to listen to the leaders of national programs, encouraging them to set the parameters and probe the elements of those central topics. For some 12 or more hours of formal conversation, and unknown hours of informal, each group of research leaders explored the topics. They were not unanimous in observations or recommendations. Nor were efforts made get measurable responses; this was an exercise in observing, a search for wider understanding of the environment for agricultural research in the several countries represented.

To deepen its own understanding of information from these discussions, and to provide documentation to partici-



Leaders of IARCs and national research systems discuss needs and ISNAR's role in linking the systems.



National research leaders from 18 African countries met with ISNAR and IFARD in Nairobi in March 1981.

* Strengthening National Agricultural Research Systems in Africa (Nairobi, Kenya, March 6 and 7, 1981). ISNAR-C1. 1981.

Strengthening National Agricultural Research Systems in Asia (Los Banos, Philippines, March 18 and 19, 1981). ISNAR-C2. 1981.

pants and others interested in the subjects, ISNAR synthesized and published a report on each of the sessions. The reports, which have been circulated among many in the international agricultural research community, are available by request from ISNAR*.

The hours of interaction with national agricultural research system leaders disclosed many similarities in problems. While there were differences in perception of problems in some cases, and in approaches to dealing with problems in others, a number of key ideas came through.

- *Many countries lack a national agricultural policy in which to fit research policy. There is considerable interest in the approach of a national agricultural research agency, one with authority to influence programs of many groups involved in agricultural research.*
- *The manpower needs expressed by these leaders are not identical; constraints mentioned included scarcity of scientists, lack of capable managers, and too few support and technical staff. A common problem was inadequate opportunities for in-country training, especially for management and support personnel.*
- *None of the research leaders from these 31 countries was satisfied with the linkage between agricultural research and agricultural production. They confirm the need for better feed-in of problems (and understanding of farmer circumstances) to the research establishment and more effective means to get results to farmers. They are uncertain about "best models" for linking research and dissemination, but they agree on the need for improvement.*
- *International cooperation and technical assistance are still essential for the strength needed in national systems in these developing countries. Leaders have ideas about ways that the donor community may relate more closely to national priorities and perhaps require less counterpart and administrative input. Some of the needs seen as most pressing relate to help in finding training opportunities (and often funding support); getting access to more highly qualified consultants from the scientific community; drawing on expertise from other developing countries — not only from the developed nations; building cooperative projects more around the needs of the nation and perhaps less around the central interests of the donor; making clearer to the donor community that national systems*

are crucial to greater use of technology from international centers – and national systems need external help to speed their development.

The insights and advice offered in those talks have been brought together in two publications, as noted above. Reported below, under the principal subject categories, are highlights from these consultations.

On Organizing for National Agricultural Research

Many of the Asian countries have set up national councils or institutes to determine agricultural research policy and priorities and to aid in coordinating activities among many research groups. These leaders looked closely into the qualities that seem to make for an effective council, noting that informal as well as formal factors can be significant – such as the person who fills the role of leader. They emphasized relational problems among research groups and also with the dissemination systems (usually extension service). The Asians expressed some concern about the issue of integration (relating all or most programs within a single framework) or fragmentation (accommodating many separate programs); while they see integration as important in framing policies and priorities, they note that fragmentation may be necessary to put special emphasis on certain problems.

While few such national research councils are functioning in their part of the world, African leaders favor a move in that direction; they propose that such national bodies be semi-autonomous, multidisciplinary, and focused on serving the best interests of farmers. Most characterize their systems as lacking coherent research policy; they cite the need for an overall national research policy for science and technology, within which agricultural goals can be developed. They believe policy development to be an internal national matter, although outside advisers and donors can make useful inputs.

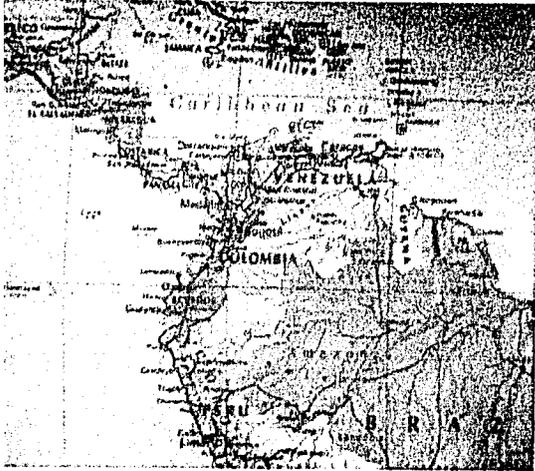
Funding was on these leaders' minds in two ways: (1) simply that funds for agricultural research are less than enough to meet their needs; (2) management of funds is often complicated by an organization scheme that places the financial decision-makers in one department, while those who determine research programs are in a separate department.

Manpower Development

Agricultural scientists, in the opinions of both Asian and African research leaders, need to understand farm production methods; this will help insure that their research



National research leaders from 13 Asian countries met with ISNAR and IFARD in Los Banos in March 1981.



National research leaders talked of research needs and links with IARCs in a meeting in San Jose in March 1981.

results will make sense under farm conditions. Yet many scientists come from urban backgrounds and don't have that experience. Both groups believe the problem significant enough to get special attention in the orientation and training of young researchers, after they enter service if not before. Both groups stress the constraint on national research of shortages of trained managerial and support manpower; both are anxious to have access to this kind of training for personnel (as is currently available in the Philippines through SEARCA, for example).

African research managers describe manpower problems under three headings: training, motivation, and remuneration. Asians express similar thoughts under labels of training and retaining staff. Both agree that salary is one factor in motivating and retaining staff; and they cite other key points, such as professional development opportunities, good working conditions (including technical support staff), and good living conditions for themselves and their families.

Funding from outside sources brings both benefits and some problems. Such projects may provide better salaries, attracting staff from local research projects that may actually be of higher national priority. When the outside support ends, the system may face a problem in retaining the staff.

Africans mention that scientists of comparable training generally receive less remuneration in government research than do those working in parastatals, universities, or private organizations. This is seen as a key factor in relatively short tenure in government research compared to non-government research (in one country, 2.5 years is the average in government research posts compared to 7 in non-government research positions).

Linking Agricultural Research to Production

Both the African and Asian research leaders endorse a fully rounded model that relates the agricultural researcher and the farmer: (1) research problems are defined according to farmers' needs and situations, (2) results are verified under farm conditions, and (3) findings go promptly and effectively to farmers who can apply them.

That's what the leaders would like. Neither group is satisfied with present research-dissemination linkages. In most of their situations, one organizational system is involved in the research phase and a different one in the dissemination or extension phase. The leaders think that separate systems are likely to be necessary for some years, but they believe both should work toward becoming a common entity.

African leaders make the point that farmers differ, and they have different needs. There is a stark contrast

between the commercial farmer and a typical subsistence farmer, for example; the latter may be illiterate and have little ability to apply information on his/her own. Subsistence farmers may be the focus of national policy, but the task of serving them is likely to fall on the extension workers who have the fewest qualifications. Asian leaders note the same differences, going on to point out that the research results generally reach those farmers with better and medium resource endowments, with relatively little for the poorly endowed.

In both sessions, these leaders let their minds range on ways to build better ties between research and the farmer. While crediting the power of the human networks, they suggest that more support be given with various media – radio, print, and mass media. They commend also the practice of going through existing groups for dissemination. And they ask for analytical studies of alternative systems for organizing and servicing the links they feel are vital between researchers and users.

International Cooperation and Technical Assistance

One of ISNAR's primary functions is improving the linkages of international assistance groups, especially the CGIAR centers, with national research systems. This topic came in for much discussion. The research systems vary widely in current stages of development, so specific needs for cooperation and assistance vary. In general national development was more advanced in the Asian countries represented, and the focus for each of the two groups of national leaders was not the same.

There was general praise for the IARCs' contributions in developing germplasm and for their practical and useful training programs. Asian leaders, who seem on the average to have longer experience with IARCs, suggest that some national systems have advanced enough now to be able to collaborate with the IARCs on a wide range of areas; some functions carried out by IARCs now might reasonably be shifted to national systems, in their view. Need continues for both the international and national systems, they say, but more donor attention could be given now to national program support.

Discussions among the African leaders emphasize two prime areas for assistance through international cooperation: (1) support to develop managerial and technical manpower and (2) commitment of a higher proportion of support to the research component of projects that involve both research and development. Within the manpower area, the needs range from refresher conferences to postgraduate training. Equipment, fuel, and transport are among specifics noted as needs in research funding. These Africans also



favor international assistance channeled through more regional and subregional efforts.

Two specific areas for international cooperation came out of talks with the national system leaders. One dealt with communication – helping assure that researchers in one country can know what their neighbors are doing in research, plus sharing world knowledge more effectively; a second was on donor consortia that could coordinate donors' activities in a given country, as well as help countries to identify the appropriate donor sources and to develop projects.

Role for ISNAR with National Research Systems

These two sessions were held to help describe the role and to add substance to the work of ISNAR. The conferees found much to agree with on the need for ISNAR, as well as on contributions ISNAR can make to their national programs.

Agricultural research leaders in both Asia and Africa welcome studies and reviews of national agricultural research systems. They express interest in understanding processes by which governments make policy decisions and set priorities; they want strategies that leaders can use to work with governments more effectively. When ISNAR works in their country, they want their own scientists and research leaders to be involved also in assessing needs and in framing recommendations for improvement.

ISNAR can play an important role, the leaders say, in (1) documenting the interests of various donors, (2) appraising needs of national systems, and (3) helping bring those two together. They see opportunities for ISNAR, as a result of knowing a lot about what is going on in national programs, to encourage assistance between developing countries.

They think ISNAR can assist in another area of information exchange – knowing of, gathering, and making others aware of potentially useful reports from the many symposia, seminars, and technical conferences held throughout the world. A knowledge base on training and service institutions would also be useful, they say; it would make it easier for managers to find places to meet needs for specific staff training. They are interested in such institutions within the developing world as well as those in Europe and North America.

A third conference of this kind was held in Latin America at about the same time. ISNAR was a participant-observer for the session called by the Latin America IFARD and the InterAmerican Institute of Cooperation for Agriculture (IICA). Observations there, along with the explorations at Nairobi and Los Banos, provided ISNAR with an early



opportunity to build its working model along lines considered crucial for agricultural research systems: to identify and define problems from the situations of the eventual user of the results.

Rural Social Sciences in Africa

A host of factors affect agricultural productivity in a context (and continent) as large as Africa. There is no chief cause among such an array of factors as unproductive soils, unfavorable climate, inappropriate policies, inadequate management, lack of funds for fertilizer, poor physical infrastructure, undeveloped marketing channels, conflicting values, inadequate incentives, etc. Some of these factors are physical, some are biological, and some have a heavy social or human shading.

These are all factors listed by a group of African scientists as having some bearing on low productivity in the agriculture of their continent. After listing these and other factors affecting agricultural productivity, and recognizing the close relationship of agricultural to overall rural development for Africa, the group stated with special emphasis:

The social sciences are not simply one more item on that list. Rather, the social sciences have to do with the human element that pervades the whole input matrix.

Weaknesses in rural development institutions have been a concern of African leaders for some years. Some had asked for a special appraisal of African social sciences in relation to rural development. With encouragement and support from International Development Research Centre (IDRC) and the Ford Foundation, ISNAR undertook a study of rural social scientists in nine African countries and also the role of social sciences in rural Africa. The resulting study became the basis for a workshop that engaged 25 persons in evaluating findings and proposing responses.

An Appraisal of Resources

The researcher for ISNAR (Dr. Gaston V. Rimlinger, professor of economics, Rice University, Houston, Texas, U.S.A.) inventoried institutions and persons in the social sciences in nine African countries: Cameroon, Ivory Coast, Kenya, Nigeria, Sudan, Tanzania, Tunisia, Upper Volta, and Zimbabwe. He measured availability of rural social scientists by dimensions of (1) quantity, (2) quality (level and relevance of qualifications, training, research output), and (3) utilization.

Utilization emerged as an issue of particular importance. A principal form of under-utilization seemed to stem from a lack of interaction between government decision-makers and social scientists currently in research and educa-



Aided by IDRC and the Ford Foundation, ISNAR led a study of rural social sciences resources in Africa.



A consultant (left) and the ISNAR officer inspect data from the study of nine African countries.

tional institutions. Another kind of under-utilization occurred when users turned to expatriates instead of their own trained nationals – a practice thought to have become established when there were few trained nationals available. Some under-utilization seemed to result from structural or organizational linkage problems, such as between a government department and a university.

On the other hand, where some governments have discovered the value of university social scientists, the tendency has moved toward over-utilization of those who are available.

In two months of field work, mid-May to mid-July 1981, the ISNAR researcher compiled an empirical list of rural social science resources in nine countries plus additional elaboration and evaluation of actual and potential utilization. The presentation and findings from that work became the focus of an invitational conference, held in late November at the Rockefeller Foundation conference facilities in Bellagio, Italy*.

Studying and Extending the Findings

In four days of concentrated attention, the conferees laid out their concerns, confirmed the relevance of their field to solving African problems in rural development, and thought through ways to improve the utilization of social scientists. They concluded on a positive note: they found a significant role to be played by the social scientists, and they proposed that ISNAR work with them for a limited time to put forward specific developmental plans.

ISNAR accepted in principle a continuing role (for six to eight months) in support of rural social sciences development in Africa. The role is to involve the advisory committee, other African leaders, and bilateral and multilateral donors in preparation of a program to implement plans coming out of that interaction. Then needed organizational and financial support can be sought to put the program into effect for the improvement of rural social sciences in Africa.

This activity is on ISNAR's action agenda for 1982.

The Role of International Associations in Strengthening National Agricultural Research

There is a long history of activity by both private and government groups to help developing countries in agricultural research. The groups are diverse in type – government aid departments, foundations, church consortia, and many others. They work in different ways, in some cases forming other groups to work with, or on behalf of, agricultural

* A report of this conference, including as an annex the full report of the study by Dr. Rimlinger, is available upon request from ISNAR: Strategies to Meet Demands for Rural Social Scientists in Africa. ISNAR-C3. 1982.

research in target countries.

These international associations represent an important fact of life for the national agricultural research manager. They may be a means of gaining needed resources – finances, expertise, organizational advice, and more (international agricultural research centers, for example, produce and make available new germplasm resources).

The same international associations can be a source of competition for a country's limited resources – for finances and personnel to meet counterpart commitments and administrative needs, for example.

In addition to important bilateral relationships with established associations, some developing countries have taken initiative in forming their own international associations. This model has a few, or many, developing country systems joining their interests, which in one instance may be a single commodity, in another may be systems related to an ecological area, and in others may be related broadly to coordination, training, and information exchange.

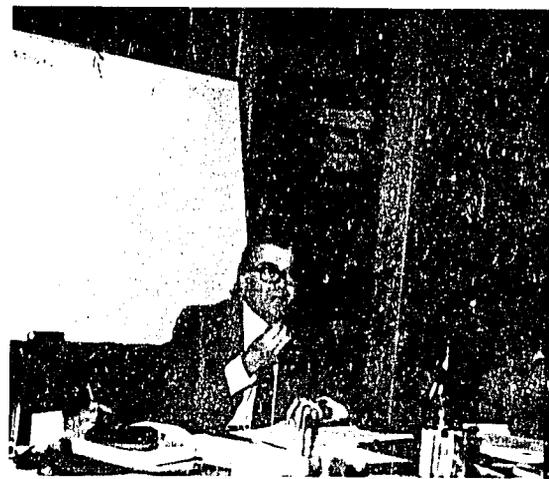
International associations have become a factor of some importance in the management of a national agricultural research system. For that reason, ISNAR and the International Agricultural Development Service (IADS) joined to sponsor a conference on this subject. With cooperation of IFARD, they hosted a group of 30 persons from national research systems and international associations – at the Rockefeller Foundation Conference Facilities at Bellagio, Italy – in December 1981.

Two basic questions focused the group's deliberations:

- *What contributions have international associations made to national agricultural research systems?*
- *What contributions may they make in the future?*

The participants analyzed the role of international associations, discussed ways of evaluating their performance, and looked for ways that such associations might be developed to serve national research needs. The main substance for the workshop came from a keynote paper proposing an analytical scheme to categorize such associations and from papers on four world regions, in each of which an experienced observer discussed typical problems facing national research managers in that region.

The conference keynoter, Dr. Eduardo Venezian, professor of economics, Catholic University, Santiago, Chile, offered a model in which associations were divided into a



A keynoter (left) and the ISNAR Director General put attention on role of international associations.



Africa, Latin America, and South Pacific representatives share ideas informally.

nine-cell matrix according to (a) their relationship to research (is it a primary, secondary, or incidental function of the association?) and (b) their mode of operation (does the association carry out programs itself, support others that do, or serve only in a coordination or promotion role?).

Mode of operation came out as a central discussion issue. Those discussing it saw possible conflict of preferences for the method of operation of a given international association: while the association itself may wish to carry out projects (the executing mode), the national program may stand to gain more from an associations that helps coordinate and support the national program. Some of the executing associations, it was suggested, show more interest in basic research, although the needs of a given national program might be served best by applied research.

A number of participants suggested that associations working in the supporting or coordinating/promoting mode offered more short-term potential to strengthen national agricultural research. While some were pessimistic about the future contributions of associations that simply execute projects, there was consensus that international associations have potential for major support to the development of national systems.

The Regional Perspective

The four regional papers (Africa, Asia, Latin America, and Middle East) took the perspectives of national agricultural research systems. The four writers stimulated discussion of constraints under which most developing national programs operate.

The conclusion was that international associations might respond productively in relieving some of them. Included among the constraints were: lack of qualified manpower, both scientific and managerial; lack of access to good information on which to base research; lack of inter-country coordination in research programs; weakness in public/private sector linkages; and weakness in the advocacy of research system interests.

On the last point, participants said that both national governments and international agencies need to understand better the constraints under which agricultural research is carried out. An institutional voice is needed to articulate problems and to lobby with governments and associations for their solution. IFARD and ISNAR were both mentioned as possible voices.

Strengthening International Associations

Participants in this conference agreed generally that international associations have a greater potential to add

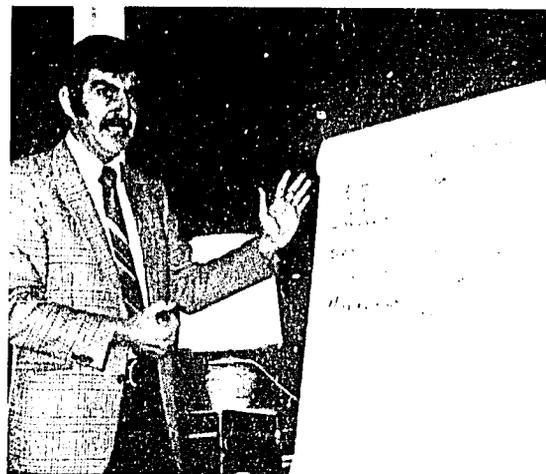
strength to national agricultural research systems than they have demonstrated to date. Existing associations could contribute more and new groups could be formed to meet emerging needs. However, just how these more effective associations may be developed requires more study and testing.

Developing Country Associations

Interest developed around the roles of associations initiated among developing-country systems. Participants discussed several kinds: professional societies, such as the Association for the Advancement of Agricultural Sciences in Africa (AAASA) in Africa and the Association of Arab Universities (AAU) in the Middle East; graduate study and training, such as the South East Asian Center for Graduate Study and Research in Agriculture (SEARCA) in Asia; and more. In the area of research programs, two associations of Latin American national systems sparked particular interest: CONO SUR, the program to coordinate certain research activities among six nations of the "southern cone" of South America, and PRECODEPA (Programa Regional Cooperativa de Papa), through which six countries of the Central America and Caribbean region coordinate potato research.

The CONO SUR program was formalized in 1978 by agreements of six governments, Argentina, Bolivia, Brazil, Chile, Paraguay, and Uruguay. With financial support from the Inter-American Development Bank and administrative support from IICA, the organization works to strengthen research activities and the transfer of technology on wheat, maize, soybeans, and beef cattle. The research is carried out within the national systems, with CONO SUR aiding in coordination among them. Also the project provides support for training, information, and documentation systems. In its first 18 months of operation, CONO SUR conducted 91 activities that involved 524 leaders and researchers of the six countries (more than half the participation was financed by national institutions).

PRECODEPA is an association that concentrates on a single crop, potato. Its purpose is to strengthen national capacity in potato research and technology transfer in the six cooperating countries, Costa Rica, Dominican Republic, Guatemala, Honduras, Mexico, and Panama. Established in 1978 with financial assistance of the Swiss Development Agency, this association functions without a formal secretariat (the present coordinator is a scientist in the national potato research program of Mexico). Nine major projects were under its attention in 1981, each led by one of the associated countries. Each project concentrates on a constraint that affects potato production in several of the cooperating countries, and each includes a staff training component



PRECODEPA is explained as an example of developing countries helping each other deal with research problems.



Directors of CIMMYT and IADS chat with a dean of a Middle East agricultural faculty, who is also an ISNAR trustee.

available to all the countries where that project is relevant.

Leaders in these programs credit major local involvement in decision-making and support, which includes bearing a significant portion of costs for their own participation, as important ingredients in success. However, there is general agreement that external funding plays a key role in making it possible to form such associations.

Within this frame of reference, participants highlighted what they consider the main constraints under which such associations operate:

- *Lack of clear goals and plans. Associations need precise plans to attract international and national support.*
- *Uncertainty over organizational procedures. Association effectiveness seems often to depend on the members of its secretariat. A secretariat may develop organizational regularity, but it does not in itself guarantee success or ensure against failure.*
- *Lack of stability in funds. This was seen as the biggest constraint. International associations usually operate at a loss, depending on donors and national governments to make up deficits.*

An Action Model

The group addressed itself to matters of formation and operations of such an association. One aspect was the stages of development; the second aspect was what an association needs from national programs.

Stages were cited through which an association moves to be effective in strengthening national research. Each builds on the stage before: (1) evaluation of needs in national research programs; (2) definition of a program responding to national needs; (3) identification of resource levels required for personnel and finances; (4) development of administrative ability to become self-supporting; and (5) promotion of activities within national agricultural research systems.

Participants noted that several existing international associations had skipped over some of these stages. In their view, stages 1 and 2 often receive too little attention; too much attention too early may be devoted to stages 3 and 4. Then stage 5 activities, the original reason for the association, may be jeopardized.

There was a strong feeling, however, that national research programs often do not do enough to encourage in-

ternational associations. Perhaps they have not been sufficiently aware of the possible benefits. Participants agreed that four kinds of contributions are needed from national programs if the international associations are to be effective: legitimacy; funds; personnel; and counterpart linkages. A report on this conference is available upon request from ISNAR*.



Regional perspectives come from regional workers; Asia and Middle East reporters share the stage.

* The Role of International Associations in Strengthening National Agricultural Research. ISNAR-C4. 1982. The report includes a summary of principal conclusions, the lead paper of Dr. Venezian, and digests of regional papers on Africa, Asia, Latin America and Caribbean, and Middle East.



ISNAR staff and consultants discuss concepts in ISNAR's informal and formal research activities.

The name of ISNAR implies its primary commitment to serving the national agricultural research systems. It is a service organization, yet research has a role in its activities. To enhance its ability to understand systems and advise research managers, the staff of ISNAR must build a verifiable base of knowledge from which to work. An orientation to research provides a methodology for evaluating evidence, as well as setting out procedures for gathering data on the nature of structures and processes that are more humanistic than physical, often more ephemeral than controllable.

ISNAR uses informal research methodology in its country review missions. Its staff makes judgments (hypotheses) about at least three factors related to national systems: (1) constraints on the system; (2) activities that will give high returns to resources; and (3) ways of managing resources that will improve performance of the system. The staff tests perceptions under field conditions. They accumulate experience that may change operational hypotheses or perceptions. Although applied rigorously by an experienced staff, this research method is informal.

Investigations and Experiments

A more formal research approach involves controlled investigations and experiments. The objects dealt with in the research are within the national agricultural research systems. The subjects may cover a wide range, with initial emphasis among the following: measuring output and impact of a research system, program, or project; determining forms of organization or structure of a national research system adaptable to different circumstances; determining management practices associated with successful performance; determining ways to improve linkages within national and between national and international research institutions; and conducting periodic assessment of financial and human resources used in national agricultural research systems. By undertaking this research, ISNAR may improve the quality of its services and strengthen the knowledge base that it shares with agricultural research managers throughout the world, especially in developing countries.

Research is considered here in the limited sense of studies on organization and management of national agricultural research systems. This research area received mainly developmental attention during ISNAR's inaugural year. A staff group, augmented from time to time by specialists in that field, undertook program development steps. They continue into the next year.

Collaboration with IFPRI

One formal project was carried out in collaboration with the International Food Policy Research Institute (IFPRI). That project involved an effort to record and draw implications from resource allocations to national agricultural research in the 1970s. The principal investigator, Peter Oram of IFPRI, had looked previously into facets of resource allocation to agricultural research. In the present study, 1980 and time-sequence data were collected on allocation of financial and human resources in the countries of a group called "developing market economies."

Useful data were developed from 76 of the countries; 48 others could not be included in the analysis because of insufficient data.

Progress in the decade. In real terms agricultural research in the developing countries receives more resources now, relatively, than was the case at the start of the 1970s. Data from 41 countries (with populations totalling about 1.7 billion persons) indicated a 1980 allocation of 0.56% of the respective "gross development product." The comparable 1970 figure for the same countries was 0.3%.

Resources are far from evenly allocated throughout the developing world, according to this study. Fifteen countries among 51 for which allocation data were available for 1980 accounted for 85% of agricultural scientists and 88% of agricultural research expenditures.

Appraising the present. The researchers drew some tentative conclusions about the present status of research establishments in developing countries. Based on numbers of scientists and levels of support, they categorized countries into three groups:

- those with adequate staff and financing to be at or near a point of self-sustaining growth in agricultural research capability – 25 nations (management experience appears to be a major factor determining effectiveness in a number of these nations);
- those at intermediate stages, adequate in some commodities but lacking the critical mass for all needs – 25 nations (more external financing appears to be needed to support training and institution-building that could raise their research capacity);
- 20 others, for which resource data were available, were classed as unable to carry out significant amounts of agricultural research. Many of these were small countries, and the researchers believe numerous other countries would be in the same category, if data were known.

The report of this research project is available either from IFPRI or ISNAR*.



A consultant updates ISNAR staff on computer applications in developing country research.

* Oram, Peter A., and Vishva Bindlish. Resource Allocations to National Agricultural Research: Trends in the 1970s. (ISNAR, The Hague, Netherlands, and IFPRI, Washington, D.C.). November 1981.

In cooperating with national agricultural research system managers, ISNAR gathers a great deal of information. Much of it can also be used by others in the agricultural research community.

The essence of ISNAR's communications work is determining who can benefit from what information, and then getting these people and data together. The capability to perform this task is derived from several ISNAR activities, including working with individual national systems, supporting conferences and training, conducting research into related areas, and assembling research management documentation.

Work with Individual National Systems

Information, and successful communication of it, is critical in the work of national agricultural research systems. As each ISNAR review mission considers this area, it analyzes (1) the links maintained by the research system with policy-makers, appropriating bodies, and the agricultural production system; (2) the ability of the organization to maintain effective communication among its own research units; and (3) dissemination of findings to people in the production system and to the scientific community within and beyond the country.

ISNAR missions have found important problems related to communications and information. Their recommendations have included actions designed to meet these problems. Some call for organizational changes, while others deal with recruiting or training personnel to provide communication and information skills; still others relate to equipment and materials to provide essential services in the system. Attention to this area continues as part of the developmental relationship between ISNAR and national agricultural research systems.

Dissemination of Findings

At many points in this annual report, there is reference to specific publications that make findings available to other persons. These include reports of country reviews (which have been cleared for general distribution by officials of each host country) and reports of conferences and research.

ISNAR has accepted responsibility to help gather and disseminate a working literature on agricultural research management. While a number of outstanding authors have written on parts of this broad subject, there does not now appear to exist a "literature of agricultural research management."



National systems leaders are interested in developing resources to get research results to users quickly.

agement." Yet there is obvious potential use for such material. Some material will come from ISNAR's experience with individual national systems, and some will be the result of scholarly work carried out by rigorous investigators. Some of the scholars, it is intended, will come from the ranks of research managers in developing countries.

A Literature of Research Management

In the first year of operation, through two main activities, ISNAR began the development of a literature on research management that can be shared with others:

- The first was an inquiry into massive existing data bases. Consultation and cooperation came to ISNAR from such established professional services as Pudoc (the Centre for Agricultural Publishing and Documentation) and the Royal Tropical Institute, both of the Netherlands, information scientists from the International Development Research Centre, and documentalists of the United States Agency for International Development. Neither "research management" nor "agricultural research management" was found to be a well-defined segment of world knowledge. Thousands of citations drawn from computerized English literature sources were reviewed by one investigator, and his selections were further winnowed by a panel of ISNAR's experienced research managers. By the end of the year, the process had sharpened the focus to fewer than 2,000 citations, but it appeared that considerably more rigorous attention will be needed to synthesize a resource that will be useful.
- On the basis of its experience in dealing with existing literature sources, the ISNAR panel concluded that some original scholarship would be necessary. Current plans call for identifying a relatively short list of topics of particular interest to the developing-country research manager. These will be the subjects for literature review, synthesis, and original writing by consulting scholars and – to the degree that resources permit – by some ISNAR staff.

A specific literature contribution on this topic was in the process of being published as the year ended. Dr. Arthur T. Mosher, an author of renown on agricultural development processes, and himself a veteran of many decades in developing-country agriculture, offered a manuscript. This work is directed to managers of agricultural research. It sets out, in insightful and readable style, 15 steps that Dr. Mosher believes will assure productive agricultural research. This small book will be introduced and distributed widely in the next program year.



Word processing advances help ISNAR develop and share information on research management topics.

The procedure followed in obtaining the Mosher book provides a pattern for ISNAR's future commissioning of needed literature contributions from experienced writers.

Linking National with International Agricultural Research

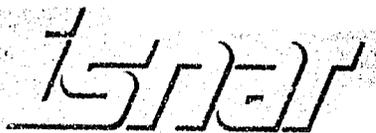
One of three specific purposes stated in the ISNAR mandate deals with its function as a linking mechanism between national agricultural research systems and the international agricultural research centers. The founders anticipated, and early ISNAR experiences have confirmed, that the highly developed research resources of IARCs are not used as fully as they could be by national systems.

Research officers in many developing countries do not have enough information about the IARC programs and materials to exploit them to greatest advantage. Links should be useful to them. At the same time, IARC researchers are interested in creating and maintaining links with developing-country scientists so that problems can be identified more accurately, and feedback can be obtained on IARC genetic materials and processes.

As part of the CGIAR network of centers, ISNAR is concerned with linking national systems with other CGIAR centers. But its efforts do not stop there. Many international, regional, and – in some cases – national centers of research excellence have potential to help others. In its continuing activities with national systems, and wide contacts with many research organizations, ISNAR is in a position to help those with problems get in touch with organizations that can help them find solutions.

ISNAR serves in an intermediary role. That role is seen as one of bringing two parties together, not in being involved as a third party to carry messages. Interaction is more meaningful when the active parties themselves are in direct contact. To equip itself for this linking role, ISNAR has begun to build and maintain a data base on the many facets of each IARC – including crops, commodities, research interests, services, training programs, and more. Electronic processing makes this data base readily and accurately accessible.

Another side of the national system/IARC relationship is that of feed-forward of research needs in the developing countries. Country missions put ISNAR in touch with this area, and their teams' findings on research needs are reported to others. By using IARC specialists on country-review teams, ISNAR encourages direct observation by, and establishment of personal acquaintances between, scientists of the national and international systems. As those relationships develop into networks, the linkages should become self-sustaining.

The logo for ISNAR, consisting of the letters 'I', 'S', 'N', 'A', and 'R' in a stylized, outlined, sans-serif font. The letters are interconnected and have a slight shadow effect.

ISNAR came onto the international agricultural stage in late 1980 as an unknown quantity. Its sponsors were convinced that a need existed for the kind of service it was designed to perform: helping to strengthen national agricultural research systems. Whether a demand for the service would develop was as yet unknown; in other words, was the need felt among prospective clients? And could the small organization authorized be created quickly, and could it respond effectively?

Sixteen months is too short a time to answer those questions confidently. In fact, the founders of ISNAR set a term of five years as a reasonable period before they would analyze fully the performance of this newcomer to the group of international agricultural research centers. In addition to being the newest organization in CGIAR, this newcomer was charged to pursue objectives much different in concept than those guiding the dozen research centers.

As we look back at the brief time of our activity, we see signs to convince us that the judgment of our founders was correct, that the investment of our donors will bring a good return in improvements in agricultural research and, through research, in improvements in agricultural development. We have attempted in this first annual report to present the early evidence that supports our belief.

A Demand for ISNAR Exists

The idea of ISNAR has caught the interest of officials in national agricultural research systems in many developing countries. That is shown amply in the quickening stream of questions and interest in exploratory discussions coming to ISNAR. Three individual country relationships were launched in the period covered in this report. By the end of that period, commitments had been made to start work in five countries during the first half of 1982; serious initiatives had already come from another eight.

The first year of interaction with national agricultural research leaders gives evidence that ISNAR is meeting a need. We found evidence of need as we discussed agricultural research with many national leaders

and especially in our country review and planning missions. There are problems and weaknesses in these systems. Their countries need greater contributions from agricultural research than they are now receiving. Through a complex development process, based on a vital internal commitment and involving support from outside sources, systems can be strengthened.

Time, resources, and effective management are required. Management, broadly defined, appears to be a key factor, and neither time nor resources, in themselves, assure the strengthening of management. This is an area of particular concern that ISNAR brings to the international agricultural research community. ISNAR is an organization responsible for helping the people in national agricultural research systems to increase their own ability to organize and manage their own systems.

A Creative Response to the Present

This first year has helped us define the kind of services that ISNAR should provide. It is a preliminary definition, but the crux of it is relationships with individual national agricultural research systems. Based on analysis of the existing system and its environment, the relationship points toward a continuing developmental partnership in which ISNAR helps the system build the strength it requires to meet the country's needs.

There is a limit to the number of national systems with which ISNAR can work in the depth defined for it. So it seeks generalizations that may be of use to others, as well as being of use to strengthen its own capabilities. A research effort, discussed in conceptual terms in this report, is thus part of the ISNAR initiative.

Training and communications programs provide other extenders of ISNAR influence. They provide channels through which the knowledge and experience from many other sources may be brought to bear on this area of need. Both programs were begun in this first year, and directions for development were laid out, as discussed in this report.

ISNAR is Not Alone

Much has been done in the last quarter-century that is now shaping, or could shape, progress as agriculture strives to meet the demands of rising populations and expectations. A host of institutions, organizations, and agencies are at work in the field. Their individual and collective contributions deserve much credit for the remarkable way that the world's farmers have staved off the Malthusian prediction of starvation.

The existence and commitment of those groups, plus the growth potential

within the people of the national systems, are the latent powers that ISNAR seeks to enhance. We learn from interaction with many in these groups.

Looking Ahead

ISNAR has found its first year of operation challenging and full of opportunities. It looks ahead to continued cooperation with national leaders and others, seeking innovative ways to further strengthen national agricultural research systems.

ISNAR Publications of 1981

Working to Strengthen the National Agricultural Systems of Developing Nations.

– ISNAR brochure in English.

Organisme cree pour renforcer les systemes nationaux de la recherche agronomique des pays en developpement.

– ISNAR brochure in French.

Creado para Fortalecer los Sistemas Nacionales de Investigacion Agricola des las Naciones en Desarrollo.

– ISNAR brochure in Spanish.

Program and Budget for 1982. June 1981

Strengthening National Agricultural Research Systems in Asia.

Report of discussions by leaders of agricultural research systems in 13 Asian countries. March 18 and 19, 1981. (A summary of discussions in a meeting in the Philippines sponsored by ISNAR and IFARD.)

Strengthening National Agricultural Research Systems in Africa.

Report of a meeting of managers of agricultural research systems in 18 African countries. March 6 and 7, 1981. (A summary of discussions in a meeting in Kenya sponsored by ISNAR and IFARD.)

South Pacific Agricultural Research Study: Consultants Report to the Asian Development Bank. June 1981.

Report of a mission for the Asian Development Bank led by Dr. W. K. Gamble, Director General of ISNAR. In addition to the full report, ISNAR published individual country reports for:

Cook Islands

Fiji

Kiribati

Papua New Guinea

Solomon Islands

Tonga

Western Samoa

Other Countries and Organizations

El Sistema de Investigacion Agropecuaria y Transferencia de Tecnologia en Costa Rica. June 1981.

Report of the ISNAR review mission to Costa Rica, led by Alexander von der Osten, Executive Officer of ISNAR.

Rapport d'une Mission ISNAR/IITA aupres de l'Institut de Recherche Agronomique et Zootechnique de la Communaute Economique des Pays des Grands Lacs (Burundi, Rwanda, Zaire). July 1981.

Report (in French) of a mission by Dr. Rudolf Contant and Dr. Rene Devred, Senior Research Officers, ISNAR.

Report of an ISNAR/IITA Mission to the Institut de Recherche Agronomique et Zootechnique of the Communaute Economique des Pays Grands Lacs (Burundi, Rwanda, Zaire). July 1981.

Report (in English) of a mission by Dr. Rudolf Contant and Dr. Rene Devred, Senior Research Officers, ISNAR.

African Rural Social Sciences. Consultants Report to ISNAR. August 1, 1981.

Report of a study of rural social science resources in nine African countries. (Published as a draft for use in a conference in November 1981, it will be included in full in the proceedings of that conference.)

Kenya's National Agricultural Research System: A Report to the Government of Kenya. September 1981.

Report of the ISNAR review mission to Kenya led by Dr. T. Ajibola Taylor, Senior Research Fellow, ISNAR.

Kenya's National Agricultural Research System: A Report to the Government of Kenya. Executive Summary. September 1981.

An executive summary of the ISNAR review mission to Kenya.

The Agency for Agricultural Research and Development of Indonesia.
October 1981.

Report of the ISNAR review mission to Indonesia led by Dr. A. B. Joshi, Continuing Consultant, ISNAR.

The Agency for Agricultural Research and Development of Indonesia. Executive Summary.
October 1981.

An executive summary of the ISNAR review mission to Indonesia.

Other Participation

Participation by ISNAR Staff Members in Conferences and Meetings Related to National Agricultural Research (Other than those arranged by ISNAR) – 1981

January 13-16. Seminar on research strategies and agricultural policies. Sponsored by CIMMYT, CIAT, and CIP. Cali, Colombia. Mr. von der Osten.

January 23, 24. Meeting of bilateral and multilateral donors on national agricultural research. Sponsored by the World Bank, Washington, D.C., U.S.A. Dr. Gamble.

March 16-18. Latin America research leaders meeting. Sponsored by IFARD. San Jose, Costa Rica. Mr. von der Osten.

April 7-9. CIAT Long-Range Planning meeting. Sponsored by CIAT. Cali, Colombia. Dr. Fonseca.

May 25-29. Coordination meeting on potato research programs of six Central American countries. Sponsored by PRECO-DEPA. Panama City, Panama. Dr. Fonseca.

May 25-29. Conference on world food issues. Sponsored by World Food Council. Novi Sad, Yugoslavia. Dr. Gamble.

June 8-10. Workshop on resource allocation in national agricultural research sys-

tems. Sponsored by IFARD and IDRC. Singapore. Dr. Haworth.

October 1-14. Study team considering plans for international program on water management research and training. Sponsored by TAC. Rome, Italy. Dr. Dagg.

Papers or Presentations on ISNAR

March 17. Seminar on ISNAR with the Asian Development Bank. Manila, Philippines. Dr. Gamble.

May 13-15. Discussant for lead paper on research delivery systems. Sponsored by DAC/OECD. Paris, France. Dr. Gamble.

September 1-4. Discussant for paper on technological progress in Latin American agriculture. Sponsored by IICA. San Jose, Costa Rica. Dr. Gamble.

October 16. Presentation on ISNAR to agricultural loan officers. Sponsored by the World Bank. Washington, D.C. Dr. Gamble.

November 18. Seminar on ISNAR and national agricultural research systems. Sponsored by international Programs, Cornell University. Ithaca, N.Y., U.S.A. Dr. Gamble

Consultants to ISNAR in 1981

ISNAR was designed to have a relatively small core staff whose efforts can be extended and enlarged through selective use of consultants. In this way high levels of expertise can be brought in to deal with specific problem situations. Consultants thus provide the specialization to complement the generalist qualities of core staff.

The following persons served in the different roles indicated to support the 1981 program of ISNAR:

Consultant	Activity
Dr. Guy B. Baird IADS New York, U.S.A.	Member of review team, Costa Rica
Dr. C. Fred Bentley Independent consultant Alberta, Canada	Member of review team, Indonesia
Dr. Almiro Blumenschein EMBRAPA Goias, Brazil	Member of review team, Indonesia
Mr. C. W. Brookson Independent consultant England	Assist in preparation of report on mission to the South Pacific
Dr. Jaap Hardon Ministry of Agriculture Wageningen, Netherlands	Member of review team, Indonesia
Mr. J. A. Harten Independent consultant The Hague, Netherlands	Assist in preparation of background document for Indonesia mission
Ms. Patricia Hill University consultant Wisconsin, U.S.A.	Develop systems and programs for library, mailing lists, other records in electronic storage
Dr. A. B. Joshi Independent consultant Maharashtra, India	ISNAR/IADS/World Bank mission to Bangladesh; ISNAR/SEARCA seminar; leader of review team, Indonesia
Dr. Herbert C. Kriesel Michigan State University Michigan, U.S.A.	Member of review team, Kenya
Dr. Luis Marcano FUSAGRI Caracas, Venezuela	Member of review team, Costa Rica

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| Dr. Heino H. Messerschmidt
Independent consultant
Bonn, Federal Republic of Germany | Member of review team, Kenya |
| Dr. Barry Nestel
Independent consultant
Surrey, England, U.K. | Member of review team, Indonesia;
planning for research management workshops |
| Dr. Arnold Paulsen
Iowa State University
Iowa, U.S.A. | Member of review team, Indonesia |
| Dr. Gaston Rimlinger
Rice University
Texas, U.S.A. | Study of rural social science resources in Africa;
participant in subsequent seminar |
| Dr. Laurence Roche
University College of North Wales
Gwynedd, Wales, U.K. | Member of review team, Kenya |
| Dr. M. A. Seligsson
University of Arizona
Arizona, U.S.A. | Preparation for review mission to Costa Rica |
| Mr. O. P. Shori
ICRISAT
Andhra Pradesh, India | Consultation on accounts |
| Mr. Sunday H. Udoh
IITA
Ibadan, Nigeria | Consultation on accounts |
| Dr. Frank Wiedijk
Agricultural University
Wageningen, Netherlands | Consultation on documentation |
| Dr. Sylvan Wittwer
Michigan State University
Michigan, U.S.A. | Planning for series of regional research workshops |

The Origin and Chronology of ISNAR

Donors supporting agricultural development internationally in the 1960s raised the priority for their funding of agricultural research. Dramatic improvements in rice, wheat, and some other leading cereals captured the interest of an enlarging pool of international leaders. However, by the middle 1970s both national and international observers saw more clearly that improvements were needed in the research capabilities of national systems in order for more advantage to be taken of improvements coming from international groups.

At that time, and out of the perceived needs for strengthening national research, came the actions creating ISNAR. Most of the activity took place within the Consultative Group for International Agricultural Research (CGIAR), coordinating body for donors supporting the international agricultural research centers.

Key actions in the conceptualization and creation of ISNAR included the following:

The Munich Consensus

Representatives of a number of development assistance organizations attended a conference at Munich, Federal Republic of Germany, in April 1977: *New Approaches to Technical Assistance in Accelerating Agricultural Development*. The consensus of discussions was stated in a letter to the CGIAR chairman. The key sentence was, "The service we envisage would cooperate, on the request of recipient governments, in the planning and implementation of national agricultural research programs and would help to create or strengthen national research institutions by various means."

The CGIAR Response

Later that same year, CGIAR deliberated on the recommendation from Munich. It stated terms of reference and named a Task Force on International Assistance for

Strengthening National Agriculture Research, directing the task force to report by August 1 of the following year.

The Task Force Report

"...a clear and urgent need for additional assistance to strengthening national agricultural research capabilities in developing countries..." was the principal finding of the CGIAR task force. "The concern," its report went on to state, "is to strengthen the national research system as a whole in order to generate and adapt technology suitable to local farming conditions for commodities important to national development objectives, including but not limited to food commodities covered by the international agricultural research centers." The report recommended creation of such a service within CGIAR.

CGIAR Approves and Executes

Acting affirmatively on its task force report, CGIAR appointed a committee of its members to represent it in actions that would initiate the new organization under CGIAR auspices. The committee chose as executing agency the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ). That agency and the committee carried through the detailed tasks of planning and preparing for legal establishment of the organization that would be named the International Service for National Agricultural Research.

ISNAR Established October 1979

On October 31, 1979, two members of CGIAR signed the memorandum of understanding that provided formally for this thirteenth member of the "family of international research institutions" supported by CGIAR. Co-sponsors of record were the United Nations Development Programme and the World Bank.

Activity Begun September 1, 1980

Three administrative staff members opened the headquarters of ISNAR in The Hague, Netherlands, on September 1, 1980. The staff was comprised of Dr. William K. Gamble, Director General, Alexander von der Osten, Executive Officer, and Alicia Mina, Administrative Officer.

Staff Assembly

Two categories of professional staff were authorized for ISNAR: senior research

officer and senior research fellow. Appointments of individuals to these posts began in January 1981. By the end of 1981, the staff included six officers and four fellows. The organization was also authorized to utilize consultants in various ways to meet its assigned responsibilities.

Program Initiation

With the arrival of staff members, the program of ISNAR, as reported in this first annual report, was initiated.

Glossary of Organizations Often Cited by Acronym

AAASA	Association for the Advancement of Agricultural Sciences in Africa
ADB	Asian Development Bank
AVRDC	Asian Vegetable Research and Development Center
CGIAR	Consultative Group on International Agricultural Research
CIAT	International Center of Tropical Agriculture
CIMMYT	International Maize and Wheat Improvement Center
CIP	International Potato Center
FAO	Food and Agriculture Organization of the United Nations
IADS	International Agricultural Development Service
IBPGR	International Board for Plant Genetic Resources
ICARDA	International Center for Agricultural Research on Dryland Areas
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IDB	Inter-American Development Bank
IFARD	International Federation of Agricultural Research Systems for Development
IFPRI	International Food Policy Research Institute
IICA	Instituto Interamericano de Cooperacion para la Agricultura
IITA	International Institute of Tropical Agriculture
ILCA	International Livestock Centre for Africa
ILRAD	International Laboratory for Research on Animal Diseases
IRRI	International Rice Research Institute
SEARCA	Southeast Asian Regional Center for Graduate Study and Research in Agriculture
UNDP	United Nations Development Programme
WARDA	West African Rice Development Association