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ISNAR

International Service for National Agricultural Research

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

Of the thirteen centers in the CGIAR network, ISNAR is the only one that focuses primarily on national agricultural research issues. It provides advice to governments, upon request, on research policy, organization, and management issues, thus complementing the activities of other assistance agencies.

ISNAR has active advisory service, research, and training programs.

ISNAR is supported by a number of the members of CGIAR, an informal group of approximately 43 donors, including countries, development banks, international organizations, and foundations.

1987 ANNUAL REPORT

May 1988

ISNAR

International Service for National Agricultural Research

FOREWORD

The ISNAR Board and management take pleasure in presenting ISNAR's annual report for 1987.

Looking back over 1987, we see three developments that stand out clearly in the evolution of ISNAR:

- * continued progress in strengthening the three thrusts of our integrated program in support of national agricultural research systems (NARS): our advisory service, our research and our training program;
- * the publication in June 1987 of ISNAR's long-term strategy;
- * the development of a medium-term plan for the period 1988-1992.

We saw good progress in program development and implementation in 1987 -- guided by our evolving strategy. We reinforced the integration and interaction of our three program thrusts and fully implemented the concept of a research-based service.

We provided assistance to an increasing number of NARS seeking collaboration -- particularly in sub-Saharan Africa -- and have based this service on a strengthened research effort. At the same time, we were able to expand our delivery of training events, thanks to

generous support from non-core sources.

Our strategic planning effort, begun in 1986, was concluded in June 1987 with the publication of our strategy document. The paper was well received. A workshop in early September, which brought together the leaders of 28 NARS, confirmed the basic thrusts of our program and reinforced our priorities.

Our medium-term plan for 1988-1992 builds on the ISNAR strategy. It makes the strategy operational, bringing in dimensions of time and resource constraints and defining the kinds of products and services ISNAR will make available to NARS that seek our collaboration.

The planning process saw intensive interactions between Board, management, and staff. During this planning process, we also benefitted greatly from the advice and counsel of TAC. ISNAR was among the first centers in the CGIAR system to follow the new procedure of programming and medium-term planning.

At its March 1987 meeting, TAC examined our first draft and provided extensive feedback. At its June meeting, TAC reviewed the final draft and endorsed the plan -- recommending it for approval by the CGIAR.

At International Centers Week, the CGIAR approved the plan. For ISNAR this implies:

- * a balanced growth of the three program thrusts;
- * a moderate growth in staffing -- from 25 positions of senior staff under the core program in 1987 to 34 positions in 1992;
- * an overall expansion in resources by approximately 11 percent per year;
- * more effective support to NARS in their efforts to strengthen their national research capacities.

From the CGIAR point of view, this is an expression of the increased importance given to the goal of research institution building. It reinforces the CGIAR's strategy calling for a balanced approach to technology generation, improving the policy environment, and building institutional capacities at the national level.

We welcome this decision by the CGIAR to endorse our plan and to strengthen its support for building national research institutions.

To our donors we express our sincere thanks for their continued support of the ISNAR program.



Henri Carsalade
Chairman
ISNAR Board of Trustees



Alexander von der Osten
Director General
ISNAR

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1987 DONORS

Donors to the Core Program

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Belgium (Belgian Administration for Development Cooperation)
Canada (Canadian International Development Agency)
European Economic Community
Federal Republic of Germany (Bundesministerium für Wirtschaftliche Zusammenarbeit)
France (Ministère de la Recherche et de l'Industrie)
Ireland (Department of Foreign Affairs, Development Cooperation Division)
Government of Italy
Japan (Ministry of Foreign Affairs)
Netherlands (Directorate General for International Cooperation)
Philippines (Ministry of Agriculture)

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Sweden (Swedish Agency for Research Cooperation with Developing Countries)
Switzerland (Department für auswärtige Angelegenheiten)
United Kingdom (Overseas Development Administration)
United States (Agency for International Development)
The World Bank

Donors to Special Projects

Asian Development Bank
Australian Centre for International Agricultural Research/
Australian Development Assistance Bureau
Federal Republic of Germany (Deutsche Gesellschaft für Technische Zusammenarbeit)
Government of Italy
International Development Research Centre
Rockefeller Foundation
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University of Wisconsin (under contract to USAID)
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▼ Seated, left to right: Ekeobil, Sadikin,
Carsalade, Nakane, von der Osten. Standing:
Lopez-Saubidet, Thomas, Mwandemere,
Porceddu, Elliott (Secretary), Wessels, Dillon.



ISNAR STAFF - 1987



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ISNAR STAFF - 1987

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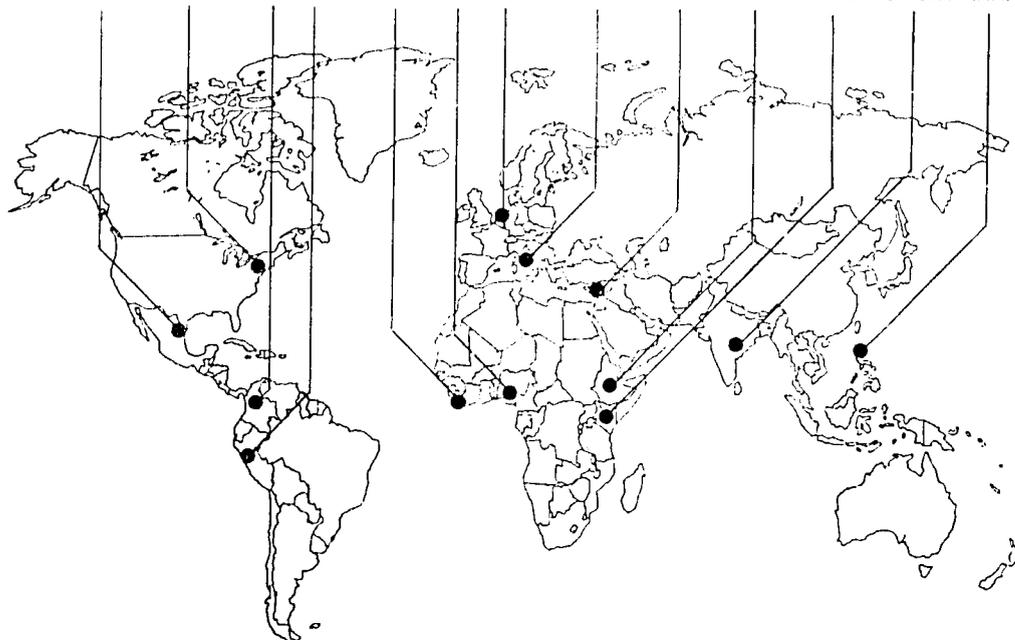
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** Joined during 1987

* Completed appointment during 1987

THE 13 CGIAR RESEARCH CENTERS

CIMMYT IFPRI CIAT CIP WARDI IITA ISNAR IBPGR ICARDA ILCA ILRAD ICRISAT IRRI



CGIAR Centers - Full names of centers coordinated by the Consultative Group on International Agricultural Research (CGIAR) are included in the list of acronyms (p. 48).

HIGHLIGHTS OF 1987

Planning Takes Increasing Role in Service to NARS

Among ISNAR's roles of diagnosis, planning, and implementation, planning support for NARS now receives the largest share of attention.

Examples of all these roles are reported here. Diagnoses (system reviews) begin on p. 9; planning, p. 12; and implementation, p. 15.

Costa Rica Invites Second Review Mission

ISNAR's first system review, in 1981, was invited by the Government of Costa Rica. In 1987, ISNAR was asked to come back: to review progress, identify areas needing attention, and suggest actions to deal with present constraints.

The review team found that the Costa Ricans had implemented most of the 1981 suggestions. (See p. 9.)

Methodology for Planning Puts Niger in Lead Role

Niger's INRAN asked ISNAR to help prepare a national research plan for the next 10-plus years. ISNAR offered a planning process calling for major inputs by nationals, then helped Niger produce its own plan. Local planning teams drew in nationals of wide expertise, along with a few expatriates.

ISNAR provided methodology, trained local teams to use it, and gave support at all stages. (Report on p. 13.)

Two Research Institutes Reviewed in Cameroon

Cameroon's research institutes for agronomy and livestock were reviewed by ISNAR in 1987. This carried ISNAR's work there to a new stage -- it had begun with study of research management training needs under the CDA/ISNAR program in the early 1980s.

The team gave particular attention to how to strengthen linkages between the institutes themselves and with their parent national research ministry. (Reported on p. 10.)

Sudanese Apply ATMS Methodology

Agricultural technology management system (ATMS) method of analysis as a means to diagnose constraints in a NARS was developed at ISNAR in association with Rutgers University. With ISNAR aid and support by AOAD, a Sudanese team carried out an ATMS study of its research system. This provided a pilot trial for possible use in other Arab countries. (Reported on p. 10.)

Research-extension Link Reviewed in Chile's NARS

Research and extension elements function in the same national body for agricultural technology in Chile. At the request of that body, INIA, two ISNAR staff reviewed the linkage and recommended a number of actions to strengthen it.

This review provided a pre-pilot study to help in planning a new ISNAR research project on research and transfer links. (Reported on p. 11.)

Review and Planning Aid to Rwanda on Farming Systems

Rwanda called on ISNAR to help as it gave system-wide attention to agricultural research. ISNAR provided the leadership for a task force that reviewed farming systems work and then made plans to develop more fully its potential to integrate other research on crops and livestock. (Reported on p. 11.)

Work with Bangladesh on National Research Plan

Bangladesh Agricultural Research Council (BARC) plays a key role in agriculture in that country. When called on by government for a national agricultural research plan, BARC in turn asked for assistance from ISNAR. Two staff members helped draft the plan, while giving several Bangladeshi staff training and experience for similar tasks in the future. (Reported on p. 14.)

Five-year Plans Laid by Senegal and Tunisia

Two of the nations with which ISNAR collaborates in francophone Africa faced similar tasks this year: create five-year plans for agricul-

tural research. Although other agencies took the lead, ISNAR provided a key staff input for each. (Reported on p. 14.)

Three Late-1986 Reviews Reported Back in 1987

ISNAR teams made late-1986 review visits to Tunisia, Ethiopia, and Zimbabwe. The reporting tasks, including sessions with host-country officers, carried over into 1987. Review documents are listed with the 1987 ISNAR publications (p. 38).

Research Data Base to be Published Soon

Since 1984 an ISNAR research team has been gathering and validating data on national agricultural research expenditures worldwide. At the end of 1987, data went back to 100 countries for final checking. Publication is expected in 1988. (See p. 18.)

OFCOR Country Case Studies Prepared for Publication

Nine case studies of on-farm, client-oriented research -- three each in Asian, African, and Latin American countries -- were about ready for publication by the end of 1987. Other analyses will follow in 1988. (Detailed on p. 20.)

NARS Managers Help Analyze OFCOR Findings

A group of 28 persons closely involved in the country case studies of OFCOR met with ISNAR researchers in The Hague. They reviewed case-study results and advised on analyses. (Reported on p. 28.)

Management Workshop Brings 28 NARS Leaders to ISNAR Headquarters

The 1987 International Workshop on Agricultural Research Management was concentrated on five broad issues in managing research in NARS. Papers, reports, and conclusions were distributed in proceedings that came out a few weeks later. (See the list of 1987 publications, p. 38.)

Three Regional Workshops on 1987 Training Agenda

Regional workshops took research management to many participants from NARS in 1987:

South Pacific, Western Samoa: 11 nations -- held in collaboration with University of the South Pacific and ILC's CTA;

Southern Cone of Latin America, Argentina: 48 took part from all over the continent; co-sponsorship with FAO, IICA, and Argentina INTA;

West Asia-North Africa, Cyprus: 13 countries present -- co-sponsored with FAO and ICARDA. (Regional workshop reports are on p. 29.)

Special Training Effort in Southern Africa

Nine countries of southern Africa coordinate a number of agricultural research networks through SACCAR. By a special project set up late in 1986, ISNAR is executing agency for a research training network. CIDA, ODA, and USAID provide financial support.

Three national workshops got the project started in 1987; 16 more training programs will follow over the next 3 years. (Discussed on p. 28.)

National Workshops Are Growth Area in Training Programs

Ten of ISNAR's 15 sponsored training events of 1987 were planned and carried out for staffs of single national systems. The focus was strongly on Africa, with 8 of the 10 events; Indonesia and Syria were the othersites. (Report begins on p. 29.)

Individualized Study Undertaken in-house

Many requests for individual study come from NARS. The ISNAR strategy statement noted in-house training as a way to serve some of these expressed needs of NARS. Seven persons from five countries studied at ISNAR in 1987 -- a total of 23 person-weeks. (Reported on p. 31.)

WORKING WITH NARS



▲ ISNAR senior advisers take their research management experience and skills to work with NARS managers -- often on the manager's own ground.

Requests coming from national agricultural research systems (NARS) have changed over time in terms of different kinds of advisory service. The change follows the logic of the three-step ISNAR strategy in working with a NARS: diagnose constraints, plan actions to overcome constraints, and implement those actions.

In our first six years, we collaborated with national leaders in diagnostic reviews of more than 30 NARS. Most disclosed important areas calling for research management attention, especially areas dealing with quality of planning within their own organizations and programs.

In 1987 we carried out two regular system reviews and three diagnostic reviews of parts of NARS. In the same period we were engaged in planning exercises with a larger number of NARS -- at varied levels of intensity.

The past six years have brought some changes in relative emphasis among the critical factors in research management, which were described in the strategy paper we published in 1987.

The sharpest and continuing rise among the requests shows up in the policy factor of setting priorities and allocating resources. Also among those most requested have been one organizational factor -- structure and organization -- and two management factors -- program formulation and program budgeting, and developing and managing human resources.

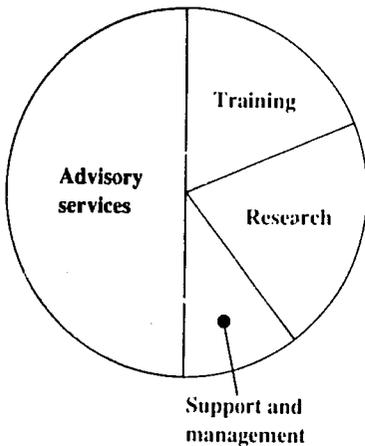
Research-based Service

The ISNAR strategy describes our product as service to NARS: a research-based service.

As we have noted, our own strategy for building the institution of ISNAR has led our Board to authorize increases in our research capacity. TAC has also encouraged expansion of our research role. Additions to staff in 1987 brought more capabilities in management-research methods. This has come from our own recruiting and was augmented by the Rockefeller Foundation, U.S.A.: under its Visiting Fellow program, the Foundation matched interests of two additional field-experienced young social scientists to program emphasis of ISNAR.

Through our working groups (described more fully on p. 25), we correlate research talents with practical experience. That combination permits us to produce tools we can offer with confidence to NARS leaders. These tools help the leaders improve their management; that, in turn, strengthens their research systems.

At the same time, our research generates knowledge useful to others -- particularly because we keep an intimate tie to the needs of practitioners. We are adding our findings to the knowledge base of agricultural research management. It's a reciprocal relationship: we build on existing world knowledge, along with field experience, to formulate our research; we report our findings back to that same community.



Allocation of resources to ISNAR programs

Advisory service is research-based and focused on NARS

Focus on NARS

ISNAR was created to strengthen national agricultural research systems. This mandate keeps our objectives aimed toward the NARS themselves.

Advisory service provides the focusing mechanism. A busy field schedule has many of our senior officers meeting the clients on their home ground. They are not alone in these contacts.

Multidisciplinary teams may work with them to analyze field situations, helping to develop and try the tools in use. Calls for research contributions to advisory services become more specialized, such as in development of program budgeting systems, management information systems, and analytical tools on human resources.

Increased tempo in ISNAR training includes numerous national and regional workshops on needs that surface through advisory service contacts. Staff from all three programs become involved in training activities, both in preparing materials and in teaching in the field. In the brevity of this report, we can only highlight some of the advisory service activities. They reflect the subject range of our work and indicate the geographic spread. (A special section, starting on p. 33, summarizes our 1987 contacts by country and region.)

In this report, we give a few examples of findings and results of our continuing work with NARS. For every story we tell here, however, many more have become part of ISNAR's experience and our collective knowledge base.

WORKING WITH NARS TO DIAGNOSE CONSTRAINTS

Five diagnostic missions in 1987 -- two full-system and three component reviews

The medium-term plan that guides ISNAR into our second five-year period of operations called for three to four diagnostic NARS reviews each year. The year 1987 brought five new activities in this area, although not all involved review of entire systems. Reviews carried out during the final quarter of 1986 (Zimbabwe, Tunisia, and Ethiopia) brought over a large demand for staff input in 1987 to complete diagnoses and reports.

Two of five 1987 diagnostic missions were comprehensive reviews under full ISNAR auspices: Costa Rica and Cameroon.

Three other diagnostic activities occupied senior ISNAR staff and others: application of the ATMS (agricultural technology management system) methodology in a study in Sudan, plus reviews of specific parts of two other systems -- research-extension linkages in Chile and farming systems research in Rwanda.

Costa Rica

Costa Rica has accounted for two firsts in a country association with ISNAR: It was the first NARS reviewed by ISNAR -- that was in the spring of 1981. Costa Rica was the first country to ask ISNAR to review its system a second time -- that happened in 1987.

The second review was carried out in collaboration with IICA, the InterAmerican Institute for Cooperation in Agriculture.

Terms of reference called for the mission to review developments since 1981, asking also for recommendations now on methodology and strategy of research and extension work of the Ministry of Agriculture and Livestock.

Shortly after the 1981 review team had submitted its report to the Government of Costa Rica, elections brought a different political party to office. The NARS, under new leadership, did not maintain contacts with ISNAR. However, the 1987 review team found that much had happened within the NARS during the five-year time span. Acting on their own initiative and at their own pace, the Costa Ricans had implemented most of the 1981 recommendations.

Six Main Proposals

The ISNAR team had made six main proposals in 1981:

- * create an autonomous institute of agricultural research and extension;
- * strengthen regional research through multidisciplinary teams in the regions;
- * integrate research and extension into one organization;
- * improve management processes for setting priorities and for planning and programming both research and extension;
- * make the NARS stronger by: more funds for operating expenses; more staff of higher competence; improved conditions of service for staff; decentralizing administrative



▲ An ISNAR team was invited to review the agricultural research system in Costa Rica in 1987. This was a second review. Costa Rica was the first NARS review conducted by ISNAR in 1981.

First country reviewed -- 1981 -- revisited in 1987

procedures; and building a modest center for laboratories. Except for the autonomous institute, which they agree is a desirable goal but not realizable now, the Costa Ricans had put into effect all of the 1981 recommendations.

A Continuing Influence

Two factors seemed to have accounted for the continuing influence of the 1981 review -- without direct interaction with ISNAR: (1) the review had left a consensus of what needed to be done, a consensus shared by many research and extension professionals in the Ministry of Agriculture and Livestock; (2) the document left by ISNAR became a basic reference for anyone considering new proposals for action (especially donors).

The 1987 reviewers -- which included one member of the 1981 team -- found the earlier recommendations still valid. While important changes in the system had added strength, significant improvements were still needed, they concluded.

Recommendations from this review addressed problems seen in defining priorities, further integrating research and extension at the regional level, and involving wider participation in the processes of generating and transferring technology.

Coordinating Mechanisms

The team offered suggestions for a number of advisory and coordinating mechanisms: a national commission -- to define priorities and link organizations in the NARS; a national research center committee -- to link with the national scientific community; national program

committees -- to link different groups interested in commodities and problem areas; and regional and cantonal committees -- to strengthen links to producers.

Other proposals were aimed toward giving a high profile to research and technology-transfer functions within the ministry; placing more authority for programs in the regions; and further strengthening the processes for setting priorities, planning, and programming.

Next Steps

ISNAR staff had little contact in the Costa Rican NARS after the 1981 review. But we have seen evidence already to confirm interest in continuing collaboration this time.

Cameroon

Two national agricultural research institutes came under focus in a review requested by Cameroon's Ministry of Higher Education and Scientific Research (MESRES). Terms of reference covered factors of policy, organization, and management.

Cameroon's agronomic research institute (IRA) and animal research institute (IRZ) function as units under the national research ministry. The review team's recommendations on structure called for a series of formal linkages -- especially on boards of directors and program committees -- to bring work of the institutes closer together and also to relate the institutes to university and ministerial bodies.

The review team proposed that agricultural research be restructured by ecological zones, which it saw as an evolutionary approach to decentralizing and gradually integrating services and facilities. Reviewers also offered more than 20 specific and detailed ways to deal with organizational and management factors they were asked to consider.

Sudan

The review of the agricultural technology system of Sudan differed in form from the usual ISNAR approach. It followed ATMS methodology. (ATMS refers to "agricultural technology management system" which is broader than research alone. It focuses on the key sectors or institutions involved in generating, transferring, and using agricultural technology. The study gathers extensive data to analyze institutions and human resources against functions that the system must perform.)

Sudan study used ATMS methodology

ISNAR provided the methodology to launch this effort in Sudan. In addition to an enabling financial grant, AOAD (Arab Organization for Agricultural Development) provided facilities and other support. Three senior Sudanese professionals made up the local team; that team, along with their supporting personnel, assembled the data base on which analyses, interpretations, and recommendations could be built.

Sudanese Applied Methodology

The Sudanese study team collected background on the nation's agricultural sector and development policies and goals. It brought together information on about 120 organizations that function in the ATMS of Sudan. The team obtained human resources data to represent more than 7,000 persons in the technology system, with individual information on nearly 400 scientists.

This mass of data -- some analyzed and some in raw form -- was brought to The Hague. Staff representing ISNAR advisory service and research programs worked jointly on the next steps: making a fit between the data and the computer software to enable electronic processing; analyzing and summarizing findings; and presenting the findings, along with provisional recommendations.

This work was nearly finished by the end of 1987. Early in 1988, ISNAR will return to Sudan for an in-country seminar that will review the findings.

In addition to benefits of this work to the host country NARS, three groups gained from the exercise: the Sudanese, who carried out the process; the AOAD, which participated directly; and ISNAR, which made a further trial and adaptation of the ATMS methodology it had developed, in collaboration with Rutgers University, U.S.A.

Rwanda

The ISNAR role in Rwanda was an important element in a larger effort. It built on a long record of relationships with agricultural research in Rwanda, beginning in our first year of operation, 1981. This major effort in 1987 came as a result of a recent World Bank agreement that called for Rwanda to review all its agricultural research programs and to formulate a master plan for the medium term -- the next five years.

One ISNAR officer took a leading role with the team responsible for reviewing

and then planning for farming-systems research. This area was viewed as a means of helping the Rwanda NARS strengthen its capacity to guide and coordinate numerous projects operating in the country.

A second person from ISNAR, a consultant, also took part in this work. He brought the experience of having coordinated the Senegal case study in ISNAR's OFCOR project.

Chile

Throughout the 1980s, leadership for research and transfer of agricultural technology in Chile has been in directorates within the same national institution, INIA (Instituto Nacional de Investigacion Agropecuario). ISNAR was asked in 1987 to carry out a review there, looking specifically at the linkages involved in research and the transfer of technology. Two ISNAR staff members made up the review team.

Within INIA itself, they found staff numbers tilted strongly toward research, with about 145 researchers and 32 transfer specialists. They examined a number of other transfer programs or organizations involved in getting agricultural technology to producers. They found that INIA had some tie to most of these efforts.

A program for Transfer of Technology Groups (GIT) serves many commercial producers. The groups organize to get technology -- often as the result of initiatives by INIA transfer staff. An INIA specialist brings the programs to the group.

About 10 percent of Chilean small producers receive technology services through EAT groups (EAT comes from the Spanish for Technical Assistance Enterprises). The organizer of these groups is INDAP (the national institute for agricultural development). The main emphasis is on supervision of credit made available by INDAP. INDAP contracts with small private firms that carry out demonstrations and give advice to the EAT clients.

Two special programs (PDCA, Community Agricultural Programs of Development) have provided some 55 agronomists to work with small producers who don't qualify for INDAP services. These programs operate only in two specific municipalities.

Some private-sector firms offer seminars, demonstration plots, advertising, and printed materials to

Chile asked review of research linkage with extension

disseminate their products. They deal mainly with larger producers.

Strengthening the Linkage

The ISNAR reviewers looked for ways in which linkages bring producer feedback to the INIA researchers -- as well as provide channels to disseminate INIA technology to users. They offered suggestions for strengthening these linkages: INIA transfer specialists could be involved more in planning for adaptive research and in carrying out off-station trials. Transfer specialists could bring useful feedback through reporting GTT members' problems to INIA researchers. More effort could be made to involve INIA researchers directly in transfer activities -- such as in talks, demonstrations, and popular articles. Stronger educational and follow-up elements could be built into plans to distribute new crop varieties. More time on transfer activities could be on the agenda for programming meetings of research and transfer staff.

In work with outside organizations, INIA could try to integrate GTT coordinators more closely to its efforts; INIA could add more technical content

in the training it gives technicians who serve INDAP groups; and INIA could seek ways for its transfer specialists to cooperate with PDCA programs.

WORKING WITH NARS ON PLANNING

Long-term planning gives inside and outside benefits

Planning becomes a key phase in our strategy to help NARS strengthen their systems. It involves defining specific measures to resolve constraints on the system. Following work with a NARS on diagnosis, a usual next step is planning for the longer term.

Long-term planning offers a number of benefits to a national agricultural research system.

Some of the benefits are external: a sound plan gives the system a better basis for dialogue with outside groups or agencies that are critical to its operations. These may include officers at higher levels of policy in the NARS' own nation, as well as international groups that provide financial or technical support.

Many of the benefits are internal -- that is, they add strength to the NARS itself. A long-term plan requires the NARS to face realistically how its own programs relate to agricultural research needs and potentials to support national and regional goals. A plan gives the NARS a

map to follow into the future. The deep look into its own operations may lead to improvements in organization and management to meet NARS goals as set out more clearly as a result of planning.

ISNAR's work reflects the importance of long-term planning, as viewed from the perspective of NARS managers. Planning has become the leading area of involvement of ISNAR advisers with NARSs. We report here some formal planning activities we worked with in 1987, responding to NARSs' requests. They represent the kinds of work ISNAR staff undertook in this area -- but not all the year's activities in planning.

Niger Produces a National Plan

Niger's national agricultural research plan provides a good example of how ISNAR contributes to a young NARS in the area of planning. A national research plan was one outcome of this work with Niger. The plan was developed in such a

National involvement makes Niger plan their own

way that 50 or more nationals gained skill and self-confidence in research planning through their involvement. Many were NARS staff, and others came from agencies outside the NARS.

Niger's national institute for agricultural research is called INRAN, the acronym for its official name in French. It was created in 1975, combining independent research institutions set up earlier by France. Six research departments function now under INRAN.

"In spite of financial investments in research, the results were not up to expectations," wrote the Director General of INRAN in a paper presented to the 1987 ISNAR International Workshop on Agricultural Research Management. INRAN asked ISNAR to study the system and advise on strengthening it.

Several ISNAR staff had been in contact with the Niger NARS since 1985, and a number of other agencies had conducted agricultural reviews in recent years. Thus planners in Niger and ISNAR advisers had access to detailed data on human resources and research programs. This helped in the review and diagnostic process, which allowed them to progress quickly into the planning phase.

The strategy of the advisers-planners was based on two considerations: first, the plan should come from a national effort, not be one handed to INRAN by outside experts; second, planning should involve qualified specialists from other groups in addition to INRAN's researchers.

The goal of that strategy was simply that many would support proposals coming from the plan, including: scientists, INRAN clients, the Government, and funding agencies, both inside and outside Niger. The strategic reasoning was that participation by a wide range of planners would spread the feeling of ownership, and many would bring personal commitment to dealing with the proposals in the plan.

The ISNAR role, then, would be mainly in the methodology of planning; also in writing, if needed.

The Planning Sequence

The keys to the planning process were (1) to obtain detailed information on problems facing agriculture, as well as its potentials in Niger and (2) to locate professionals who could contribute both knowledge and judgment across the

necessary range of the work. The professionals would make up teams to evaluate information and formulate feasible research plans for given sectors of the agriculture of Niger.

Work groups were set up to deal with major agricultural sectors (rainfed agriculture and its main crops -- millet, cowpea, and sorghum; irrigated agriculture; animal production; natural resources, including forestry; farming systems); plus a national ad hoc working group that could deal with institutional problems. Each work group had its chairman and secretary and a group of specialists. People were invited from INRAN, university agriculture faculties, development and technical assistance projects, and other related groups.

Sectoral Papers

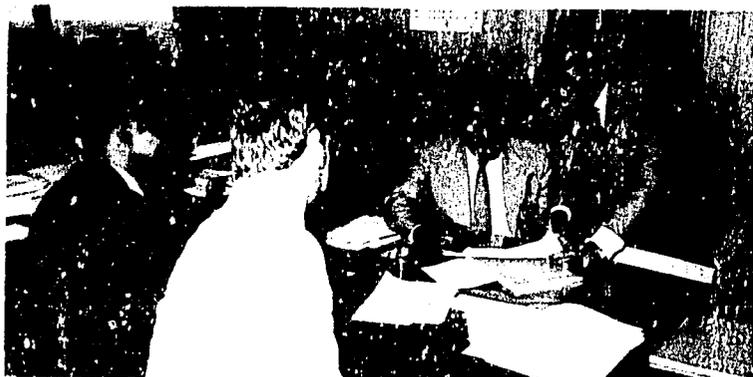
The ultimate goal for each working group was a sectoral paper that presented both the group's analysis of the sector and its proposals related to research needs and priorities. The groups were advised to prepare concise and readable papers of 20 to 40 pages in length.

Three chapters comprised each report. The first, presentation of the sector the group covered, including: production, yields, socioeconomic importance, and long-term perspectives; main problems and potentials of the sector; and the priority research needs

The second chapter dealt with the sector in relation to the farming systems and rural economy. Planning could not thus be so sectorally bound that it failed to relate to the broader concerns of producers and agriculture as a whole.

In the third chapter, planning guidelines stressed quantification of the priority research needs. Planners in Niger relied on the informed judgment and insights of the experienced team members. Sophisticated approaches, such as used in many formal planning efforts, were not considered necessary in Niger, where the nation's agricultural gross development product is based on only a few major commodities.

Each team set out research priorities for its sector in terms of scientist-years for scientific specialties they considered essential at national and regional levels. Planners were charged to propose the minimum scientist-years required to handle only the most important problems of their sector -- problems on which they predicted a high probability of research success. Beyond that



← Kenyans have called on ISNAR to help in planning many changes they have brought about there since the 1981 review by a team of ISNAR staff and Kenyans.

minimum they could propose, by disciplines and research centers, how additional resources could be used (but they limited such projections to not more than 30% above what they proposed as minimum requirements).

The ISNAR Role

Three ISNAR advisers worked at various stages of this process. They took the lead in laying out the planning methodology; and the main effort was begun with a seminar they led in Niger in February 1987. The advisers had interim contacts as the teams undertook analyses, deliberations, proposals, and writing. When all sector papers (or scenarios for the future) had been submitted, the ISNAR staff helped in the synthesis during a second meeting in Niamey in April.

Representatives from each working group, plus the Director General of INRAN and an officer from the Ministry of Planning, came to The Hague. With additional help from a French computer specialist for immediate processing of proposals, this group balanced regions and sectors -- all within limited resources. They considered human resources, field research centers, and other critical planning variables.

Two planning horizons were addressed: the 10 years until 1997 and the 13 years to the turn of the century. Much agricultural research in Niger is carried out through projects financed by grants and loans of the international community to different ministries; however, the plan assumed that all research would be concentrated in INRAN and the university by the end of the planning period. In the meantime, it was assumed, the level of external funding and the need for technical assistance would be reduced drastically.

The methodology of national research planning in this one francophone nation

in Africa will be used in another in the coming year. Mali will approach its plan along similar lines, with perhaps some adaptation, and with ISNAR again in an advisory and supporting role.

Planning with Other NARS

Planning -- in the broad sense -- was part of advisory work in many collaborating countries in 1987. Most planning activities were not as intensive as that described in Niger; yet a number addressed wide planning horizons, such as system-wide, medium-term, or long-term research plans.

Bangladesh

Two ISNAR staff members responded when the Bangladesh Agricultural Research Council (BARC) asked help to meet a near and urgent deadline for a draft national agricultural research plan targeted on the year 2000. BARC expressed the need for support in preparing such a plan for the national policy level that had requested it.

ISNAR had worked with BARC before and could respond on short notice. One officer on the team took his long career of experience in agricultural research in Asia; the other took strong credentials in the process of planning agricultural research. BARC had excellent statistics and documentation on the 13 autonomous institutes it coordinates, but its staff available for the task at that time needed to interact with an external team. The ISNAR staff found that institute submissions were good summaries of current research projects, and provided a base for the crucial projections that had yet to be made.

The ISNAR staff contributed directly to the plan. At the same time, they worked in a mentor mode so the BARC staff

came out of the experience with increased skills and confidence for research planning efforts in the future.

Under difficult time constraints, the mission reached draft stage on schedule, in two weeks time. Bangladeshis with whom the team worked then carried the job to completion on their own.

Pakistan

An ISNAR senior research officer worked with a mission to Pakistan, conducted under the FAO/World Bank Cooperative Programme. The task of the mission was to prepare a major project for support to the agricultural system in Pakistan.

The ISNAR officer analyzed basic issues related to organization and management of agricultural research there. He gave attention to such areas as: developing a quantitative basis for research programming and planning; planning, funding, and managing staff to provide more adequate support services to agricultural scientists; improving linkages between federal and provincial research institutes and with agricultural universities; moving toward a career scheme of service for provincial research staffs; and planning processes for monitoring and evaluation of the research system.

ISNAR's earlier associations with the Pakistan NARS, along with its conceptualizations of critical research management functions, resulted in an important contribution to the mission by this ISNAR staff member.

Senegal

The national agricultural research institute in Senegal, ISRA, invited ISNAR to take part in planning the ISRA research program. An ISNAR officer worked with personnel from the French agency for overseas research,

Many NARS are asking for collaboration in their planning

Office de la Recherche Scientifique et Technique Outre-Mer (ORSTOM), to develop a five-year research program. The staff member, who had been involved in earlier associations with Senegal, contributed the long-term strategy chapter for the medium-term national plan that resulted. In another activity in 1987, ISNAR studied human resources issues related to the medium-term plan.

Tunisia

ISNAR contributed to the joint FAO and World Bank effort to develop a medium-term working program for agriculture in Tunisia. One ISNAR officer, who has often worked with the Tunisian NARS, helped prepare the five-year plan for the research system.

Uruguay

When policymakers in Uruguay decided that a new structure was needed for their agricultural research system, task forces were organized to address different areas and functions. ISNAR played a role in helping to orient and guide the task forces -- in the advisory and training sense. The output was a basic document on how to implement work in the decentralized organization.

In this case, ISNAR worked again with the regional agency, IICA (InterAmerican Institute for Cooperation in Agriculture), which focused on research-extension linkages and some financial and administrative issues.

WORKING WITH NARS TO IMPLEMENT PLANS

Implementation is step three in the strategic process we follow in ISNAR to help countries build their institutions for agricultural research. Implementation means action, action by the national system we work with. The action is not an ISNAR role, although we advise and support the NARS in its steps to take action.

We have told above that Costa Ricans implemented nearly all recommendations made by the first ISNAR review team in 1981 -- on their own initiative.

We have worked in Burkina Faso, Madagascar, and Rwanda in quite a different way. In each of these countries, an ISNAR staff member was outposted to give continuing advisory support as national officers implemented steps to strengthen their agricultural research systems. Still, all the action steps were decided on and made by nationals; the ISNAR resident advisers were mainly that -- advisers.

In most instances, the ISNAR working relationship for implementation is less obvious or dramatic than these examples. Most occur in the continuing communication between ISNAR staff members and officers in the national system. Some take place by letter, telex, or telephone; some occur when the staff member who maintains liaison makes one or more annual visits to the country.

In one sense, most of the activity described in this entire report is implementation of the process of building institutions. We cite here only a few from among many possible examples.

In Indonesia, we have given technical assistance as its Agency for Agricultural Research and Development (AARD) develops a computerized management information system (MIS). (A special project from USAID supports this work.) Some of our assistance came through regular visits of an ISNAR staff member and an ISNAR consultant who maintain liaison with Indonesia; some came from a staff member outposted part of the year by ISNAR specifically to work with AARD on MIS. Also in 1987, we carried out a workshop to help 37 middle managers in AARD, who reviewed the pilot work on MIS to date and prepared to work with it in the system.

In Morocco, we're collaborating with nationals to adapt computer software to handle a programming and budgeting system. This shows another type of support for action taken by NARS staff. A number of other NARS have expressed interest in this same area of research management.

Uruguay provides another example of support to NARS in implementing

action: Leaders in agricultural research there were developing a semi-autonomous institute as the organizational form for their NARS. An ISNAR staff member responded to their requests for consultation, either by personal visits or by other communication channels.

Much of our training activity relates to NARSs' implementation of plans. That is especially true for national workshops and for in-house study by persons from NARS. Training is often focused on a definite and immediate need within a NARS strategy to strengthen its organization and functions.

SIGNS OF IMPACT OF ISNAR COLLABORATION



▲ The long-run goal of activity in a country with which ISNAR works is a NARS whose research contributes to a sufficient food supply and a robust farm economy. These Cameroonians in the market represent a late stage in the vital food chain in that country. An ISNAR review was made there in 1987.

The essence of ISNAR's collaboration with NARS is system building. And our method is mainly catalytic. Impacts from this kind of activity are usually difficult to measure. They permeate a whole system, which may mean that considerable time passes before effects can be seen.

We don't deal with overt factors, such as distributing improved crop varieties or livestock management systems. We don't directly work in the technical sphere of the NARS scientists who develop or adapt new technologies needed in the agriculture of their nation.

What, then, is the nature of ISNAR's ultimate impact? Ideally, it is a research system that, after ISNAR collaboration, is more productive; one whose scientists are better-equipped, feel more confident in their roles, and are actually providing more effective and more efficient technological support for modernizing the agriculture of their country.

Certain interim indicators reflect the effects of our work, however. We focus on critical factors in research management. From them we can identify indicators of this interim impact. We can look for better capacity in a NARS to diagnose constraints, create plans to overcome them, strengthen the programming process, obtain and manage resources more effectively, and improve other factors of policy, organization, and structure. Such impacts are institutional. And changes in institutions tend to be gradual, to occur by increments, and to be cumulative over time.

To see these kinds of change clearly in a country, we might need to repeat a diagnostic review. Even then we could not claim evidence of our direct impact. We would follow with keen interest, however, the outcome of actions taken by the NARS in line with recommendations and proposals that we had offered.

We have not existed for a full decade. We can't yet take a long historical view, but we have seen changes that seem to reflect the influence of our associations.

In one case -- Costa Rica -- we have actually gone back for the second review, just six years later. And we have set out some of the significant changes implemented by that NARS in an earlier part of this section (p. 9). We can see signs of change in other collaborations, even some of relatively short duration.

We can cite Kenya, where we were first

invited to collaborate in 1981. Agricultural research was then part of the larger bureaucracy of Government. Here are some of the significant actions Kenyans have taken in the ensuing years:

- * re-created the semi-autonomous Kenya Agriculture Research Institute, which has much better control than before over the use of its resources;
- * consolidated national and regional stations, where each now has a well-defined mandate and mechanisms for coordination with others;
- * encouraged donors to form a consortium that coordinates their offers to support a national plan that guides research efforts in the reorganized system.

Burkina Faso faced much different problems in its agricultural research system. Most researchers were expatriate scientists in 1981, when the country moved on its own to set up a national institute. We were invited to collaborate the next year. A main feature of our work there was, for the first time, to outpost a resident ISNAR research management adviser.

Over the next four years, the adviser supported the Burkinabes as they took a number of institution-building steps.

- * A review of the research system produced an inventory of research and identified priorities for the future. A medium-term national plan followed the review.
- * Manpower development was planned for the next 10 years. French and Canadian governments provided aid to begin implementing the plan.

- * A research station network was created, consisting of one central and five regional stations. The stations were put into operation with the assistance of World Bank and such bilateral donors as French, German, Dutch, and United States agencies.
- * An institutional mechanism was designed to link research with the extension service.
- * Close linkages with a number of the international agricultural research centers were established or, in some cases, were redefined more closely in line with national needs.

By the end of 1987, when the outposting arrangement reached the end of its first phase, the Burkina Faso research system included: 53 national and 20 expatriate scientists; six research stations; eight national research programs; and a strategic plan for the future.

Agricultural research in **Sri Lanka** typified problems found in many national research systems. Especially in Asia, growing food shortages in the 1960s had led policymakers to strengthen agricultural research. Some became extremely complex in the decades that followed. In the early 1980s in Sri Lanka, the system was spread over eight different ministries. Each had its own unit, which dealt with aspects of agricultural research; there was little coordination or interaction among these separate units.

In work with Sri Lankan research leaders and policymakers in 1983, a group had suggested creation of a national council on agricultural research policy -- an approach that has succeeded in similar situations elsewhere. The council's role would include evolving priorities, coordinating research activities, and

organizing and funding inter-ministerial projects.

By the end of 1987, steps were well along for establishment of the council. The legal framework had been worked out; the Cabinet had approved the proposal that would go before the Parliament. Support appeared to be forthcoming for World Bank financing and German technical assistance. ISNAR had been asked to outpost two specialists for brief periods to help implement some of the proposals.

Small countries, such as **Fiji**, face a special set of problems, one being their relative isolation from the wider community of information and ideas about agricultural research. Unless in a crisis situation, such countries tend to rank well down the list in priority for attention by development and aid groups.

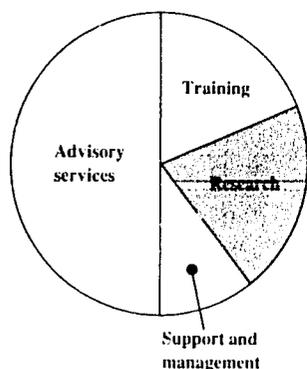
We believe that our low-key involvement with Fiji over the past three or four years has left useful impacts. After a system review in 1982, our main collaboration has been to work with a government-appointed task force. Fijians in the NARS have given particular emphasis to planning their research as year-to-year programs within a longer-term perspective.

Looking back now, we see a better appreciation among the higher counsel of government for the role of agricultural research: the government has improved its budgetary support for research, especially for operating costs. Donor support has increased, notably that by Japan, Australia, and New Zealand. Links are stronger to such research centers as IRRI and CIMMYT.

COLLABORATION IN STRENGTHENING NARS: MAJOR COUNTRY ACTIVITIES 1981-87

Region	System reviews	Planning	Implementation
Africa	15	12	7
Asia	9	8	2
Latin America	7	6	3
West Asia			
N. Africa	3	6	2
Seven-year Totals	— 34	— 32	— 14

ISNAR RESEARCH - 1987



Allocation of resources to ISNAR programs

As ISNAR entered its second five years of operation, the Board underscored our role as a research-based service to the national agricultural research systems. The demand for services becomes more specialized, and research plays an essential role as we develop tools for use in agricultural research management.

In 1987 we saw two large research projects nearing maturity and two going into planning, one already at a pilot-study stage. In this section on research,

we report 1987 developments in: first, research to establish a global data base or NARS; second, the nine country case studies of on-farm, client-oriented research; third, the emergence of a new project to study NARS linkages between research and programs to transfer technology; and fourth, a new collaborative study of priority setting in four Asian NARS.

Also in this section, we report on our working groups. These are in-house groupings of staff around critical management functions. The groups aim to increase our expertise in providing advisory services and in training managers on those critical functions.

A DATA BASE ON NARS WORLDWIDE

The end of 1987 found ISNAR near the brink of satisfying a need recognized since its beginnings: the need for a comprehensive, accurate, consistent, and usable data base on national agricultural research systems worldwide. Parts of the work were in final verification at the end of 1987, with publication anticipated in the second half of 1988. Some other interpretive and supporting activities were still under development.

We have needed a thorough and accurate global data base on national agricultural research systems throughout the world. We have needed it for our own studies, and our clients have needed it for norms and comparisons by which to evaluate their own situations in relation to personnel, training, levels of support, and others.

ISNAR's first collaborative publishing effort, with IFPRI in 1981, helped to give wide access to what was then the most current information on agricultural research expenditures. And we continued to devote direct efforts of our own and worked with others to get better data.

In 1984 we launched our research effort to gather the expanded and updated global data base we need. A grant by the Italian government supplemented

ISNAR's core support for the project. IFARD (International Federation of Agricultural Research Systems for Development) and AOAD (the Arab Organization for Agricultural Development) associated themselves with the first survey, which was done by mail. In 1987 a follow-up survey was undertaken, with Asian Development Bank support, of NARS in the South Pacific. A number of other organizations, such as the World Bank and OECD, and many individuals from agencies and universities worldwide, have assisted our efforts.

The mail survey underscored the need for data, as well as problems in getting them. Many NARS reported back that they had difficulty in trying to supply some of the information sought -- but they, too, needed it. The major effort of the ISNAR team was then to develop a data base that incorporated survey returns with data from many other sources. They examined more than 800 sources. Each figure was documented and validated to the fullest extent possible. They made a concerted attempt to assure that the time series data on human resources and expenditures is compatible over time and across countries.

In late 1987, country data, sources, and supporting documentation was referred

back to more than 100 countries for review and comment before they go into the final data base. The second half of 1988 should see this part, called the indicator series, enter distribution.

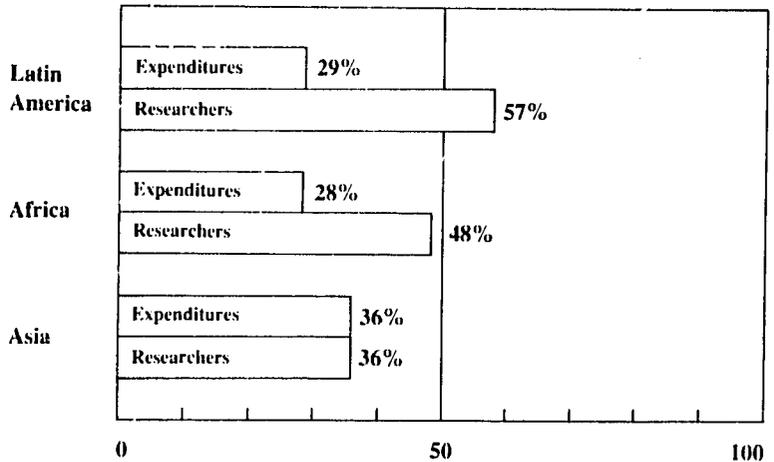
We expect the data base to be used by NARS leaders, donors, and scholars with varied interests. We have attempted to generate data in ways that should prove to be easy for our clients and others to use. For example, we have derived expenditures in current and constant (1980) local currencies, as well as in constant (1980) U.S. dollars. We plan to publish the data in a format compatible with FAO, IMF, and World Bank data on agricultural sectors.

We expect this indicator series to become the standard historical reference on worldwide agricultural research inputs for the 25 years it covers, 1960-85.

A second, later, volume from the data base project will enlarge its usefulness by establishing a relevant policy context for these data. During 1987 seven outside authors accepted assignments to add to the analyses by ISNAR staff. A 12-chapter book will look into a variety of agricultural research policy issues, utilizing the data base.

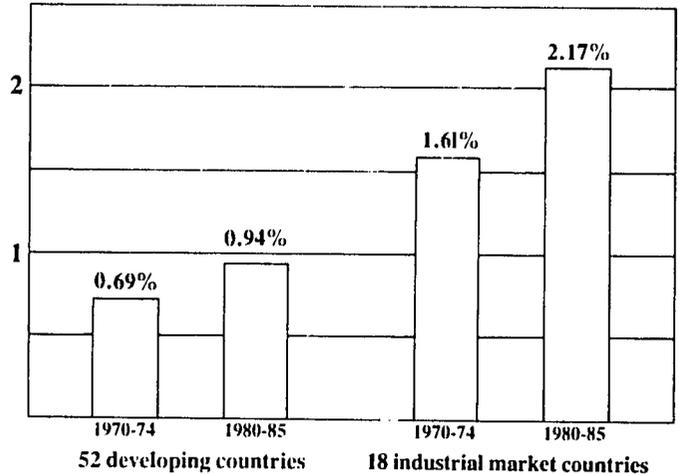
Graphic examples of data from ISNAR's Indicator Series -- ISNAR global data base

The decade 1975-85 brought emphasis on building up research staffs in Latin American and African NARS; numbers increased at rates well ahead of growth in total expenditures for agricultural research. Many Asian NARS had begun staff growth earlier, and in this decade growth rates were the same for both researchers and expenditures.



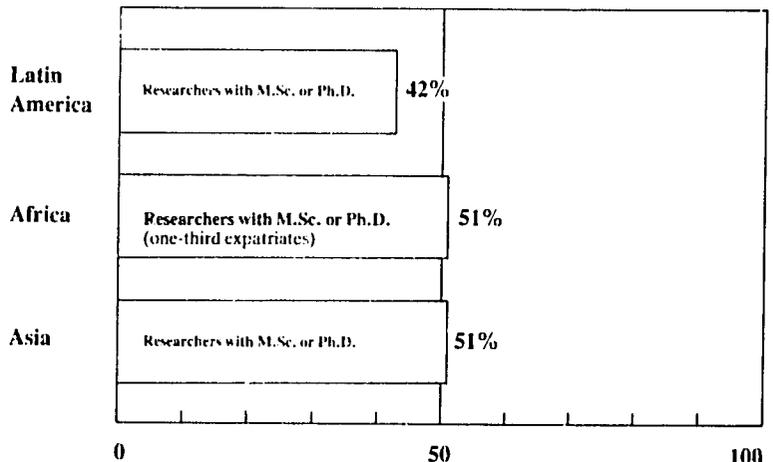
Average growth rates from 1975-79 to 1980-85 in expenditures for agricultural research and number of researchers in 46 developing countries.

Average spending for agricultural research in 52 developing countries was still below 1 percent of national agricultural gross development product value in the period 1980-85, after increasing more than one-third from the years 1970-74. At almost the same rate of increase, the average in 18 industrial market countries had reached nearly 2.2 percent of A.GDP by the latter period.



Average spending for agricultural research as percent of agricultural gross development product in two periods for 52 developing countries and 18 industrial market countries.

Most of the fundamental training for agricultural research skills takes place in postgraduate education. Data from 78 developing countries showed these percentages of NARS research staffs to hold M.Sc. or Ph.D. degrees, as an average for the years 1980-85. Of 51 percent with a research degree in African NARS, nearly one-third were expatriates.



Percent of agricultural researchers with M.Sc. or Ph.D. degree in 78 developing countries -- averages for 1980-85.

ON-FARM, CLIENT-ORIENTED RESEARCH

The acronym OFCOR stands for five words that describe one research approach to building a knowledge bridge from science to farmers' practice in an agricultural system. "On-farm, client-oriented research" is both a philosophy and a particular way of planning and doing agricultural research. It complements and integrates station-based research.

The key asset of OFCOR is its diagnosis of problems at the farm level. Then the scientists seek to design technology that deals with the farmers' problems.

The on-farm results show how a given technology performs under those farm situations, away from the more tightly controlled experiment station conditions. Researchers and farmers can jointly evaluate the results. If problems in the technology appear, they can work together with the station-based scientists on needed adaptations.

▼ Practitioners of on-farm research met in a workshop at ISNAR with staff who were studying organization and management of on-farm research. They reviewed findings of the ISNAR OFCOR study in plenary and small-group sessions. Much literature from the project will come out in 1988.

At the end of 1987, ISNAR was two years into its two-and-a-half years of study on organization and management of OFCOR in nine NARSS.

This subject came onto ISNAR's agenda because experience has shown that it takes effective management to build a strong bridge to integrate on-farm and on-station research. The OFCOR project seeks insights that help a NARS manager design his/her strategy to meet that management challenge.

By the end of 1987, with most analyses of nine case studies completed, findings were emerging. ISNAR's project leader, with case study researchers, as well as managers of OFCOR programs, had previewed results with NARS managers attending the International Workshop on Agricultural Research Management.

Nine Major Themes

Comparative analyses focused on strengths and weaknesses of various ways to organize OFCOR. Nine themes were identified. They deal with such areas as management of programs and resources, relations with donors and external knowledge sources, farmer collaboration, issues in institutional development, and the numerous linkages between OFCOR and other institutions. A synthesis paper will be

issued on each of these nine themes, drawing on findings in the case studies.

An accompanying short article (at right) gives an example of findings on management implications of one of nine analytical themes -- managing the integration of OFCOR and station-based research. It suggests the large amount of information coming from this study.

Add to World Literature

The coming year will bring a significant ISNAR contribution to the world literature on on-farm, client-oriented research, including:

- * Nine case study reports -- each analyzing integration of OFCOR in a specific national system: the institutional context and processes; relating how OFCOR was developed, organized, and managed -- and how it was integrated into the overall process of research in the country. Each also takes a critical look at the related organizational and management issues in the country.
- * Nine guidelines papers for research managers, based on the themes, or lessons, coming from comparative analyses across the whole range of case studies.
- * Training materials that deal with organizing and managing OFCOR within a NARS.

Considerable demand exists -- evidenced by many calls and letters asking for findings. Working papers will be published in 1988. A workshop has been proposed for 1988, and a book of overall synthesis might result.

A significant share of ISNAR's research resources has been focused on this project for more than two years. The Government of Italy, through financial grants, and the Rockefeller Foundation, U.S.A., through assignment of a research fellow who served as project coordinator, provided enabling support.



Key Findings on the Integration Theme

Managers have expressed particular interest in the theme, organization and management of the integration of on-farm, client-oriented research and research on experiment stations. Here are some of the highlights ISNAR researchers synthesized from information gathered on this one specific theme:

- * OFCOR can perform three functions in relation to experiment station research: service - screening, testing, and evaluating technologies on farms; adaptive research -- diagnosing key constraints at the farm level and adjusting or changing technology to deal with them; and feedback -- helping station researchers to know more about technical and managerial problems of farmers when they set their priorities and design experiments.
- * Experiment station research can perform two functions in relation to OFCOR work: carry out applied research that leads to technologies which OFCOR may test; provide support in terms of technical and specialized knowledge to back up OFCOR staff in the field -- helping solve problems and interpreting results.
- * ISNAR researchers and NARS leaders who talked about findings at the 1987 workshop agreed that OFCOR serves best when it's seen realistically as a strategy (complementing station research) that requires time to produce desired effects on farm production and when the client-oriented philosophy guides a total NARS effort.
- * Based on nine country case studies -- three each in Latin America, Asia, and Africa -- we can say that NARSS have succeeded best in implementing the adaptive research function of OFCOR. They have been least successful in implementing the feedback and support functions. Their service-function relationships have varied: station researchers have seen service as a responsibility of OFCOR, but OFCOR staff have often seen that as their least desirable function and have not always taken it up. The studies have shown clearly that desired results flow from well-managed collaboration and interactions between researchers of OFCOR and those on stations -- support and feedback functions are most dependent on collaboration. However, collaboration doesn't

happen without costs of some kind, and researchers seldom assume these costs voluntarily. The ISNAR research team concludes that a management strategy must define clear policy for interaction plus set up mechanisms for collaboration -- if the manager wants these functions fully implemented.

A manager's decision-making environment affects how the on-farm and on-station research efforts can be integrated. ISNAR researchers identified 11 elements as important in defining that decision environment.

- * National development policy -- especially the priority given to assisting resource-poor farmers.
- * Stability of the NARS as an institution, especially tenure of senior research managers -- which affects how consistently critical management functions are carried out.
- * Senior research managers' commitment to on-farm research
- * Financial resource base of the NARS -- especially as it affects competition between station-based and on-farm research.
- * Number and type of staff available -- influencing division of responsibility and labor between the two types of research.
- * How research is organized -- whether by commodity, discipline, or geographic elements.
- * The maturity and capacity of experiment station research -- which affects the technology available for on-farm trials; also, it affects how station scientists view needs for on-farm research.
- * A tradition for on-farm research within the NARS -- which affects how station scientists perceive OFCOR validity and appropriateness as a research strategy.
- * Degree of centralization in the research structure -- a highly centralized system depends more on on-farm research to get agroecological coverage; at the same time, communication and integration costs may be higher.
- * Agroecological complexity -- which affects the importance of adaptive research and feedback needs.
- * Capacity of extension services -- which affects how much is expected from research in testing and demonstrating technology.

While many of these conditions set

boundaries on the actions of NARS managers, they have some room to maneuver. The manager's challenge, then, is to find the maneuvering room and to develop a realistic strategy of managing to encourage strong and productive integration of OFCOR and station-based research.

The OFCOR research project identified seven conditions that managers can take as objectives for a strategy to strengthen this integration:

- * Researchers, whether working on-farm or at a station, share an applied, farmer-oriented perspective toward their research.
- * Both sets of researchers share an understanding that OFCOR complements station research; it is not a competing strategy.
- * Both agree on the functions that each should perform as they collaborate.
- * OFCOR has scientific credibility among station-based researchers.
- * Scientists see that benefits of their collaboration -- in material, professional, and intellectual rewards -- outweigh the personal costs.
- * The system allocates enough human and financial resources to support collaboration between station and OFCOR research activities.
- * There are opportunities for both formal and informal interactions.

This brings the strategy to the point where the manager needs mechanisms to gain the conditions needed for effective collaboration. Three types of mechanisms were found in the OFCOR study, mechanisms that:

- * create incentives to stimulate and reward collaboration;
- * mobilize resources that support communication, coordination, and collaboration;
- * provide opportunities for formal and informal interaction.

The OFCOR research team began a paper in 1987 on specific management mechanisms to improve this integration. It deals with such means as, (a) joint diagnosis and setting priorities; (b) joint programming and review; (c) joint field visits; and (d) organization of collaborative research projects. All these mechanisms had been used successfully by managers in some of the case studies.

STUDY LINKAGE OF RESEARCH AND TRANSFER OF TECHNOLOGY

National agricultural research system managers talk of their concern about how to link research with other systems to be sure the technology from their research reaches users. Many others share that concern -- including policymakers in the managers' own countries and leaders in the international donor community.

At our 1986 workshop for agricultural research managers, in The Hague, NARS managers signalled the importance of this critical management factor. One of our working groups had already begun to give it special attention. The 1987 management workshop group confirmed the ISNAR decision to make this a priority theme. Plans were by then well-established for a major ISNAR research effort.

Three-year Project

A three-year research project was designed and started in 1987. It focuses on ways to strengthen the linkages between agricultural research and systems that transfer the technology, improving the relevance of research efforts by the flow of information about farmers' needs to the research system and also improving the transfer of technology to agricultural producers and other users of agricultural innovations.

Funding that enabled this special project comes from grants by the governments of Italy and the Federal Republic of Germany. The Rockefeller Foundation supports it through assignment of a research fellow, who serves as project coordinator.

NARS managers reviewed the conceptual framework of the project as laid out in a paper at the 1987 management workshop. Their discussion helped sharpen key issues as seen by managers in the research systems.

The research approach draws upon our experiences in the on-farm, client-oriented research project. Several methodologies, successful in the OFCOR work, will be applied in this study. These include the use of comparative case studies, collaboration

with selected NARS, use of case-study coordinators, and an international advisory group.

Goal is Tools to Help Managers

In line with our strategy, the research ultimately aims toward development of management tools. We expect the work to help, first, in developing guidelines that managers can use to strengthen the link between research and transfer of technology. Various products should come from the study:

- * Country case studies and a number of less intensive country analyses. The case reports will describe a range of organizational and management procedures currently in use. The researchers will appraise results, weaknesses, strengths, and lessons to be drawn from the cases. We plan to do seven case studies. Four other desk studies will expand the data base by drawing on recent reports on research-transfer linkages in People's Republic of China, Taiwan, Kenya, and Fiji.
- * A summary report of the study's findings, with guidelines for NARS and managers on organizing and managing the research-transfer linkage.
- * A series of ISNAR working papers that deal with the main issues associated with the linkages. Scholars from various developing and developed countries, plus several ISNAR staff, have been commissioned to submit papers.
- * A published review of current literature on this subject.
- * A policy workshop based on key findings.
- * A number of developing-country researchers experienced in studying research-technology transfer linkages. They will gain that experience in carrying out country case studies in collaboration with ISNAR project staff.

An advisory service activity within ISNAR last year actually served to confirm the need for such a study and advanced our thinking on approaches. That came when Chile asked ISNAR to look into links between technology

Colombia first case study in research-extension linkage project

generation and transfer within INIA, its national agricultural institute. Two ISNAR staff undertook that mission: one from the advisory service program and one from research. The latter serves as coordinator of the linkages project.

Pilot Study in Colombia

This project was launched in a country pilot study in Colombia in the final months of 1987. The coordinator and three other professionals made up the study team (two came from Colombia's agricultural research institute, ICA, and one from the Netherlands agricultural ministry).

To test the case-study methodology, the group gathered data in the field and analyzed four research-transfer linkages in Colombia, involving:

- * irrigated rice production in Colombia's eastern plains (Rice Growers Federation, ICA, CIAT, private agronomists, and commercial input distributors);
- * coffee technologies in Southwest Antioquia (Coffee Growers Federation's national research center and the Federation's extension staff);
- * relations between ICA's Obonuco experiment station, technology-transfer workers, and on-farm researchers in Narino;
- * relations between ICA's research and technology-transfer programs for beans in Garzon, Huila.

Field work for the four studies was carried out in 1987, and the first segment of the Colombia pilot study reached draft form as 1987 ended. It hinted at the

richness of information to be expected from this research.

Followed Three Technologies

The study dealt with the linkage of technology generation (the research component) and technology transfer (by extensionists and others) within the Coffee Growers' Federation. It stayed within one geographic area, Southwest Antioquia. The analysis followed the development, dissemination, and adoption of three types of coffee technology there: one biological, a variety of coffee resistant to coffee rust; one mechanical, involving fumigation pumps to combat coffee diseases; and one production technology, pruning, to stimulate production by older coffee plants.

The researcher picked up each of the three technologies at its origin within the Federation's research institute, CENICAFE. He reconstructed its movement through the cycles of trial and adaptation until it was recommended as a product or procedure for the growers in Southwest Antioquia. Then he followed each through the transfer process, including relationships of researchers, trainers, communications specialists, and others in planning for introduction to producers. Finally, he followed up with producers themselves.

The payoff in knowledge and tools for NARS managers remains in the future, when much more data are gathered and analyzed. But already we can see the wide range of knowledge this service-oriented research project will provide.



◀ The farmer, the researcher, and the extensionist are key players in a nation's system for development, transfer, and adoption of appropriate farm technology. All three meet here in a farmer's field in India. The linkage between research and the transfer of technology is the focus of a new ISNAR study, started in 1987.

STUDY PRIORITY SETTING IN FOUR NARS IN ASIA

Government and public bodies, including NARS, allocate money every year for agricultural research. Their financial choices determine that some lines of work get ample funding and others get little or none. All such decisions reflect priorities; they are not often formal. Policymakers may not state their priorities in words.

However, there are formal methods for setting priorities for agricultural research, and there is growing interest in this topic among scholars scattered throughout the world. Some methods are quantitative, using mathematical formulas; some are simpler, using check lists and scoring methods to make thinking more conscious and perhaps more structured.

None of the formal methods promises to replace experience and judgment.

However, the methods can complement experience and intuition by: consciously identifying a wider set of variables than a person may keep actively in mind; noting the ways in which variables relate to each other; and, in some systems, putting weights or values on those variables.

ISNAR brought out a working paper in 1987 that explored these methods. (Working Paper No. 7, listed with 1987 publications, p. 38).

Priorities Regional Project

The Australian Centre for International Agricultural Research (ACIAR) and ISNAR formulated a project in 1987 in which they will study the ways certain Asian NARS set their priorities. Four countries will collaborate: Indonesia, Papua New Guinea, Philippines, and Thailand.

Over a three-year period, project workers -- many of whom are staff members within the systems under study -- will seek to adapt formal methods and apply the methods to their situations.

The goals are, first, to generate methods that can be used by the NARS; second, to apply those methods and get them established within the systems.

ACIAR made a major core grant to the

project, and ISNAR will contribute significant resources in personnel, travel, and computer-support costs. ACTAR also provides a grant to cover in-country costs in Papua New Guinea. The Federal Republic of Germany will support ISNAR's work on the project in Indonesia.

The supporting network for country-level projects includes scholars from Australian and United States universities, as well as from agencies in the participating countries. One U.S. scientist will collaborate with ISNAR and ACTAR to backstop the project in methodology review and development. He will devote nearly a year of time over the course of the project.

Six main products should come from the project:

- * Review and critical evaluation of the literature on setting research priorities. The goal here is to put available methodologies into a consistent conceptual framework. Such a treatment may help managers see how to implement approaches under various constraints on the priority-setting process within their country situation.
- * Collection methods for primary and secondary data to implement the priority-setting procedures at a country level. Sample questionnaires will be developed and used.
- * Formal decision tools, developed in collaboration with the four countries, which can guide others in thinking about setting priorities.
- * A series of project papers that provide a forum for exchange of ideas and developments among the project collaborators.
- * A workshop to make cross-country comparisons in Asia before final reports are issued on the test countries.
- * Resource-allocation methodologies that can be used by different practitioners under varied circumstances, and which can be tested further to ensure that they are readily usable.

Next Steps

Six other countries will collaborate in case studies. In 1988, in-country researchers and case-study coordinators will be identified, and field work will begin in the selected countries.

The project has already included individual consultations with international authorities on technology generation and transfer linkages. More will be carried through. Some of these experts will join ISNAR staff as part of a continuing project working group; each member devoting as much as 120 to 180 days of professional time over the next two years.

A small board of senior experts will be formed into an official advisory group. They will take part over the remaining life of the project. An early activity for the group will be a workshop in 1988 to advise on case-study methodology and country selection.

BLENDING THEORY AND FIELD EXPERIENCE

Working groups combine field experience with social sciences to develop management tools

▼ ISNAR working groups bring together staff from all programs to focus their special interests on critical management functions of a NARS. The Human Resources Working Group launched a research-based effort to develop tools managers can use in dealing with human resources issues. These members have contributed to a working paper about human resources management in a NARS.

ISNAR's output -- its experience-based and research-based service, tested management tools, and training -- calls for input competencies that go beyond individual capacities. Functional skills in three areas need to be blended to make the ISNAR product. These include: experience in developing countries; understanding of agricultural research; and advanced technical knowledge in research management.

ISNAR's work -- and therefore its need for expertise -- is in four regions of the world, with close continuing relationships with more than 30 different and unique national agricultural research systems. The work relates to a long list of physical, biological, social, and behavioral sciences. In terms of management practices, the ISNAR strategy and program identify 12 critical functions within a NARS. No one could keep on top of that list of possible needs of clients.

The "working group" was seen as a response to this wide range of special needs. Working groups provide vehicles in ISNAR to focus different experiences and technical specialties onto specific targets. Members of these formally constituted groups are largely self-selected; they come together on themes of common interest. Through the interactions of those who share a thematic interest, the group develops in-house expertise on its assigned subject.

As a creative unit, the working group contributes to ISNAR in several ways: it develops certain areas of the research management discipline; it builds a body of relevant knowledge; it integrates discipline representatives into focused teams; it brings research to bear on needs in advisory service and training; and it becomes a window to the sciences and scholars worldwide on which research management draws.

Working groups have been defined around critical factors of NARS management. The tempo of their activity picked up in 1987. We report briefly here on three, which serve as examples.

Human Resources

The working group on Development and Management of Human Resources provides an example of program development and progress. Enhanced by interests and talents of two research fellows who joined during the year, this group set out to develop tools to help NARS managers deal with human resources.

An early goal was to identify the minimum data needed for effective management of human resources in a NARS. ISNAR can make good use of a framework to get consistent human resources data when it works with a NARS to identify constraints. The minimum data set -- covering such factors as numbers of personnel, their training, specialization, work assignments (whether administration, management, research, etc.), and many others -- could provide the ingredients for analysis.

Such a data set would interest many beyond ISNAR staff. Some NARS managers would find it useful as a basis for comparisons of human resources in their system with those in other, possibly similar, situations.

This working group committed itself to planning and conducting an international users' workshop on human resources in national agricultural research systems -- to be held in the final quarter of 1988. The conference of selected NARS personnel with ISNAR staff will act in several ways. Participants



will receive and evaluate tools that the group's work has developed. They will also have a direct hand in helping to create tools and training materials.

This group has also begun work on an overview paper on human resources management in national agricultural research systems.

Priority Setting and Resource Allocation

Demand for help in setting priorities and allocating research resources is widespread and increasing among our NARS clients. A working group has taken up this critical factor. It aims to produce materials that can help NARS managers deal with this complex but important matter.

Two research fellows, both with professional ties to two U.S. universities at which this management factor is also under study, collaborated to produce an ISNAR working paper. (The working paper is listed with 1987 ISNAR publications, p. 33.) The paper offers a brief look into current thinking on approaches to setting priorities for agricultural research, with short reports on major formal methods.

The same topic was presented as an issues paper in the 1987 International Workshop on Agricultural Research Management.

Other members of the working group took on the task of developing a guidelines paper, one that should help policymakers and NARS managers consider the potential value to them of some of the formal methods available. The working group intends to provide materials that NARS staffs could use in these more structured methods of setting priorities in their own system.

Organizational Structure in NARS

The Organizational Structure working group seeks to develop an analytical framework plus a cross-national base of information about organization and structure in NARS. Their aim is to gather a source of comparative information that can help NARS managers deal with issues in this area of management.

Other goals of the group include improving in-house diagnostic ability and advisory service on structure and

organization issues; also to develop management approaches and tools that can be shared with senior managers through training.

Over its first seven years, ISNAR carried out diagnostic missions in more than 30 NARS. Its reviewing staff thus represents a notable body of knowledge and experience gathered in the field, which this working group is analyzing. The group has an additional information base of three major in-house papers from the last three years, plus a number of consultants' efforts. This group is looking at organizational issues at national, institutional, and field levels of implementation. They have defined some 11 key issues of NARS organization and structure.

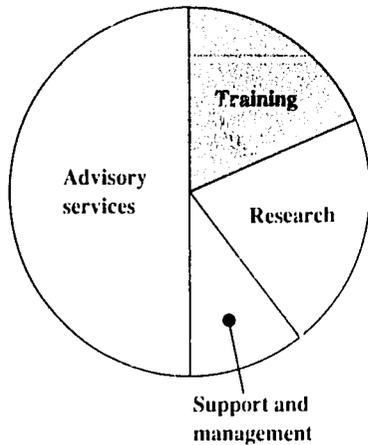
The group anticipates probable gaps in knowledge and will design field research on specific organizational issues to fill those gaps.

Looking into the longer-run future -- up to two years ahead -- the group foresees a workshop. Here, NARS managers and advisers would join to validate lessons of experience and to transform knowledge into better organizational performance in NARS.



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TRAINING 1987



Allocation of resources to ISNAR programs

In the larger scheme and strategy of ISNAR, training adds strength to NARS by helping managers further develop their skills in research policy, organization, and management.

In 1987, ISNAR continued its worldwide program of training in agricultural research management. That included (as described below): two international, three regional, and ten national workshops. Also, 1987 brought the first visitors to headquarters for what we call in-house training (seven persons spent a total of 23 person-weeks in individual study in The Hague).

Special Effort in Sub-Saharan Africa

The year also brought an increase in ISNAR staff and resources devoted to a single subregional grouping, nine countries of southern Africa. Special project funding came from Canada (CIDA), United Kingdom (ODA), and United States (USAID). New resources were added as ISNAR geared up for the

massive commitment it had made in late 1986 to provide training to countries in the region served by SACCAR, the Southern African Centre for Cooperation in Agricultural Research. (The special item, p. 28, gives more detail on this program.)

ISNAR focuses its effort in the new southern Africa project specifically on training in agricultural research management. NARS managers from the member countries helped set up goals for the program in a meeting sponsored by SACCAR late in 1986.

Three training events took place in 1987: national workshops in Malawi, Tanzania, and Zambia. These were the first of a series of four national workshops in each of these countries; a fourth country, Zimbabwe, will also be served with four national training events. Regional workshops for research managers will be offered in two clusters of other nations, plus one region-wide workshop for senior research managers and policymakers.

GLOBAL WORKSHOPS

NARS leaders came to The Hague in 1987 for our two global workshops. In each they filled a dual role, adding to their own knowledge and skills while helping sharpen ISNAR's knowledge base on agricultural research management.

Research Management Workshop

ISNAR's annual International

◀ ISNAR took on the role as executing agency for the research management training activity of SACCAR in the southern Africa countries. In addition to an aggressive program of training for research managers, the program will help the region develop and maintain its own training capacity.

Workshop on Agricultural Research Management brought 28 leaders from NARS, worldwide. Twelve presented invited papers. An equal number of ISNAR staff took part as well; they contributed 15 papers.

Five broad issues areas were developed: agricultural research policy and planning; linkage issues in research organizations; improving management processes; management of human and physical resources; and structural issues in large national research systems.

Proceedings of the workshop came out the following month, with papers, reports of discussions, and conclusions.

On-farm Research Workshop

The second workshop focused on managing on-farm, client-oriented research (OFCOR). Study materials for the workshop came from ISNAR's nine country case studies of OFCOR. The researchers shared their case-study drafts and offered their first efforts to synthesize findings. They emphasized lessons to be found on how effectively to launch and manage programs of on-farm, client-oriented research.

National practitioners in OFCOR, NARS managers, and ISNAR staff took part in the conference. In plenary and work-group sessions they reviewed papers on management guidelines, advising the study coordinators of ways to strengthen analytical approaches.

Cooperating for Research Management Training in Southern Africa

A special four-year project involving ISNAR in research management training in nine southern African nations began functioning in 1987. Starting this year and continuing for three more, some 19 training events will add strength to research management in the NARS of each country.

Origins of this project go back at least to 1980, when nine countries of the region launched SADCC: Southern African Development Coordination Conference. The countries are Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Zambia, and Zimbabwe. They came together to work closely with international donors active in that region.

SADCC subsequently created an organization to deal with agricultural research networking and coordination in the region. That is SACCAR, Southern African Centre for Cooperation in Agricultural Research. From headquarters in Botswana, SACCAR operates 11 agricultural research networks -- many in collaboration with international groups, including CIAT, ICRISAT, and CIMMYT among CGIAR centers. ISNAR is the executing agency for the agricultural research training project.

The collaboration of ISNAR and SACCAR was worked out in 1986-87. This training project pursues five main objectives:

- * to foster human resource

development in agricultural research management;

- * to strengthen capacity of national research leaders in planning and managing research that is relevant to national development goals;
- * to build management skills of middle-level research administrators;
- * to build within the region capacity for sustained management training for agricultural research;
- * to reinforce the exchange of information on issues in management of national and regional agricultural research programs.

Nineteen Events Programmed

For the course of SACCAR/ISNAR collaboration, 19 training events have been programmed. Three took place in 1987: national training workshops in Malawi, Tanzania, and Zambia. These were the first of a series of four national workshops in each of those countries; a fourth, Zimbabwe, will also be served with four national training events. One regional workshop will be developed for research managers in Mozambique and Angola, the two Portuguese-speaking countries among the nine in SACCAR. A second regional event will be held jointly for research managers of the systems in Botswana, Lesotho, and Swaziland. One additional regional workshop will be held for senior research managers and policymakers.

New resources provided to ISNAR for this project include one senior staff post, the project coordinator, plus funds to

use consultants when needed to develop training materials and to conduct training. Other ISNAR staff will contribute to materials and training, as will the manpower and training officer of SACCAR. Training resource people in the region will be drawn into the programs; this will help the region develop and maintain its own research management training capabilities -- one of the main objectives of the project.

International Support

International support for this large effort comes from a number of sources: CIDA (Canadian International Development Agency) provides the largest component for national and regional research management training workshops and the policy seminars. ODA (Overseas Development Administration of the U.K.) also supports these components for each of the four years. USAID (the U. S. Agency for International Development) finances the coordinator post at ISNAR plus costs of the ISNAR training staff's work with the project.

A Continuation of Activity

For ISNAR, this project builds on a close relationship with research management training for sub-Saharan Africa that had existed since the CDA/ISNAR initiatives of 1982-86. With funding then from USAID and ODA, that project identified training needs, developed training materials, staged seven training events, and cooperated with five African management training institutes.

REGIONAL WORKSHOPS

ISNAR had roles in three regional research management workshops in 1987, with different levels of sponsorship and training input in each.

South Pacific

A two-week workshop brought participants from 11 Pacific island nations to Alafua, Western Samoa, in October. Fifteen policy-level NARS leaders took part in one week; 20 middle-level managers participated in both weeks.

ISNAR was co-organizer of the program, along with IRETA (Institute for Research, Education and Training in Agriculture of the University of the South Pacific). Three senior staff served as primary trainers while, in all, 14 resource persons contributed. Major financial support was provided by the Asian Development Bank and by the European Economic Community's Technical Centre for Agricultural and Rural Cooperation. The Australian Centre for International Agricultural Research also played a cooperating role.

The Southern Cone

ISNAR served mainly as a catalyst in its role in a research management workshop for the Cono Sur (the southern cone countries of South America). Forty-eight South Americans took part in the workshop, held in Mar del Plata, Argentina in October.

The Food and Agriculture Organization of the United Nations (FAO) and INTA, the Argentinian agricultural research institute, were prime sponsors, with cooperation of ISNAR and IICA (InterAmerican Institute for Cooperation in Agriculture).

Though planned as a workshop for about 20 participants from Southern Cone nations, the event attracted leaders from 11 countries -- including two from as far away as Mexico.

ISNAR's earlier training and advisory activities in the region had helped develop nationals who played major parts in this event. Two ISNAR staff

made presentations at the workshop. Most presenters, however, were citizens of the countries taking part. Several had been in previous ISNAR training events.

West Asia-North Africa

ISNAR first participated in a conference of AARINENA (Association of Agricultural Research Institutions in the Near East and North Africa) in 1983. This third collaboration, again with FAO and ICARDA (International Center for Agricultural Research in the Dry Areas), took place in Cyprus in December.

Part of the 1987 conference -- three half-day sessions -- featured ISNAR staff on research management topics requested by the group's planning committee: monitoring and evaluation and planning and program development.

Eighteen leaders from 13 countries of the region took part. Thirteen other participants came from research or development organizations: the International Potato Center; International Development Research Centre (Canada); Arab Fund for Social and Economic Development; and the Arab Centre for Study of Arid Zones and Drylands.

NATIONAL WORKSHOPS

NARS demand growing for national training events

◀ Twenty-eight NARS leaders took part in the 1987 research management workshop in The Hague. This interaction plays an important role in evaluating ideas and proposals on agricultural research management.

As ISNAR continues its work with a country, the NARS leaders often identify their training needs more precisely. This tends to create an increasing demand for training tailored to that one NARS. Thus the number and variety of national training events expand. Ten national programs were on the ISNAR agenda in 1987.

Three national workshops were staged under the SACCAR/ISNAR program; five others were also in Africa; one was in Asia (Indonesia); and one was in the Near East (Syria).

Burkina Faso

Seventeen Burkinabe middle managers took part in an ISNAR workshop on oral and written communication. Their planning and writing assignments stressed project and annual reports.

Trainers for the five-day program were: the ISNAR resident research management adviser; an ISNAR consultant; and a Cameroonian who had previously developed skills in a train-the-trainer program that ISNAR conducted for Cameroon. We expect this kind of regional cooperation to grow.

Cameroon

ISNAR's first train-the-trainer effort was held in Cameroon in 1987 for three trainees. The focus was on oral and written communication, important skills for the trainer and the research manager. The training goal was to qualify a group within Cameroon, who would then provide training through the rest of the systems. Fourteen persons were later trained by those three, working with ISNAR staff. One of the three later



▲ Two Zambian NARS staff work on a training exercise in a SACCAR/ISNAR workshop. Nineteen training events are scheduled over a four-year period in this collaboration, including three more in Zambia, where one workshop was held in 1987.

served as a trainer in a Burkina Faso workshop.

The Gambia

Fourteen middle managers trained on computerized program budgeting systems (PBS) at a workshop in The Gambia in April 1987. They were joined by seven staff from the USAID/Gambia Agricultural Research Development project in the country.

Program budgeting system (PBS) was the training focus. Participants learned that it was necessary to begin on a small scale and adapt systems for local use. They gained experience working with computer software, creating project budgets, and producing data sheets for actual projects in their system.

Indonesia

A workshop for 37 middle managers in Indonesia's Agency for Agricultural Research and Development (AARD) focused on a computerized management information system (MIS). Participants were key persons in a special AARD/ISNAR project to develop an MIS based on existing data base software for microcomputers. USAID funds help support this project.

Kenya

A research management workshop in Kenya in 1987 involved 28 managers of regional research stations. These senior personnel manage interdisciplinary, systems-oriented research programs and regional station facilities.

In the workshop they concentrated on management principles applied to planning and programming agricultural research. The ISNAR training event was held at Egerton College. It was the first of what will be a series of research management training programs with which ISNAR will be involved in Kenya. Funding by Rockefeller Foundation supported this workshop, which related to its work there using household-level studies to help plan for farmers' needs.

Malawi

Thirty-four Malawian middle managers took part in this first of four national research management workshops to be staged under the SACCAR/ISNAR project.

Sudan

Training in Sudan was keyed to the ATMS (agricultural technology management system) analysis carried out there in 1987. A core group of about 60 senior managers took part in a workshop on planning and programming research. Many more persons attended parts relevant to their work, but not all, giving a total participation of 94.

Syria

Thirty-nine senior research managers and policymakers took part in a national workshop in Syria. One national agency, the Agricultural Scientific Research Directorate (ASRD), and one international agency, Canada's IDRC, joined ISNAR as sponsors of the event. ICARDA provided resource persons, as did two regional organizations: AOAD (Arab Organization for Agricultural Development) and ACSAD (Arab Centre for Study of Arid Zones and Drylands).

Much of the workshop dealt with topics presented by ISNAR staff, including: setting priorities and allocating resources; program budgeting system using microcomputers; monitoring and evaluation; and linkages of research with policymakers, the transfer system, end users, and knowledge sources.

The workshop participants discussed and agreed upon a series of recommendations to ASRD, dealing with organizational structure, research strategy, linkages, socioeconomic research units, and research program formulation and budgeting. In follow-up to these recommendations, a Syrian scientist came to ISNAR headquarters for in-house work.

Tanzania

The first research management workshop in its SACCAR/ISNAR-sponsored series involved 20 middle managers.

Zambia

Thirty-two middle managers of the Zambian NARS inaugurated their country's training under the SACCAR/ISNAR program on agricultural research management.

IN-HOUSE TRAINING

The ISNAR strategy paper identified in-house training as a useful method of support to advisory service activities. Seven persons from five countries spent a total of 23 person-weeks in 1987 focusing on specific needs of their research systems.

The in-house aspect refers in part to activity at ISNAR headquarters; the other aspect is that the training is largely one-to-one, often involving members of the staff from one, two, or all three ISNAR program areas.

Jordan

A Jordanian agriculture faculty dean devoted his week at ISNAR to study of adoption of agricultural technology.

Morocco

The inspector general and deputy from the Moroccan INRA pursued three areas of work at ISNAR: they devoted time to evaluation of systems and institutes; became familiar with data base management; and set up a human resources administrative data base for their institute. With a start from an ISNAR specialist, they did their own work on the computers.

Sudan

Sudan sent two high-ranking staff on in-house missions with ISNAR in 1987. The Director of the Agricultural Research, Extension and Training Project focused on identification of training needs during his three weeks at ISNAR. The Deputy Director of Sudan's Agricultural Research Council called on ISNAR expertise as he developed a coding manual and data base to computerize data on objectives, resources, facilities, and programs in Sudanese agricultural research.



▲ A workshop in Syria on agricultural research management was opened by two high-ranking Syrian officials and representatives of two international sponsors involved: from left are the Middle East representative of Canada's IDRC, Syria's Minister of Agriculture, the Deputy Director General of ISNAR, and the Director of the Agricultural Scientific Research Directorate.

Syria

As one follow-up of the Syrian national training workshop, one scientist spent three weeks at ISNAR. His primary goal was to develop a coding manual needed for a program budgeting system for agricultural research in Syria. The manual provides for coding programs, research objectives, and resources within the Syrian NARS.

Uganda

A Ugandan is both contributing and learning in his in-house program with ISNAR. He is applying ATMS methods (agricultural technology management system) developed at ISNAR in his university-based research. ISNAR will gain from his further testing of the approach; he is using it to compare evolution of three East African states.

TRAINING MATERIALS

Development of training materials on agricultural research management has been an area of emphasis since we began to formulate an ISNAR training program in 1981. One goal is to have materials we can use in our own training activities. At the same time, we want to increase the supply of materials for effective training on research management, materials that our co-trainers can use. Our goals are for materials that apply widely and which can be adapted to specific situations. We make them available for use by other institutions in this field.

To date, ISNAR staff and consultants have written more than 60 cases on

agricultural research management topics, and all are available to research management training institutions. One unit of 14 cases was brought together last year to be published in 1988.

The ISNAR training group has also moved aggressively to use motion pictures and videotapes. We take several approaches with these audiovisual media. We have obtained commercial productions that effectively cover certain topics needed in our training programs. With our own video equipment we have recorded for further use and dissemination some of the best training inputs brought to our courses by consultants and in-country trainers. Also, we can capture presentations of ISNAR staff on tape; then their specialized knowledge can be shared with audiovisual impact in widely separated places without requiring travel and personal presence.

Working Groups Contribute

For many of the core topics on agricultural research management, we find no existing training materials. Here we are drawing on ISNAR working groups as sources. In some cases they gather the basic information and carry through all the way to actual training materials; in some cases, trainers and consultants make the final adaptation and create the final pedagogical materials. As the pace of working group activity increases, the next several years should bring a surge in materials for training.

The SACCAR/ISNAR project stresses training materials, along with its clear-cut aims in training. In framing the project, we stated a demanding set of criteria by which to guide preparation of

Expanding training efforts require many new teaching materials

training materials. These same criteria apply as well to materials for use throughout our training program. They include:

- * Materials should be effective when used either by trainers in workshops or in self-instruction, stressing how-to-do and teach-yourself components.
- * Materials should be based on and relate to experience of trainees, providing methods of solving realistic problems.
- * Materials should be attractive visually, in format, graphics, and illustrations.
- * Materials for use in workshops should be interactive, encouraging exchanges among trainees themselves and between trainees and trainers.
- * Materials should be empirical, based on real practices and problems in research management in NARS.

ISNAR TRAINING ACTIVITIES 1981-87

Conferences, seminars workshops, courses	Number of events	Number of participants
Global	13	500
Regional	17	790
National	<u>18</u>	<u>442</u>
Seven-year Totals	48	1,732

**1987 ACTIVITIES IN FOUR REGIONS
OF THE WORLD**

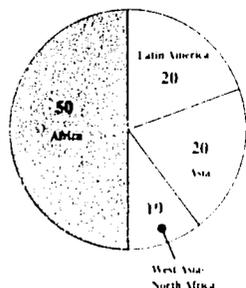


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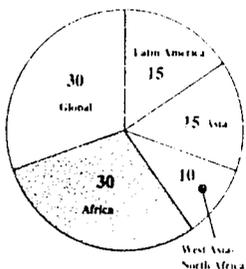


ISNAR'S 1987 ACTIVITIES IN AFRICA

Advisory services



Training



Allocation of resources to ISNAR programs

Cameroon first to use train-the-trainer approach

Burkina Faso

The ISNAR resident research management adviser continued in that role into the third quarter of the year, supporting planning and various aspects of institution-building efforts under way since 1984. Seventeen middle managers took part in oral and written communication training sponsored by ISNAR.

Cameroon

An ISNAR mission reviewed the agronomic and livestock research institutes. The country requested a resident adviser on agricultural research management for the agronomic institute, and ISNAR nominated a candidate acceptable to the national system. The study report on training needs (developed under CADA in 1984) was still being used and cited. ISNAR trained staff from the institutes to serve as trainers on selected topics.

Ethiopia

ISNAR reported back on the mission carried out late in 1986 to review the agricultural research institute. Plans were laid for in-house training and a workshop.

The Gambia

Fourteen staff of the NARS, plus seven from the GARD/USAID project, took part in the ISNAR workshop on program budgeting, leading to an adapted PBS for their system.

Kenya

A workshop in 1987 for regional research station managers introduced management principles for planning and programming research. It was the first of a series planned to emphasize development and management of systems-oriented research in regional centers of the Kenya Agricultural Research Institute. Rockefeller Foundation provides major funding.

Madagascar

An outposted staff member continued as agricultural research management adviser, helping to implement programming and budgeting. Plans were laid for ISNAR participation in a training seminar. An ISNAR staff member provided help in preparing a long-term agricultural research plan and also took part in a mission with a World Bank project-identification team.

Malawi

ISNAR conducted the first of four national workshops planned as part of the ISNAR/SACCAR training project. Thirty-four middle managers took part.

Mali

An exploratory visit was made by an ISNAR staff member, at the invitation of the Government. A system review will follow in 1988.

Niger

Report-back was made on the review of 1986. ISNAR staff helped nationals develop their long-term plan, offering a methodology that utilized in-country agricultural expertise. ISNAR staff led a seminar to launch the work.

Rwanda

An outposted ISNAR agricultural research management adviser continued to serve as a source of technical assistance in research management. An ISNAR staff member led a team reviewing farming-systems research (one of several teams working in preparation for a World Bank project); a consultant who coordinated one of the OFCOR studies in Africa also assisted in this activity.

Senegal

Cooperating with ORSTOM, an ISNAR staff member assisted in preparing a long-term national strategy statement as

introduction to Senegal's five-year agricultural research plan. A human resources study was begun. Case study work continued there in the ISNAR OFCOR project.

Tanzania

Twenty middle managers took part in the research management training workshop offered there in the ISNAR/SACCAR training project.

Uganda

ISNAR took part in a major exercise in 1987 to review means of strengthening the research system. ISNAR was involved on the task force on agricultural research, which developed medium-term plans for rehabilitation and development of the system, including the research station network.

Zaire

At the request of the State Commissioner of Higher and University Education and Scientific Research, UNDP enlisted ISNAR services to help a task force and the national institute to implement recommendations. This was the third of four planned missions, the goal of which is to evaluate areas that need further assistance.

Zambia

Thirty-two middle managers participated in their first national workshop on research management under the ISNAR/SACCAR project. Work continued on a case study in the ISNAR OFCOR project.

Zimbabwe

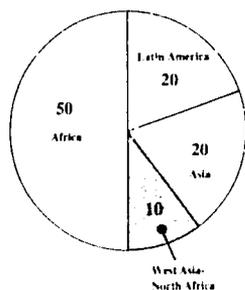
ISNAR's late-1986 system review

mission was an extension of numerous earlier collaborations on research management in Zimbabwe. A national workshop in 1987 considered the major recommendations of the review and made plans for implementation and future system-building efforts. It is one of four countries to have four national workshops programmed in the ISNAR/SACCAR project, with the first to come early in 1988. Work continued there on a case study in the ISNAR OFCOR project.

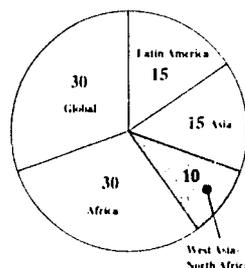
ISNAR'S 1987 ACTIVITIES IN WEST ASIA-NORTH AFRICA



Advisory services



Training



Allocation of resources by four world regions

Algeria

An ISNAR staff member made an exploratory visit at the request of the Government, to discuss agricultural research management.

Jordan

The Dean of the Faculty of Agriculture, University of Jordan, spent one week at ISNAR in a study visit, concentrating on adoption of agricultural technology.

Morocco

Collaboration continued on a computerized program budgeting system. Prototype software was provided for testing in their NARS. An ISNAR staff member assisted a team that reviewed dryland agriculture.

Sudan

ISNAR and AOAD used an adapted version of the ATMS (agricultural technology management system)

methodology to work with Sudan's analysis of its NARS. ISNAR collaborates with the Agricultural Research Corporation (ARC) of Sudan to conduct periodic workshops to train senior managers on agricultural research policy and management issues; the Agricultural Research Extension and Training Project (a World Bank project) cooperates. The first workshop was conducted in 1987 for senior administrators and policymakers. Two Sudanese made study visits to ISNAR: the Director of ARETP, who worked on identifying training needs; also a Deputy Director General of ARC, who spent three weeks on developing a coding manual and computerized data base on research activities -- objectives, resources, facilities, program-budgeting, etc.

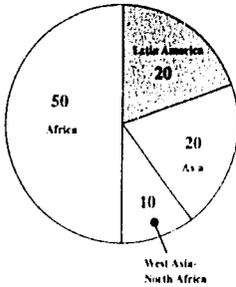
Syria

With IDRC support, a national workshop was conducted for agricultural

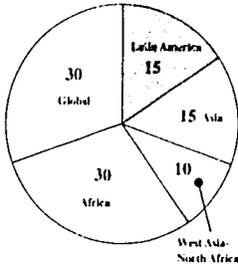
ISNAR'S 1987 ACTIVITIES IN LATIN AMERICA AND THE CARIBBEAN



Advisory services



Training



Allocation of resources to ISNAR programs

Chile

Two ISNAR staff carried out a review of the research-extension linkages within the national system, INIA. This also provided ISNAR a pre-pilot study for its series of case studies of research-technology transfer linkages.

Colombia

The pilot case study was conducted there for the ISNAR research-technology transfer linkage project. Four Colombian institutes collaborated. One ISNAR staff, one from the Netherlands Government, and two Colombian staff (from ICA) took lead roles in the study.

Costa Rica

In 1987 ISNAR responded to a request to do a second system review (the first was done in 1981), a joint mission with IICA. The team found the substance of 1981 recommendations still valid; most had been implemented by Costa Ricans on their own.

Ecuador

An exploratory mission was carried out, leading to a system review in 1988. Work continued on the case study conducted there in the ISNAR OFCOR study.

Guatemala

Work continued there on a case study in the ISNAR OFCOR research project.

Mexico

An exploratory visit was made by an ISNAR staff member, at the invitation of INIFAP. Focus was on plans for training.

Panama

Case-study work continued there in the ISNAR OFCOR research project.

Uruguay

In a visit in 1987, ISNAR provided assistance to nationals in their plan to

design and develop a semi-autonomous national institute in place of the research service currently in the agriculture ministry. Plans were made to emphasize strategic planning and program budgeting in 1987, with a seminar planned to relate to the structural changes.

The Southern Cone Workshop

A regional research management workshop was developed cooperatively by FAO, ISNAR, INTA (Argentina), and IICA. Participants from much of Latin America attended. The workshop and training content came largely from the Latin America training network (including many persons ISNAR had worked with in earlier training events). INTA staff handled all local logistics.

1987 ISNAR PUBLICATIONS

International Workshop on Agricultural Research Management. Report of a Workshop.

Annual Report 1986
Rapport Annuel 1986
Informe Anual 1986

ISNAR Newsletter No. 6
ISNAR Newsletter No. 7

Review of the Research Program Management and Manpower Planning at the Institute of Agricultural Research in Ethiopia

Programme de Développement de la Recherche Agricole en Tunisie:
Volume 1. Le Système National de Recherche Agricole - Situation Actuelle et Propositions de Réorganisation
Volume 2. Identification des Problèmes et Besoins de Recherche à Long Terme par Grands Secteurs de Production
Volume 3. Proposition d'un Programme National à Long Terme de Recherche Agricole

Working to Strengthen National Agricultural Research Systems: ISNAR and Its Strategy

Travailler au renforcement des systèmes nationaux de recherche agricole: ISNAR et sa stratégie

Trabajando para el fortalecimiento de los sistemas nacionales de investigación agrícola

Catalog of Publications/Catalogue des Publications/Catálogo de Publicaciones 1987

El Modelo de Investigación, Extensión y Educación en el Perú: Estudio de un caso. Volúmenes I, II, III, and IV

ISNAR 1988-92 Medium-term Plan

The Impact of Research on National Agricultural Development. Report of the First International Meeting of National Agricultural Research Systems and the Second IFARD Global Convention.

Working Paper No. 6: Issues in Implementing Research with a Farming Systems Perspective in NARS

Working Paper No. 7: Priority-setting Mechanisms for National Agricultural Research Systems: Present Experience and Future Needs

Working Paper No. 8: Agricultural Research in the Private Sector in Africa: The Case of Kenya

ISNAR CONSULTANTS - 1987

ISNAR remains small in staff numbers, as envisaged originally. Yet our mandate is broad in geographic and subject perspectives; requests are many from present and prospective clients. We can respond successfully only with the collaboration and assistance of many institutions and individuals. The following persons and organizations shared in our work in 1987.

J. R. Anderson, University of New England, Armidale, Australia
Participated in Pakistan agriculture research project preparation in an FAO team -- for World Bank.

Marcelino Avifa, International Council for Research in Agroforestry, Nairobi, Kenya

Assisted in the Zimbabwe case study on the organization and management of on-farm research in the Department of Research and Specialist Services.

Richard Bernsten, Michigan State University, East Lansing, MI, U.S.A.

Participated in the ISNAR study on organization and management of on-farm research in NARS (national agricultural research systems).

Stephen Biggs, Overseas Development Group, University of East Anglia, Norwich, U.K.

Participated in the ISNAR study on organization and management of on-farm research in NARS.

James Bingen, Michigan State University, East Lansing, MI, U.S.A.

Participated in the farming systems research inventory mission in Rwanda, assisted with the final report; also participated in the ISNAR study on organization and management of on-farm research in NARS.

John Coulter, Mayfield, East Sussex, U.K.

Assisted with preparation of a paper, "Considerations for Priority Setting and Resource Allocation in Agricultural Research in Sub-Saharan Africa."

Rogelio Cuyno, Research Management Center, University of the Philippines, Los Banos, Philippines

Prepared and delivered training material for the Tanzania and Malawi workshops.

Jennifer Dagg, Norwich, U.K.

Participated in the ISNAR study on organization and management of on-farm research in NARS.

Marie de Lattre, Paris, France

Prepared and presented training material for Zambia and Burkina Faso workshops.

Rene Devred, Brussels, Belgium

Assisted with the workshop in The Gambia; also with documentation on program and budgeting system -- including translation to French.

Thelma Egerton, IBM Europe, Paris, France

Prepared and delivered two communications training courses in Cameroon.

Paul Engel, Ministry of Agriculture and Fisheries, The Hague, Netherlands

Assisted with defining the methodology for the project on research-technology transfer.

Ruben Echeverria, Rutgers University, New Brunswick, NJ, U.S.A.

Prepared a paper on "Private Sector Research and Technology Transfer in the Third World: Implications for Public Research and Extension Systems."

Peter Ewell, Cornell University, Ithaca, NY, U.S.A.

Contributed to the ISNAR study on organization and management of on-farm research in NARS.

Jacques Faye, Institut Sénégalais de Recherche Agronomique, Dakar, Sénégal

Contributed to the ISNAR study on organization and management of on-farm research in NARS.

Edward Felton, Wake Forest University, Winston-Salem, NC, U.S.A.

Worked with Hunt Hobbs on a book of case studies on agricultural research management.

Leonard Fernando, University of the South Pacific, Alafua, Western Samoa

Participated in the ISNAR/IRETA workshop and undertook a survey of resource commitments to agricultural research in the South Pacific region.

William K. Gamble, Minneapolis, MN, U.S.A.

Participated in the review, analysis, and planning of agricultural research as a component of the Ugandan Agricultural Development Program.

Elon Gilbert, U.S. Agency for International Development, Banjul, The Gambia

Participated in the workshop for organization and management of on-farm research in NARS.

Grace Goodell, The Johns Hopkins University, Washington, DC, U.S.A.

Participated in the workshop for organization and management of on-farm research in NARS.

Sarita Gomez, The Hague, Netherlands

Translator to Spanish for the 1986 annual report and interpreter for workshops held at ISNAR.

William P. Gornabley, Wilton, CT, U.S.A.

Assisted in reviewing and making recommendations on ISNAR management practices.

Anthony Green, IBM Europe, Paris, France

Participated in the review mission to Cameroon.

Anil Gupta, India Institute of Management, Ahmedabad, India

Participated in the workshop for organization and management of on-farm research in NARS.

Fred Haworth, Kingsbridge, Devon, U.K.

Produced a retrospective analysis of the focus of ISNAR's advisory services to NARS during the past seven years.

JaeTae Kang, Gyeongsang National University, Ghinju, Republic of Korea

Wrote a paper, "Inter-organizational Relations between Extension Agencies and Other Agricultural Development Agencies in Asian and Oceanian Countries."

B. N. Kayastha, Kathmandu, Nepal
Contributed to the ISNAR study on organization and management of on-farm research in NARS.

Stuart Kean, Department of Agriculture, Lusaka, Zambia

Contributed to the ISNAR study on organization and management of on-farm research in NARS.

K. Robert Kern, Ames, IA, U.S.A.

Assisted with the preparation of presentations on ISNAR's program.

Bill Kinsey, Informetrics, Norwich, U.K.

Provided expertise on monitoring and evaluation and management information techniques.

F. Labouesse, Institut National de la Recherche Agronomique, Montpellier, France

Participated in the preparation of the long-term agricultural research plan for Niger.

David K. Leonard, University of California, Berkeley, CA, U.S.A.

Co-authored the paper, "The Political Economy of Development and Transfer of Agricultural Technologies."

Kamanda Lumpungu, University of Kinshasa, Kinshasa, Zaire

Prepared a study of human resource planning and management for the Institut Sénégalais de Recherche Agronomique.

J. L. Marjoribanks, Commonwealth Development Corporation, London, U.K.

Participated in the ISNAR/IRETA Workshop in Alafua, Western Samoa.

Luis Marcano, Fundacion Servicio para el Agricultor, Caracas, Venezuela

Participated in the review mission to Costa Rica.

Bright Mombeshera, Ministry of Agriculture, Harare, Zimbabwe

Contributed to the ISNAR study on organization and management of on-farm research in NARS.

Claude de Montgolfier-Kouevi, Paris, France

Translator for the ISNAR 1986 annual report to French.

Edgardo Moscardi, Instituto Nacional de Tecnología Agropecuaria, Buenos Aires, Argentina

Contributed to the ISNAR study on organization and management of on-farm research in NARS.

Claudio Hidalgo Nunez, The Johns Hopkins University, Bologna, Italy

Assisted in the literature review for the research-technology transfer project.

Barry Nestel, Surrey, U.K.

Participated in the continued review of the institutes and programs of AARD, Indonesia.

William Payne, Worcestershire, U.K.

Participated in the review mission to Cameroon.

Carl Pray, Rutgers University, New Brunswick, NJ, U.S.A.

Prepared a paper, "Private Sector Research and Technology Transfer in the Third World: Implications for Public Research and Extension Systems"; contributed to ISNAR's report on the State of National Agricultural Research Systems.

Susan Poats, University of Florida, Gainesville, FL, U.S.A.

Contributed to the ISNAR study on organization and management of on-farm research in NARS.

Ulf Renborg, Swedish University of Agricultural Sciences, Uppsala, Sweden

Assisted with planning and organization for the Agricultural Research Policy Seminar to be held in Feldafing in April 1988.

E. P. Riezbois, Agricultural University, Wageningen, Netherlands

Participated in the review mission to Cameroon.

Terry Roe, University of Minnesota, St. Paul, MN, U.S.A.

Contributed to ISNAR's report on the State of National Agricultural Research Systems.

Niels Röling, Agricultural University, Wageningen, Netherlands

Assisted with the defining of the methodology of the research-technology transfer project.

Sergio Ruano, PRECODEPA, ICTA, Guatemala City, Guatemala

Contributed to the ISNAR study on organization and management of on-farm research in NARS.

Vernon Ruttan, University of Minnesota, St. Paul, MN, U.S.A.

Contributed to ISNAR's report on the State of National Agricultural Research Systems.

Jonathan Sands, The Hague, Netherlands

Assisted and advised on the project management process of ISNAR, the CGIAR inventory, and on other microcomputer work.

G. Edward Schuh, Institute of Public Affairs, University of Minnesota, Minneapolis, MN, U.S.A.

Contributed to ISNAR's report on the State of National Agricultural Research Systems.

David Shapiro, Pennsylvania State University, University Park, PA, U.S.A.

Contributed to guidelines for analyzing human resource issues in SPAAR and assisted in preparing a study of reward structures and conditions of service; prepared information for planning and priority setting in Zaïre; and also prepared a study of human resource planning and management for the Institut Sénégalais de Recherche Agronomique.

Holly Sims, University of California, Berkeley, CA, U.S.A.

Co-authored a paper, "The Political Economy of Development and Transfer of Agricultural Technologies."

Romulo Soliz, Ministry of Agriculture, Quito, Ecuador

Contributed to the ISNAR study on organization and management of on-farm research in NARS.

Krystyna Stave, Vienna, Austria

Provided computer and programming assistance on various ISNAR projects.

Wayne Swegle, Winrock International, Morilton, AR, U.S.A.

Prepared the annual report of ISNAR activities in 1986; also prepared the final version of ISNAR's strategy paper.

Geoff Tansey, Ankara, Turkey

Assisted with presentations at the International Workshop on Agricultural Research Management and prepared the summary of the workshop discussions.

Brian Webster, St. Ives, Cambridgeshire, U.K.

Assisted with the reporting on IFARD activities in Brasilia.

Efrem Whingwiri, Ministry of Agriculture, Harare, Zimbabwe

Contributed to the ISNAR study on organization and management of on-farm research in NARS.

Anna Wuyts, The Hague, Netherlands

Assisted with the literature review for the research-technology transfer project.

STAFF PARTICIPATION - 1987

January 6.

Ministry of Foreign Affairs, The Hague, Netherlands. Meeting on priorities for Dutch technical assistance in support of agricultural development in the Sahel. **W. A. Stoop.**

January 19.

Babcock Graduate School of Business, Wake Forest University, NC, U.S.A. Presentation by **H. Hobbs.**

January 26-28.

Strengthening National Agricultural Research Systems. Wheat and Rice Research and Training -- an International Consultation -- IFAD Headquarters, Rome. Sponsored by the International Fund for Agricultural Development (IFAD), the International Development Research Centre, Canada; the Federal Ministry for Development Cooperation, Federal Republic of Germany; the Swedish Agency for Research Cooperation with Developing Countries (SAREC); and the Rockefeller Foundation. **A. von der Osten.**

January 29-30.

Symposium on Evaluating Agricultural Research and Productivity, Atlanta, GA, U.S.A. Paper presented by **P. Pardey.**

February 1-3.

Workshop on Agricultural Research Policies, Organization, and Management, Damascus, Syria. Presentations by **H. Elliott, G. Hariri,** and **R. Devred.**

February 11-13.

Sixth International Course for Development-oriented Research in Agriculture (ICRA), Wageningen, Netherlands. Presentations by **H. Hobbs** and **D. Wood.**

February 27-28.

Workshop on the Recovery of the Agricultural Sector in Uganda. World Bank of Uganda, Kampala. **T. A. Taylor** participated as co-chairman of the Task Force on Agricultural Research.

March 10-13.

First meeting of the Directors of Agricultural, Animal Husbandry and Fishery Research Institutes of the Preferential Trade Area (PTA), at Kigali, Rwanda. **F. Razakaboana.**

March 11-12.

Regional Cooperative Project IICA/BID/PROCISUR, Fifth Board of Directors Meeting, Montevideo, Uruguay. **H. Hobbs.**

March 18 and May 6.

International Course on Food Science and Nutrition. Organized by The Netherlands Universities Foundation for International Cooperation (NUFFIC), Wageningen, Netherlands. Lectures by **B. Mook.**

March 22-24.

CGIAR/Pan Arab Seminar on Agricultural Research Priorities and Arab Food Security, Damascus, Syria. Presentation by **A. von der Osten;** participation of **G. Hariri.**

March 24-25.

SPAAR Technical Working Group on Networks at ISNAR Headquarters. **A. von der Osten.**

March 29-April 9.

Preparation of a proposal for continued USAID support and funding for the INRA/MIAC (Mid-America International Agricultural Consortium) Dryland Agriculture Research Project, at Settat, Morocco. Assistance of **P. Goldsworthy.**

May 3-6.

Task force meeting for planning the Second General Conference of AARINENA, FAO, Rome, Italy. Participation of **G. Hariri.**

May 18-22.

CGIAR Mid-year Meeting, Montpellier, France. Presentation by **A. von der Osten;** participation of **G. Rocheteau.**

May 18-22.

Regional seminar on farming systems research, sponsored by CIAT and CIMMYT at Remera, Rwanda. **F. Razakaboana.**

May 29; June 5, 9.

Fact-finding mission on the AGRISK Project of CEDRES, University of Ouagadougou, Burkina Faso, and the University of Groningen, Netherlands. **R. B. Contant,** member of the AGRISK Supervisory Committee.

June 3.

Workshop on knowledge flows in Dutch agriculture, organized by Wageningen Agricultural University and Ministry of Agriculture and Fisheries, Netherlands. Presentation by **W. A. Stoop.**

July 6-10.

Conference on Allocating Resources for Developing-country Agricultural Research, Bellagio, Italy, sponsored by Rockefeller Foundation. Papers presented by **E. Q. Javier, G. Norton,** and **P. Pardey.**

July 12-26.

Expert Advisory Committee of IFAD/ITA Africa-wide Biological Control of Cassava Pests, IITA-Cotonou, Benin and Ibadan, Nigeria. **T. A. Taylor.**

July 27-31.

International Development Studies Workshop on Farmers and Agricultural Research: Complementary Methods. University of Sussex, U.K. **D. Merrill-Sands.**

August 2-7.

Annual American Agricultural Economics Association Conference held in East Lansing, MI, U.S.A. Paper presented by **P. Pardey.**

August 10-14.

Validation workshop for training manual on project planning, monitoring, and evaluation for FAMESA (Financial and Administrative Management of Research Projects in East and Southern Africa), Nairobi, Kenya. **D. McLean** and **L. Abe.**

August 20-24.

Training Needs for Agricultural Research in Eastern and Southern Africa, Arusha, Tanzania. Presentation by **D. Wood.**

September 1-18.

Evaluation of a research seed project in Peru, financed by Swiss Technical Cooperation and executed by the National Agricultural Research and Promotion Institute (INIPA) and the International Potato Center (CIP). **C. Valverde,** team leader.

September 14-19.

Nigeria CGIAR Task Force Study Group on Maize and Cassava in Coastal West Africa desk study, Paris, France. **T. A. Taylor.**

September 15-17.

Follow-up meeting to the Pan Arab/ CGIAR Conference, AFESD Headquarters, Kuwait. **G. Hariri.**

September 20-23.

USAID Africa Bureau Workshop for Agriculture, Natural Resources, and Rural Development Officers, Nairobi, Kenya. **D. McLean.**

September 21-22.

Meeting of SPAAR Working Group on Coordination of Support in Agricultural Research in Tanzania, Bonn, F.R.G. **H. Elliott.**

September 22-23.

First Meeting of the SPAAR Working Group on Methodologies for Setting Agricultural Research Priorities, Bonn, F.R.G. **H. Elliott.**

September 22-23.

Regional Cooperative Project IICA/ BID/PROCISUR, 12th Board of Directors Meeting, Montevideo, Uruguay. **R. Martinez-Nogueira.**

September 24-25.

USAID Gender (Women in Development) Resources in African Agricultural Systems, Nairobi, Kenya. **D. McLean.**

September 24-27.

Meeting on African Agricultural Research and Technology Development, Feldafing, F.R.G. Presentations by **A. von der Osten.**

October 4-10.

Regional Cooperative Project IICA/ BID/PROCIANDO. Mission for the development of a methodology for monitoring and evaluation of the network, Quito, Ecuador. **R. Martinez-Nogueira.**

October 6-8.

International Conference on Save Our Soils, Amsterdam, Netherlands. Presentation by **W. A. Stoop.**

October 7-13.

Review committee meeting of the Indian Council of Agricultural Research (ICAR), Hyderabad, India. **H. K. Jain.**

October 9.

Technical meeting on research-extension linkages, Ministry of Agriculture of Malagasy Democratic Republic, World Bank Benmor Mission. Participation by **P. Saint-Clair.**

October 15-November 7;

November 25-December 2.
CGIAR Task Force Study Group on Maize and Cassava in Coastal West Africa: Country Studies, IITA, Ibadan, Nigeria; Togo, Benin. **T. A. Taylor.**

October 21.

Seminar on agricultural research management directed to members of the research systems of the countries participating in the regional cooperative programs PROCISUR, PROCIANDINO, and Mexico, Mar del Plata, Argentina. Presentation by **R. Martinez-Nogueira.**

October 23.

Second Meeting of the SPAAR Working Group on Methodologies for Setting Agricultural Research Policies, Washington, DC, U.S.A. **H. Elliott.**

October 20-30.

International Centers Week, Washington, DC, U.S.A. Presentation by **A. von der Osten**; participation of **H. K. Jain** and **H. Elliott.**

November 30-December 2.

Workshop on Planning and Programming Agricultural Research, Wad Medani, Sudan. Presentations by **B. Mook, P. Marcotte,** and **G. Hariri.**

December 14-18.

Internal Workshop of the Agriculture and Water Resources Centre of the Council for Scientific Research, Iraq. **P. Goldsworthy.**

December 15-17.

Second General Conference of the Association of Agricultural Research Institutions in the Near East and North Africa (AARINENA), Nicosia, Cyprus. Address by **A. von der Osten**; presentations by **E. Javier** and **G. Hariri.**

ISNAR'S 1987 FINANCIAL HIGHLIGHTS

Price Waterhouse Nederland



AUDITORS' REPORT

The financial information set out on pages 44 to 46 has been extracted from the accounts of International Service for National Agricultural Research (ISNAR) for the year ended December 31, 1987 which have been examined by us. Based on our examination, we have expressed our opinion that such accounts have been properly prepared using accounting principles consistent with those used in the preceding year to give the information required to be shown in accordance with the accounting procedures contained in the instructions issued by the Consultative Group on International Agricultural Research, Washington.

Price Waterhouse Nederland.

March 3, 1988

ISNAR
BALANCE SHEET
December 31
(stated in US dollars)

	<u>1987</u>	<u>1986</u>
<u>Current Assets</u>		
Cash	1,424,971	1,468,599
Receivables from Donors	595,378	47,600
Other Receivables	244,642	209,918
Prepayments	<u>53,734</u>	<u>164,036</u>
Total Current Assets	<u>2,318,725</u>	<u>1,890,153</u>
<u>Fixed Assets</u>		
Vehicles	23,234	23,234
Furnishings and Office Equipment	<u>1,427,837</u>	<u>1,064,783</u>
Total Fixed Assets	<u>1,451,071</u>	<u>1,088,019</u>
<u>TOTAL ASSETS</u>	<u>\$3,769,796</u>	<u>\$2,978,172</u>
<u>Liabilities</u>		
Advance received on 1988 Core donation	427,095	70,582
Accrued Expenses	<u>1,046,557</u>	<u>776,704</u>
Total Liabilities	<u>1,473,652</u>	<u>847,286</u>
<u>Fund Balances</u>		
Invested in Fixed Assets	1,451,071	1,088,019
Unexpended Funds:		
- Core-unrestricted	15,274	11,645
- Working Fund	1,150,000	650,000
- Special Projects	<u>(320,201)</u>	<u>381,222</u>
Total Fund Balances	<u>2,296,144</u>	<u>2,130,886</u>
<u>TOTAL LIABILITIES AND CAPITAL</u>	<u>\$3,769,796</u>	<u>\$2,978,172</u>

ISNAR
RECEIVABLES FROM DONORS AS OF DECEMBER 31, 1987
(stated in US dollars)

<u>Donor</u>	<u>Amount Pledged in Original Currency</u>	<u>US\$ Equivalent at Time of Pledge</u>	<u>Payment in Original Currency</u>	<u>Received during the Year</u>	<u>Losses/(Gains) Arising on Exchange and/or Donation Shortfall</u>	<u>Balance Outstanding at the Year End</u>
<u>CORE UNRESTRICTED OPERATING GRANTS</u>						
Australia	Aus\$ 240,000	154,000	Aus\$ 240,000	155,453	(1,453)	--0--
Belgium	BFRs 2,000,000	57,100	BFRs --0--	--0--	--0--	57,100
Canada	Can\$ 450,000	324,000	Can\$ 450,000	339,494	(15,494)	--0--
EEC	ECU 500,000	510,000	ECU 500,000	577,356	(67,356)	--0--
Federal Rep. of Germany	DM 300,000	145,500	DM 300,000	161,669	(16,169)	--0--
France	FF 1,550,000	254,900	FF 1,550,000	253,350	1,550	--0--
IBRD	US\$ 1,000,000	1,000,000	US\$ 1,000,000	1,000,000	--0--	--0--
Ireland	IrPds 100,000	150,500	IrPds 100,000	150,500	--0--	--0--
Italy	L 350,000,000	265,400	L --0--	--0--	--0--	265,400
Japan	Yen 46,500,000	309,500	Yen 46,500,000	324,042	(14,542)	--0--
Netherlands	Dfl 600,000	259,000	Dfl 600,000	293,488	(34,488)	--0--
Philippines	P.p 500,000	25,000	P.p 273,000	13,383	--0--	11,617
Spain	US\$ 30,000	30,000	US\$ 30,000	30,000	--0--	--0--
Sweden	Skr 400,000	57,000	Skr 400,000	62,851	(5,851)	--0--
Switzerland	Swf 440,000	257,000	Swf 440,000	327,315	(70,315)	--0--
UK	PdsSt 135,000	197,000	PdsSt 135,000	219,836	(22,836)	--0--
USAID	US\$ 825,000	825,000	US\$ 625,000	625,000	--0--	200,000
IBRD/Stat. Fund	US\$ 61,261	<u>61,261</u>	US\$ --0--	<u>--0--</u>	<u>--0--</u>	<u>61,261</u>
Total Core Unrestricted Operating Grants 1987		4,882,161		<u>4,533,737</u>	<u>(246,954)</u>	<u>595,378</u>

CORE RESTRICTED OPERATING GRANT

Federal Rep. of Germany	DM 300,000	145,500	DM 300,000	161,669	(16,169)	--0--
Netherlands	Dfl 300,000	<u>161,290</u>	Dfl 300,000	<u>161,290</u>	<u>--0--</u>	<u>--0--</u>
Total Core Restricted Operating Grants 1987		306,790		<u>322,959</u>	<u>(16,169)</u>	<u>--0--</u>

NOTE:

Applied to Working Fund	(500,000)
Earned Income Applied in the Year	468,700
Unexpended Balance Prior Year	<u>11,645</u>

TOTAL REVISED 1987 BUDGET **5,169,296**

ISNAR
STATEMENT OF SOURCES AND APPLICATION OF FUNDS
FOR THE YEAR ENDED DECEMBER 31, 1987

(stated in US dollars)

	<u>1987</u>	<u>1986</u>
<u>Source of Funds</u>		
<i>1.- Core Operations</i>		
Unrestricted	4,382,161	3,820,500
Restricted	306,790	130,435
Unexpended balance from prior year	11,645	(23,738)
Earned Income Applied in Year	<u>468,700</u>	<u>451,365</u>
	<u>5,169,296</u>	<u>4,378,562</u>
<i>2.- Capital</i>		
Restricted	---0---	20,849
Working fund	1,150,000	650,000
Earned Income Applied in Year	<u>363,052</u>	<u>189,782</u>
	<u>1,513,052</u>	<u>860,631</u>
<i>3.- Special Projects - Cumulative Income on Projects not Completed</i>		
	<u>2,362,718</u>	<u>1,756,711</u>
<u>TOTAL SOURCE OF FUNDS</u>	<u>\$9,045,066</u>	<u>\$6,995,904</u>
<u>Application of Funds</u>		
<i>1.- Core Operations</i>		
Advisory Service to NARS	2,171,527	1,857,509
Research	815,522	611,129
Training	732,780	654,040
Program Support (Publ/Infl/Doc)	612,216	445,216
General Administration	<u>821,977</u>	<u>799,023</u>
	<u>5,154,022</u>	<u>4,366,917</u>
<i>2.- Capital</i>		
Capital Additions	<u>363,052</u>	<u>210,631</u>
<i>3.- Special Projects - Cumulative Expenditure on Projects not Completed</i>		
	<u>2,682,919</u>	<u>1,375,469</u>
<i>4.- Unexpended Balance</i>		
Core - Unrestricted	15,274	11,645
Working fund	1,150,000	650,000
Special Projects	<u>(320,201)</u>	<u>381,222</u>
	<u>845,073</u>	<u>1,042,867</u>
<u>TOTAL APPLICATION OF FUNDS</u>	<u>\$9,045,066</u>	<u>\$6,995,904</u>

DONORS TO SPECIAL PROJECTS 1987

Rwanda/IDA under contract between the Government of the Republic of Rwanda and ISNAR for advisory services in agricultural management provided by ISNAR to the Rwanda Institute of Agricultural Sciences (ISAR). **\$23,759**

The Rockefeller Foundation for support of a research fellow with responsibilities for the on-farm research project. **\$28,000**

The Rockefeller Foundation for support of a research fellow with responsibilities for the formation of agricultural research policy in Latin-America. **\$31,000**

The Technical Centre for Agricultural and Rural Co-Operation (CTA) for preparation of the international IFARD conference held in Brasil in October 1986. **\$6,000**

The World Bank for the West Africa agricultural research review **\$25,424**

USAID/Jakarta for the Indonesia applied agricultural research project. **\$295,029**

Burkina Faso/IDA under contract between the Government of Burkina Faso and ISNAR for technical assistance in agricultural research provided by ISNAR to Institut National d'Etudes et de Recherches Agricoles (INERA). **\$107,095**

Rwanda/IDA under contract between the Government of the Republic of Rwanda and ISNAR for assistance in preparing a master plan for agricultural research in Rwanda. **\$22,653**

Rwanda/IDA under contract between the Government of the Republic of Rwanda and ISNAR for advisory services in agricultural research management provided by ISNAR to the Rwanda Institute of Agricultural Sciences (ISAR). **\$60,612**

University of Wisconsin under contract to USAID for ISNAR assistance to the University of Wisconsin/Gambia agricultural research and diversification project. **\$19,050**

The Rockefeller Foundation for support of a training seminar in Kenya on management of systems research with a focus on rural households and farms. **\$36,460**

FAO/World Bank Cooperative Programme for technical assistance to Pakistan in agricultural research management. **\$51,956**

Technical Centre for Agricultural and Rural Co-Operation (CTA) to conduct a regional workshop on planning and management of agricultural research in the South Pacific. **\$40,450**

The Asian Development Bank (ADB) to conduct a regional workshop on planning and management of agricultural research in the South Pacific. **\$55,000**

The Australian Center for International Agricultural Research (ACIAR)/Australian International Development Agency Bureau (AIDAB) for collaboration on agricultural research priorities project. **\$20,771**

The Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) for Indonesian agricultural research priorities project. **\$70,000**

The International Development Research Centre (IDRC) for agricultural research management improvement for research institutes in the Sahel. **\$35,998**

Deducted from the total under item Additions in the Year are the amounts of **\$33,899** refunded to U.S.AID/Dominican Republic for ISNAR assistance in the establishment of the Instituto Dominicano de Investigaciones Agropecuarias and **\$2,188** refunded to the United Nations Development Programme (UNDP) for the study of the integration of IARC activity in Southern Africa, SADCC (B).

LIST OF ACRONYMS

Centers in the Consultative Group System

CGIAR	Consultative Group on International Agricultural Research
CIAT	International Center for Tropical Agriculture
CIMMYT	International Maize and Wheat Improvement Center
CIP	International Potato Center
IBPGR	International Board for Plant Genetic Resources
ICARDA	International Center for Agricultural Research in the Dry Areas
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IFPRI	International Food Policy Research Institute
IITA	International Institute of Tropical Agriculture
IICA	International Livestock Centre for Africa
ILRAD	International Laboratory for Research on Animal Diseases
IRRI	International Rice Research Institute
ISNAR	International Service for National Agricultural Research
WARDA	West Africa Rice Development Association

Other International Organizations

AARINENA	Association of Agricultural Research Institutions in the Near East and North Africa
ACIAR	Australian Centre for International Agricultural Research
ACSAD	Arab Centre for Study of Arid Zones and Drylands
ADB	Asian Development Bank
AFESD	Arab Fund for Economic and Social Development
AOAD	Arab Organization for Agricultural Development

CIDA	Canadian International Development Agency
CTA	Technical Centre for Agricultural and Rural Cooperation
FAO	Food and Agriculture Organization of the United Nations
IDRC	International Development Research Centre (Canada)
IFARD	International Federation of Agricultural Research Systems for Development
IICA	Interamerican Institute for Agricultural Cooperation
IRETA	Institute for Research, Extension and Training in Agriculture (University of the South Pacific)
ODA	Overseas Development Administration (United Kingdom)
OECD	Organisation for Economic Co-operation and Development
ORSTOM	Office de la Recherche Scientifique et Technique Outre-Mer
SACCAR	Southern Africa Centre for Cooperation in Agricultural Research
UNDP	United Nations Development Programme
USAID	United States Agency for International Development

General Terms often Referred to by Acronym

ATMS	Agricultural technology management system
IARC	International agricultural research center
MIS	Management information system
NARS	National agricultural research system
OFCOR	On-farm, client-oriented research