

Review of

MADAGASCAR

Illustrative Case Study IV.

A document prepared for the External Review Panel by

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MADAGASCAR

A. Lessons

ISNAR's experience with Madagascar has shown that a national capacity for planning is a desirable prerequisite for successfully designing and implementing an operative, effective research system.

When the World Bank in 1988 requested a long-term plan for agricultural research as a condition for a loan to rebuild the system, Madagascar was able to respond with a plan of their own design in 3 months. It was a well designed long-term plan because the necessary information had been compiled and the fundamental issues had been identified.

Of necessity, the process was participative; only by working with the national personnel in a fully cooperative and collaborative fashion were the knowledge and perspectives required for forward planning institutionalized in the system. By 1989, counterparts in Madagascar had become capable, not only of meeting the planning needs of their system, but of assisting and advising the managers of other research systems on the issues of planning.

B. Background

Madagascar, with a per capita income of \$210 and a population growth rate of 3%, is one of the poorest countries in the world.

Debt service payments absorb 10% of the GDP and will continue to be a heavy burden on the country's development prospects.

Since independence in 1962, Madagascar's economy has followed a rocky road: modest growth until 1972 followed by a sharp deterioration between 1980 and 1982. Until the mid-1970's, Madagascar was a net exporter of rice, the principal food crop. In 1982, rice imports stood at about 350,000 tons. The major exports are coffee, vanilla, cloves, and shellfish. Between 1979 and 1983, per capita GDP declined by 3% a year.

The causes of this disappointing performance included weak public institutions management, and a government policy discouraging agricultural production and marketing (e.g market controls), consumer subsidies on foodcrops and nationalization of the export crop trade.

State of NARS at the time of initial contact

The national agricultural research institute FOFIFA, created in 1972 to bring under one umbrella the numerous experiment stations of the former colonial commodity research institutes, deteriorated over time. External donors withdrew their support completely. In 1982 FOFIFA had no funds, a few competent research scientists and it was not producing new technology for farmers.

Between 1981 and 1983, the Government began a far reaching reassessment of its agricultural policies including moving towards a free market system and focusing public expenditures on essential services such as agricultural research and extension. ISNAR was formally requested by the Minister of Agriculture to critically evaluate FOFIFA's on-going research effort. The review was implicitly expected to lay the groundwork for NARS restructuring and to help Madagascar achieve the conditions for further World Bank loan eligibility.

The NARS activities towards rebuilding the research system have fallen into 3 distinct phases: the first a diagnosis/strategy phase, the second a consolidation/rationalization phase and the third an expansion phase.

C. The First Phase: Diagnosis and Strategy of the NARS (1983)

The main findings of the review mission, which was conducted and finalized in close and continuing interaction with NARS leaders, were the following:

At National Level

- . The lack of institutional mechanisms to allocate resources to priority needs relevant to national development objectives;
- . The development, outside the national institute, of autonomous research units within development projects, absorbing the bulk of external financial and human resources available for agricultural research;
- . Inappropriateness of the legal statute of FOFIFA.

At Institute Level

Program Management:

- . The internal organization based on disciplinary scientific departments did not allow multidisciplinary and problem-oriented research;
- . The programming of research projects appeared to depend on uncoordinated initiatives by the individual researchers.

Resource management:

- . Heavy infrastructure, disproportionate to the research being carried out, along with an excess of unskilled manpower. Salaries and maintenance costs were absorbing almost the whole budget, to the detriment of research programs;
- . Limited skilled human resources;
- . Financial mismanagement;
- . Isolation from external sources of knowledge;
- . Weak links with the extension services.

A strategy for strengthening NARS in two steps was designed.

- . consolidation of NARS aiming at the establishment of the conditions for effective improvement of NARS (1984-1988);
- . expansion of the NARS, including the design and implementation of a long-term agricultural research master plan (1988-90).

D. The Second Phase: Reorganization and Consolidation of the NARS (1984-88)

In line with the systems review recommendations, the NARS efforts in institution-building have been concentrated on three priority areas.

Reorganization at the National and Institute Levels

- . Creation, in 1984, within the new Ministry of Scientific Research (MRSTD) of a Directorate of Planning and Coordination (DPC) in charge of agricultural research;
- . Transformation of the statute of FOFIFA from a socialist enterprise to an EPIC (industrial and commercial statute).
- . Internal reorganization, including the creation of a scientific committee, of a scientific directorate with programming and evaluation units, of a Department of Research-Development (FSR);

ISNAR provided two advisory missions per year to monitor and evaluate progress toward the reorganization of the research system. Collaboration during these missions was principally with the DG and DS of FOFIFA, and with the Director of Planning and Coordination within the Ministry of Scientific Research. ISNAR also provided expertise in the organization and management of FSR during a two week mission in 1985.

Program Management:

- . Introduction of Programming by objectives and budgeting by programs system;
- . Concentration of efforts on a few priority research programs, with donors' support:
- . Rice (IRRI/USAID; France; Switzerland; IDA)
- . Farming-system research (France, IDA)
- . Livestock and fisheries (GFR); Groundnut (US AID/France)

ISNAR provided, under a renewable two-year contract (1984-88) an expert in research programming and evaluation, with backstopping from ISNAR by the country officer. The main responsibilities of this advisor have been assisting in the design and implementation of a system of programming at FOFIFA (structures, mechanisms, procedures) and in training a national counterpart. Additional technical support has been provided by ISNAR for the computerization of the programming data base.

Assistance in the management of the documentation and information systems was provided by Canada and France.

Resources Management:

- . Progressive reduction of the number of unskilled workers;
- . Progressive reduction of the number of stations;
- . Reduction of the financial deficit.

Assistance in financial and personnel management was provided by a World Bank sponsored national agency.

E. Third Phase: Preparations for an Expansion of the NARS (1986-88)

In 1986, progress made⁷⁵³⁰ in improvement of the national agricultural research system was judged sufficient to allow the expansion of the NARS and to start preparing a long-term national agricultural research plan (Master Plan). The capacity for national planning was carefully established by creating implementation bodies and by collecting necessary information on research results to date. As a result, the Masterplan itself was prepared in a very short time because the groundwork had been done with organizational changes, and because the necessary information had been gathered.

The planning process was placed under the Directorate of Planning of the Ministry of Research; three implementation bodies were created:

- . an interministerial committee, whose tasks were to supervise, arbitrate and approve the Plan;
- . an interministerial working group, to organize and monitor the whole exercise;
- . a consultative board, composed of scientists specializing in the various areas concerned (rice, other food crops, industrial crops, animal production, forests).

A complete inventory of existing research results by crop and/or livestock systems (1986-89) was initiated.

F. The Fourth Phase: Expansion of Agricultural Research (1988-Present)

Several major steps were involved in the expansion phase.

- . preparation of a long-term (10 years) agricultural research Master Plan (Jan-Mar 1988), finalized by the Interministerial Committee in April 1988;
- . preparation of an agricultural research project (June-July 1988), including the design of a national agricultural research program (NARP) over a period of 5-7 years

The final objective of the Master plan exercise was to produce a document addressing the following elements:

- . Analysis of the agricultural development problems and coordination with national development objectives;
- . A long-term priority program, starting from the present situation (continuation or reinforcement of on-going programs, new programs);
- . Estimates of the human and financial resources necessary to implement the proposed programs.

The range of ISNAR's assistance to the Ministry of Research has been very wide. ISNAR's country officer and an ISNAR consultant assisted with the process and methodology of preparing the Master Plan, and advised the DPC and the Interministerial Working Group on the organization and monitoring of the planning exercise. ISNAR assisted by designing a methodology and in the preparation of a draft Master Plan. ISNAR also provided training for the consultative board of scientists.

ISNAR assisted in the preparation of the National Agricultural Research Project. ISNAR led a preparation mission team of seven foreign experts (including one ISNAR staff) and four nationals (the team leader was an ISNAR consultant, supervised by the country officer; an ISNAR staff member participated to cover organization and management issues.

At the time of the World Bank appraisal of the NARP, an ISNAR officer joined the mission at the request of the government. A principal result of the evaluation was the creation of a Committee of Funding for Agricultural Research composed of national representatives from the Ministry of Agriculture, the Ministry of Planning, the Ministry of Finance, donor representatives, and scientists of international stature. The role of this committee, structurally placed between the BOT and the Science Committee of FOFIFA, is to coordinate project activity and funding, and to implement the Masterplan. The ISNAR country officer was appointed to the committee in 1990.

Changes in the National Research System

By 1990, the Madagascar national agricultural research system had changed substantially. The principal advances were:

- . National level reorganization, with the creation of a Directorate of Planning and Coordination for agricultural research under the Ministry of Scientific Research;
- . FOFIFA reorganization, including the creation of a scientific committee, a scientific directorate and a FSR Department.
- . Building the capacity for coordination and planning of research activities, including an inter-ministerial Committee for Funding Agricultural Research;
- . The design and preparation of a masterplan for agricultural research;
- . The preparation and implementation of a National Agricultural Research Project based on the Masterplan, representing an infusion of World Bank loan funds;
- . The reduction of research infrastructure and of the numbers of unskilled workers; the number of research stations was reduced from 31 to 20, and the size of the stations was reduced.

The reduction of a financial deficit for agricultural research; in 1981, 83% of the budget went to personnel costs and 17% to research operations. In 1990, the proportion going to personnel costs was 56%.

Program changes were made which concentrated the bulk of external funding and all recruitment efforts on 2 programs, rice and FSR. By 1989, the number of researchers for rice had increased from 9 in 1983 to 30. Researchers in FSR increased from 2 in 1983 to 13 in 1989. There was a reduction in the number of research programs from 26 to 17. The average allocation of researchers per program increased from 2.4 to 3.7 man years by 1989.

Progress in research programming has been assessed by NARS leaders, as follows:

- . a better definition of program structures, based on the adoption of a new conceptual framework: a program is a set of operations/activities/actions, which produces results defined by objectives normally tied to national priorities. This is a tool for fostering multidisciplinary research and for deciding on priority programs;
- . structure and content of the various documents (activities report/half-yearly reports/ missions reports/ program projects). Program progress indicators have been introduced. This is a tool for program monitoring and evaluation;
- . improvement in data collection on research resources allocation (by programs, stations and regions). This is a necessary base for budgeting by program.

G. Problems

Since the review recommendations of 1983, the principal difficulty has been resistance to the idea of reduction of the research station network by the managers in the research system. The reasons advanced by the research managers for the resistance have been:

- . the disruption of germ plasm repositories;
- . the loss of employment;
- . the loss of budget allocation bargaining power.

In addition, certain commonly held attitudes reinforced these arguments. There was a reluctance to change the existing situation which was commonly held among high level managers, and a general attitude among scientific personnel that skilled researchers do not make field visits. Such visits are made by unskilled workers; hence the belief that the numbers of workers should not be reduced.

A less important problem was that the researchers were not inclined to participate in the programming process, which reduces their freedom to manoeuvre. A seminar to improve their awareness was considered necessary by the scientific director of FOFIFA. It took place in September 1988.

H. Future Directions

Madagascar is currently implementing a national agricultural research project, with World Bank technical assistance. Some of the major emphases of the project are to extend the research station network reduction process, to decentralize and regionalize the research centers, and to improve the linkages between research and extension.

ISNAR has not been requested to assist with the implementation of the project and there are no other pending requests at this time.