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PROJECT EVALUATION SUMMARY

MADAGASCAR

International Rice Research Institute (IRRI)/
Malagasy Rice Research Project
(Grant No. 936-4111-G--00-4001-00)

15 November 1985
Antananarivo, Madagascar

13. EVALUATION SUMMARY

This Grant of \$1.2 million with the International Rice Research Institute (IRRI) of the Philippines covers the period from February 24, 1984 through August 20, 1986. The grant provides for IRRI to "formulate a workable mechanism linking the GDRM and IRRI in a joint effort to improve the professional skills and institutional capacity for conducting relevant research." The grant provides for two IRRI scientists to be stationed in Madagascar to work with the National Rice Research team of the GDRM in the National Center for Applied Research on Rural Development (FOFIFA). Activities include training of FOFIFA scientists, exchange of information through participation in symposia and workshops, exchange of germ plasm, introduction of improved germ plasm, selection of pure lines from local materials, and consultancy visits from IRRI scientists, together with the provision of better facilities for rice research in Madagascar, and the development of a well coordinated national rice research program.

The evaluation team has found IRRI performance of activities under the grant to be excellent to date, with expenditures occurring as projected. Good progress has been made in four of the five outputs identified in the project description: selection of pure varieties within the existing collection of germ plasm material adaptable to irrigated and upland conditions; IRRI germ plasm tested for adaptability to irrigated and upland conditions; development of a system for the exchange of information between IRRI and the GDRM rice research institution; and, trained personnel for the rice research institute. The fifth item, completion of a country rice research strategy plan for long term development of the rice research institution, was to be undertaken during the last 18 months of the grant period. FOFIFA has made progress in planning for practical research objectives and institutional needs over the next 5-10 years.

In addition, the team has made a recommendation concerning the continued problem of maintaining a functioning quarantine facility for screening of imported germ plasm. If the problem is not solved, effective rice research will be precluded.

Under the condition that the quarantine issue is resolved, the evaluation team recommends that a second phase of the project be undertaken, with types of activities and expenditures to be similar to those in the existing project. However, greater emphasis should be placed on development of needed physical research facilities. The current level of funding, or a slight increase, would be consistent with the absorptive capacity of the Malagasy research institution. Because the country has just initiated a major exercise to develop a national agricultural research strategy, the evaluation team supports the continued participation of rice researchers in this national effort as it develops.

14. EVALUATION METHODOLOGY

The evaluation was conducted between November 10 and 17, 1986 in Madagascar. A mid-term evaluation was to be undertaken at this time, 20 months after project inception. Participants in the evaluation were Dr. Robert Armstrong, Regional Agricultural Development Officer, REDSO/ESA, Dr. Rosalie Fanale, Project Development Officer, REDSO/ESA, and Dr. Dennis Greenland, Deputy Director General, International Rice Research Institute (IRRI).

The team met with IRRI staff assigned to Madagascar to implement project activities; staff of FOFIFA (National Center of Applied Research in Rural Development), the institution supporting national rice research; other representatives of the implementing Ministry of Scientific Research and Technical Development (MRSTD); representatives of the Ministry of Agriculture (MPARA); and donor representatives. A list of persons contacted is appended to this document as Annex 1. The team was able to visit field facilities at Mahitsy, near Antananarivo, and at Lac Aloatra, and the Ministry of Agriculture's quarantine facilities in Antananarivo. The team benefitted from the detailed reports prepared for the evaluation by FOFIFA, summarizing progress to date and future needs.

The evaluation team has followed the PES format in fulfilling the scope of work outlined in the grant project description. In accord with the suggested evaluation plan, the evaluation team has focussed on assessment of the following: results of germ plasm testing of the rice collection, IRRI and other germ plasm introduced into the country, and improved cultural techniques; the plant quarantine procedures and their effectiveness in expediting plant materials for use in the research field testing program; structural changes which may or may not have occurred in the national research institution as impacting on rice research; the effectiveness of the short term training program and the utilization of the trainees in strengthening the rice research efforts at field testing locations. Lastly, the evaluation has examined constraints in implementation of the activity and made recommendations, where appropriate, for correcting resulting problems.

In addition, the evaluation team was asked by REDSO/ESA and AID/Antananarivo to examine, given progress to date, longer term support requirements for a continued program of rice research development in Madagascar. The team was asked, more specifically, to recommend inputs and concrete objectives for a two-year, second phase of activity with IRRI assistance, to commence following the end of the current grant in August, 1986.

15. EXTERNAL FACTORS

Continued development of national policies permitting increased linkages with other parts of the world is one aspect external to the project which has facilitated progress toward the project purpose. The positive attitude toward modern agricultural research, and the country-led development of a strategy which prioritizes needs, draw in part from this general attitude, and create a favorable environment for research on rice, the country's most important staple crop. With reference to quarantine policy, there has been a conscious decision by government to address the necessity of reasonable quarantine procedures, and since that time, materials have passed through quarantine expeditiously. (More recent problems with the facilities have slowed implementation of this policy change, as discussed elsewhere in the evaluation.)

Changing national economic policies, especially agricultural pricing policies, have gone hand in hand with this increased interest in research. As part of the government's "liberalization" policy, certain controls have been removed and farmers are now permitted to sell their own rice at market prices. This has stimulated production levels and made it more advantageous for farmers to take advantage of technological developments. One long run effect of improved economic policies will be to make it more likely that agricultural research efforts will contribute to the project goal of improved rice production on farms in Madagascar.

16. INPUTS

Inputs to be provided by IRRI under this grant are two long term technical assistance positions (a plant breeder and an agronomist); short term consultants; short term training courses for Malagasy scientists; and equipment such as vehicles, laboratory and field equipment and materials.

Given that this is one of the first major projects that government has undertaken in agricultural research, and that IRRI had not undertaken research in Madagascar prior to this project, inputs have been provided in an exemplary fashion. Delays have existed with some commodities, but these delays have been minor. The evaluation team does not suggest that any major changes should be made in the type or amount of inputs to produce outputs. Any specific recommendations are included in Section 23, below. It is important to mention, however, that due to the development of an agricultural research strategy in conjunction with the International Service for National Agricultural Research (ISNAR), the timing of development of a strategy for rice (Output No. 4 in the project description) needs to be adjusted to fit within the larger effort. This may affect the timing and types of consultants brought in by IRRI during the project and during Phase II.

Inputs to be provided by the GDRM include local currency for professional salaries, operating costs for office, station and field level technicians, and research facilities and equipment located at the stations. In discussions with FOFIFA, the evaluation team learned that there have been repeated delays in reimbursement to FOFIFA for approved project costs from the PL480 fund held in the Treasury. However, FOFIFA has actively pursued resolution of this issue and feels that agreement has been reached with the Director of Treasury to establish more workable procedures for reimbursement.

17. OUTPUTS

The outputs of the activity are to provide a sound foundation for rice research in the country's overall agricultural sector.

Progress toward the accomplishment of this overall objective can best be indicated by the statement made by Minister Rabesa Zafera Antoine in his address at IRRI's 25th Anniversary Symposium, "We wish to emphasize that for the first time in the history of FOFIFA, a national program for rice research has been established. The program is implemented by a multidisciplinary team, including two IIRI researchers."

The grant document identified five short term outputs. More than satisfactory progress has been made as measured by four out of five output targets, and the fifth is scheduled for the last 18 months of the project.

(1) Selection of pure varieties within the existing collection of germ plasm material adaptable to irrigated and upland conditions. The selection of pure varieties from within the existing local germ plasm pool started in 1983. During 1984, 486 samples were grown out at Mahitsy or Lac Alaotra. In 1985, these local populations were purified and the number of samples increased to 893. In addition to the work done locally, selected varieties were sent to IRRI where they were measured for specific characteristics and tested for specific disease resistance.

(2) IRRI germ plasm material tested for adaptability to irrigated and upland conditions. As a basis for the testing of IRRI germ plasm for adaptability to upland and irrigated conditions, approximately 1000 carefully selected seed samples were sent from IRRI. Of these, 288 have passed through quarantine and have been grown for seed increase. Other samples are in the process of reproduction under quarantine and multiplication. Based on the IRRI lines which have been screened, preliminary varietal trials conducted at Mahitsy and the advanced trials at Balanitra both indicate high yielding

potentials of the introduced IRRI varieties. The trials to date confirm that the introduction of new IRRI materials, although not bred for the temperate conditions of the high plateau, are outyielding the local varieties of Rojofotsy and Chainan-8. The IRRI rice breeder suspects that the "local germplasm is, in general, shallow and narrow," and since little breeding work was done in the past in comparison with pure line selection, he believes the IRRI lines will have a major impact on Madagascar's rice production. It is too early to make an appraisal of whether this view is correct, but at least the present indications can be considered promising.

The inability of the quarantine system to efficiently screen the IRRI seed samples at the moment is preventing the accomplishment of this output target, which is basic to overall project aims. The problem is discussed in full under "Unplanned Effects," below, and is a problem which will have to be corrected if outputs are to be achieved. The project should not be continued if the present quarantine system cannot be made to function effectively and efficiently on a continuing basis.

(3) Development of a system for the exchange of information between IRRI and the GDRM rice research institution. The development of a system for the exchange of information between IRRI and the GDRM rice research institution became a reality with the creation of a National Rice Research Team and the appointment of Dr. Pascal Ravahitrarivo, Director of Research, as its coordinator in June 1985, with Dr. Hooper, IRRI project team leader, as joint coordinator. In more concrete terms the exchange of information has been realized through the training of 10 FOFIFA scientists at IRRI and the attendance of four senior ministry staff at five international rice conferences held in various rice producing countries. In addition to presence of the two resident IRRI staff, five IRRI scientists have worked in country on consultancies.

(4) Completion of a country rice research strategy plan for long term development of the rice research institution. The development of a country rice research strategy plan scheduled during the last 18 months of the project has been overtaken by events, and will have to be implemented in a different manner during the proposed Phase II activity. At the request of the Ministry of Scientific Research and Technical Development, the World Bank will be supporting a study to develop an overall Madagascar Research Plan, which will include a rice strategy. FOFIFA and IRRI will participate in the development of the plan and the approach suggested in the project document will be incorporated into the rice strategy.

(5) Trained personnel for the rice research institute. The training of personnel for the rice institute is on schedule. To date, 10 FOFIFA scientists have gone to IRRI for short-term

training in variety improvement, soil fertility, cropping systems, integrated pest management, and other topics. Fifteen are now being trained or have been identified for training during the next year. FOFIFA has indicated that if official accreditation is granted for U.S.-earned degrees, they are prepared to send two candidates for the Ph.D. and four for the M.S. In-country training will begin as soon as the number of staff in the rice research team, including returned trainees, justifies an in-country course.

18. PURPOSE

The approved project purpose is to develop an institutional mechanism for the exchange of information and materials between IRRI and the GDRM rice research institution. Progress toward this purpose is evident after 20 months of implementation, with sound working relationships established between IRRI and Malagasy researchers, and interchange of ideas through the visits of consultant researchers to Madagascar and of Malagasy researchers to IRRI training programs and international conferences and symposia. For its part, FOFIFA has already taken steps to strengthen its capacity, through the addition of 8 research staff since the beginning of the project. This already functioning mechanism will be strengthened with continued USAID and IRRI support over the life of the project, and during the projected Phase II effort. Output-to-purpose linkages are effective and appropriate.

An important factor contributing to purpose achievement has been the formal establishment of a national rice research team comprised of Malagasy and IRRI scientists, and acceptance of its continuing role in a multidisciplinary effort to improve research, and ultimately production, of this important commodity. The decision to institutionalize a national team is important because it places in an established organization the various scientific disciplines necessary for development and perpetuation of a sound rice research program. The FOFIFA coordinator of the team was formally appointed in June of 1985, and the first team program review was held in September of this year, with attendance by scientists from FOFIFA's departments, and representatives of the Ministry of Agriculture's Protection Service, Seed Production and Extension divisions. The team will be involved in annual reviews and planning of the rice research effort. It will also provide for coordinated representation of rice research needs as part of the broad master plan for agricultural research.

The development of the Mahitsy field station as the headquarters for the rice research team, with offices, laboratory, greenhouses, storage facilities, and so on, would consolidate

the moves made to create the team, and give it a physical entity. It would also facilitate the day-to-day contact and discussions between the leading members of the team. FOFIFA has already initiated development of Mahitsy, and construction is to begin soon. Additional support will be required, during Phase II, to complete the facilities. The location is representative of the Haut Plateau, the largest rice growing area. It will also be necessary to assist the development of the other, smaller, substations to serve different regional needs.

19. GOAL

The project goal is to improve rice production on farms in Madagascar.

Given that rice research in Madagascar has been practically non-existent for the last 10 years, and that no new varieties have been introduced or new recommendations made to farmers, it is far too soon to expect to see increased production resulting from the project's research recommendations. With IRRI support, technologies are being evaluated under farmer's field conditions for the first time in a decade.

However, good progress has been made towards this long term goal, as demonstrated in the achievements to date of specific outputs (outlined in 17, above), and by steps taken toward project purpose (outlined in 18, above). Other factors which are likely to contribute to goal achievement are the liberalization of market prices, an external factor that already has encouraged, and very likely will continue to encourage, increased farm production. The goal will also be furthered as FOFIFA strengthens linkages with national extension activities within the context of the master plan. Further, the decision by FOFIFA to seriously investigate farming systems research techniques reaffirms their sincere, although not yet formalized, commitment to integration with extension. In general, the continuation of the coordination established in the last 18 months within FOFIFA, and between FOFIFA and the Ministry of Agriculture divisions, will help to accelerate the flow of technology from researchers to farmers.

20. BENEFICIARIES

The direct beneficiaries of project activities have been and will continue to be those individuals who have received training at IRRI or on-the-job in country, and those who have been able to participate in international symposia or conferences or study visits to IRRI and other research facilities in major rice producing countries. Ten individuals have participated, or are

participating in training courses at IRRI during 1985. Plans are to send 15 more trainees to IRRI before the end of the current project in August, 1986.

The other principal beneficiary is the institution of FOFIFA, especially those elements involved in rice research. Institutional strengthening efforts are described in more detail in the above section on purpose achievement. It is important to point out the long term benefits to the institution of working with IRRI scientists in the conceptualization, planning, establishment and management of research, and the analysis and interpretation of results.

The ultimate long term beneficiaries will be the rice producers of Madagascar, who will gain access to improved rice varieties with associated cultural practices. Because rice research in Madagascar is directly linked to smallholder production constraints, the potential spread effect is quite broad, and the ultimate benefits -- increased output using techniques and materials that require little or no increased inputs -- are significant.

21. UNPLANNED EFFECTS

The necessity for Madagascar to import a large number of rice varieties in order to undertake an effective research program has forced a rethinking of previous attitudes toward quarantine requirements, and IRRI and the evaluation team feel that a satisfactory approach has been agreed upon between FOFIFA, the Ministry of Agriculture and the FAO.

However, a serious short term problem requiring immediate attention has arisen. Heating and cooling equipment for the existing greenhouse facilities, where initial screening prior to release of breeding materials is undertaken, has not been installed by responsible parties. At the same time, the previous fan installation has been disconnected. The result is that the situation is now worse than at the inception of the project. A large proportion of the materials currently being screened in the facility will not survive, and if these unsatisfactory conditions are not corrected, further screening of materials cannot be undertaken.

The importation and screening of germ plasm is now well behind schedule, and FAO and MPARA, as well as FOFIFA, are unable to implement agreed-upon plans. Existing facilities must be appropriate to permit expeditious entry of rice germ plasm into the country. Unless this situation is corrected, a Phase II activity should not be attempted, as effective rice research is precluded, and any strategy for rice improvement in Madagascar is endangered.

22. LESSONS LEARNED

Given that the project is an initial effort in strengthening agricultural research on a major crop, and that the evaluation has been undertaken after 20 months of implementation, it is premature to expect to have lessons for application to development efforts elsewhere. The category is not pertinent at this time.

23. SPECIAL COMMENTS OR REMARKS

This section includes the evaluation team's recommendations for Phase II follow on support, as well as recommendations concerning implementation of activities under this grant. Recommendations are as follows:

(1) Quarantine problems, as described above, should be resolved, with a functioning quarantine facility established as soon as possible. Without progress in this area, design and support of follow on activities should not proceed.

(2) Pending resolution of the quarantine issue, AID support for rice research in Madagascar should be continued beyond the life of the current project, at an approximate level of \$1.0 million per year for two years.

(3) The second phase should, for the most part, support a continuation of current research activities.

(4) The institutionalization of farming systems research within the national rice research program should be reviewed in the light of existing rice-based agricultural systems in the country. It may be appropriate to bring REDSO/ESA agriculturalists, farming systems experts and FOFIFA and IRRI staff together to review options.

(5) There is a continued need to strengthen language skills among IRRI and FOFIFA staff, so that both parties can best profit from the institutional linkages supported under this project. Greater emphasis on both French and English language training is recommended for the remainder of this phase and for the next phase.

(6) To build upon successes to date in strengthening staff capabilities, there should be an increased level of support for construction of adequate research facilities

during the Phase II follow on period, particularly at Mahitsy. To avoid overburdening IRRI researchers, FOFIFA and USAID, it may be necessary for the grantee to employ an administrative person to manage construction efforts.

(7) For the second phase, current institutional relationships between IRRI, the GDRM and USAID should be continued. Recognizing their unique capacity and performance to date in Madagascar, we recommend that once again a grant to IRRI be chosen as the mechanism for support. However, implementation would be simplified with a direct link between the AID office in Antananarivo and IRRI, rather than between S&T/Agriculture and IRRI.

Based on its review of progress to date and proposed items for funding as supplied to the team by FOFIFA, we have prepared an estimated budget for follow-on support. The budget is attached to the evaluation as Annex 2.

As a general comment, the evaluation team would like to state that the ultimate success of FOFIFA's efforts in rice research and the institutionalization of a national rice team will depend on the statutory establishment of an adequate number of research staff positions. FOFIFA recognizes this as a constraint and is taking steps within government channels to deal with it. Of course, the recurrent cost burden of any rapid expansion of staff is an issue that must be honestly addressed by the government of Madagascar, given that PL480 support for staff cannot continue indefinitely. This question should be addressed in terms of future funding needs arising out of the master plan for national agricultural research, to be developed with IRRI participation.

Finally, the team is convinced that, in the long term, concentration on the introduction of new genetic material to Madagascar can make the maximum contribution to development of low input, low cost rice production systems suitable to the needs of farmers in the country.

ANNEX 1:
LIST OF PERSONS CONTACTED

Ministry of Scientific Research and Technical Development (MRSTD)

Dr. Zafera Rabesa Antoine, Minister
Mr. Rasolondraibe Henri, Secretary General
Dr. Razafindrakoto Charles, Director General of FOFIFA
Dr. Ravohitrarivo Clet Pascal, Scientific Director of
FCFIFA
Mrs. Rabenatoandro Yvonne, Chief of Department of Agronomy
Mr. Rasolo Françoise, Chief of Department of Research
and Development
Mr. Bruno Dauphine, Director of Administration and Finance
Dr. Pierre St. Claire, ISNAR Representative, FOFIFA

Ministry of Agriculture (MPARA)

Mr. Ramarokoto Daniel, Secretary General

IRRI Rice Research Project

Dr. James Hoopper, Agronomist and Team Leader
Dr. B.B. Shahi, Plant Breeding Expert

American Embassy

Mr. David Rawson, DCM
Mr. Samuel Rea, AID Representative

Donor Representatives

Mr. Henrik Olesen, Deputy Representative, UNDP
Mr. Jean Francois Cuenot, UNDP
Mr. John Crostwaite, Economist, EEC
Mr. Paul Bley, World Bank Representative
Mr. Andre Hupin, Program Officer, FAO
Mr. Guido Donotrio, Program Officer, Malagasy Fertilizer
Program, FAO
Mr. Robin Dingle, Program Officer, Seed Production
Program, FAO

Other

Dr. David Norman, Consultant
Dr. David Nygaard, Consultant

ANNEX 2: Suggested Budget for Phase II

USAID

I. Technical Assistance

<u>Long Term</u>		
Agronomist	24 person months	\$300,000
Rice Breeder	" " "	300,000
<u>Consultants</u>	48 person months @ \$7500	\$360,000

II. Training

Long Term Degree	6 yrs @ \$2500	\$150,000
Short Term/IRRI:		
20 persons for 4 mo @ \$1500		\$30,000
Seminars and Workshops		
2 persons, 8 conferences @ \$4000		\$64,000

III. Commodities

Equipment per FOFIFA list	\$240,000
Shipping	60,000
Transport 22 vehicles @ \$10,000	220,000
Farm Equipment per FOFIFA list	100,000

IV. Contingency and Inflation @ 10 % \$183,000

TOTAL USAID \$2,007,000

GDRM

Buildings and Local Cost Items
per FOFIFA list -- PL 480 funds \$3,000,000