

PROJECT ACTIVITIES COMPLETION REPORT
RICE PRODUCTION (657-0009)
GUINEA-BISSAU

I. BACKGROUND

The Guinea-Bissau Rice Production Project (657-0009) was authorized on August 28, 1980 for \$4,500,000. The goal of the project was to "contribute to the stated GOGB aim of food self-sufficiency". The purpose of the project was "to increase food production and farm income of about 1,200 small farm families in the Geba River basin of Guinea Bissau, and to develop the institutional, experience and information bases which may enable the farming systems developed in the project to spread beyond the immediate beneficiary universe and be reflected elsewhere".

The Project Agreement was signed in September 1980. The Department of Studies and Research (DEPA) of the Ministry of Rural Development and Fisheries was selected as the counterpart agency. The activities were confined to the Geba River Basin operating out of the DEPA facilities in Contuboeil.

The original estimated budget of \$4,500,000 allocated approximately \$1,250,000 for technical assistance; \$350,000 for training; \$250,000 for construction; and \$600,000 for commodities. Also included in the original budget were \$200,000 for studies and evaluations; \$300,000 for operating costs; and \$150,000 for land development. To this total of \$3,100,000, an additional \$1,000,000 was estimated for inflation and contingencies. In addition, the sum of \$400,000 was set aside as a special fund for health interventions. The date originally set for completion of activities (PACD) was December 31, 1984.

Preliminary final balances for the project on completion indicate that \$1,880,000 was spent on technical assistance; \$300,000 on training; \$585,000 on construction; and \$1,000,000 on commodities. Of the original budget of \$650,000 for studies, operating costs and land development, only \$250,000 was used. The special fund for health interventions was not used. The actual PACD was September 30, 1987. At that time, nearly \$4,000,000 had been expended. Final payments are in process. In-house financial accounting is scheduled for early February 1988.

II STATUS OF PROJECT

The status of project as of December 31, 1987 is as follows:

A. Technical Assistance

Long-term technical assistance was available from April 1982 through Aurora Associates, Inc. Following an evaluation of progress in 1984, the technical assistance component was substantially modified. Aurora Associates was again awarded the contract and proceeded to provide an additional nine person years of technical assistance until July of 1987.

The long-term technical assistance concentrated in three areas. The team leader was responsible for overall project management and, in addition developed the credit-farm supply component of the project. An agronomist specialized in the water management technology improvement. The third long-term technical assistance team member was the extension specialist.

Several short-term consultancies were also conducted. A soil report was conducted in 1982. An alternate technologies report, also conducted in 1982, raised serious questions regarding the original strategy that was being used to increase rice production.

B. Training

The project provided long-term training at the undergraduate level in the United States for two only DEPA employees. Both received training in Agronomy and Hydrology. One has returned and is working at the Contuboel Center. The other needed a fourth year to finish his studies and is being funded under another project. He is expected to complete his studies in May of 1988.

Eleven staff members received short-term third-country training. The International Institute for Tropical Agriculture (IITA) in Ibadan, Nigeria provided much of this training. All have completed their training and returned to work.

C. Procurement

The project procured ten vehicles, and eight motorcycles, equipment and supplies, and agricultural inputs. Vehicles included four-wheel drive station wagons, and pick-ups, a truck, and a mini-bus. Two tractors were also procured. In addition to office equipment and supplies, equipment and training material for extension was provided. The agricultural inputs, used as incentives to cooperating farmers were sold at subsidized prices. These inputs included fertilizers, tools, and donkey carts.

D. Construction

All construction was satisfactorily completed. Construction included offices, a kitchen and mess hall, classrooms, dormitories for trainees, and housing for staff.

III. CONTRIBUTIONS

A. Host Country

As part of the Project Agreement, the GOGB's contribution was to have been the gas and oil necessary to run project vehicles and machinery. The counterpart agency was unable to provide sufficient quantities, and invariably gas and oil for the project were paid for out of the petty cash fund that the Aurora Team managed. The salaries of some counterparts, which were originally planned as a GOGB contribution, were paid with cash grants generated from the sale of P.L. 480 commodities and/or food commodities from the World Food Program.

B. Other Donors

FAO is responsible for a Seed Production Unit at Contuboe1. Improved seed was one part of the improved technological packages. FAO also contributed machinery for seed processing and equipment for a seed laboratory. Other donors included the Governments of Japan, Norway and Sweden who donated the pumps which were an integral part of the original project design.

IV. ACCOMPLISHMENTS

In general, the outputs, as planned, were realized. The exception was the first output which was radically modified after the mid-term evaluation.

A. Output 1. Pump Irrigation

The planned output of improving rice production by pump irrigation was dropped early on in the project. This output originally was stated on "successful pump irrigation of 300 ha. of bolanha (river valley) land." The output was rephrased as "the introduction of improved water management techniques and agronomic practices". The improved water management technique was contour-diking to impound rain water in the rice fields. Improved agronomic practices introduced included use of fertilizers and pesticides.

During the three years, 1985-1987, 1,310 families participated in the program which affected 416 hectares. According to the project paper, 300 hectares of river valley land and 100 hectares of lateral stream valley land were to be affected. The project paper also refers to assisting 1,200 families. Thus, the quantitative objectives in land and beneficiaries affected were met.

According to the objectively verifiable indicators of the project paper, rice yields of 3-6 tons per hectare were expected on the river valley land and 2 tons per hectare on the lateral stream valley land. The Rice Specialist's final report indicates that in 1985, on 35 hectares of land where the contour dikes were completed to project standards, the average yield was 3.1 tons per hectare. The following year, the average yields dropped to 2.2 tons.

Considering that the average rice yield without the improved contour dikes is 1.1 ton per hectares, it would appear that the introduction of contour dikes resulted in at least doubling of rice yields. However, there is insufficient data available to attribute all of the increased yields to the introduction of contour dikes.

B. Output 2. Upgrading Lateral Stream Valley Land

The second output has been subsumed under A above. The contour dikes affected both river valley and lateral stream valley land similarly. The data do not distinguish difference in yields by land types.

C. Output 3 - Extension

The output was originally stated as "Trained extension agents and extension training system in place". This output was later rephrased to "improved management capacity of DEPA in providing services to farmers including an extension and rural engineering staff in place".

Once the output was changed, the Aurora Team concentrated on developing not only extension but also engineering and credit/input supply services. The emphasis was placed on organization and management of three operational units. The Credit Unit consisted of one accountant, one bookkeeper, two credit monitors and one central and six zonal warehouses. Engineering services were organized around a Hydrology Unit which consisted of three topography teams and two designers/drafters. The Extension Unit consisted of 24 extension agents, three supervisors and two coordinators.

The Credit Unit was organized to facilitate the purchase of agricultural inputs by providing credit. The lack of trained personnel, poor transportation and inadequate warehouse facilities constrained this effort. There is doubt that the Unit will be sustainable without continued external assistance. There are also questions as to the appropriateness of the public sector (DEPA) being involved in the agricultural input supply business.

The Hydrology Unit supported the contour dike construction. It was well organized and managed. It was necessary to establish this unit in order to carry out Output 1 as revised. That is, the construction of improved contour dikes depended on topography services.

The Extension Unit was organized at half the level of the original target of 48 extension agents. The original estimate of 48 extension agents was excessive. Even with 24, the unit is not supportable given the limited resources of the GOGB to pay salaries or provide transportation.

Another issue is the role of extension agents. They were used more to obtain farmer participation in the contour dike program and in providing inputs to farmers than in extension of improved agricultural practices. Until there is an improved technological package that is appropriate to the local conditions, there is little for the Unit to extend.

The output, as rephrased, of improved management capacity of DEPA in providing services to farmers, has been realized. The impact of this output on the purpose, however, appears to be minimal.

D. Output 4. Gaba River Valley Development Plan

This output was not produced. The project, however, has provided information that would be helpful to the GOGB in developing such a plan.

E. Output 5. Cultural Practices and Farmers Associations

The output was originally written as "knowledge about improving cultural practises and small farmer associations which can be useful". The output was clarified in the Project Supplement to read "Experimental farmer associations operating and supervised by DEPA technical personnel".

The experimental farmer associations that were organized were rice committees composed of one to three people. The committee members were selected by the villagers. The committees were responsible for assigning parcels of land to farmers, mobilizing and coordinating farmers in joint work activities, and ordering and distributing agricultural inputs.

This output was realized in so far as experimental farmers associations operated under the supervision of the DEPA technical staff. The impact of the output on the purpose, however, can only be measured to the extent that the lessons learned from the experimental farmer associations have been used to improve the organization and operations of farmer association working with DEPA. However, there is no evidence to suggest that the experience affected positively the organization and operations of farmers association working with DEPA.

V. ACHIEVEMENT OF PURPOSE

There are two purposes stated in the project paper. The first refers to the "farmer beneficiaries". The second refers to the diffusion of the improved "technological package" beyond the immediate beneficiaries.

The beneficiaries are identified as 1,200 small farm families whose food production and income is to be increased. By 1987, the project was working with 1,310 families who were farming 416.2 hectares. If we assume that the average yields is two tons per hectare compared to one ton prior to the introduction of improved contour dikes, then the increased production amounts to 416.2 tons of rice.

Assuming that: a) the average yield is two tons per hectare; b) the milling rate is 70 percent; c) the per capita annual consumption is 125 kilos; and d) the average family has 5.5 members; we can only conclude that the impact of the project on the beneficiaries is mixed. From the food production side, the 1,310 families are producing 832 tons of paddy rice. Once milled, this is equivalent to 582.4 tons of consumable rice. This would be sufficient to meet the consumption needs of only 4,660 people. If the 1,310 families represents 7,205 people, the farmer beneficiaries are not even meeting their own consumption needs. They have increased production and improved food availability. Their incomes, however, have not necessarily increased.

It is also possible that the incremental production costs have not been compensated by the added production. Data, however, are insufficient to calculate the incremental production costs.

Considering the minimal impact on the beneficiaries, one would not expect the "improved technological package" to have been diffused beyond the immediate beneficiaries. No data exist to indicate that it has been diffused. Evidence exists, however, that parts of the technological package have been accepted. There is certainly a demand for improved seeds. The importance of fertilizer, herbicides and insecticides is understood. Techniques

in construction of contour dikes have been accepted. Further survey work would be necessary to quantify the extent to which the improved technologies have been diffused.

VI. FINAL ADJUSTMENTS ON PROJECT DESIGN

Adjustments in project design should include: a) integrating production with the marketing; and b) expanding the project to include the entire farming system rather than rice alone.

The major constraint to increased rice production has been the low GOGB procurement price for rice. Now that the price has been freed, the market equilibrium price is expected to be an incentive to increase rice production. Whether it will be, will depend on: a) the efficiency of the free market system, i.e.; the extent to which the farmer producer receives a fair share of the final price; and b) the profitability of other production alternatives for the farmers. Project design adjustments which integrate production with marketing will help to sustain the gains already achieved.

Expanding the project to include the farming system is imperative. Rice is only a part of the present farm production system. To succeed with rice, it is necessary to integrate rice production into the total production system. If rice production competes with other production, the farmers will choose what benefits them the most. Rice production must reinforce and not compete with other farm production.

No other adjustments in project design are needed. However, the delays in providing the technical assistance suggest the need to continue some technical assistance at least to consolidate progress made. Particularly in the areas of institutional development of DEPA. Short-term training should also continue. Data, generated by the project, needs to be analyzed and an agricultural data bank needs to be organized and maintained.

VIII. POST-PROJECT A.I.D. RESPONSIBILITIES

The major post-project A.I.D. responsibility is to prepare the financial statements for the project. An in-house effort will be made to put the accounts in order. If there is any uncertainty of the status of the financial reports, following this effort, an audit will be performed.

VIII. DATA COLLECTION AND EVALUATION

The final evaluation and the final report of the Aurora Associates' team have been completed. The evaluation was performed by an IQC with DAI. These reports are complete, well documented, and provide useful recommendations for future action. The Aurora Associates' final report includes annexes on the status of the three operational units of DEPA.

These reports should be useful not only to A.I.D. in future project design but also to the GOGB, particularly in developing a Geba River Basin development plan.

IX. LESSONS LEARNED

There are many lessons learned from the project experience. The most important is the need to field test improved technologies thoroughly before replicating. Other lessons include:

- OAR/GB's project implementation responsibilities should be limited to monitoring. Other project management functions, including procurement, should be contracted out.
- Three years of technical assistance is insufficient to develop an organizational structure to operate efficiently and be self-sustaining.
- Realistic institutional development goals should be set in relation to the available staff's absorptive capacity.
- Training should be directed at all levels of the organization and not just for the senior professional staff.
- The private sector should be used for input delivery and marketing of production.
- Researchers should conduct on-farm trials to adapt "improved technologies" to local conditions.
- Extension agents should be trained to demonstrate the "improved technologies" in farmers' fields with farmers' participation.
- Selected farmers should test the "improved technologies" in their own fields before diffusing to farmers in general.

The project was originally designed to introduce a new technology; i.e., pump irrigation. It was soon decided that this was not feasible. The project was subsequently redesigned to introduce another new technology; i.e., contour dikes constructed with the help of tractors. This was a more logical intervention but the technology was decided upon without testing under local farming conditions.

