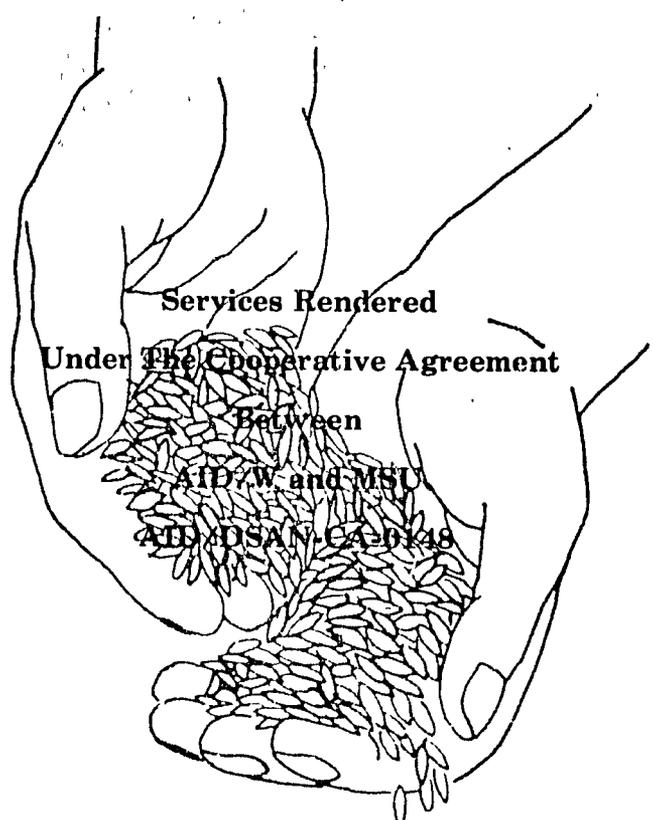


REPORT TO:  
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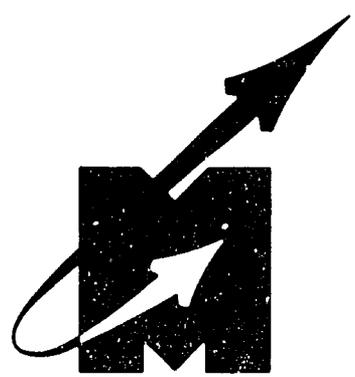
Brief Consultation on the Production of  
Quality Seed for the Integrated  
Agricultural Development Project (Haiti)



Services Rendered  
Under The Cooperative Agreement  
Between  
AID/W and MSU  
AID/DSAN-CA-0148

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SEED TECHNOLOGY LABORATORY  
MISSISSIPPI STATE UNIVERSITY  
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## REPORT SUMMARY

**TITLE:** Brief Consultation on the Production of Quality Seed for the Integrated Agricultural Development Project (Haiti).

**CONTRACT:** AID/DSAN-CA-0148 with Mississippi State University

**CONSULTANT:** Gary A. Reusche, Research Associate  
Seed Technology Laboratory, MAFES  
Mississippi State University

**PERIOD OF CONSULTATION:** May 18-20, 1980

A two day consultative visit was undertaken to assess the possibilities of developing a supply of foundation seed for use in the technological package to be developed in the upcoming integrated agricultural project. The inclusion of a modest seeds component is recommended to multiply those varieties showing potential for the region where active extension programs exist. Early release in farmer trials is considered necessary to assess the acceptability of the developed varieties at the small farmer level. Repeated activities in varietal improvement in Haiti have had little or no impact due to either the lack of a vehicle to move the improved varieties to the small farmer or the rejection of developed varieties for various reasons of preference. The only sure way to accurately assess the acceptability of improved genetic material is to try to move it into the small farmers field by the use of extension trials and then be capable of following up with an adequate supply of foundation seeds of those lines showing farmer acceptability.

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## 1.0 Introduction and Background

### 1.1 Terms of Reference

In conjunction with travel to Puerto Rico to harvest sorghum seed multiplied for research activities under the Title XII Collaborative Research Support Program for Grain Sorghum and Millet (INSORMIL), and in response to USAID/Haiti approval for assistance from this contractor, a two day period of consultation was recommended and approved for Mr. Gary A. Reusche, Seed Technologist, under the following terms of reference:

1. Review and comment on prior USAID activities with the goal of producing foundation maize seed.
2. Study the upcoming Integrated Agricultural Development Program in relation to the multiplication of adapted varieties for use in the extension program.
3. Briefly review with the Ministry of Agriculture personnel charged with the development of new varieties and foundation seed production (DARNDR/SERA) the status of the on-going seeds program.
4. Advise on training possibilities in the U.S. for seed technologists.

The consultant arrived in Haiti from Puerto Rico on May 17 and returned to Mississippi State University on May 21.

### 1.2 Research/Extension Sub-Project

The integrated agricultural development project signed in November of 1979 and in the implementation stage is divided into four sub-pro-

jects of which the sub-project "Research and Extension" is involved in varietal improvement and the dissemination of improved production techniques. This sub-project will strengthen the Research Services (SERA) ability to develop and make available basic food crop production packages to small farmers. It is assumed by the consultant that one of the primary factors in the improved production techniques is the introduction of planting materials. A prior USAID project (AID/1a-c-1113 from 1975 - 1978) based in Cayes compared local maize strains and internationally available varieties, studied sociological factors on the distribution of seed and local acceptance of agricultural innovations, prepared plans and operational details for a small foundation seed facility, investigated production and storage techniques adapted for the small farmer, trained 2 agronomists in the project and internationally at CIMMYT, and initiated the summer training of agronomy students from the agricultural college. The consultant was the primary developer of the above components and was located in Cayes from 1975-1977. Since that time due to various problems, the project was terminated, plans for the seed processing facility were scrapped, routine variety trials and breeding programs abandoned and operational funds for continuing many of the activities dried up.

The upcoming sub-project in research and extension is largely based upon the prior USAID project with the expansion of its activities to include the research station at Damien, other crops, and closer integration of the research with extension activities. Four expatriate advisors are due to be recruited and at post in the SERA office at Damien by the end of 1980.

### 1.3 Foundation Seed Production at CECOSAM

Foundation seed production is the responsibility of SERA who also chooses and releases the varieties to be produced. Its major activities are centered around the modern seed conditioning facility at Damien (CECOSAM) designed for the drying, processing and storage of 500 MT of maize seed per year. One variety, Eto Amarillo, is presently being produced and last year 100 MT were distributed. A well equipped modern seed laboratory is in operation and approximately 6 agronomists working within SERA have received some degree of training in seed technology. The consultant, due to time restrictions, was unable to assess the operational and technical aspects of the center at CECOSAM but was in general impressed by the state and completeness of the facilities in use. The director of SERA indicated that technical problems do exist and it was felt that technical support and additional training were required. The consultant noted that the storage facilities were not conditioned with respect to temperature and relative humidity and has questions concerning seed storability and quality in the facility.

No other programs for producing foundation seed within the SERA organization were brought to the attention of the consultant except that a bean variety was being hand cleaned and bagged at the processing facility during the visit.

### 1.4 Visit to Cayes Region

A one-day visit to the Cayes region was undertaken to interview the agronomists stationed in the region interested in seeds and to evaluate the current status of field research and seed production/distribution.

No seed is being produced under the supervision of the area agronomists despite their keen interest in so doing. Problems cited include unapproved budgets and lack of extension personnel to introduce the seeds into the traditional farming patterns. Some question exists as to the general acceptability of the varieties identified as possessing good yield potential, standability, kernal color and milling characteristics and observed on the Levy station for at least 5 years. The general feeling seemed to be that the endless repetition of variety trials without release to the small farmer was a fruitless activity, and for that reason and the paucity of operational funds the replicated variety trials started in 1975 were discontinued. However, research has been continued especially in respect to herbicide and storage chemicals for weed control and storage insect problems. Regular visits from the SERA staff at Damien to observe and participate in the research have been initiated and training activities continue for new agronomists.

The general feeling of those persons interviewed concerning the question of the supply of foundation seed was that they should be grown and processed in the Cayes area. Importing them from Damien was not thought to be the solution although the results of a trial introduction of the CECOSAM variety Eto Amarillo were not yet available (8 tons were recently distributed, sold at \$0.20/lb.). Eto Amarillo has been compared a number of times with superior varieties tested at Levy Farm and has been outyielded by 80% in one trial and 34% in another (Essai Decision I and II) under conditions in the Cayes Plain.

Mention was made of a "psychological factor" of producing seed outside of the Cayes plain and importing it. Farmers, it appears, like to see and have first hand knowledge of the seed crop. The introduction of the Proneer hybrid which is well adopted to the region has never caught on, perhaps in part due to this reason and certainly to supply factors.

## 2.0 Observations and Recommendations

1. Early release in limited quantities of recommended varieties to judge farmer acceptability seems to be a valuable lesson learned from the Maize Improvement Project. After 3 cropping cycles (less than 1½ years) varieties showing promise need to be moved into the farmers fields for further evaluation.

2. The lack of adequate operational and support budgets is among the top problems encountered.

3. Lack of government land and competition amongst various projects for land has plagued efforts to produce seed. Experiment stations might best be utilized in research activities whereas a centralized seed facility in an area served by a reliable electric source may be recommended. At Damien this requirement is very satisfactorily met with the CECOSAM facility. However, the facility at Damien even when operating at capacity peak efficiency and producing the required quantities of quality seed, may not meet the requirements of the Cayes region.

4. Contractor production of foundation seed is the alternative to its production on state-run research stations. This type of an operation requires a well-organized support and monitoring system to insure the production of genetically pure seed of high quality.

5. A low humidity, cold storage facility is recommended to maintain breeder seed stocks. The alternative is the total loss of varietal collections after 1-2 years storage at ambient temperature and relative humidities.

6. Routine varietal testing should be permanently adopted.

7. Degree level training and short term training in all aspects of seed technology is required to assure the short and long-term success of the technical aspects of the program.

8. No negative stigma should be attached to the production of local varieties already in use by the farmer. The present system of "roulette" when purchasing these seeds from the local markets can be greatly improved upon by selling the farmer seeds of known quality. This will aid in establishing more uniform stands which will in turn lead to an increase in production.

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## ANNEX I

Contacts were made with the following technicians:

Mr. Neptune, ADO, USAID/Haiti

Mr. Trevino, Agronomist, USAID/Haiti

Elias Tamari, Development Specialist, USAID/Haiti

Julio Barthebemy, Director and Agronomist, SERA/DARNDR

Normil Henry, Agronomist, SERA/DARNDR

Max Mondesir, Agronomist, DARNDR/Cayes

Reynold Pierlus, Agronomist, DARNDR/Cayes

Joseph St. Phard, Agronomist, DARNDR/Cayes

Miss Calix, Agronomist, CECOSAM/Damien