

UNITED STATES GOVERNMENT

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TO : Mr. Aldelmo Ruiz, AID Representative

DATE: February 8, 1975

FROM : Clyde S. Adams, Food & Agriculture Officer

Clyde S. Adams

6p.

SUBJECT: Evaluation of the Sorghum Production Project, 279-018

A team made up of Dr. Leland House, Dr. A. Conje, Mr. John Young, Mr. Charles Antholt and Mr. Clyde Adams conducted an evaluation of the Sorghum Project. A summary of the team's finding is attached as well as the resulting draft project appraisal (PAR).

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Part #2



Summary Sorghum Evaluation Team's Findings
Sana'a, Yemen January 27-31, 1975

The purpose of the project is to identify improved sorghum and millet varieties, develop complementary improved production practices, and develop a cadre of YARG personnel capable of conducting adaptive research on sorghum and millet. The project, to date, has taken only the first steps of this process. On the basis of initial work, however, some significantly improved varieties have been identified which appear very promising. For example, some of the best introduced varieties of sorghum and millet yielded three to four times the local variety used as a check. (Since most of these varieties have only been tested in unreplicated single rows at one location the test results can not yet be considered conclusive).

Other initial project achievements, while less satisfactory, have been in the training of YARG personnel and research station development. Three participants were sent to a 7 month sorghum production training program at ALAD facilities in Beirut while these and other staff received "in service training" under Dr. Conje. On the Ber El Khoum farm, about 6 acres of the total 30 acre station were fenced, leveled and irrigated.

Also of note should be the performance of the contractor. Dr. Conje, while relatively young, has performed exceptionally well. We think the manner in which he conducted the research trials under trying circumstances was particularly praiseworthy. Similarly, the on-the-job training he has given YARG personnel has been extremely effective and well received.

The primary difficulties experienced in implementation of the project have been in connection with participants and delivery of commodities. The participants sent out for training have been well motivated individuals with a commendable willingness to work and learn. The difficulty has been with their weak academic and technical background which has made it difficult for them to capitalize fully on their training. In fairness to the YARG and USAID, it should be mentioned that the time for participant selection was extremely short. The delivery of commodities was delayed by the extreme ineptness of the U. S. procurement agency.

In looking toward the future, we see substantial strengthening of Yemen's sorghum and millet program as essential. The absolute and relative importance of these grains to the population and economy of the country dictates this and we feel the U. S. can enthusiastically support it. Further we recommend a strengthening of the current project by placing prime emphasis on the

development of a National Sorghum and Millet Improvement Program as apposed to the current narrower emphasis on varieties and cultural practices. A multi-year staffing profile for the program, as proposed by Dr. House, is attached.

In summary we feel the sorghum project has progressed satisfactorily under very difficult circumstances. The contractor's ability to carry out his assignment and the support of the YARG are to be especially noted. We want, however, to emphasize that the project to date has taken only a first step. We believe the revised program as outlined is a recognition of the progress to date and reflects that experience. The program we believe deserves and will receive AID/W support. Likewise the program is in response to the extreme importance of Sorghum to Yemen and should be seriously considered by the YARG. As we see it the major challenge to the YARG is to accord the sorghum program the high priority it deserves and to act on that basis, particularly in the process of allocating manpower resources.

JDS Descriptions

Coordinator; Joint Coordinator

Be an active plant breeder; much of the useful material generated for the program will come from the coordinator.

Tie together all phases of the crop improvement program; this requires familiarity with work in all disciplines, all stations, and in the countryside.

Represent the program to government - he is the contact between the program and the government.

Call a periodic (annual) workshop

Organize an annual progress report

Assist with budgeting and operational problems including the availability of equipment.

Plant Breeders

To provide continuity of operation at each station. Initially these people provide support to the coordinator but develop into breeders of stature. They will sooner or later:

a. Organize and advance material in nurseries.

b. Conduct locally and regionally organized yield trials.

c. Operate crossing blocks.

d. Assist in maintenance of collections and of breeders seeds. (The legume breeder would first evaluate collections of the 2 or 3 most important legume crops and begin a program of selection from the collections - collections would include local and introduced types).

Collector

An individual either now with the program or to be identified who would be a continuing part of the program but for a 3 year period spend the maturation and harvest period collecting seeds of sorghum, millet, and other crops of agronomic importance in Yemen.

Agronomist

To undertake research leading to a package of management practices for irrigated and dry conditions. This includes evaluation of such things as sowing date, rate and timing of fertilizer application, and spacing in the various agro-environmental conditions in the country.

Where water is available to work on intensive cropping systems, particularly those involving sorghum, millets, and food legumes.

To assist, as necessary, with experiment station development.

Initially, the foreign agronomist would assist with extension functions so should have some interest and proficiency in this area. He would train Yemeni counterparts in both agronomy and extension.

Extension

To liason between the research and extension program and to be familiar with farmer problems.

To be an extension education officer and provide training for the large number of individuals required to carry out an effective extension programs.

To keep a constant vigil on the quality of extension, demonstrations. Seed production and marketing (not properly part of the research program).

It is relatively easy to describe and write up a seed production and distribution program and very difficult to implement it. Because of this it is suggested that a qualified individual initially spend 4 to 6 months learning about conditions in the country and helping AID and the Ministry of Agriculture write up a seed production-distribution program. Subsequently, he would return at a critical time of the year for a 2 - 3 month period initially, and shorter time subsequently to help solve problems of implementation.

Production Officer - this should be a motivated, talented individual who might spend time (6 months to a year) in the USA working under the direction of the consultant. He should be in Yemen when the consultant is in Yemen.

He would have responsibility for such things as:

- a. Training farmers who would participate in the seed production function.
- b. Assist with on the spot farmer production problems.
- c. Train technicians to help with farmer production problems and post harvest manipulations.
- d. To assist with the creation of and operation of drying, threshing, cleaning, treating, bagging equipment and fuctions.
- e. To be knowledgable about seed inventory.

Qualify Control Officer - this should also be a motivated, talented individual who might spend time (6 month to one year in the USA) working under the direction of the consultant. He should be in Yemen when the consultant is in Yemen.

He would have responsibility for such things as:

- a. Establish and operation of a seed testing lab so that such things as germination percentage, percent foreign seeds, and percent inert material can be identified on a seed lot basis.
- b. Be responsible for at least one field inspection to determine isolation and percentage off type plants.
- c. To implement any tagging or other aspects of a quality control function as might be included in the program.
- d. To assist in the training of technicians to help in the seed lab and with field inspection.

In no situation should the production officer and quality control officer be the same man.

Plant Protection

Initially, a foreigner, possibly a qualified individual on sabbatical leave could evaluate the insect, disease, and other pest problems of importance to production and storage. Two capable and interested individuals should be associated with his work in Yemen. These individuals should have academic qualification that would subsequently permit them to undertake advanced study as deemed necessary by the consultant.

The pathologist and entomologist would round out a team of specialists focused on the problems of sorghum and millet production.