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memorandum

DATE: December 9, 1981

REPLY TO
ATTN OF: Jeannette John, PRO, USAID/SyriaSUBJECT: Summary - Land Classification/Soil Survey Project
Second Evaluation November 16-18, 1981

TO: Mr. Edwin D. Callahan, AID Representative, USAID/Syria

Thru: Mary K. Huntington, PRO, USAID/Syria

At the conclusion of the evaluation, agreement was reached by the participants on the decisions/issues as indicated on the Project Evaluation Summary (PES) Part I.

Summary:

The project is designed to institutionalize land classification and soil survey capability in the Soils Directorate of the Ministry of Agriculture through training of Syrian scientists in the United States, through the production of certain natural resources map products, and through procurement of modern equipment.

Seventeen out of the proposed eighteen trainees have completed their training in the U.S. and have returned to the project. They are receiving hands-on training until the completion of the project. To date, the Syrian Arab Republic Government has not provided a computer trainee. A computer programmer is essential to continue to effectively use the data generated by the project. SARG has agreed to provide a computer trainee prior to January 1, 1982.

Fieldwork on the soils maps and land use maps at scales of 1:500,000 and 1:100,000; have been completed. The final map compilation is in process and will be completed by February 1, 1982. The soils mapping at the scale of 1:25,000 will begin in February 1982. The contractors will develop and implement a model procedure and train staff in a geographic area selected by SARG and the contractor. The mapping in this selected area will be completed jointly by the contractor and SARG by the end of the project.

All commodities have been purchased.



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The AID Representative requested the participants to address three points. First, how to effectively use the remaining funds in the time left. Second, the issue of the computer and computer trainee. Third, the responsibility of the contractor to undertake and complete a portion of the 1:25,000 scale map in order to train the Syrian counterparts to continue the mapping after the departure of the contractor team.

The project is presently on schedule and it is expected that all aspects will be completed prior to the termination date.

Project Activities:

The objective of the project is to assist SARG expand and accelerate its program of land classification and soils survey in order to facilitate the implementation of the government's decision to intensify agricultural production in selected areas, thus increasing both agricultural output and income through more efficient and appropriate use of limited land and other productive resources.

I. Soil Surveys:

The objectives of the Soil Surveys are:

1. To assist the SARG to expand and accelerate its Soil Survey/Land Classification program.
2. To establish an effective Soil Survey/Land Classification unit through:
 - a. Specialized training for Syrian Counterparts.
 - b. Hands-on experience and training the Syrian soils personnel in the field.
3. To prepare Soils and Land Classification Maps of the following types and scales.
 - a. General Soils Maps of the Syrian Arab Republic at a scale of 1:500,000.
 - b. General Soils Map of the First Settlement Zone. (This is an isohyet of more than 350 mm of rainfall annually) at a scale of 1:100,000.
 - c. Develop and implement a model procedure and train Syrian staff for a 1:25,000 scale soils

survey in a selected geographic area within the first settlement zone.

Introduce Remote Sensing techniques and interpretation of the satellite imagery as they apply to the General Soil Survey studies.

5. Prepare soil maps and soil reports for the above soil studies and make necessary interpretations of the soils data for the end users showing the potential resources for future development projects.

The soils scientist summarized portions of the resolutions of the first annual review which dealt with soil survey activities. He was to prepare and present a seminar on the principles of the soil classification and mapping and remote sensing techniques; complete the field work of the 1:500,000 soil survey; start and try to complete the field work of the 1:100,000 survey and prepare a list and order the equipment for the fieldwork.

After the first evaluation, he met with the SARG representative and presented a time table for the fieldwork and a list of the equipment to be purchased. Administrative problems were also discussed and solutions agreed to regarding additional payment to workers in the field, hiring a competent draftsman for the soils maps and graphics, and the typing, translating and printing of reports.

He then summarized his activities from the first evaluation to the present. A complete set of lecture notes for the seminar was prepared and the Soil Survey and Remote Sensing Seminar took place from March 21 - April 5, 1981 with 15 personnel attending from the Directorate of Soils. A three day field trip was made at the end of the seminar and many important aspects of soil classification and soil mapping were discussed under actual field conditions.

The field^{work} for the scale of 1:500,000 soil survey was completed in June. Final interpretations of the 1:500,000 imagery was made and the final soils map and soils legend were prepared during August and September. The mosaics were received in October and the soil lines were transferred onto the mosaics and sent to the RSI for digitizing.

The fieldwork for the scale of 1:100,000 soil survey during the month of July was around the Lattakia, Baniyas and Tartous areas and approximately 35% of the first settlement zone was covered. During late October and early November, the area around Qamishli and approximately 21% of the first settlement zone was covered. At the same time, the Chief of Party and the Syrian counterparts completed fieldwork on an additional 39% of the first settlement zone in the Hama-Aleppo area.

Criteria for the evaluation of important soil factors were established and all of soil information was coded and sent to the RSI for the data bank.

II. Land Use Mapping:

The objectives of the land use mapping were to prepare maps of present land use patterns of Syria at 1:500,000 scale and of the first settlement zone at 1:100,000 scale.

The land use specialist stated that both of these objectives have been accomplished and a report prepared for inclusion in the publication of the final project results.

Extensive field observations throughout Syria were combined with standard photo interpretive procedures to produce these maps. The 1:500,000 scale maps present six general land use categories and the 1:100,000 scale maps present a more detailed subdivision of these categories. If an area consisted of more than 60% of one land use category, it was mapped in that category recognizing that there could be up to 40% mapping inclusions.

It was pointed out that for land use maps to be effectively utilized, mapping should continue on a periodic basis such as yearly or biannually to provide information on changing land use patterns.

III. Range Vegetation:

The objective of the rangeland studies was to review the current status of the Syrian rangelands, to evaluate current trends and problems, and to make recommendations for research activities and policy changes which would be instrumental in increasing and maintaining long term rangeland productivities.

The range management specialist pointed out on the maps the routes taken on the fieldwork. A short discussion was given of the delays such as the late approval from the SARG for his arrival, clearing and licensing of vehicles, difficulty in obtaining a qualified counterpart, etc. In addition no field trip was scheduled in July due to travel restrictions.

He explained that since the vegetation was essentially gone by the time he was able to get to the field, he was limited as to what he could do and produce. He recorded the perennial vegetation that was present.

When the rough draft of the 1:500,000 soils map was completed, he compared his vegetation data with it and found limited correlation except in certain instances such as high salt areas. This is probably due to the long term overuse of the steppes. He noted that the imagery was of little use in delimiting range vegetation because of low density and cover present.

He gave a brief ^{summary} of the recommendations that will be presented in his report.

He pointed out that an inventory should be done at a detailed scale and at the start of the range improvement practices, a monitoring program be established. He also recommended establishment of permanent study transects as the basis of monitoring.

He stated that although the hema and related cooperative systems were undoubtedly well suited to many areas, other systems should be investigated.

He encouraged the grazing of camels as they utilize plant species not used by other livestock. If not grazed, these species increase at the expense of other plants thereby lowering the grazing capacity for the other classes of livestock.

IV. Irrigation:

The objectives of the irrigation studies were to review the current status of the irrigation projects in Syria, to review on-going irrigation research activities, to make recommendations for future research needs, and to establish criteria for evaluating the suitability of the soils for irrigation.

Since the irrigation engineer completed his assignment and returned to the U.S. in October, the Chief of Party presented the results of the irrigation studies.

Irrigation projects in Deir-Ezzor, Raqqa, Ghab Depression, Sinn River Basin, Euphrates Valley and Akkar plain were investigated in the field. Reports were written based upon these investigations which addressed the specific problems observed such as excessive salinity and alkalinity and inadequate drainage. Assistance was provided to the Directorate of Soils staff on current research projects in several parts of Syria. This included consideration of experimental design and selection and installation of research equipment purchased by the project.

A major output is the two part final report which will be published at the end of the project. The first section of the report presents criteria for use in classifying irrigation soils suitability. The criteria selected are based on those used by the U.S. Bureau of Reclamation, but were modified to accommodate local conditions. The procedure was tested on randomly selected soils and found to produce meaningful results.

The second section of the report presents information needs for establishment of irrigation water requirements and management guidelines, and procedures which could be used to obtain this information.

V. Training:

Seventeen out of the proposed ^{eighteen} trainees have completed their training in the U.S. and have returned to the project.

The trainees were sent in two groups. After the return of the first group of ten, discussions were held and modifications were made in the training curriculum for the other group of seven to further increase their understanding of remote sensing technology.

A computer science trainee is still to be identified by the SARG. This is a critical problem, as a trainee must be selected and sent to the U.S. by January 1, 1982 in order to complete the training and delivery of the computer hardware and software systems before project completion. It was agreed that if the SARG did not provide a computer trainee by January 1, 1982 the automatic data processing and information systems component of the project will be examined and recommendation set forth for disposition of this aspect of the project.

VI. Commodities:

All commodities have been purchased. The computer was delivered to the Remote Sensing Institute at the South Dakota State University in December 1980 in anticipation of the imminent arrival of the computer trainee at that time. The computer will not be shipped from the U.S. until trainee has completed his program in the U.S. and adequate facilities are available for housing the computer in Syria.

VII. Budget:

The budget was reviewed and revised to permit a three month extension of the soil scientist. This will enable him

to participate more extensively in the development and training of the Syrian counterparts in the implementation of the 1:25,000 scale soil mapping survey procedures. The contractor produced a new budget for \$2,190,727 which is within the \$2,200,000 budgeted amount.