UNITED STATES GOVERNMENT

Memorandum

TO : Mr. D. L. Roberts, Water Resources Engineer
LA/CD/ENGD

DATE: April 28, 1969 13p

FROM : William H. Berry, ENRN

SUBJECT: Quarterly Report - Multiple Development of the São Francisco River Basin

Attached is one copy of the subject report for the period ending March 31, 1969.

The report is prepared quarterly by USAID and the Technical Assistance Team and submitted to SUVALE in accordance with the project agreement.

WHB:bdo

ATTACHM ℅ #____ to TOAID A Memo
Dated 4/24/69
Copy 1 of 4

MULTIPLE DEVELOPMENT OF THE SÃO FRANCISCO RIVER BASIN

Quarterly Report

Period Ending March 31, 1969

No. 3

Loan No.: 512-L-054
Project Agreement No.: 512-22-120-252.6
PIO/T No.: 512-2526-2-6580379

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Loan No.: 512-L-054
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U. S. TECHNICAL ASSISTANCE TEAM

A recent memorandum of understanding between the Agency for International Development, the U. S. Department of Interior, Bureau of Reclamation, and the U. S. Department of Agriculture makes it possible to obtain the services of certain specialists in agriculture from the latter for the U. S. Technical Assistance Team. It is anticipated that nominations of technicians concerned with agriculture, marketing and farm planning will be received early in the coming quarter.

Seven new arrivals from the Bureau of Reclamation during the quarter brought the total number of U. S. technicians currently on board to ten and conforms with the nominations listed in the preceding quarterly report.

Through the good offices of the Language Training Branch of the U. S. Foreign Service Institute, SUVALE located a competent Portuguese language instructor. Under contract with SUVALE he provides regular scheduled language instruction to the team. The Institute is supplying training aids for the project.

SUVALE

In January, the former Minister of Mines and Energy was appointed Minister of Interior. With the change, the former superintendent of SUVALE was replaced by Dr. Wilson Santa Cruz Caldas formerly an assistant to the Minister of Mines and Energy. Dr. Santa Cruz was Director of Planning and Engineering for SUVALE during most of the Land and Water Reconnaissance Appraisal of the São Francisco River Basin (Phase I).

SUVALE has acquired additional office space, furniture and equipment for the team some of which has been delivered. With the arrival of the entire group and the resultant counterpart activity more will be required.

The assignment of a typist to the team has greatly facilitated the handling of the daily routine. There is, as previously pointed out, a pressing need for a bi-lingual secretary.

STAFF CONFERENCES

The U. S. Technical Assistance Team and SUVALE's Division of Planning (DIPLAN) held a series of meetings during the past quarter to discuss various program elements and requirements. Included were work items and data required for project feasibility studies; material and supplies for current and projected development, and personnel needs for the total effort. Throughout the discussion emphasis was placed on the desirability of assigning counterparts on the basis of individual projects. In which case several technicians would eventually be working with each member of the team. Thus, assuring maximum utilization of available specialized advisory assistance in developing a high degree of competence within SUVALE. Due to the lack of official action on many of the proposals presented to the group active program participation is being curtailed.

As an outgrowth of the discussions relative to personnel needs an organizational scheme is jointly being developed which will closely align the

U. S. Technical Assistance with SUVALE's current organization and set forth by proficiencies counterpart requirement. The detailed chart is scheduled for submission to the Superintendent in early April for his consideration.

RELATED CONFERENCES

Schistosomiasis

Representatives of SUVALE, the Departamento Nacional de Endemias Rurais (DNERU) conferred with U. S. personnel relative to minimizing, to the extent possible, the spread of schistosomiasis. Drs. João Leite (SUVALE) and Ernesto Paulini (DNERU) will review, comment and advise on project plans from the standpoint of minimizing the desease. SUVALE has entered into working agreement with DNERU in an attempt to more adequately define the present extent and location of areas of infestation. Jointly they will seek assistance from the Pan American Health Organization.

LAND AND WATER RESEARCH

Representatives of Utah State University visited Brazil in connection with its contract with USAID/W which includes an evaluation of water management needs of Latin America. Drs. Bruce H. Anderson, Director of Centro Interamericano de Desarrollo Integral de Aguas y Tierras (CIDIAT), Merida, Venezuela, Alvin A. Bishop, Head of the Agricultural and Irrigation Engineering Department and Howard B. Peterson, Professor of Irrigation of the University met with SUVALE and U. S. personnel on several occasions. Purpose of the visits was to explore the need and ways Utah State might, under its contract, assist SUVALE in carrying forward a cooperative water management research program. SUVALE express considerable interest in such a program and proposed to study the possibility of incorporating water management research into the activities of the experimental farm included in its multiple development program for the São Francisco Valley. It was concluded that Utah State University would pre-

sent to USAID a Water Management Research program oriented toward the needs of SUVALE.

SOILS LABORATORY

Based on the recommendations of Mr. William B. Peters of the Bureau of Reclamation Chief Engineer's Office, SUVALE is processing the procurement of additional equipment for the SUDENE laboratory at Petrolina. This addition will provide the necessary facilities to satisfy the presently anticipated land classification needs of SUVALE. Utilization of the laboratory at Petrolina presents some recruitment problems due to inadequate housing and schooling facilities. It also presents some commuting difficulties with respect to Belo Horizonte as headquarters for the Team's soils laboratory technician, as originally planned.

Some consideration is being given to shifting his headquarters to Rio de Janeiro. Such a move would tend to reduce the amount of supervision the incumbent could give to the laboratory and further remove him from the area of field activity. On the other hand it would place him in closer contact with the office phase of the land classification effort.

SÃO DESIDÉRIO PROJECT

Work continued as weather permitted on excavation of the main canal. By the end of the quarter, approximately two kilometers had been completed with another two kilometers under various stages of construction. One box culvert is under construction. Permeability tests performed in the field indicate a strong possibility that lining may be required. Earth samples have been submitted to the laboratory for testing and analysis. It is estimated that approximately 15% of the first 6 kilometers of canal has been completed to date. Although some equipment is available to the project, it is inoperable largely due to lack of replacement parts. SUVALE has elected not to make an investment in equipment for this project since construction beyond Km 6 of the main canal is expected to be

accomplished by contract. Therefore, with the exception of one D-4 tractor used to clear vegetation from the canal alignment picks, shovels and wheelbarrows are the principal equipment used. Some 300 laborers were employed during March.

To date, over 40,000 cubic meters have been excavated at an average cost of NCr$3.5 per cubic meter (equivalent to 67 cents per cubic yard). Unit costs of excavation ranges from NCr$2 to 10 per cubic meter based on classification of material to be excavated.

Inaccuracies in the existing topographic maps (scale 1:2000) necessitated a re-mapping of the entire area. A contract was awarded to Cruzeiro do Sul to provide a new map of the area on a one-meter contour interval and to the same scale. First maps are expected to be delivered about July.

Lack of authentic maps and right-of-entry have adversely affected both design and field operations.

Rains during January and February restricted land classification activities to the office where aerial maps were catalogued and otherwise prepared for field. Despite considerable rain during March field surveys relative to land classification were completed on 1,800 hectares. Soil samples were sent to the laboratory of Petrolina, Pernambuco, for analysis. Thus far, a total of 209 auger holes and 16 pits have been examined on the project area and 322 samples taken. Land classification of the project is approximately 15% completed.

FORMOSO PROJECT

With the arrival of additional U. S. technical personnel, discussions were held with SUVALE late in March to discuss ways and means of accelerating development of the project. It is anticipated that the proposed 1100 hectares irrigation development cannot be serviced as planned

due to limitations of the installed capacity of the pumps. Plans were formulated for an early on-site inspection and for taking additional micro-topography for determination of farm layouts. Work on land classification has been essentially completed. Distribution systems and farm layouts along with water requirements are being programmed.

SUVALE has contracted Cruzeiro do Sul during the quarter to furnish topographic maps on the scale of 1:2000 covering some 5000 hectares adjacent to the present small irrigation project. It is envisioned that this area will be developed in approximately the same way as the smaller project

The status of the original project is as follows:

Type of Activity	% completed
Land classification	80
Design and layout	25
Construction	25

Sequitai
~~RIACHO GRANDE~~ PROJECT

Reconnaissance drilling was started on the upper Cachoeira damsite early in the year. By the end of the quarter, the right or east abutment was nearly completed. Drilling is expected to be completed on the left abutment during the coming quarter.

PIRAPORA PROJECT

Designs for the 70 hectare experimental farm are nearing completion. Preliminary data on electrical requirements for the pumping plant have been obtained. However, it cannot be firmed up until the project is further advanced. Agronomists are receiving training in technicques of land classification in connection with field survey activities. During the quarter a total of 3600 hectares (9,000 acres) between the São Francisco and the Das Velhas rivers, below Pirapora, were surveyed. For purposes of the survey the area has been divided into 2 x 2 kilometer quadrangles. Mosaics

of 1:25,000 scale are being used as a base map. To date a total of 143 profiles have been augered and some 400 samples collected.

In addition, over 130 samples were taken for fertility analysis. A brief review and partial analysis of the data reveal the soils of the area average sandy loan to sandy clay loan, a low fertility level, and a cation exchange, capacity ranging from moderately low to low.

To date some land classification on the project is approximately 5 per cent complete, plans and layouts some 2 per cent.

SUMMARY

During the quarter administrative changes and subsequent actions have been taken within SUVALE designed to strengthen and activate the Agency. It is expected that the move will redefine and strengthen program responsibilities.

Arrival of the Leader and several members of the U. S. Technical Assistance Team plus the anticipated arrival of the remainder has contributed to increase program activities. Hopefully the combination will motivate a stepped up and active prosecution of the São Francisco Development Program.

Although weather conditions during much of the past quarter have not been conducive to field activities some notable progress was made in land classification on the Pirapora, Formoso and São Desidério projects. Limited construction was carried forward on the latter two. Considerable office planning and orientation was carried on during the period.

Current construction activities apparently are to be limited to the completion by hand labor of certain project features related to the São Desidério and Formoso projects. Present thinking in SUVALE is that the bulk of the construction on these and other projects will be completed under contract.

Some of the basic data, normally available in feasibility reports, are not currently available. Therefore, any determination of program completion on a percentage is somewhat relative. It is estimated however, that progress to date on the multiple development program for the São Francisco River Basin could be stated as:

Activity	% completion
Design and layout	3
Land classification	15
Construction	2

WHB:asl
4/24/69

512-054

June 3, 1969

MEMORANDUM

TO: Files

FROM: Daryl L. Roberts, Water Resources Engineer, LA/DR/ENGD

SUBJECT: Brazil -- Sao Francisco River Basin Quarterly Report - Period Ending March 31, 1969 - Loan No. 512-L-054

U.S. Technical Assistance Team

A recent memorandum of understanding between AID/USDA/BuRec makes possible the obtaining of certain specialist in Agriculture for the U.S. Technical Assistance Team.

With the arrival of seven BuRec personnel, the number of U.S. technicians currently on board are ten. SUVALE has provided a competent Portuguese language instructor for team language training.

Staff Conferences

Meetings included discussions, on various program elements and requirements. Emphasis was placed on the desirability of assigning several counterpart to each team member.

Schistosomiasis

Project personnel were briefed relative to minimizing to the extent possible the spread of schistosomiasis. Areas of infestation were defined.

Land and Water Research

Representatives of Utah State University visited Brazil in connection with its contract with USAID/W which includes an evaluation of water management needs of Latin America. Purpose of the visit was to explore the need and ways Utah State might, under its contract, assist SUVALE in carrying a cooperative water management research program. It was concluded that U.S.U. would present to USAID a water management program oriented toward the needs of SUVALE.

Soil Laboratory

SUVALE is processing the procurement of additional equipment for the SUDENE laboratory at Petrolina. Some consideration is being given to shifting the team's soils laboratory technician from Belo Horizonte to Rio de Janeiro. This would reduce the amount of supervision the incumbent could give the laboratory and further remove him from the area of field activity.

RECORD COPY

Sao Desiderio Project

Excavating of the Main canal continued. It is now estimated 15% of the first 6 kilometers of canal has been completed. Inaccuracies in the existing topographic maps (scale 1:2000) necessitated a re-mapping of the entire area. Lack of authentic maps and right-of-entry have adversely affected both design and field operations. Permeability tests along the canal indicate a strong possibility that lining may be required.

Formosa Project

It is anticipated that the proposed 1100 hectare irrigation development cannot be serviced as planned due to limitations of the installed capacity of the pumps. Work on land classification is essentially complete. Plans for taking additional topography for determination of farm layouts have been formulated.

Jequitai Project

Drilling at the upper Cachoeira damsite continued -- the right abutment was nearly complete.

Pirapora Project

Designs for the 70 hectare experimental farm are nearly completed. Agronomists are receiving training in land classification. During the quarter 3600 hectares between the Sao Francisco and the Das Velhas were surveyed. Over 150 samples were taken for fertility analysis -- a partial analysis of data reveal the soils of the area average sandy loan to sandy clay loan with a low fertility level.

Clearance: Benjamin G. Watkins, Deputy Chief Engineer, LA/DR/ENGD