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AGENCY FOR INTERNATIONAL DEVELOPMENT

UNITED STATES A. I. D. MISSION TO BRAZIL

REPORT ON EXAMINATION

OF

CONSTRUCTION OF SMALL DAMS FOR DROUGHT RELIEF - BAHIA

GRANT PROJECT AGREEMENT No. 512-11-120-252

FOR THE PERIOD

DECEMBER 22, 1964 THROUGH MARCH 31, 1968



OFFICE OF THE CONTROLLER



REPORT No. 5/60

COPY No. 6

DATE: AUGUST 28, 1968

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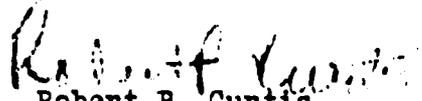
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AGENCY FOR INTERNATIONAL DEVELOPMENT
UNITED STATES A.I.D. MISSION TO BRAZIL
Office of the Controller

August 28, 1968

TO The Director of Mission
Minister William A. Ellis

The Controller's Office, Audit Division, has completed an audit of the project entitled, "Construction of Small Dams for Drought Relief - Bahia", partially financed by release of P.L. 480, Title I former Section 104 (e) grant funds in the amount of NCr\$100,000. Although this USAID contribution was originally intended to support construction of 16 small dams, only two dams were constructed under the financing. Factors adversely affecting project progress included inflation, delays in construction work and lack of contractor's financial capability. None of the SUDENE (CONTAP funded) contribution of NCr\$100,000 had been released to the project and a redetermination should be made at this time as to their planned uses. The audit report also noted that the State of Bahia failed to respond in a satisfactory manner to the reporting requirements as set forth under the agreement.


Robert B. Curtis
Controller

AGENCY FOR INTERNATIONAL DEVELOPMENT
UNITED STATES A.I.D. MISSION TO BRAZIL

REPORT ON EXAMINATION

OF

CONSTRUCTION OF SMALL DAMS FOR DROUGHT RELIEF - BAHIA

SECTION I - GENERAL

SCOPE AND PURPOSE

We have examined the project "Construction of Small Dams for Drought Relief - Bahia". This was the initial examination of the project and covered a period from December 22, 1964 through March 31, 1968.

The principal objectives of our examination were to review and evaluate program implementation as compared with the objectives outlined in the project agreement and to determine the quality and effectiveness of financial and administrative management.

Our examination was made in accordance with generally accepted auditing standards and included such tests of financial records, inspections and discussions with USAID/B, SUDENE, and State officials as we considered necessary under the circumstances. The audit was conducted jointly with SUDENE auditors who are issuing their own report.

Before finalization, this report was reviewed with appropriate USAID/B officials in Rio and in the Northeast Area Office (NEAO). This report contains three recommendations for corrective action.

B. BACKGROUND

The State of Bahia is the largest and most populous in the Northeast with 560,000 square kilometers and over 5,000,000 people. More than sixty (60) per cent of its area is in the so-called "Polygon of Drought". This region is periodically affected by such extremes as floods and droughts which endanger the lives of both human and livestock.

With approximately 70 per cent of the State inhabitants dependent on agriculture for their living, the availability of impounded water is necessary to the economic development and well-being of much of the human and livestock population. During the dry period, water stored in small dams is needed for the very maintenance of life itself.

While hundreds of small dams had already been constructed in the interior, many important areas still remain without reservoirs.

C. PROGRAM OBJECTIVES

To alleviate the situation outlined above, the State, in 1963, initiated studies for the establishment of a small dams construction program. Out of approximately 100 projects, 16 were selected for detailed studies and planning by the State with the cooperation of National Department for Works Against Droughts (DNOCS).

Since construction of these dams was considered vital and the State was unable to finance the works from its own resources, USAID/B financing was sought through a formal proposal dated January 24, 1964. AID P.L. 480 Title I Section 104 (c) grant cruzeiro funding of NCr\$.. 100,000 was subsequently agreed upon as the USAID/B contribution under a project agreement dated December 22, 1964.

The agreement contemplated the construction of a maximum of 16 priority small dams adequate for multiple usage of stored water. They were to be built in selected areas in order to permit future expansion of the program. Their planned water storage capacity was 7,201,700 cubic meters.

SECTION II - FINDINGS AND RECOMMENDATIONS

A. PROGRAM ACCOMPLISHMENTS

During the 37 months that have elapsed since the inception of this program, only one dam out of the proposed 16 has been completed. A second one is approximately 90 per cent complete, its construction work being about 17 months behind schedule due to extended stoppages. However, the funds obligated under the project agreement, amounting to NCr\$100,000 which were intended to support construction of 16 small dams, have already been either spent or committed to the construction costs of these two (the Mocambo and Barreiro) dams. Both dams are located on public lands in the county of Caculé, about 760 kms from Salvador, the State Capital and are of the homogeneous compacted earthfill type.

In terms of water storage, project progress could be measured as follows:

	<u>Planned Water Storage</u> <u>(Cubic Meters)</u>	<u>Percent</u>
Programmed: 16 dams	<u>7,201,700</u>	<u>100.0</u>
Completed: 1 dam (Mocambo)	854,120	11.9
Underway: 1 dam (Barreiro)	669,120	9.3

Factors adversely affecting project progress included the following:

1. Inflation. Due to the substantial time elapsed between the first cost estimate which was made in 1963 and the date the agreement was signed, i.e., December 22, 1964, unit prices were significantly affected by inflation. The original budget for construction of 16 small dams became unrealistic. For example, the budget first approved for the Mocambo dam, which was based on unit prices prevailing in 1964, had to be nearly doubled by September 1965 from NCr\$44,353.53 to NCr\$80,216.87.

2. Delays in Beginning of Construction Work. Several months elapsed before the approval of SUDENE was obtained for the engineering plans which had been worked out by the State and DNOCS. Moreover construction work on Mocambo and Barreiro dams did not start before May and August 1965 respectively. Such delays were mainly due to the fact that none of the 16 dams originally planned by the State gained SUDENE's approval. Program replanning on the basis of SUDENE's technical advice then became necessary and, of course, this was time consuming. Such replanning included Mocambo and Barreiro dams whose engineering plans were eventually approved both by SUDENE and USAID/B.

3. Lack of Contractor's Financial Capability. Although the technical capability of the Contractor's engineers has not been questioned, the Contractor's financial limitations jeopardized project progress. Extended halts in the construction of Barreiro dam have occurred due to the Contractor's inability to purchase needed fuel supplies and to pay the salaries of workers and other field personnel on a timely basis. In spite of the fact that the construction

company was a mixed entity, with the State holding 70 per cent of its capital stock, by the middle of 1967 it had reached a point near bankruptcy. Outstanding debts both with Social Welfare Agencies and local suppliers, amounted to approximately NCr\$120,000 and NCr\$.. 150,000 respectively and several overdue obligations were then protested by creditors. By that time, the Barroiro dam was reported as completed and, as a result, the company wrongfully obtained from the State release of project funds. This irregularity was subsequently corrected through refund following joint USAID/SUDANESE action. Since October 1967 the company has been under new management which is exerting efforts to restore its financial standing, but results appear to be limited thus far.

B. PROGRAM NEEDS

1. Barroiro Dam

At the time of our review excavation of the spillway was underway, but progressing slowly. The USAID/B engineer indicated that non-completion of earth compactation on both the up and downstream slopes, coupled with the absence of ditches on the abutments to collect water from the hills, contributed to the development of a serious erosion process on both slopes aggravated by heavy rainfalls that occurred in December 1967. The USAID/B field engineer reported there was no immediate risk of collapse. However, he expressed the opinion that repair of cracks should be completed within thirty (30) days, since this region is affected by floods.

The Contractor has been paid according to the following schedule:
50 per cent of total approved budget upon signature of construction

agreement; 20 per cent upon performance of half of construction work; the remaining 30 per cent becomes due upon completion of the dam. The State was therefore retaining in the project bank account in Salvador, funds committed for the 30 per cent final payment. According to State and SUDENE engineers, this dam is already 90 per cent completed, but, due to the Contractor's inadequate working capital, further extensive delays in construction are anticipated unless some remedial measure is implemented.

RECOMMENDATION No. 1

The Northeast Engineering, Industry and Natural Resources Division (NEEIN) should request the State to immediately establish with Contractors, in a form acceptable to USAID/B a construction schedule to repair Barreiro dam and accelerate its completion.

2. Need for Additional Funds

As its contribution to this program, SUDENE on June 1, 1966 through Revision No. 1 to the Agreement, agreed to make NCr\$100,000 available to the State of Bahia from CONTAP funds. The source of the CONTAP funds was the counterpart deposits made by the GOB under A.I.D. Program Loans. The final contribution date was extended from June 20, 1966 to June 30, 1967. On October 12, 1967 Revision No. 2 was issued to (a) change the executing agency from the State to DMOCS, and (b) to extend the final contribution date to October 12, 1969. Change of the executing agency appears to be a sound corrective measure

in view of the highly unsatisfactory progress at the Barreiro dam and also in view of DNOCS's extensive past experience in dam construction. However, completion of Barreiro dam remained under State responsibility.

None of the promised SUDENE (CONTAP) funds have been released to this program, although this will not affect the construction of the Barreiro dam, such funds having been planned for new construction. However, it should be noted that the CONTAP contribution is significant, amounting to one-third of the planned USAID/State/SUDENE financing. Receipt of the CONTAP funds would enable further progress toward achievement of program goals, now woefully short of planned objectives. On the other hand, if in the judgment of the USAID the program should be discontinued or changed, plans could be made to employ the agreed NCr\$100,000 CONTAP contribution in some other area.

RECOMMENDATION No. 2

The Northeast Associate Director's Office (NEAD) either (a) request SUDENE to deposit NCr\$100,000 of CONTAP funds toward dam construction in Bahia, or (b) discontinue the project and arrange to allocate CONTAP funds to another development area.

3. Dam Sizes

Our discussion with SUDENE and USAID/B engineers involved in this project evoked from them a majority opinion that both the Mocambo and Barreiro dams are too large when human and livestock needs for water are taken into consideration in the areas served.

Although original plans had been approved by USAID/B and SUDENE engineers, the latter currently feel that a construction plan contemplating a series of smaller and more disseminated dams might be more advantageous.

Although it is not our intention to make any recommendation on this subject, it appears that these views deserve consideration by the appropriate USAID/B officials in future planning and possible employment of SUDENE (CONTAP) funds for this project. (See also recommendation No. 2 above).

C. FUNDING

USAID/B, the State, and SUDENE have agreed to match funds in the amount of NCr\$100,000 each for this program. USAID/B's contribution was originated from P.L. 480 Title I Section 104 (c) grant. Obligations were met by parties concerned as follows:

	<u>OBLIGATED</u>	<u>UN- RELEASED</u>	<u>PROVIDED</u>	<u>EXPENDED</u>	<u>COMMITTED</u>
	<u>NCr\$</u>	<u>NCr\$</u>	<u>NCr\$</u>	<u>NCr\$</u>	<u>NCr\$</u>
USAID/B	100,000	4.15	99,995.85	76,744.03	23,251.82
State	100,000	-	100,000.00	86,137.85	13,862.15
SUDENE (CONTAP)	100,000	100,000.00	-	-	-
TOTAL	300,000	100,004.15	199,995.85	162,881.88	37,113.97

The amounts committed are deposited in the Bank of Brazil, Salvador (NCr\$23,251.82) and Bank of State of Bahia, Salvador (NCr\$... 13,862.15) for final payment on construction of Barreiro dam upon completion, as per contract.

In addition, USAID/B contributed 42,563 metric tons of Title II, P.L. 480 FFP commodities for payment in kind of no more than forty

(40) per cent of project labor costs, as called for under the agreement. This was actually part of the "Work Front Program - NE".

D. CONTRACT AWARDING PROCEDURES

No bidding procedures were followed in relation to construction of either the Mocambo and Barreiro dams. In lieu thereof two "Memoranda of Understanding" were signed between the State and ECOSAMA - Organization for Soil Preservation, Water and Agriculture Mechanization. These documents obligated the construction company to follow (1) approved engineering plans and budgets, (2) technical standards as recommended by the Brazilian Association of Technical Standards, and (3) to carry out project site distribution of FFP commodities made available for part payment of labor costs. Departure from the usual bidding practices was justified by State officials by the fact that ECOSAMA was a mixed company, actually playing the role of State Engineering Agency. The documents were reviewed and approved by the USAID/B technician assigned to the project.

E. REPORTING, ACCOUNTING AND SUPPLEMENTARY AUDITING PROCEDURES

1. Reporting

The State failed to respond in a satisfactory manner to reporting requirements as set forth under the agreement. Only occasionally has the construction company submitted to USAID reports on construction progress. A "final report" on the construction of Mocambo dam was completed in October 1966, approximately seven months after completion of construction.

RECOMMENDATION No. 3

The Northeast Engineering, Industry and Natural Resources Division (NEEIN) should require the State to render appropriate reports as called for under Section IV (B) of the Project Agreement.

2. Accounting

The State was able to furnish us with the basic data related to release of project funds. By contrast, the construction company was not in position to satisfactorily meet some of our information requests, for example, on FFP commodities receiving and distribution.

3. SUDENE Auditing Procedures

In addition to technical assistance and supervision to this program, SUDENE agreed to exercise control over accounting, application of resources, inspection and evaluation of results. We found, however, that SUDENE did not receive any financial and/or construction reports either from the State or from the construction company. Consequently, its auditing function was not exercised before this joint audit now performed. A project site inspection, however, was made by SUDENE engineer in June 1967. His report was not submitted to the USAID.

F. PUBLICITY AND MARKING

Some publicity was conveyed by the press when the project was launched. In addition, a motion picture on project activities was

produced with project funds. Signs with the AFP "torch" and "hand clasp" emblems were erected at the project sites.

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RESPONSIBLE A.I.D. OFFICIALS - USAID/BRAZIL

ENGINEERING, INDUSTRY AND NATURAL RESOURCES DIVISION (NEEIN)

	<u>From</u>	<u>To</u>
1. Mr. A.W. Huseby Chief, NEEIN		Up to February 1965
2. Mr. Harold H. Weiland Chief, NEEIN		Since February 1965 to date
3. Mr. George Hargreaves Chief, WR-NEEIN		Up to June 15, 1965
4. Mr. Jack Sparks Chief, WR-NEEIN	June 16, 1965	February 8, 1966
5. Mr. Chris Christensen Chief, WR-NEEIN	August 16, 1966	to the present

FOOD FOR PEACE OFFICE (NEFFPO)

1. Mr. William D. Bair FFP Officer		Up to May 23, 1967
2. Mr. Robert R. Standley FFP Officer		Since August 7, 1967

TECHNICIAN ASSIGNED TO THE PROJECT - USAID/B/NEAC

1. Mr. Paulo A. Sá		Up to the present
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SUMMARY OF RECOMMENDATIONS

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3	The Northeast Engineering, Industry and Natural Resources Division (NEEIN) should require the State to render appropriate reports as called for under Section IV (B) of the Project Agreement.	11

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EXHIBIT C

DISTRIBUTION OF
REPORT ON EXAMINATION
No. 5/69

	<u>COPY No.</u>
Minister William A. Ellis, Director, United States Agency for International Development Mission to Brazil	1
Dr. Herman Kloino, Deputy Director (DDOM) - USAID/B	2
Mr. Shepard J. Hollander, Associate Director (NEAD) - USAID/B/NEAO	3 - 4
State Department - The Honorable J.K. Mansfield, Inspector General of Foreign Assistance (IGA)	5
State Department - Mr. Jack B. Kubish, Country Director - Office of Brazil Affairs (ARA/BR)	6
AID/W - Executive Director (ARA-LA/MGT/EX)	7 - 8
AID/W - Office of the Controller, Audit Division (C/AUD)	9
USAID/Panama - Mr. William F. Magee, Inspector in Charge Inspections and Investigations Staff	10
American Embassy, Rio de Janeiro, Mr. Frank C. Carlucci, Executive Officer (EXEC)	11
USAID/B - Office of Assistant Director for Operations (ADOP)	12
USAID/B - Office of Assistant Director for Program (ADPR)	13
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NOTE: All audit work papers are attached to Copy No. 29 which is on file
in the Office of the Controller, Audit Division (COAD), USAID/B.