

**MANAGEMENT RESPONSE TO  
REQUEST FOR INSPECTION PANEL REVIEW OF  
ITAPARICA RESETTLEMENT AND IRRIGATION PROJECT  
LOAN 2883-BR**

The Management and Staff of the responsible Department have reviewed the Request for Inspection Panel Review of the Itaparica Resettlement and Irrigation Project ("the Request") filed by the Pólo Sindical dos Trabalhadores Rurais do Submédio São Francisco on March 19, 1997. Under the Board Resolution establishing the Inspection Panel (Resolution 93-10, 9/22/93) this Request is ineligible for consideration because more than 95% of the Loan Proceeds had been disbursed as of the date the Request was received. However, in the interest of transparency, the following detailed response has been prepared.

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### **Abbreviations Used in this Document**

CHESF	-	São Francisco Hydroelectric Power Company
CODEVASF	-	São Francisco Valley Development Commission
ELETROBRAS	-	Brazilian Electrical Power Holding Corporation
FUNAI	-	National Indian Foundation
FUNDAJ	-	Joaquim Nabuco Foundation
GOB	-	Government of Brazil
IICA	-	Interamerican Institute for Agricultural Cooperation
IP	-	Inspection Panel
MME	-	Ministry of Mines and Energy
O&M	-	Operation and Maintenance
OD	-	Operational Directive
OMS	-	Operational Manual Statement
SAR	-	Staff Appraisal Report
VMT	-	Maintenance Payment
WUA	-	Water Users Association

## Executive Summary

The Itaparica Resettlement and Irrigation Project is a stand-alone resettlement project designed entirely for the benefit of the population affected by the construction of the Itaparica dam and reservoir. Construction of the dam, which was not financed by the Bank, began in 1979. It was needed to provide an additional source of power for the rapidly growing Northeast region of Brazil. Completion of the dam to bring additional power on line was considered a top priority by the Government and regional leaders. A plan for resettling the 8,100 families to be dislocated by the reservoir had not been considered in depth during the design and construction of the dam. As a consequence, Bank staff, in the mid 1980s, in the context of a dialogue with the power sector, strongly advised that adequate provision be made for the affected people. In response to this dialogue, the Government of Brazil requested financing for the Itaparica Resettlement Project in 1986, some seven years after the construction had begun and barely two years before flooding of the reservoir was to take place.

The urban and rural housing and other infrastructure was completed in a timely fashion and the affected population was successfully resettled. The main problem in the Project has been the completion of irrigation infrastructure for the 5,800 farming families affected by the dam. The scope of the agreed project financed by the Bank is limited to rural housing, urban infrastructure and five major irrigation subprojects encompassing about 4,500 irrigated plots. The Bank's accountability should not be extended to non-Bank-financed irrigation subprojects encompassing some 1,300 plots. As was recognized at appraisal, the project involved high risk, given the relatively scanty information available on soil conditions in the region, the technological challenges imposed by terrain and soils, and the social problems involved in dislocating people from their homes. The Borrower's commitment to the project was not strong at the outset and fluctuated throughout implementation. The project was executed during a tumultuous period of Brazil's recent history, when galloping inflation, political change and shifting priorities took their toll on execution. Lack of cooperation among different agencies and the politicization of resettlement caused additional problems.

As a consequence of these factors, long delays and cost overruns affected implementation. Current program costs are estimated at more than double the original estimates and approximately 3,560 of the 5,800 farming families affected by the dam are still awaiting completion of irrigation on their lots. Nevertheless, during the time that these families have been waiting, they have been adequately housed and have received regular maintenance payments. Also, many impoverished and landless farmers, accounting for 60% of the rural families, acquired major assets (housing and irrigated land) through the project.

Throughout the life of the project, the record shows that Bank staff have sought to identify problems as they arose and have taken many extraordinary measures to resolve them. There were regular supervision missions conducted by qualified Bank staff and consultants. These include serving as mediator between agencies and groups, suspending disbursements because of inadequate provision of counterpart funds, approving \$100 million in supplemental funds for the loan, and temporarily raising the disbursement rate from 28% to 100% during most of 1992. The Bank has maintained close contact with representatives of the affected population during project supervision, and many of its actions were taken out of concern for the population and were supported by their representatives. In fact, the NGO that presented the Request has informed Bank staff that its main motivation is to maintain the Bank's involvement in the Project. While the

current situation is far from ideal, the shortcomings to which the Request points do not arise from the Bank's failures to follow its policies.

The Government of Brazil has indicated its commitment to meet the project objectives, and, in November 1996, requested a fourth extension of the project through the end of 1997. Since funds under the loan for irrigation infrastructure are now exhausted, the purpose of the extension was to permit the disbursement of less than US\$6 million, primarily for training directed at supporting the establishment of water user associations (WUAs) to operate and maintain the completed irrigation systems. The Bank and the Borrower have agreed on a set of benchmarks for 1997 that include major advances in the completion of civil works, completion of revised engineering designs where necessary, land titling, and formation of WUAs. In addition, the Government established an Interministerial Committee in January 1997 with the objective of reviewing the program and making recommendations for accelerating its completion. The recommendations are expected in the near future. In the meanwhile, the Government has requested that the Bank continue supervision of the project through December 1999, two years after the present loan closing date. In the judgment of Bank staff, given the government's continued commitment to the overall Itaparica Program in general and the Bank-financed project in particular and the provision of additional financing amounting to about US\$100 million, satisfactory solutions can be found for the remaining rural families by mid-1999.

## I. INTRODUCTION

### *Background*

1. The Itaparica Resettlement and Irrigation Project was approved in 1987 for a loan amount of US\$132 million equivalent. A supplemental amount of US\$100 million equivalent was approved in 1990. Of the aggregate loan of US\$232 million equivalent, \$226.143 million, or 97.5%, had been disbursed as of March 12, 1997, the registration date of the Request.<sup>1</sup> The main objective of the project is stated as follows:

*The project aims at the resettlement of some 2,800 urban and 5,300 rural families (including the Tuxá Amerindian communities) displaced by the Itaparica reservoir on the São Francisco River. In particular, the project seeks to restore, and if possible, improve the incomes and living standards of the involuntarily resettled rural population.*

2. The resettlement project is linked to the Itaparica dam which began construction in 1979 and which went into operation in 1988. The dam was financed and built by the Brazilian Electrical Power Sector Holding Company, ELETROBRAS without World Bank involvement in the design and construction phases. During 1986, the Government of Brazil (GOB) requested financing to support the rehabilitation and financial restructuring of the power sector in Brazil. Preparation of this loan revealed a need to strengthen the sector's capacity to identify and mitigate potential environmental problems. Among the specific needs identified was the need for a comprehensive resettlement plan for the people affected by the then nearly complete Itaparica dam.<sup>2</sup>

3. In June 1986, the Bank approved a US\$500 million loan to the Government of Brazil (GOB) (Loan No. 2720-BR). Although this loan did not contribute to the financing of the Itaparica dam<sup>3</sup>, the Bank and the Borrower agreed that greater attention should be paid to the resettlement needs of the population affected by the Itaparica Dam. Accordingly, a clause in the Power Sector Project Agreement (Sec.2.03) stipulates that

*(a) . . . ELETROBRAS shall prepare and furnish to the Bank an action plan, satisfactory to the Bank (the Itaparica Resettlement Plan) containing specific measures to resettle the human communities to be affected by the Itaparica Hydroelectric Project; (b) ELETROBRAS shall cause CHESF to carry out the Itaparica Resettlement Plan . . . in a manner satisfactory to the Bank . . . "*

4. Subsequently, ELETROBRAS requested separate Bank financing for the Itaparica Resettlement Plan. Under the Itaparica Loan Agreement, the Borrower, ELETROBRAS, onlent

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<sup>1</sup> The original loan amount of US\$132 million equivalent was increased in 1990 by US\$100 million equivalent, to cover cost overruns under an amending agreement. From the legal and operational standpoints, the original and supplemental loans constitute one single loan. There is one amortization schedule with two tranches; the project financed by the two tranches is the same. There is a single closing date.

<sup>2</sup> ELETROBRAS and CHESF adopted a comprehensive Program to meet the needs of all 8,100 families affected by the Dam. The Project appraised by the Bank and described in the Loan Agreement is narrower in scope as explained below. This paper will maintain a distinction between the comprehensive *Program* and the Bank-financed *Project* which is narrower in scope.

<sup>3</sup> As in other sector loans, this loan did not disburse against specific expenditures but rather against general imports. No equipment, works or services directly used in the construction of Itaparica was procured with the proceeds of this loan.

the proceeds of the Loan to its subsidiary, CHESF, the regional power authority, which implemented the project. It was further agreed that

*whenever there is reasonable cause to believe that the funds available to CHESF will be inadequate to meet the estimated expenditures required for carrying out the Project, [the Borrower will] make arrangements promptly to provide or cause CHESF to be provided with such funds as are needed to meet such expenditures.*

5. The Itaparica dam affected altogether about 8,100 families, or about 40,000 people. Of these, about 2,800 families were resettled in urban areas that were rebuilt under the Program. The remaining 5,300 families were resettled in about 110 agrovilas, or rural villages, built close to agricultural subprojects with irrigation facilities. An additional 500 farming families requested relocation to an urban area but wished to continue farming, creating a total demand for 5,800 irrigated plots. The irrigation works were built under two different financial arrangements: five irrigation subprojects encompassing some 4,500 irrigated plots were cofinanced by the Bank and ELETROBRAS; and about 1,300 more irrigated plots were designed and developed without Bank financing.

6. The overall Itaparica Resettlement Program designed by CHESF with assistance from the World Bank is broader in scope than the Itaparica Resettlement Project financed by the Bank. The Bank-financed Project consists of three components, namely,

- (a) Rural Resettlement, consisting of (1) five major irrigation subprojects consisting of some 4,500 plots<sup>4</sup>; (2) agricultural production and social support; (3) rural housing (5,300 houses); (4) water supply; (5) a road system; (6) a primary power supply system to serve the agricultural and domestic requirements; and (7) education, health and social services;
- (b) Urban Resettlement, consisting of relocation of four towns including (1) construction of urban infrastructure; (2) provision of serviced residential plots, building materials and construction of new housing; (3) public buildings for health, education, post offices and telecommunications, police services, cemeteries, etc.; (4) provision of serviced plots for commercial use; (5) provision of community infrastructure such as replacement churches, public squares, etc. (6) a road system; (7) an electric power system for urban settlements; and (8) water supply and sewerage;
- (c) Fisheries Research.

7. During preparation, CHESF presented detailed plans accommodating the 1,300 families mentioned above.<sup>5</sup> The Bank did not agree to finance these subprojects because, in most cases,

<sup>4</sup> The 4,500 plots were accommodated in two "Lakeside Subprojects" -- Borda de Lago, Bahia; Borda de Lago, Pernambuco -- ; and three "Special Projects" -- Brigida, Caraibas, and Pedra Branca -- (see Annexes A and B).

<sup>5</sup> Those not financed by the Bank include the Apolônio Sales, Manga de Baixo, Brejinho, Jeremoabo, Remanso, Canafistula, Itacuruba, Inajá (Tuxá), Jusante, Rodelas (Tuxá), Ibotirama (Tuxá), and Barra do Tarrachil subprojects (see Annex B). In most cases, these subprojects involved technical approaches that Bank experts regarded as experimental and untried. For example, the Itacuruba subproject was an integrated hog-fish-duck production scheme that was technologically quite challenging and seemed more complex and excessively needful of management attention. The Borrower exercised its right not to accept the Bank's advice in these cases. These subprojects were designed for a total of some 1,268 families, leaving a total of some 4,541 families in subprojects

they did not meet feasibility criteria, either because of soil conditions in the sites identified or because of the untried nature of the technology involved. These 1,300 families include the Tuxá indigenous group which was not included in the Bank-financed package for another reason: GOB policies at the time would not allow the Bank to provide direct financing for indigenous groups. The Borrower decided to implement these subprojects using its own funds. The relevant policy in effect at the time (OMS 2.34 of February 1982) stipulates that the Bank will assist projects "only when satisfied that the Borrower or relevant government agency supports and can implement measures that will effectively safeguard the integrity and well-being of tribal people" (para 5). Therefore the Bank included language in the SAR and Project Agreement, under which CHESF agreed to formulate and implement a special plan to assist the Tuxá.<sup>6</sup>

8. The Itaparica Resettlement Project was the Bank's first stand-alone resettlement project. Launching the hydropower dam was a high priority since rapid urban and industrial growth in the Northeastern region had created high demand for electricity with resulting power rationing and consequent economic losses estimated at US\$2 billion in 1987 alone. The high priority placed by the Borrower on flooding the reservoir so that power generation could begin created a tradeoff in the resettlement project between high quality planning and speed of execution. In the final analysis, the Bank decided it could better help provide assistance to the resettler population if it became a partner along with ELETROBRAS and the GOB. The project as a whole was conceived as a rural development project designed not only to restore the livelihood of families dislocated by the inundation of Itaparica, but to raise the standards of living of a substantial segment of the resettled population.

MAJOR EVENTS ASSOCIATED WITH ITAPARICA
1979 - Beginning of work on Itaparica Hydroelectric Dam
1986 - Agreement signed among MME/CHESF/Pólo Sindical to begin resettlement
1987 - Started implementation of the agricultural settlements (agrovilas)
1987 - US\$132 million loan approved by Bank (September)
1988 - Filling of reservoir and start up of hydropower plant operation
1989 - Construction of irrigation works halted due to lack of counterpart funds
1990 - Bank agrees to US\$100 million supplemental loan
1990 - Bank suspends disbursement of Loan
1991 - Resumption of irrigation works
1992 - Bank agrees to temporarily finance 100% of works
1993 - Operation of first irrigated plots begun

9. There was a risk in the Bank's entering at this stage in the resettlement project that was recognized in the Staff Appraisal Report (SAR) as follows:

*Resettlement as a result of manmade changes in the environment is always a difficult task. Risks are increased due to the tight timeframe in which the resettlement must be carried out because of Northeast power shortages, the need for effective cooperation among a number of public agencies, and complex social and technical issues involved in the establishment of newly irrigated agricultural areas...*

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cofinanced by the Bank and ELETROBRAS. The Bank cannot legally be held accountable for the implementation of these subprojects.

<sup>6</sup> Such planning, under the name "Indigenous Peoples Development Plan," would be required under OD 4.20 "Indigenous Peoples" adopted in 1990.

10. Due to the timing of the Bank's entry into the project, it was not possible to plan the resettlement simultaneously with the hydropower dam as Bank policy prescribes. This was acknowledged at the time of appraisal, but the Bank recognized that the human need was great, especially in view of the relative lack of resettlement planning done up to that date. Nevertheless, virtually all the principles found in OMS 2.33 were present in the design of the Itaparica Resettlement Project including participation in the design and willing consent by the resettlers, determination of the needs of the resettlers, provision of necessary services such as training and health, compensation for lost assets, etc.

#### *Participation by Beneficiaries*

11. Shortly after construction began on the Itaparica Dam, a confederation of rural labor unions in the municipalities to be affected was formed under the name Pólo Sindical dos Trabalhadores Rurais do Submédio São Francisco. This group sought to represent the interests of the rural population in the region affected by the Dam and Reservoir and it held a number of meetings with CHESF management and organized demonstrations. The most dramatic of these occurred in December 1986 when 2,000 potential resettlers occupied the Itaparica construction site. After the World Bank entered the discussion in 1986 Pólo Sindical looked to the Bank as a sometime ally, sometime mediator in its disagreements with the government. In an agreement signed on December 6, 1986, ELETROBRAS, CHESF, the Ministry of Mines and Energy and representatives of Pólo Sindical agreed on a series of parameters concerning resettlement of rural families, including the following:

- definition of rural producers eligible for resettlement benefits;
- determination of the size of the irrigated plot from 1.5 to 6 ha per family to be provided to rural producers, considering their landowning status, amount of land owned and the family workforce available;
- provision of one salary per family equal to at least 2.5 minimum salaries payable by one of the construction firms through the first harvest.<sup>7</sup>

12. Agreement was also reached on the size and type of housing provided in some 110 agricultural hamlets (or agrovilas).

13. Shortly after the agreement was reached, contractors began building the agrovilas, each of which typically consisted of some 40-60 individual homes of 45-65m<sup>2</sup>, each with electrical power, running water, water closet and septic tank. Later, after negotiation with CHESF, each home was also equipped with a 500 liter water storage tank. In addition to some 5,322 homes<sup>8</sup>, the contractors also built 74 schools and 16 health posts. In brief, the new housing for the resettlers was ready very quickly and the population was successfully relocated as the reservoir began to be flooded in March 1988. In the original project design, the productive infrastructure was expected to be completed by the end of 1988. It was recognized that there would be a hiatus between relocation of the rural families and completion of the irrigation works, the reason for which the CHESF/Pólo Sindical agreement included a maintenance payment (VMT) equivalent to 2.5 minimum salaries per month. However, there were major delays in completion of the productive infrastructure in the five major resettlement areas, each linked to one irrigation subproject

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<sup>7</sup> This compensation would later be transformed into an entitlement, payable by CHESF, with no work requirement at the insistence of the Pólo Sindical and the basis for calculating the size of the benefit would change several times over the life of the project.

<sup>8</sup> The number of homes in *agrovilas* for rural dwellers is smaller than the number of agricultural lots because some of the farm families settled in urban areas.



mentioned above, with the result that a substantial segment of the resettled population has not had access to cultivable land and has been obliged to subsist on the VMT for as much as eight years after the move.

14. With hindsight, it is possible to discern that some of the problems arose from the terms of the agreement with the affected rural dwellers, terms that some observers regard as excessively costly. Even using the initial cost estimate for the project, the cost per relocated family was unusually high for projects of this sort (nearly US\$60,000). The high cost of the project exacerbated the shortage of counterpart funding that was to plague the project throughout its life. It is possible that in a different political environment, without the time pressure, a solution could have been found that would have been technologically simpler, lower in cost and more satisfactory to the displaced population.

#### *Current Situation of the Resettled Families*

15. The resettlement of 2,800 urban families was carried out smoothly and without major difficulties. The housing and associated infrastructure constructed by CHESF are of considerably higher quality than the urban settlements they replaced and the quality of life of the resettled families seems to have improved significantly. Economic and social life in these settlements has been fully restored to pre-relocation levels by any reasonable measure.

16. The picture in the rural settlements (*agrovilas*) built to accommodate some 5,300 agricultural families is mixed. While good quality housing and infrastructure are in place, the productive infrastructure needed to allow the families to restore their agricultural production is not complete in many communities. At present, about 2,239 families have plots with working irrigation systems.

## II. PROJECT IMPLEMENTATION AND BANK SUPERVISION

### *Implementation Problems*

17. Throughout implementation, the project has been affected by three main sources of difficulties: financial, technical and social/institutional. On the financial side, considered to be the major element hindering project implementation, the project has suffered from insufficient timely allocation of counterpart funding by the Borrower and from cost overruns. On the technical side, there have been difficulties related to the technical design of some of the irrigation perimeters, and unforeseen engineering problems with the main conveyance systems of water to the irrigation sites. There have also been social and institutional problems. While the rural families were resettled on the best available patches of land in the vicinity of the reservoir, the entire area is within the drought polygon of Northeastern Brazil within which rainfed agriculture has always been extremely risky. Except where these sites were close to the reservoir or river, until the irrigation systems were completed, there was a general lack of employment, especially in the three western subprojects (Caraibas, Pedra Branca and Brigida, See Map, Annex A). There were additional problems with adjustment to the new location, problems with the delivery of social services, transport, etc.

18. The Itaparica Resettlement Project was implemented during a tumultuous period of Brazil's recent economic and political history. While planning and construction of the dam took place mainly during the period of military rule, the resettlement Program was planned and implemented after the restoration of democratic presidential elections. In the period following military government, there was a substantial resurgence of popular movements and greatly raised expectations. Public officials felt that demands from parties affected by public works had to be given greater weight in decision-making. There was great public sympathy for the plight of the families who would be resettled, but after the crisis passed, and the floodgates of the Itaparica dam were closed, the political pressure favoring the resettlement Program decreased considerably and other concerns took precedence.

### *Financial Problems*

19. The macroeconomic situation was also unstable. During the late 80s and early 90s, Brazil underwent some of the highest levels of inflation in its history. In addition, the budget allocation process was in turmoil. Budgets were drawn up and approved early in the fiscal year, but funds were actually only released for capital projects late in the year, once as late as November. The Itaparica Resettlement Project competed for funds with the Xingó Hydropower project, another high priority power project on the São Francisco River, downstream from Itaparica. In addition to competition from Xingó, foreign debt service and other obligations, ELETROBRAS experienced fluctuations in its income from its subsidiary power companies which, on several occasions, failed to make remittances to their parent company. As a consequence, ELETROBRAS was chronically delayed in its funding of the project (Table 1) a situation that eventually led to a temporary suspension of disbursements on the project.

Table 1

Itaparica: Annual Disbursement Totals	
YEAR	US\$
1987	40,125,588.69
1988	13,301,596.63
1989	14,334,897.47
1990	33,623,405.69
1991	22,176,126.91
1992	71,845,125.07
1993	19,916,135.05
1994	4,473,517.43
1995	1,281,848.13
1996	3,789,083.86
1997	1,275,221.98
Total	226,142,546.91

20. Project costs have been much higher than anticipated at appraisal. The increases have been due to various factors. Total project costs were estimated at appraisal at US\$304 million. By June 1989, the estimated cost had risen to an estimated US\$614 million. As of April 1997, the total estimated cost of the Itaparica Resettlement Project had risen to about US\$774 million. The factors contributing to this cost increase are complex and it is difficult to weigh the importance of each. The first factor contributing to the cost overrun seems to be an error that occurred at appraisal when the cruzado/US\$ exchange rate (Brazilian cruzados into US dollars) was not updated resulting in the underestimation of the dollar costs. The second major factor was the shortage of counterpart funds, especially during 1989 and 1991 which resulted in reduction in the rate of work and, in some cases, the demobilization of contractors. Technical factors also led to cost increases, mainly the need to revise construction designs as more detailed topographical and soil data became available during project implementation.<sup>9</sup> Finally, wavering Borrower commitment and conflict among different governmental agencies also contributed to costly delays.

#### *Technical Problems*

21. Discussions between CHESF and rural resettlers took place during 1984 and 1985 and some 12 different sites were discussed in terms of their proximity to the resettlers' homes, transport and other characteristics. Most of these sites were close to the future reservoir. However, when the Bank and CHESF began discussions of site selection in 1987, more stringent soil requirements were set in view of the Bank's feasibility criteria<sup>10</sup>. The Bank brought to the project area a number of widely respected experts, recruited in Brazil and internationally, in an attempt to find the best sites to locate the irrigation areas. As a result, three of the five major irrigation schemes were located in an upstream area, the largest of which is actually well beyond the reservoir's westernmost tip (see Map, Annex A), and therefore several hundred km from the original riverside locations. These sites were identified on the basis of soil surveys conducted prior to project preparation and with the assistance of experts from the US Bureau of Reclamation and from the

<sup>9</sup> At project startup, there were aerial photos, satellite images and topographical maps at 1:25,000 scale, inadequate for the engineering design of the conveyance canals and irrigated plots. The notes to the Table in Annex B also provide some indications of how the cost of the project escalated during implementation.

Extension Service of Israel.<sup>11</sup> They required substantial lifting of water and water transport over long distances. The selection of sprinkler technology with its requirement of pressurized pipes, also raised the cost and complexity of implementation.

22. During project implementation, as sampling gaps were filled in, some of the planned irrigation perimeters required adjustment, leading to additional delays and higher costs. As work progressed, engineers developed a new solution for carrying water to the Caraibas site, largest of the western sites, providing irrigation plots for some 1,400 families. The fluctuation in project finances referred to above also led to partial demobilization or slowdowns by the contractors carrying out design and construction work in several locations.

#### *Social/Institutional Problems*

23. Some of the problems encountered by the Itaparica Resettlement Project have been institutional in nature. Among these can be cited occasional poor communication between ELETROBRAS and its subsidiary CHESF, responsible for executing the irrigation works. This situation reached a head in 1990 when ELETROBRAS established a special oversight group that subjected CHESF's operations to closer physical and financial scrutiny. Another institutional difficulty arose in the relationship between the Ministry of Finance and ELETROBRAS. Although the Government of Brazil (GOB) is the guarantor of the Loan and of the performance of ELETROBRAS, during the early years of the project, the Ministry of Finance was extremely reluctant to release budgetary funds for the implementation of the project to make up for shortfalls in ELETROBRAS' allocations. CHESF has also had strained relations with FUNAI, the National Indigenous Foundation. In CHESF's view, FUNAI's stance has made reaching a satisfactory plan for the Tuxá more difficult. Under FUNAI's tutelage, the Tuxá have been suspicious of CHESF's proposed solutions, demanding the right to contract their own expert consultants, and rejecting several proposed solutions. FUNAI itself made a proposal for the Ibotirama Tuxá with a cost out of proportion to the irrigation systems provided for the other resettlers in the system, which has not been accepted by CHESF.

24. There have also been occasional breakdowns in communication between CHESF and Pólo Sindical. While Pólo Sindical can claim to be the legitimate voice of most of the resettlers, its leadership shifted with some frequency and sometimes resorted to public confrontation when negotiation might have achieved its goals. CHESF, on its side, has frequently postponed meetings with the Pólo Sindical leadership and has not always disclosed information fully. Finally, there were problems between CHESF and the Fundação Joaquim Nabuco (FUNDAJ), a research institution contracted to carry out project monitoring, which often adopted an adversarial approach to CHESF. CHESF, on its side, suspended payments to FUNDAJ for a long period. In nearly all these instances, the Bank has taken on the role of mediator between institutions, a role it has carried out with mixed success.

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<sup>10</sup> Some of the areas initially selected by CHESF for resettlement had soils which were inadequate to support irrigated agriculture. In fact, most of area immediately around the reservoir -- which would have been the first choice on the criterion of proximity -- is made up of poor, shallow, mainly sandy soils, unsuitable for irrigation.

<sup>11</sup> While areas with irrigable soils were identified from existing survey data and spot checks, the actual dimensions of these areas had to be revised with more sampling as project implementation proceeded.

## Bank Supervision

25. From appraisal in 1987 through 1990, the task manager for the project was resident in Recife, where meetings, site visits and discussions with CHESF took place on a weekly or even daily basis. From 1990 onward, the project was supervised from headquarters. From August 1996 to date, a member of the Bank's Brazil water team has been stationed in Brasilia allowing frequent opportunities for contact with CHESF and CODEVASF, the agency responsible for overseeing operation and maintenance of the irrigation schemes as well as training of the farmers. Throughout the period of implementation there was a normal number of supervision missions in addition to the frequent informal contacts between the task manager, CHESF and ELETROBRAS. Official correspondence with the Borrower during the entire period shows that the Bank took a very strong position on the delays in implementation and the lack of counterpart funds. Although the Brazilian portfolio was experiencing problems across the board, the Bank frequently stressed the human factor in the Itaparica situation.<sup>12</sup>

26. Over the life of the project, the Bank, in addition to normal supervision, also took a number of extraordinary measures to improve project performance (see Box). During 1989, the Borrower, recognizing the difference between estimated and actual project costs, requested a supplemental loan of US\$100 million. Cost overruns are usually considered to be the responsibility of the Borrower, but, in view of the situation of the resettled population, management felt that this was an exceptional case. The supplemental loan was approved by the Board in February 1990, signed in November 1991, became effective in May 1992, and began to disburse in January 1993 after the entire original loan amount had been disbursed.

### Exceptional Actions Taken by Bank during Itaparica Project

Supplemental loan of US\$100 million in 1990

Suspension of Disbursements in 1990

Raised financing percentage to 100% of Works for 12 months in 1992/93

Closing Date of Loan Extended 4 Times

27. The financing of a cost-overrun is unusual but was agreed to in view of the fact that errors had been made in the use of exchange rates and in view of the extreme need of the resettled families.<sup>13</sup> An independent report filed on October 3, 1989 concluded that,

*a redesign of the project is neither feasible nor desirable, since almost all works are under construction or have been bid, and a redesign at this stage would not only likely*

<sup>12</sup> For example, in November 1988, the Portfolio Manager of the managing division wrote to the Borrower stating, "... the problem of preserving an adequate level of resettler satisfaction during the transition period has been discussed at length in the past. ... we are aware that the primary social problem lies in the lack of useful work to do." In December 1993, the Division Chief wrote to the President of ELETROBRAS, stating, "We were sorry to find that no progress was made with respect to the solution of current problems and more significantly finding a permanent solution to the delivery of health and education [services] to the resettled population."

<sup>13</sup> It should be noted that the approval of the supplemental loan by the Bank complied with its policy on the financing of cost overruns (Operations Policy Note 3.12 of February 8, 1984) because the Government was unable to finance the additional costs, the project could not be reduced in scope, and it was still economically viable.

*raise costs, but further delay completion of the project and increase the hardships of rural families.*

28. Later in 1990, when counterpart funding had slowed to a trickle, the Bank issued several warnings to the Borrower after which it exercised its legal remedy under the Loan Agreement by suspending disbursements as of October 5, 1990. After discussions with the Borrower and presentation of a financing plan, disbursements were resumed on January 3, 1991. Project implementation improved marginally, but many of the technical, financial and general macroeconomic problems referred to above persisted. In March 1992, in view of ELETROBRAS' difficulties in providing counterpart funds, the Bank agreed to increase its financing of civil works from 28% to 100% which was done through January 1993. As a result, 1992 was the year of greatest amount of disbursement over the life of the project (Table 1). This made significant advances in project works possible so that in 1993, the first irrigation schemes (Borda de Lago Bahia and Borda de Lago Pernambuco with a total of 790 plots) became operational. Subsequently, in February 1994 the irrigation schemes in Brigida (431 plots), and Pedra Branca (709 plots) also became operational. Finally, at the request of the Borrower and with the support of Pólo Sindical, the closing date of the loan has been extended four times. The most recent extension was granted for one year (through December 31, 1997) even though more than 97% of the loan has been disbursed. This is unusual, but the request largely reflects the concerns of the affected population who have stated several times in meetings that the Bank's participation is highly positive from their perspective.<sup>14</sup>

29. In summary, Bank supervision of the Itaparica Project was intense throughout the life of the project. There have been innumerable missions, informal and formal discussions with CHESF and ELETROBRAS management, and special measures taken aimed at assisting the Borrower to complete the project as adequately and quickly as possible. Since the inception of its involvement, the Bank's uppermost concern was for the welfare of the resettlers who were obliged to move because of the inundation of the Itaparica Reservoir. It is possible that had the Bank been involved in the financing of the hydropower project, timely application of the resettlement policy then in place (OMS 2.33, 1980) would have led to better planning. However, successive reviews of the project by different parties<sup>15</sup> have concluded that there were no significant lapses in the Bank's supervision and oversight of the project under its guidelines and procedures as summarized.

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<sup>14</sup> Given the strong support by Pólo Sindical for the Bank's role in the project, the Request by Pólo Sindical to the Inspection Panel might seem paradoxical. In fact it is consistent with the goal of attempting to induce the Borrower to request continued Bank involvement.

<sup>15</sup> Perhaps the most comprehensive of these was "Itaparica Resettlement Review" by Syed S. Kirmani, October, 1989.

### III. MANAGEMENT RESPONSES TO INSPECTION REQUEST

30. First, it is important to recognize that Bank Management is fully aware of the issues raised in the Request to the Inspection Panel and of the circumstances that led to its having been filed. The Bank entered the project with the intention of assisting the Brazilian authorities in to develop and implement a sound resettlement plan thereby mitigating potential hardship. Bank staff and management have met on many occasions with representatives of the affected population and have visited the resettlement sites and understand the frustration and disappointment of the farmers who are living on the VMT and unable to return to a fully productive life. The Bank's goals have been and still are to achieve the original goals of the project of helping to restore the affected population to full productivity. It is in this spirit that management responds to the Request.

31. The following section reviews the principal issues raised by the Request and presents a response by Bank Management.

#### **Complaint: Irrigation Works are Incomplete**

32. The statement is factually correct, in that many resettled farm families still do not have operating irrigation systems at their disposal. However, the information in the Request is not fully accurate. First, it should be pointed out that the Request omits mention of the VMT which has been paid faithfully since the inception of the resettlement and mitigates serious material hardship to the resettlers (see below for a detailed discussion).

33. With regard to construction itself, Table 2 shows the current (March 1997) data on operating irrigation systems and those under construction. Part of the discrepancy between the Request and CHESF's data lies in the use of the term "design phase." In some subprojects, construction and equipment acquisition is well advanced, but work had to be suspended when unexpected soil problems were encountered requiring supplemental pedological studies. These studies are time consuming and a source of frustration to all concerned, but failure to carry them out could result in waste of resources and even greater frustration in the future. A second discrepancy arises from the fact that Bank financing covered only 5 irrigation subprojects (see paragraph 6(a), footnote 4 and Annex B).<sup>16</sup> The remaining subprojects mentioned in the report and in Annex B, covering some 1,300 families, were not included in the project because they did not meet the Bank's feasibility criteria. Given the Bank's late entry into the project, it was not possible to demand that all resettlement subprojects meet the basic feasibility criteria laid down by the Bank's experts.

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<sup>16</sup> Considering all subprojects, including those not financed by the Bank, the summary breaks down as follows: In Operation - 39%; Under Construction - 41%; Design Phase - 20%. Contributing to this situation is the fact that some of the schemes financed without Bank support have failed for technical reasons and entirely new schemes had to be designed (see Annex B). Another contributing factor are the difficulties in negotiations between FUNAI and CHESF which delayed implementing a solution for the Tuxá Indigenous Group.



**Table 2: Status of Irrigation Works**

Status of Irrigation Works <sup>17</sup>	Pólo Sindical (Request) (March 1997)	Bank-Financed Subprojects (March 1997)
In Operation	35%	44%
Under Construction <sup>18</sup>	34%	53%
Design Phase <sup>19</sup>	31%	3%

34. CHESF and the Bank continue to finance the construction of three important subprojects (in Borda de Lago, Pernambuco and Caraibas). Borda de Lago Pernambuco subproject is scheduled for June 1997, and about 40% of the Caraibas subproject is scheduled to begin operation before the end of 1997. All Bank-financed subprojects will be complete by the end of 1998 although Bank financing will only be available through December 31, 1997. In addition, CHESF continues to finance studies with the objective of defining solutions for the implementation of the remaining subprojects (see Annex B).

**Complaint: Bank Resettlement Guidelines were not Followed**

35. As indicated above, Bank policy in place at the time of appraisal, and those adopted in 1990 have been followed in all major aspects, except for the timely preparation of the resettlement plan together with the underlying dam construction that caused the resettlement.

**Complaint: The Tuxá Indigenous Community was Resettled but is Unable to Resume Production Because the Irrigation System is Still Under Design.**

36. The Tuxá Amerindian population consisted of about 211 families in 1987, living in the City of Rodelas and cultivating land with ditch irrigation on Viúva Island in the São Francisco River that was inundated by the reservoir. As mentioned above, the GOB did not allow Bank financing for the Tuxá irrigation schemes. However, there are several clauses in the Loan and Project agreements stipulating specific actions aimed at providing support for this population. The SAR states that "Resettlement of the Tuxá Amerindian community would be treated as a separate operation." Although the Bank did not finance the Tuxá resettlement plan, the Bank closely supervised the development of plans to deal with this group and there were frequent meetings between the Bank, CHESF and FUNAI, with the Bank frequently playing mediator between the

<sup>17</sup> This data refers to the proportion of lots with fully operational irrigation systems out of a total of 5,809 irrigated lots of which 4541 lots received financing from the Bank. "Fully operational" refers to lots with irrigation infrastructure installed and tested.

<sup>18</sup> Construction has resumed on the large Caraibas subproject with 1406 lots; full operation is scheduled for 1998. In Barreiras, Bloco 2, designed for 600 families already relocated in the area, significant progress has already been made in the implementation of the irrigation infrastructure including the reservoir, pipeline, water intake and power sub-station all of which are concluded; all the necessary hydro-mechanical equipment has been purchased and delivered to CHESF. However, the implementation of the on-farm system was suspended because unexpected soil problems were encountered. Soil experts were brought in to help reformulate the design of the on-farm system to accommodate permanent crops. Construction is scheduled to resume shortly and conclusion of the works is expected by the end of 1998.

<sup>19</sup> The detailed engineering design for these works is undergoing adjustments and the works will be put up for bids during 1997.



other two agencies. More than half the correspondence between the Bank and the Borrower raises this issue and it is mentioned in virtually every supervision and back-to-office report.

37. Under Brazilian law, the Tuxá are under the legal tutelage of the National Indian Foundation (FUNAI) and cannot act independently without FUNAI's consent. Because of its special legal status, the Tuxá were the object of a special resettlement plan that was prepared with the participation of the community and under the supervision of FUNAI. Two operating agreements were signed between CHESF and FUNAI in 1986 and 1987 laying out the fundamentals of what amounts to an Indigenous Peoples Development Plan<sup>20</sup> including housing, infrastructure, production systems, and social support. Housing and community infrastructure have been fully implemented, but productive infrastructure has still not been completed. The Tuxá were included in the support payments made by CHESF to rural resettlers while they awaited restoration of productive infrastructure. The main reason for the delay is the inability of CHESF and FUNAI to reach agreement on the location and specifications of irrigation systems for the Tuxá.

38. About the time of these operating agreements, the Tuxá community split: one faction was resettled in a separate subdivision of the rebuilt city of Nova Rodelas, while another faction of some 100 families requested and was granted resettlement in the Municipality of Ibotirama, some 800 km upstream on the São Francisco River. In Ibotirama, CHESF secured an area of 2,082 ha for the Tuxá and constructed housing for all the resettled families, completed in 1986 in Ibotirama and 1987 in Rodelas. It also installed a ditch irrigation system (comparable to the system previously in use on the Viúva Island) covering 100 ha. An additional area of 100 ha is under construction that will utilize sprinklers. The total irrigated area planned by CHESF would reach a total of 380 ha including the areas already installed and under construction. In May 1996, FUNAI presented a proposal to CHESF entitled "Tuxá Land Management" requiring investments totaling about US \$37.5 million, or about \$272,000 per family including the new families formed since the Tuxá moved to Ibotirama. In September 1996, considering that the proposal presented by FUNAI was unreasonably costly in light of the average cost of the resettlement to date, CHESF made a counter-proposal of a subproject costing about US\$7 million, and is awaiting a response from FUNAI. In the meantime, the Tuxá families in Ibotirama are receiving the VMT in addition to the income they derive from the land they have under irrigation.

39. In Nova Rodelas, the Tuxá were re-settled in a separate section of the town and a parcel of land of some 4,000 ha about 15 km away from the town was selected by the community and acquired. However, there was a protracted dispute between FUNAI and CHESF concerning the soil quality of the land selected. A new parcel of the same size has now been identified less than 1 km from the town, with an estimated 690 ha of irrigable land. The parcel would be acquired by CHESF after an expropriation decree is obtained by FUNAI. CHESF has proposed to install a sprinkler irrigation system covering some 380 ha at this site. During the first semester of 1997, a plan entitled "Tuxá Land Management - Rodelas" will be drawn up and presented to CHESF for financing. In the meanwhile, the Tuxá families in Rodelas are receiving the VMT in addition to the income they derive from rainfed agriculture.

40. Unfortunately, the resettlement and rehabilitation of the Tuxá has been hampered by institutional difficulties and distrust on the part of the indigenous population. The Bank is continuing to make efforts to reach a satisfactory conclusion. In the meantime, the Tuxá population, while unable to resume irrigated farming, is not undergoing financial hardship.

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<sup>20</sup> An Indigenous Peoples Development Plan was not required in OMS 2.34 in effect at the time of project appraisal.

**Complaint: Irrigation Systems in Operation Suffer From Serious Operational and Maintenance Problems:**

41. The Request does not specify the extent or nature of the alleged operational problems. This issue has not been raised at any of the numerous meetings between Bank Staff and Pólo Sindical during supervision missions. As expected in any systems of this size and complexity, there have been startup problems in several of the operating irrigation perimeters including equipment malfunctions, leaks, etc. In general, such problems have been detected and corrected during the testing phase before being handed over by the contractors. The Bank has closely supervised the procurement of goods and services and has evidence that the equipment procured and installed is of the highest quality available in the world. Spot checks by Bank staff and other experts have not revealed any systematic pattern of defects or serious operational problems arising out of the design, equipment quality or installation of the irrigation systems.

42. The most serious operational problems of which the Bank and CHESF are aware are (a) occasional vandalism resulting in damage to irrigation equipment, and (b) reluctance on the part of the farmers to assume responsibility for the operation and maintenance. The Request alleges that the irrigation systems in operation are running at low levels of efficiency and consume excessive amounts of energy, although the benchmark levels mentioned in the statement do not correspond to known international standards.

43. There is, however, virtually universal recognition that a well organized Water User Association (WUA) is the most effective and lowest-cost way of managing demand and allocating water resources. Some of the problems referred to in the Request could be resolved by better management of the installed systems. For example, the systems have been designed to operate "on demand" requiring continuous operation of pumps and high energy cost. A properly organized Water Users Association could agree on timing of system use to minimize energy costs and increase efficiency. CHESF, CODEVASF and the Bank have placed a great deal of emphasis on assumption of Operation and Maintenance (O&M) of the operating systems by WUAs. Although Pólo Sindical has agreed in principle to encourage WUAs, not a single WUA has yet assumed responsibility for O&M.

**Complaint: A Significant Portion of the Affected Families are in Worse Social and Economic Condition than Before the Construction of the Itaparica Dam.**

44. Until the productive capacity of the displaced rural families is fully restored, the project will not have fulfilled its goals. A situation in which families without employment are living on the VMT is inherently undesirable. Nevertheless, the following considerations are also relevant to the assessment of the change in social and economic conditions since resettlement took place.

- Families that lost assets in excess of the value of the replacement housing and land were compensated in cash for their loss; also families preferring not to move to agrovilas and irrigated plots were fully compensated in cash;
- The 3,486 landless farming families (60% of total) living in the area gained access to a new house of 45m<sup>2</sup> with running water and electricity, and an irrigated plot of at least 1.5 hectares, assets that most of them probably could not have imagined owning without this project. Baseline data collected before resettlement indicate that the mean constructed area of rural dwellings was 50 m<sup>2</sup> of *taipa* (wattle and daub). Those families that had homes larger than 45 m<sup>2</sup> were compensated in cash for the difference in area although the quality of the new houses was superior;

- Social services including schools, health posts, and school buses, are available to the resettled rural families;
- A maintenance payment originally equal to about 2.5 times the prevailing official minimum salary<sup>21</sup> has been paid by CHESF to all 5,800 farming families affected by the resettlement since the inception of the resettlement. Baseline data collected before the project began showed that 55% of the affected rural families had incomes below one minimum salary, and 39.5% between one and two minimum salaries per month, while only 5.5% had incomes higher than 2 minimum salaries. Therefore, the VMT paid by CHESF since 1988 is higher than the baseline income of 94.5% of the population. Agricultural incomes fluctuated widely during the year, while the VMT was paid reliably throughout the year;
- Many resettlers have been able to restore their income based on alternative activities including livestock raising, rainfed agriculture, wage labor, and microenterprise activities. The Joaquim Nabuco Foundation collected data showing that the percentage of resettled rural families with incomes greater than the VMT increased from 51% in 1989 to 66% in 1994.<sup>22</sup> It should be recognized, however, that families resettled in the western areas, farther from urban centers, have probably had fewer opportunities for alternative employment and business opportunities.

45. In summary, while the VMT is a palliative, it is adequate to maintain a level of living significantly higher than previous levels in a large majority of cases.

**Complaint: Delays in Completing Productive Infrastructure led to an Increase in Violence, Alcoholism and Family Breakdown**

46. There have been many expressions of frustration by the resettled population over the lack of work opportunities. Management is also aware of accounts of increased incidence of violence, alcoholism and family breakdown in the *agrovilas*. While not discounting the possibility that these increasing, such occurrences also occur in many populations in this region including those unaffected by Itaparica. In the absence of baseline data, it is impossible to determine what the effect of lack of productive infrastructure was on the incidence of violence, alcohol abuse or family breakdown.

**Complaint: Erosion and Salinization of Soils is Occurring in Irrigation Perimeters Financed by the Project.**

47. The Bank, CHESF and CODEVASF are not aware of any significant degree of erosion or salinization in any irrigated area supported under the Itaparica Project. The alleged salinization in the Apolônio Sales subproject, a private colonization cum irrigation scheme which is not part of the projects financed by the Bank, is denied by CHESF technical personnel. The reference made to salinization in the Senador Nilo Coelho Project is irrelevant because it is not part of the Itaparica project or located in the same region. Under the soil and climate conditions prevailing in the region, a risk of salinization exists if proper soil and water management procedures are not followed. Aware of these risks, the Bank has stressed the need for adequate training of farmers in proper soil and water management through the programs that have been supported through

<sup>21</sup> The current VMT is R\$231/month. The national minimum wage is R\$112/month.

<sup>22</sup> Part of the increase may be an artifact of a slightly lower value of the VMT in 1994 (2.2 minimum salaries vs. 2.5 in 1991).

CODEVASF, technical assistance consultants, and, more recently strengthened with the CHESF-IICA partnership to minimize these risks. This question further stresses the importance of strong WUAs to socialize the farmers for good environmental management.

48. CHESF reports indicate that there are some plots not yet turned over to their occupants that may have suffered erosion. Some four plots in Borda de Lago, Pernambuco, seem to have undergone an erosive process because the vegetative cover was removed prematurely. Other plots are cut by naturally occurring gullies and CHESF has taken steps to arrest this erosion and prevent its becoming an obstacle to production.

**Complaint: Poor Materials Led to Deterioration of Housing and Infrastructure in the Agrovilas.**

49. The Request does not indicate the extent or nature of the alleged deterioration, but such deterioration, if it exists, is exceptional and localized. Construction and quality of infrastructure were monitored by Bank supervision and problems detected were corrected. In one area, some 600 houses were affected by cracking of walls and slab floors due to expansive soils that were not detected prior to construction. These defects were corrected and, in some cases, houses or entire villages were completely rebuilt. There have also been isolated, temporary breakdowns in water supply to some of the villages, mainly those not yet served by irrigation water. These problems, some caused by water theft and vandalism, have also been corrected as they arise. These problems were not caused by the use of poor materials.

**Complaint: Misuse of Resources or Diversion of Allocation to Other Works**

50. The complaint does not make specific allegations or document this claim. CHESF officials recall that at one point, CHESF proposed that some stocks of material originally acquired for another irrigation system, be used for the Apolônio Sales Subproject and returned at a later date. However, because of the protests from Pólo Sindical, the proposed exchange was not made and no material was diverted to other purposes. The Bank is unaware of any other specific allegations of diversion of material.

**Complaint: Project was not Adequately Supervised by the Bank.**

51. As documented above, the Bank supervised this project continuously and closely throughout its life. Starting on April 29, 1988, there were 21 formal supervision missions in which from one to four Bank staff or expert consultants participated<sup>23</sup> (see Annex C). From 1987 onward, an average of 19 staff-weeks per year was spent on the project. In addition, there were innumerable informal visits and contacts made in person, by telephone, fax and letter between Bank staff in Recife, Brasília and at Headquarters and CHESF and ELETROBRAS. The project file documents extensive correspondence with the Borrower and CHESF concerning all of the key issues mentioned in the Request.

<sup>23</sup> The Request itself recognizes the Bank's careful supervision of the project and its attention to the concerns of the affected population: "Pólo Sindical leaders from different periods recall that an average of at least three meetings per year were held with World Bank representatives in Petrolândia and in other affected areas on problems related to resettlement and irrigation systems." (p 8 of translated version). It also states that, "... the World Bank, despite the availability of many of its managers and experts, was unable to make CHESF implement its resettlement guidelines ..." (p. 9 of translated version).

### *Conclusion*

52. The Bank has complied with all relevant policies in the design and implementation of the Itaparica Resettlement Project. It is true that compliance with the Bank's requests was not always sufficient, and many unconscionable delays occurred due to an accumulation of factors. However, the history of this project shows that Management and staff made significant efforts to detect and correct problems as they arose and took appropriate and timely action to remedy problems. The current situation is far from ideal, but the shortcomings to which the Request points did not arise from the Bank's failure to follow its policies.

#### IV. SUMMARY OF REQUEST ISSUES AND MANAGEMENT RESPONSE

Complaint	Relevant Policy, (date)	Pertinence	Comments	Action Taken	Proposed Action
a) Irrigation works are incomplete (35% completed; 34% under construction; 31% in design phase)	OMS 2.33 Involuntary Resettlement (February, 1980) (Replaced by OD4 30 Involuntary Resettlement June 1990)	Bank did not finance Itaparica hydropower project. Responding to late Government request made it impossible to plan resettlement together with planning for hydropower project as OMS required.	Allegation is correct although percentages are incorrect. (Correct numbers for Bank financed subprojects are 44% irrigated plots in operation, 53% under construction; 3% in design phase - see Annex B). Reasons for delays are: fluctuation in Borrower commitment; construction stoppages due to delays in release of counterpart funds; unanticipated design changes after construction began; and institutional problems.	Many actions to accelerate works including: numerous mission aides memoirs and letters to the Borrower urging faster disbursement; temporary suspension of disbursement; supplemental loan of US\$100m; temporary increase in financing percentage for works.	GOB is committed to complete the project; special interministerial committee currently reviewing Program will issue report soon. Bank extended closing date to 12/31/97 and agreed to continue supervision through 1999.
b) Tuxá Indigenous community resettled but unable to resume production because the irrigation system is still under design	OMS 2.34 (Feb. 1982) Indigenous Peoples (Replaced by OD4 20 Indigenous Peoples June 1990)	OMS recommends that planning take account of special needs of indigenous people.	The Tuxá were resettled in two locations of their choice in Ibotirama and Rodelas. In the latter area, CHESF was delayed in selecting and preparing proposed site for irrigated farming. FUNAI intervened and precipitated a debate over suitability of soil. FUNAI and CHESF unable to agree on suitable site.	Bank held innumerable meetings with CHESF, FUNAI, indigenous leadership and served as mediator in dispute but has not succeeded in breaking the deadlock. Issue raised repeatedly in meetings with Borrower and GOB.	Bank will continue to help seek adequate solution for agricultural production for Tuxá.
c) Several irrigation systems in place have operational and maintenance problems	OMS 2.33 Involuntary Resettlement (February, 1980)		Request does not specify the extent of the alleged operational/maintenance problems, but such problems are in fact minimal and have been promptly corrected	Bank has been instrumental in assuring that water user associations are set up and trained in O & M and has carefully supervised training activities for resettled farmers.	Bank will continue to seek lasting organizational solutions to O & M problems and to stress training activities under the project.

Complaint	Relevant Policy, (date)	Pertinence	Comments	Action Taken	Proposed Action
d) Beneficiaries are in worse social and economic conditions than before the construction of the Itaparica dam	OMS 2.33 Involuntary Resettlement (February, 1980)	OMS requires that standards of living be maintained or improved by resettlement projects.	Request omits mention of maintenance payments (VMT) paid since the day rural families were resettled. Bank believes that the maintenance payments, while palliative, have been sufficient to maintain a level of living substantially higher than previous levels for a large majority of cases.	Bank has carefully supervised implementation of the maintenance payments and frequently recommended alternative means for income maintenance or enhancement.	Bank recommended and will supervise phaseout of maintenance payments as irrigation systems become operational.
e) Delays in the installation and commissioning of the irrigation works have contributed to an increase of violence, alcoholism and family breakdown in the resettled communities	OMS 2.33 Involuntary Resettlement (February, 1980)	The OMS recommends avoidance of excessive dependency on state assistance, and also recommends involvement of local authorities and local leaders to avoid social breakdown.	No data demonstrating increased alcoholism, violence or family breakdown have been presented or are known to Bank staff. Not possible to evaluate this claim.	Bank stressed the risk of social breakdown to the Borrower and suspended disbursements because of inadequate counterpart financing.	Bank will continue to supervise implementation of project to accelerate implementation.
f) Erosion and salinization of soils caused by project works	OD4.01 (Environmental Assessment) (10/03/91)	OD not in force when project appraised.	Request does not specify the extent of the alleged erosion and salinization. Such problems are localized and rare.	No specific actions needed.	Bank will take appropriate action in supervision if such problems arise.

Complaint	Relevant Policy, (date)	Pertinence	Comments	Action Taken	Proposed Action
g) Deterioration in some of the 110 agrovilas built with project financing	OMS 2.33 Involuntary Resettlement (February, 1980)	OMS requires adequate planning.	Some structures in agrovilas have suffered damage from expandable soils and other problems; in general these and other isolated problems have been promptly repaired by CHESF contractors.	Bank supervision missions raised this issue frequently and requested that Borrower make prompt repairs which were done.	Continue to monitor this problem.
h) Bank failed to provide adequate supervision of project.	OD 13.05 Project Supervision (March 1989)	Prescribed SPN procedures in great detail.	Bank management and staff have provided ordinary and, in many cases, extraordinary levels of supervision due to the complexity of the project.	Since 1987, there have been at least 24 supervision missions to Itaparica plus innumerable meetings with the Borrower, CHESF, GOB officials, representatives of the beneficiaries including POLOSINDICAL.	GOB has requested the Bank to continue supervision throughout Calendar 1999.



## V. ACTION PLAN

53. Both the GOB and the Bank remain committed to accomplishing the original goals of the project. The GOB has also assumed responsibility for honoring all agreements made with the affected population. To this end, in December 1996, GOB formed a high level Interministerial Committee to propose lines of action to conclude the program. This group was formally installed on January 14, 1997, with representatives of the following Ministries: Mines and Energy (coordinator), Planning and Economic Coordination, Finance, Environment, and Agriculture, as well as ELETROBRAS and CHESF. The group's goal is to reach agreement on all outstanding issues, and to prepare a detailed action plan. The group has already made visits to all the principal subprojects and has held discussions with representatives of CHESF, ELETROBRAS and the Bank. A preliminary report has been issued and discussed internally.

54. The GOB, largely in response to the urging of Pólo Sindical, has also requested that the Bank extend the closing date of the Loan through December 1997, an unusual action in view of the relatively small remaining balance in the Loan Account. In the context of this extension, the Bank and Government have already agreed on a minimum set of actions that will be completed by December 31, 1997, as listed below. The ultimate objective is the self sufficient operation of all subprojects in the Bank financed project through the creation of WUAs that will take over responsibility for O&M and organize efficient water use. With regard to the subprojects under construction, the objective is to complete construction as quickly and efficiently as possible. With regard to subprojects that have been suspended because of unexpected soil problems encountered, the objective is to complete the supplemental studies as quickly as possible with the necessary level of accuracy, and to prepare specifications and bidding documents for the conclusion of these subprojects.

55. The Benchmarks established for December 31, 1997 are as follows:

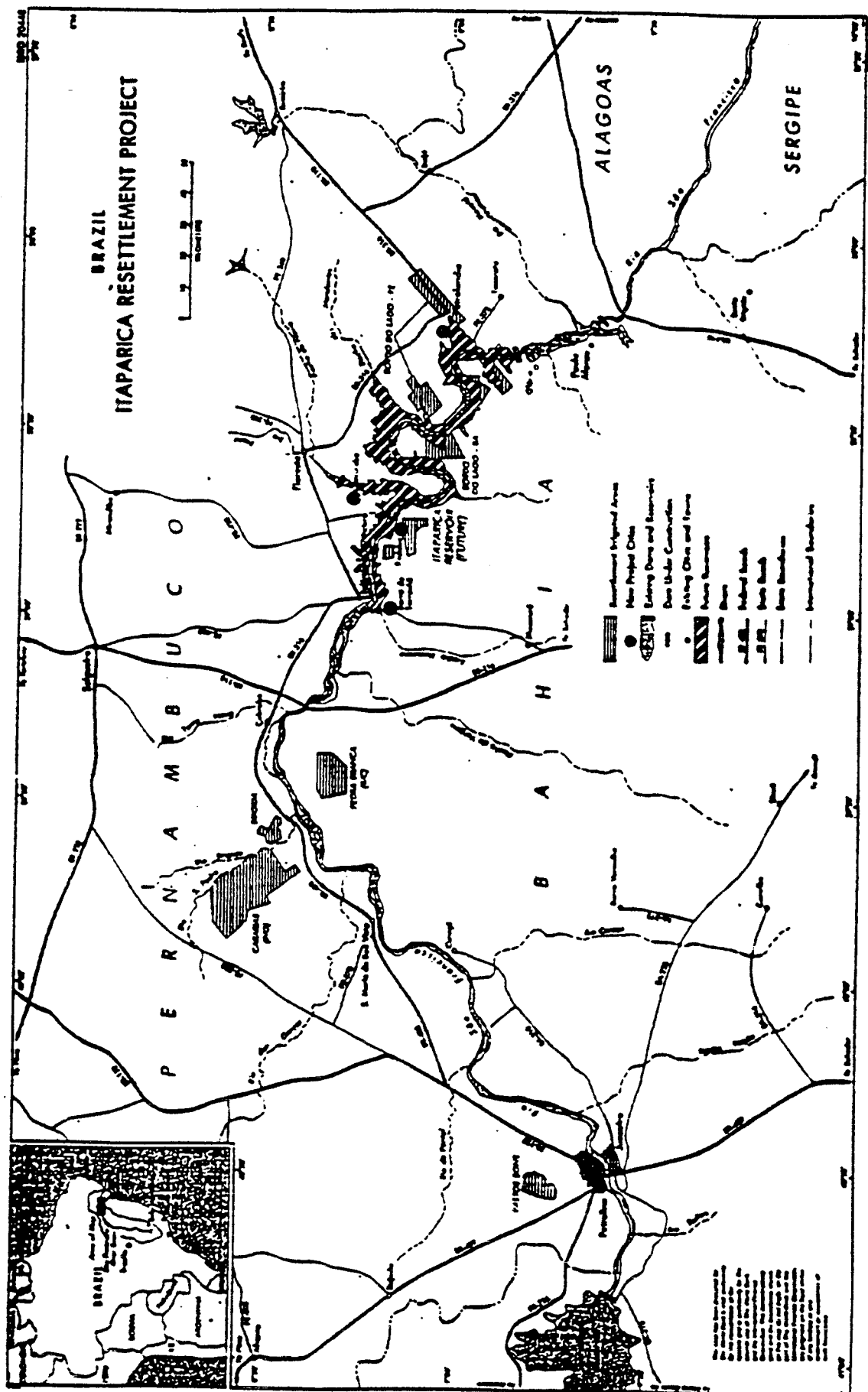
- (a) Creation of at least one WUA in 1997 (Gloria sub-project);
- (b) Issuance of 20% of rural land titles of those subprojects currently in operation by the end of 1997;
- (c) Initiate the reduction of VMT on those subprojects in production (current proposal of a progressive reduction of 25% every three months with half of this amount going into a fund to support the WUA of each subproject);
- (d) Complete issuance of 100% of urban land titles;
- (e) Conclusion of construction and start of settlement of the Ico Mandantes BL3 subproject;
- (f) Completion and commissioning of at least 40% of the Caraibas subproject;
- (g) Initiation of training in the Caraibas and Ico Mandantes subprojects;

- (h) Conclusion of negotiations between CHESF and FUNAI for the implementation of the Ibotirama (Tuxá) community;
- (i) Conclusion of negotiations between CHESF and FUNAI for the implementation of the Rodelas (Tuxá) program; and
- (j) Conclusion of supplementary studies and detailed implementation schedule for the completion of the Barreira BL2 subproject.

The above-listed actions will be financed primarily out of ELETROBRAS and GOB funds in view of the small loan balance and the fact that some disbursement categories have already been reduced to zero.

56. The GOB and Bank management have also initiated discussions concerning the role the Bank would play in insuring satisfactory completion of any components of the project left unfinished after the Loan Closing Date. The Government of Brazil has asked the Bank to extend formal supervision of the project two years beyond the closing date of the Loan Agreement (i.e. until December 1999). The point of departure for any future Bank involvement will be the Interministerial Action Plan referred to above. The Bank will not assume responsibility for supervising subprojects outside those appraised in the original project, but will work with the Brazilian authorities to seek solutions for all the affected people. Bank Management will seek to insure that the following principles are adhered to in any solution adopted and intends to use every possible avenue of influence to secure agreement on them:

- (a) Maintain and improve lines of communication and negotiation with affected families through their legitimate representatives;
- (b) Timely completion of supplementary studies, bidding, contracting and construction of all remaining works;
- (c) Preparation and adherence to timetables for all actions;
- (d) Continuous monitoring of project financial and physical performance;
- (e) Timely provision of funds for studies, training and completion of works;
- (f) Continued payment of VMT for eligible farmers until production is restored;
- (g) Commissioning and operation of completed irrigation perimeters;
- (h) Timely and adequate training of farmers in irrigation techniques, soil and water conservation, O&M of irrigation systems, commercialization of crops;
- (i) Formation of WUAs for all irrigated areas; and
- (j) Issuance of Land Titles to all project beneficiaries.



## ITAPARICA RESETTLEMENT AND IRRIGATION PROGRAM: CURRENT STATUS

SUBPROJECT	MUNICIPALITY	NUMBER OF FAMILIES	IRRIGATION AREA (ha)	NUMBER OF PLOTS	DRY LAND (ha)	LEGAL, ENVIRONMENTAL OR PUBLIC AREAS (ha)	TOTAL AREA (ha)	OPERATION START-UP
<b>Subprojects In Production</b>								
I. Barreiras (BL1)	Petrolândia - PE	95	330	95	2,045	891	3,266	Apr-93
I. Icó/Mandantes (BL4)	Petrolândia - PE	260	875	260	5,625	2,437	8,937	Mar/Dec-94
II. Glória (1*-2-3-5)	Glória - BA	122	377	123	2,544	1,095	4,016	Apr/Nov-93
II. Rodelas (II-4/5-6-7-8-9)	Rodelas - BA	405	1,192	405	8,703	3,701	13,596	May-95
III. Brigida	Orocó - PE	431	1,436	431	4,290	2,996	8,722	Feb-94
IV. Pedra Branca	Curacá/Abaré - BA	709	2,363	709	7,270	3,747	13,380	Jun-95
Apolônio Sales (BL5) (*)	Petrolândia - PE	100	800	100	1,560	885	3,245	May-93
Manga de Baixo (*)	B.S. Franc. - PE	25	93	25	549	-	642	Dec-87
Brejinho	Petrolândia - PE	11	11	11	206	-	217	Jun-96
Jeremoabo (*)	Jeremoabo - BA	12	12	11	97	-	109	Dec-84
Remanso	Remanso - BA	40	120	40	880	20	1,020	Dec-83
Canafistula (3) (*)	D. Gouveia - AL	29	-	27	830	-	830	Dec-82
<b>Subprojects Under Construction</b>								
I. Icó/Mandantes (BL3)	Petrolândia - PE	397	1,355	397	9,540	4,086	14,981	1° semester-97
I. Barreiras (BL2)	Petrolândia - PE	600	2,036	600	13,135	5,689	20,860	2° semester-98
V. Caraiabas (4)	S.M.B. Vista - PE	1,408	5,230	1,408	15,480	10,613	31,323	Jun-97

## LEGEND

(1) Bank financed subprojects (4,541 families - 78% of the total); Indicated by Numerals I.-V.

(2) All subprojects grouped under Borda de Lago: Pernambuco Project

(3) All subprojects grouped under Borda de Lago: Bahia Project

(4) Brigida

(5) Pedra Branca

(6) Caraiabas

(7) Self-sufficient projects for which payment of VMT has been discontinued (172 families - 3%);

(8) Project does not include irrigation. Plots are for cattle, goat, and sheep raising;

(9) The settlement of the Caraiabas subproject (5,230 ha) is scheduled to begin in May, 1997, and conclude by June, 1998. The planned completion of most of the largest subprojects in 1997 was one of the reasons for the latest extension in loan closing date.

SUBPROJECT	MUNICIPALITY	NUMBER OF FAMILIES	IRRIGATION AREA (ha)	NUMBER OF PLOTS	DRY LAND (ha)	LEGAL, ENVIRONMENTAL OR PUBLIC AREAS (ha)	TOTAL AREA (ha)	OPERATION START-UP
<b>Subprojects Under Study</b>								
II. Itacoatiara (1-2-3-Alag)	Rodelas - BA	1,165	4,097	1,219	19,750	7,988	31,835	
II. Baixa do Penedo	Rodelas - BA	90	326	90	1,920	854	3,100	
Itacuruba	Rodelas - BA	24	77	24	523	225	825	
Inajá (Tuxá)	Itacuruba - PE	271	930	300	5,845	2,075	8,850	
Jusante	Inajá - PE	9	27	9	123	-	150	
Rodelas (Tuxá)	Glória - BA	462	1,671	462	4,680	2,449	8,800	
Ibotirama (Tuxá)	Rodelas - BA	88	270	100	1,930	550	2,750	
Barra do Tarrachil	Ibotirama - BA	98	390	100	2,060	610	3,060	
	Chorrochó - BA	123	406	134	2,669	1,225	4,300	
<b>GRAND TOTAL</b>		<b>5,809</b>	<b>20,327</b>	<b>5,861</b>	<b>92,504</b>	<b>44,148</b>	<b>156,979</b>	

## LEGEND

(1) Bank financed subprojects (4,541 families - 78% of the total); Indicated by Numerals I.-V.

II. All subprojects grouped under Borda de Lago: Pernambuco Project

III. All subprojects grouped under Borda de Lago: Bahia Project

IV. Brigida

V. Pedra Branca

VI. Caralbas

(2) Self-sufficient projects for which payment of VMT has been discontinued (172 families - 3%);

(3) Project does not include irrigation. Plots are for cattle, goat, and sheep raising.

(4) The settlement of the Caralbas subproject (5,230 ha) is scheduled to begin in May, 1997, and conclude by June, 1998. The planned completion of most of the largest subprojects in 1997 was one of the reasons for the latest extension in loan closing date.

## NOTES

Brief History and Current Status of Subprojects Under Study:

(a) Barreiras Bloco 2 → Significant investments have been made in the implementation of the irrigation infrastructure. The reservoir, pipeline, water intake and electric sub-station are complete and all the necessary hydro-mechanical equipment has been purchased and delivered to CHESF. In addition, houses

- (agrovilas) and all access roads are finished. The implementation of on-farm systems was discontinued due to unexpected soil problems. Soil experts were hired to study the situation and reformulate the original design of on-farm systems to accommodate permanent crops (fruit crops). The study is basically complete and construction will begin soon with conclusion expected by the end of 1998.
- (b) Itacuruba → Originally, this subproject was named Angicos. The land and a significant part of the equipment was purchased by CHESF. Subproject included irrigation plots and fish ponds which were partially constructed. Soil problems indicated that the subproject was not viable as originally planned and a firm was contracted to look for alternatives within the same municipality. The revised feasibility study has been concluded.
- (c) Inajá → This small subproject for only nine Indian families that did not feel part of either the Ibotirama or the Rodelas group was completed in 1989 and operated until 1992. However the Moxotó river has gone dry, and as a consequence, operation has stopped. Alternative solutions are being studied.
- (d) Itacoatiara → Main water intake is ready. Access roads and electricity infrastructure are finished. The subproject was originally designed for crops such as onions, corn, and beans; however, soils are not adequate for these crops. Alternative solutions are being investigated.
- (e) Baixa do Penedo → Six families have voluntarily moved into this area. CHESF is studying alternatives to improve the agricultural practices in place and is considering moving eighteen additional families into the area. The subproject was not in the original agreement.
- (f) Jusante → The water intake system, in addition to soil studies and topographical studies for the main pipeline, have been completed. Remaining studies have been initiated.
- (g) Rodelas (Tuxá) → An early agreement presented by the Indian group (prepared by a local NGO hired by the Indian tribe and paid by CHESF) was accepted. The Riacho do Bento farm was purchased but additional demands presented by the Indians following the agreement has hindered implementation. FUNAI is preparing a revised plan for this community to be presented to and negotiated with CHESF.
- (h) Ibotirama (Tuxá) → The revised action plan for this community was completed by FUNAI and presented to CHESF. The extremely high cost of the proposed plan (US\$391,000/family) has created an impasse. CHESF and FUNAI are still negotiating.
- (i) Barra do Tarrachil → These 123 families chose not to subscribe to the original agreement via Pólo Sindical. In January, 1988, they signed a separate agreement with CHESF that included the provision of irrigated plots (where possible), equipment and supplies for rain fed agriculture in the alluvial valleys; or fish farms. As suitable land for agriculture was not found, fish ponds were constructed and operated until 1992 when, as a consequence of poor maintenance, operation was discontinued. Three years ago, a farm of 700 ha (Cacimba do Pedro) was identified by the population. CHESF hired a firm to conduct feasibility studies for irrigation development at this site. The studies have been completed and indicate that this subproject may be extremely expensive. CHESF is looking for other least-cost alternatives for negotiation.

## SUPERVISION MISSION DATES AND STAFFING

MISSION END DATE	RESETTLEMENT SPECIALIST	WATER RESOURCES AND IRRIGATION ENGINEER	OTHER
4.29.88		X	
10.8.88		X	
5.10.89		X	X
6.15.90	X	X	
12.01.90		X	
4.15.91		X	X
8.16.91	X	X	
1.31.92	X	X	X
8.5.92		X	X
12.15.92		X	X
3.27.93	X	X	
7.6.93		X	
12.03.93	X	X	
6.7.94		X	
1.31.95		X	
6.3.95		X	
8.3.95		X	
11.30.95		X	
5.9.96		X	
9.27.96		X	
1.25.97		X	