

**PRESERVATION AND ENVIRONMENTAL PROTECTION OF THE
SERRA DA CAPIVARA NATIONAL PARK**

(TC-94-05-27-7-BR)

EXECUTIVE SUMMARY

REQUESTER: Fundação Museu do Homem Americano - FUMDHAM

EXECUTING AGENCY: FUMDHAM

FINANCING: IDB: US\$1,700,000 (Non-reimbursable, requested from Japan Special Fund)
Local counterpart funding: US\$ 100,000
Total: US\$1,800,000

TERMS: Execution period: 24 months
Disbursement period: 30 months

ENVIRONMENTAL CLASSIFICATION: The Environmental Management Committee, at its meeting of May 25, 1995, classified this as a Category I operation.

OBJECTIVE: The purpose of this technical cooperation is the protection of the archaeological sites and ecosystem of the Serra da Capivara National Park. To support the preservation and protection of the National Park: (i) the archaeological sites will be conserved and documented; (ii) the infrastructure systems of the Park will be improved to facilitate the management of the Park; and (iii) support actions will be undertaken to strengthen the management of FUMDHAM and promote environmental education and socioeconomic development among the local populations.

DESCRIPTION: The project will comprise the following components:

- a. conservation and documentation of the archaeological sites;
- b. basic protection, infrastructure and maintenance works, including construction of entrances to the Park, rehabilitation and maintenance of parkways providing access to the prehistorical sites and observation points within the Park area, works to minimize erosion and rehabilitation/establishment of water reservoirs; and

- c. support actions, including strengthening of FUMDHAM's management in business and marketing, educational training for the surrounding communities and promotion of artisanal activities

BENEFITS:

This operation will result in the preservation of archaeological sites of great cultural value. Furthermore, the implementation of the Management Plan, concluded in 1991, for the protection of the ecosystem of the only National Park in the brushwood region (Caatinga) of Brazil will be supported. Direct environmental benefits are expected in terms of avoided environmental losses, and improved protection of the ecosystem through the increased security and control of the Park.

Given its participatory nature, the project is also expected to result in socioeconomic benefits. Direct beneficiaries will include an estimated 7,700 persons, in particular children and youth coming from low income families in the Protection area.

RISKS:

Risks include a less-than-expected participation of the local communities in the activities to be financed. This risk should be limited taking into consideration the successful participation by the local population in the activities already promoted by FUMDHAM through community centers and a small production project.

**THE BANK'S
COUNTRY STRATEGY:**

The proposed technical cooperation reflects the overall strategy agreed upon by the Bank and Brazil during the 1995 Programming Mission, by focusing on the following areas: (i) environmental protection; (ii) social needs of low income groups; and (iii) stimulation of private sector participation. In addition, through this operation, the Bank will support the preservation of a human heritage with great cultural value for the country and will reinforce the cultural identity of the surrounding communities, as well as their self-sufficiency.

**SPECIAL
CONTRACTUAL
CONDITIONS:**

As a condition prior to first disbursement under the protection and infrastructure component, FUMDHAM shall present, to the satisfaction of the Bank, a work plan for the rehabilitation and maintenance of parkways, erosionworks and water reservoirs. (See 3.6.)

I. BACKGROUND

A. The need to protect the Serra da Capivara National Park

- 1.1 The Serra da Capivara - established as a National Park in 1979 and recognized in 1991 by the United Nations Educational Scientific and Cultural Organization (UNESCO) as a World Heritage Site - is situated in Piauí, one of the poorest and most undeveloped states in the Northeast of Brazil. In 1970 national and international archaeologists started to explore the area, which has the largest concentration of pre-historic sites in the country. As of today 362 sites have been registered with an estimated 25,000 paintings and engravings on rocks. Most of the paintings were made by people inhabiting the Park area 8,000 years ago. The archaeologists have found evidence of human presence earlier than 30,000 years ago, generating a new theory on the settlement of pre-historical humans in the American continent.
- 1.2 The sites are distributed over mountains, valleys and open lands. The paintings and rock carvings, representing scenes from daily life and rituals, show that those pre-historical human groups had a complex system of communication, both graphic and iconographic. Such registrations are of extreme value for the reconstruction of the societies who lived in the American continent long before the arrival of the Iberian colonists.
- 1.3 In addition, the region is a unique sample of the *Caatinga*, a brushwood dominion, not represented in any other protected area of Brazil. It has an important and diversified flora and fauna, containing several endangered species, among them several previously unknown species. The Park is situated in a half-deserted border region between two large geological formations: the sedimented bay of Maranhão-Piauí, and the peripheric valley of the São Francisco River. Landscapes of extreme beauty can be seen from favored observation points.
- 1.4 The Serra da Capivara National Park (PARNA) occupies 1,300 square kilometers (130,000 hectares) of an area belonging to four municipalities. Its territorial demarcation was concluded in 1990 by the Brazilian Institute for the Environment and Natural Renewable Resources (IBAMA), the public institution in charge of all federal protected areas. An Area of Environmental Protection (APA), occupying a ten kilometer broad zone, was created around the Park, constituting a buffer zone for additional protection.
- 1.5 After its establishment, as a consequence of budgetary difficulties of IBAMA, the PARNA was left without protection for more than 10 years. During that period it was plundered systematically, unbalancing the ecosystem and endangering the conservation of the archaeological sites and its paintings. Destruction of the flora by fire affected rare arts, and commercial hunting resulted in the extinction of animals, such as ostriches, deer and bears. Because

of the lack of effective control and vigilance local populations plundered the biological areas and the cultural patrimony by hunting, deforestation, destruction of the wild bee stocks, clearing the land located in the interior of the PARNA for planting, and exploiting the area rich in archaeological and paleontological sites. The invaders came from extremely poor and illiterate communities, subject to the chronic problems of the Northeast of Brazil.

B. The Management Plan

- 1.6 Through agreements with IBAMA, the Fundação Museu do Homem Americano (FUMDHAM), after its creation in 1986, took on the responsibility for: (i) developing a Management Plan for the PARNA; (ii) implementing the Management Plan; and (iii) promoting an action program for the preservation of the sites and ecosystems of the PARNA.
- 1.7 The Management Plan was concluded in 1991. It reflects much of the interdisciplinary research that FUMDHAM has developed in the region through comprehensive studies of man-nature interaction from pre-historical times up to now. The plan focuses on cooperation with the local population, creating alternative possibilities for improving the conditions of life for the involved communities.
- 1.8 However, due to the lack of effective infrastructure systems within the PARNA and its protection area, it has not been possible to fully implement the plan. An adequate preservation and protection of the whole PARNA is fundamental for its survival.

C. The FUMDHAM experience: background and perspectives

- 1.9 FUMDHAM is a non-governmental, non-profit organization, established in 1986 by a group of scientists (originally a French/Brazilian cooperation) who worked in the Park-region since 1970. It was this group, which directed the creation of the PARNA. Over 20 years of studies done by the scientists represent an important compilation of knowledge in the area, both in the cultural/ecological field and in the socioeconomic development of the surrounding APA area. The FUMDHAM statutes include as an overall objective: "to structure and return to the society, the results of the research in the cultural and ecological field as well as the socioeconomic development in the protection area".
- 1.10 FUMDHAM is governed by a General Assembly which nominates an Advisory Board and the Management. The Management consists of a president and two managers (technical-scientific and financial) responsible for four departments and six sub-departments. The organization has a staff of 33 persons, including 11 persons working in administration and 22 in community centers. Technicians and researchers are not included, as they are paid directly by funding institutions. Whenever needed, FUMDHAM can count on

specific technical assistance from different universities both within and outside Brazil.

- 1.11 FUMDHAM's annual budget over the last years has been in the range of US\$5-600,000, including costs for specific projects financed by national and international organizations. For 1995 the operating expenses are estimated at US\$167,700 of a total budget of US\$680,600. With an estimated income of around US\$590,000 from agreements with funding institutions and a balance of US\$190,200 from 1994, the foundation will be able to cover all expenses and leave a positive balance for the following year. The foundation's assets (mainly buildings and equipment) as per December 31, 1994, are valued at US\$4,700,000.
- 1.12 FUMDHAM gets its financial resources through agreements with IBAMA and institutions like the Fundação Banco do Brasil (FBB), Financiadora de Estudos e Projetos (FINEP), Fundo Nacional do Meio Ambiente, Ministerio da Educação (MEC), Vitae Foundation, United Nations Children's Fund (UNICEF), IDB and Terra Nuova, and further through agreements with universities as mentioned in para. 1.10. Some income is received from the selling of souvenirs with environmental and archaeological themes.
- 1.13 Together with national and international institutions FUMDHAM has been able to develop and diversify its research programs, protect the environment and the archaeological patrimony, and execute development programs for the region. In addition to the authority given by IBAMA for the protection of the Park, FUMDHAM has cooperation agreements with two of the four municipalities where the Park is situated - São Raimundo Nonato and Coronel José Dias. The agreements include conditions for environmental protection, the archaeological patrimony and administrative and institutional assistance.
- 1.14 In an effort to transform the local population into allies in the protection of the Park, FUMDHAM has created three Community Service Centers in the APA area (financed by a technical cooperation with the Italian Government) to develop activities in education, health care and handicrafts. The education activities focus primarily on children, who will be the future guardians of the Park, and on training of teachers. The health care centers offer emergency treatment and preventive care, especially in prevention of epidemic illnesses, prenatal care, vaccinations and education in basic hygiene. Production activities include handicraft and the formation of small production units, as in the case of a honey production project, which is being financed by the IDB (see para. 1.17). Each Center has a school, a refectory, lodging for teachers and scientists, a health care center, a water well, washing facilities and vegetable gardens.
- 1.15 The activities of FUMDHAM can therefore be characterized by the integration of: (i) cultural and historical matters (the existence of very important pre-historical sites); (ii) environmental

matters (the sites are situated in the interior of a National Park); and (iii) social concerns (the integration of the population in the preservation actions, oriented towards the socioeconomic development of the local community). The goal to preserve and re-establish the ecological equilibrium of the Park will be achieved through the re-establishment of the harmonious relation between cultural patrimony, environment and population.

D. The Bank's strategy and previous experience

- 1.16 The proposed technical cooperation reflects the overall strategy agreed upon by the Bank and the Brazilian government during the 1995 Programming Mission by focusing on the following areas: (i) environmental protection; (ii) social needs of low income groups; and (iii) stimulation of private sector participation. Through this project, the Bank will contribute to the preservation of a National Park with archaeological sites of great cultural value for Brazil. At the same time, the Bank will support an interaction between environmental, cultural and social events, promoting sustainable development strategies in an area of extreme social and environmental vulnerability, reinforcing the cultural identity of the surrounding communities as well as their self-sufficiency.
- 1.17 In 1992 the Bank approved a small project and parallel technical cooperation to support FUMDHAM (SP/SF-92-28-BR, ATN/SF-4047-BR) for US\$640,000 to finance a honey production project, whereof 80% is disbursed to date. The production center and laboratory for quality tests were ready in November 1994. Production and marketing were started in 1995 with an estimated production of 16 tons. One of the objectives of this project was to stop local populations using the Park for hunting and farming by supporting alternative income-generating activities. The project has achieved this goal and the 240 families involved are now cooperating with FUMDHAM in the Park protection. Together with other measures undertaken by FUMDHAM, such as the creation of the Community Centers, the invasion problem is not an issue any longer. Regarding income-generation, however, the marketing strategy for the honey has yet to be effectively implemented through the hiring of consulting services. The remaining portion (US\$25,000) of the technical cooperation component (ATN/SF-4047) will therefore be used to strengthen this aspect. Together with the strengthening of FUMDHAM's management through the hiring of a business manager/marketing expertise under the proposed technical cooperation, it is expected that this issue will be resolved.

II. OBJECTIVES AND EXPECTED RESULTS

A. Program objective

- 2.1 The purpose of this operation is the protection of the archaeological sites and ecosystem of the Serra da Capivara National Park.

B. Specific outputs

- 2.2 To support the preservation and protection of the PARNA: (i) the archaeological sites will be conserved and documented; (ii) the infrastructure systems of the Park will be improved to facilitate the management of the PARNA; and (iii) support actions will be undertaken to strengthen FUMDHAM and promote environmental education and socioeconomic development among the local populations.
- 2.3 At the project's conclusion, it is expected that:
- a. conservation measures on a selected number of sites, and video-registration of all the 362 archaeological sites will have been completed and an art book published about the PARNA;
 - b. the infrastructure systems for the Park administration will be in place, including: (i) rehabilitation and maintenance of parkways; (ii) eight (8) security gates installed to control access; (iii) works to prevent erosion will have been executed; and (iv) three (3) new water reservoirs will be in place to attend the necessities within the Park and its APA area;
 - c. a business and marketing strategy is in place; and
 - d. environmental education and socioeconomic development of the APA population will have been promoted including: (i) the publication of elaborated pedagogical material; (ii) training of all local teachers; and (iii) artisanal activities for commercial purpose will have started involving the APA population.

III. PROJECT DESCRIPTION

A. Components

- 3.1 A summarized version of the logical framework used in the development of this project is attached as Annex. The logical framework table, which forms part of the work plan (see para. 3.12.a) specifies the components and activities to be carried out in this project, including the estimated budget, expected results, the means for verifying the accomplishments, and the corresponding assumptions (risks). It includes the following components:

1. Conservation and documentation of the archaeological sites
(US\$390,000)

- 3.2 This component comprises the following activities: (i) identification of the causes of deterioration and destruction, and the use of specific conservation measures for a selected number of sites; (ii) registration by computerized video technology of all paintings and rock carvings in the 362 sites; (iii) gathering of material for, and the publishing of a book about the cultural legacy of the Park; and (iv) completion of circuits to facilitate access to seven (7) sites open to public.
- 3.3 These activities will be carried out through the use of a consultant specialized in restoration and identification of causes . 3rd party services, equipment and material for conservation, registration and the circuits will be purchased under the project.

2. Basic protection, infrastructure and maintenance works
(US\$777,000)

- 3.4 In the design of this component, specific problems of the region where the PARNA is located have been taken into consideration. The access, vigilance and maintenance within the Park is very difficult given its vast area and precarious roads. In addition, the area has a serious climate problem, marked by a long dry season in which precipitation is very low and when it rains, it floods. Erosions, caused by floodings together with the lack of proper drainage systems, are affecting the archaeological sites and destroying the parkways.
- 3.5 This component comprises the following activities: (i) construction of eight (8) entrances to the Park in accordance with UNESCO specifications; (ii) rehabilitation and maintenance of parkways providing access to selected pre-historical sites and observation points within the Park area; (iii) execution of works to minimize erosion and to rehabilitate erosion-prone areas; and (iv) rehabilitation and establishment of water reservoirs.
- 3.6 The administration of the infrastructure work will be done either directly by the Executing Agency or by service firms. The work plan (see 3.12.a) will include the detailed plan for administration and execution of the works and will have to be presented to the Bank as a condition prior to first disbursement under this component. Least cost options should be presented such as hiring local microenterprises to be trained for the rehabilitation work and maintenance of the roads, and the leasing of equipment to the microenterprises should be considered. This component also includes the hiring of one engineer and one hydrologist to supervise the works and provide technical assistance. Material for drainage and water collection, and in the case of direct administration the acquisition of equipment to be used for the protection and infrastructure work, will be purchased. The

acquisition of specific vehicles for rehabilitation and transportation will also guarantee long term maintenance of entrances and roads after the conclusion of the project, ensuring a sustainable protection of the Park. All procurement of goods and services under the project will be carried out according to Bank procedures.

- 3.7 It should be mentioned that IBAMA will finance eight (8) watchtowers to be built in accordance with the Management Plan. Construction will start during the second semester of 1995.

3. Support actions for FUMDHAM and the Community Centers
(US\$433,000)

- 3.8 This component involves:

- a. the strengthening of FUMDHAM's management in the business/marketing area; and
- b. environmental and basic education and vocational training for the surrounding communities including: (i) preparation and publication of specific material for environmental and formal education for the area and also for the country; (ii) training of local teachers; and (iii) promotion of artisanal production.

- 3.9 The strengthening of FUMDHAM's management will be done through the hiring of a marketing expert/business manager during the entire project execution period. The use of funds for this consultant will be combined with the use of the remaining balance under the small project (see 1.17).

- 3.10 The support activities for the Community Centers will be carried out through the hiring of consultants specialized in elaboration/publication of pedagogical material, training of teachers, and artisanal production. The publication of pedagogical material for the country will be done in cooperation with the Ministry of Education. The acquisition of a vehicle to facilitate the interaction between the Community Centers and the surrounding municipalities and one small truck to support the artisanal activities, will be included as well as the purchase of equipment and material for education purpose.

B. Organization and execution of the project

- 3.11 The project will be executed by FUMDHAM, an institution sufficiently organized, structured and experienced to administer the project. The project will be fully integrated into the existing structure of the foundation. To ensure timely execution of the project the technical-scientific manager will be assigned to oversee technical coordination and administration in cooperation with the sub-managers for each relevant department who will be responsible for execution of the respective components and activities. The management will be strengthened by the engineer

and hydrologist to be hired to supervise the construction and maintenance activities. All consultants to be hired under the project will be integrated into the execution structure. Additional local temporary staff will be hired with counterpart funds during the execution period.

C. Monitoring and reports

3.12 The agreement to be entered into between the Bank and the executing agency will stipulate that FUMDHAM must prepare the following reports and submit them to the country office in Brazil, which will have the primary responsibility for monitoring the project:

- a. an initial report containing the timetable and work plan for the project components and activities must be submitted within 90 days after signing of the agreement. The initial report shall contain the following information: (i) the program's work plan, including a description of the administration and execution model to be used for the protection and infrastructure component (see 3.6); (ii) terms of reference and the plan for contracting the consultants; (iii) baseline indicators upon which an eventual ex-post evaluation will be based; and (iv) a description of the mechanism for coordination and execution of the project;
- b. throughout the execution period, a progress report on each six-month period must be submitted within 30 days after the end of the period. The report must include a description of the progress made relative to the initial plan, deviations and the operational plan for the next six-month period; and
- c. within 90 days following the close of each calendar year during the period of execution of the project and on the date of last disbursement, the executing agency must submit financial statements on the use made of the Bank's resources and of the local counterpart contribution. All the financial reports must be audited by an independent auditing firm accepted by the Bank.

D. Project cost and financing

3.13 The total cost of this operation is estimated at US\$1,800,000. The Bank's contribution would be US\$1,700,000, the financing of which has been requested to the Japan Special Fund on a non-reimbursable basis. The local counterpart would be the equivalent of US\$100,000 to be paid in kind and through the hiring of local staff assigned to project execution. The following table shows the costs and financing resources.

US\$ equivalent

Components/Categories	Bank	Local	Total
1. Conservation/Documentation: - consultants - services - equipment - construction material	<u>390,000</u> 60,000 189,000 57,000 84,000		390,000
2. Infrastructure/Protection Works: - consultants - special programs: a. 8 gates (works/material) b. parkways, erosion, water (works,/equipment/material)	<u>777,000</u> 70,000 192,000 515,000		777,000
3. Support Actions: - consultants - services - equipment - training	<u>433,000</u> 180,000 62,000 171,000 20,000		433,000
4. Project and Works Administration	---	100,000	100,000
5. Contingencies	100,000	---	100,000
TOTAL	1,700,000	100,000	1,800,000

- 3.14 The project will have an execution period of 24 months calculated from the effective date of the agreement. The date for final disbursement will be 30 months after that same date.

IV. BENEFITS AND RISKS

- 4.1 This technical cooperation will result in the preservation of archaeological sites of great cultural value. It will also make the implementation of the Management Plan for protection of the ecosystem of the only National Park of the Caatinga viable. Direct environmental benefits are expected in terms of avoided environmental losses, and improved protection of the ecosystem through the increased security and control of the Park.
- 4.2 Given its participatory nature, the project is also expected to result in socioeconomic benefits. Direct beneficiaries will include the population living in the protection area, an estimated 7,700 people, in particular children and youth living under very poor conditions. Furthermore, it will create conditions for the transformation of cultural and ecological consciousness of the regional population and will contribute to the improvement of the quality of life for those inhabitants.

- 4.3 Other direct beneficiaries are scientists and archaeologists both national and international.
- 4.4 The Annex identifies the assumptions (risks), in general and for each component. Those risks include a less-than- expected participation of the local communities in the activities to be financed. This risk should be limited taking into consideration the successful participation from the local population in the activities already promoted by FUMDHAM through the Community Centers and the small project financed by the Bank.

V. SUSTAINABILITY

- 5.1 The self-sustainable nature of the Park management in the long run is an important issue to be considered. It is necessary for the future, to develop sources of income that will help finance the administration of the Park now undertaken by FUMDHAM. This risk will be minimized by a successful preservation of the Park, which will facilitate the management and attract visitors and generate income.
- 5.2 The annual minimum resources required for Park administration, once the infrastructure for Park protection is in place, is estimated at US\$600,000. This amount includes the Community Centers, which form an integral part of the Park. The cost increase compared to the years 1994 and 1995 is explained by new personnel for control and vigilance, operational costs for visitor centers and the maintenance of parkways and other infrastructure. It is estimated that, once the infrastructure is in place and the tourists are arriving, the Park will be able to generate sufficient income to cover the administration costs. It should be mentioned that, according to the Park's Action Plan, all costs related to control and vigilance should be covered by IBAMA. In addition, FUMDHAM will continue to raise funds through their national and international networks for Park protection and community activities.
- 5.3 Income is expected from the commercialization of the computerized video registration of the paintings and rock carvings and from the publishing of an art book under the proposed project. Also, by giving the children and youth now living in the protection area basic education and vocational training and supporting artisanal sales activities, FUMDHAM is helping in preparing the local population for their future participation in Park administration and income-generating activities. It is necessary, however, for FUMDHAM to strengthen its management in relation to business and marketing of products in general and the honey and other artisanal production in particular in order to generate further income for cost recovery. The proposed technical cooperation will include the hiring of specialists in this area.

- 5.4 To attract tourism in larger scale, support from the state and local communities, will be important. Access to the Park will have to be made easier through the rehabilitation of roads, local airport and other infrastructure. A small state-owned hotel has been built in a neighboring town (São Raimundo Nonato) to accommodate tourists visiting the Park and there are plans for private investments once the Park's infrastructure is developed. In cooperation with FUMDHAM the state-owned hotel is offering training for local youth in hotel management.
- 5.5 The state of Piauí is slowly improving its infrastructure to attract tourism. This will hopefully also benefit areas like the PARNA, which can offer the tourists interesting ecological/cultural attractions for a one-two days excursion or more. But access has to be made easier within the state. Today the PARNA is easier to reach through the neighboring states of Bahia and Pernambuco. It is expected that the PARNA will be included in the second stage of the Bank's Tourism Project for the Northeast (PRODETUR II). One of the managers of FUMDHAM is a member of the Piauí State Environmental Council.
- 5.6 Finally, another element that will contribute to the sustainability of this project's benefits, once the execution phase is completed, is the interest from universities and archaeologists from all over the world to continue to finance research in the Park area. The Ministry of Education recently financed the "Museu do Homem Americano" in São Raimundo Nonato to keep and preserve pre-historical material from the Park and to offer courses in related topics. The museum was inaugurated in 1994.

VI. EVALUATION

- 6.1 Evaluation of this project will be an on-going process through the reports described in para. 3.12, to be prepared by the executing agency and forwarded to the Bank. In addition, the country office in Brazil will have basic responsibility for administration of the project and will conduct periodic inspections.
- 6.2 During and after the execution of the project, IBAMA will be requested by the Bank to provide periodical information regarding the quality and effectiveness of FUMDHAM's conservation activities in the PARNA. Baseline data should be furnished by FUMDHAM/IBAMA at the beginning of the project to be used to carry out an eventual ex-post evaluation (particularly in terms of conservation efforts and income-generating activities).

**PRESERVATION AND ENVIRONMENTAL PROTECTION OF THE
SERRA DA CAPIVARA NATIONAL PARK**
Summary Logical Framework Table (TC-94-05-27-7-BR)

OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
Goal The saving of cultural values and the reestablishment of the ecological equilibrium of the Serra da Capivara National Park	Compared to base-line data: - No further deterioration or destruction on archaeological sites - No decline in population of endangered species. No increase in number of endangered species.	- Inspection - Published material	- Commitment by local and federal governments for continued support - Financial resources available to permit the continuation of activities
Purpose The archaeological sites and ecosystem of the National Park are protected	- The Management Plan being implemented - Improved infrastructure systems - Archaeological sites conserved/documented -	- Visual inspection (see 6.1) - Reports (see 3.12)	- Local population supports the protection of the Park.
Outputs (Components) To support the preservation and protection of the National Park: 1. The archaeological sites are conserved and documented <ul style="list-style-type: none"> Conservation of a selected number of sites Registration of all paintings and engravings Book publishing Completion of circuits to the sites open to public 2. Basic protection, infrastructure & maintenance works are executed <ul style="list-style-type: none"> Construction of 8 entrances in accordance with UNESCO specifications Rehabilitation, construction and maintenance of parkways providing access to selected pre-historical sites and observation points Execution of works to minimize erosion Rehabilitation and establishment of water reservoirs 3. Support actions are undertaken <ul style="list-style-type: none"> Strengthening of FUMDHAM's management in the business and marketing area Preparation and publication of specific material for environmental and formal education Training of local teachers Promotion of artisanal production 	1. - Conservation measures used on 11 selected sites as of month 24 -362 video cassettes with documentation of each site ready as of month 20 -One art book prepared as of month 14 and published as of month 20 -Circuits with access to 7 sites ready as of month 11 2. -Construction of entrances completed by month 11 -Parkways works completed by month 17 -Erosion works completed by month 5 -3 new water wells in function as of month 6 -4 rain water reservoirs installed as of month 12 -Studies on erosion/ drainage completed as of month 18 -Recuperation of natural water systems and water collection works completed by month 24 3. -Marketing strategy by month 6, fully implemented by month 24 -Pedagogical material prepared by month 8 -Publication of expository/ pedagogical material by month 14 -Teachers trained months 3-7 and 15-17 -Artisanal production activities starting as of month 7 -Sales marketing starting as of month 15	- Site inspections - Progress reports together with copies of video registrations and book delivered to the Bank - Site inspections - Progress reports - Progress reports - Publication copies - Sales revenues	General: <ul style="list-style-type: none"> Continuation of FUMDHAM's formal mandates Adequate enforcement of public regulations High participation by local population in project activities Availability of appropriate registration and conservation methods as planned Minimal delays in acquisition processes Proper maintenance of equipment used

OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
Activities			
1. Conservation and Documentation	- Consultant: (specialists in restoration and identification of causes) 60,0	- Site inspections - Progress reports	General: - Availability of qualified consultants as planned - Management of FUMDHAM administers works and project execution effectively
a. Identification of causes of deterioration on all sites	- Equipment: 57,0		
b. Profound restoration of a selected number of sites, inc. those to be open to visitors	- Constr.material: 84,0		
c. Paintings and engravings in all sites to be documented by computerized video registration technique	- Services: 189,0		
d. Matrix on laser-disc to be prepared for each site	Subtotal Component 1: 390,0	B	1. and 2. - Skilled workers available in the area - Sufficient number of workers available in the area - Workers willing to be trained for rehabilitation and maintenance work
e. Preparation and publication of art book over the PARNA		U	
f. Installation of visitors circuits on sites open to the public in accordance with Management Plan		D	
2. Basic protection, infrastructure and maintenance works	- Consultants: (engineer and hydrologist) 70,0	G	
a. Installation of Park entrances in 8 selected places	- Services 154,0	E	
b. Improve conditions to meet Management Plan requirements for: (i) roads with access to selected areas of the Park; (ii) parkways with access to archaeological sites and observation points; and (iii) service roads, including 45 km of the principal road crossing the Park in west-east direction	- Material 128,0 - Spec.program 192,0 (entrances) - Spec.program 233,0 (roads, erosion, water)	T	3. Favorable attitude among local teachers toward improved environmental education
c. Installation of information signs	Subtotal Component 2: 777,0	E	- Local population interested in artisanal activities
d. Installation picnic areas/parking		X	
e. Studies of the region's natural water and drainage systems and recommendations		E	
f. Construction of drainage systems using collection in micro-basins		C	
g. Recuperation of natural water systems within the Park area		U	
h. Opening of 3 water wells and the construction of 4 cisterns for collection of rain water for the service centers		T	
3. Support actions		I	
a. Development and implementation of market strategy	- Consultants: (marketing/business admin.) 110,0	O	
b. Preparation/publication, together with MEC, of pedagogical material for environmental education	- Consultants: (2 specialists in elaboration/publication of pedagogical material, hiring of teachers and production processes. 70,0	N	
c. Elaboration of Park-excursion programs for school children in the surrounding areas	- Services 62,0		
d. Elaboration of a program for environmental education to be used in all FUMDHAM centers and in schools around the Park	- Training 20,0		
e. Training program for local teachers using invited teachers specialized in rural areas, ecology/archaeology	- Equipment 171,0		
f. Purchase of vehicles to be used by the service centers	Subtotal component 3: 433,0		
g. Training of local populations in artisanal production; cabinet making, ceramics, and others			
h. Marketing of artisanal products			

PROPOSED RESOLUTION

BRAZIL. NONREIMBURSABLE TECHNICAL COOPERATION FOR THE
PRESERVATION AND ENVIRONMENTAL PROTECTION OF THE
SERRA DA CAPIVARA NATIONAL PARK

The Board of Executive Directors

RESOLVES:

1. That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, as Administrator of the Special Fund of Japan, to enter into such agreements as may be pertinent for the execution of the plan of operations referred to in Document AT- ____ with respect to technical cooperation with Fundação Museu do Homem Americano - FUMDHAM, of the Federative Republic of Brazil, for the preservation and environmental protection of the Serra da Capivara National Park.

2. That up to the sum of US\$1.700.000, is authorized for the purpose of this resolution, chargeable to the resources of the Special Fund of Japan.

3. That the above mentioned sum is to be provided on a nonreimbursable basis.