Ethno-Environmental Management Plan for the Sete de Setembro Indigenous Reserve
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Indigenous communities typically experience a significant process of transformation upon making contact with the technological world. However, such processes historically have made indigenous peoples dependent on technologies and manufactured goods from outside their world.

Many indigenous societies have been destabilized by means wherein the implementation of development projects follows short-term regional processes that are merely economic in nature and that disassociate the exploitation of natural resources from the environmental impact generated by that use.

Our society, as a transformative agent, must exercise care with processes that alter the *modus vivendi* of indigenous societies. We must demonstrate respect for their organizational systems and their sustainable means of caring for their environment.

Despite the Brazilian State’s development projects, the collective and individual efforts of indigenous society, and the work of charitable organizations, the context of hunger and deprivation that threatens the majority of indigenous peoples is still serious. In 1995, Brazil’s *Instituto de Estudos Socio-Economicos* (Instituto for Socio-economic Studies, INESC), in its publication “Map of the Hungry among Indigenous Peoples of Brazil,” demonstrated that the majority of Brazil’s indigenous people experience conditions of misery and malnutrition.

The lack of public policies designed to improve this status makes the Brazilian State the historical villain in the process. The self-sufficiency of many tribes who use natural resources sustainably is what maintains biodiversity on indigenous lands.

Because of the longstanding occupation of Brazilian indigenous lands—most of them already reduced to small areas—there are only a few indigenous-only territories remaining for a huge number of indigenous people, hampering the internal migration which is necessary for their traditional way of using natural resources.
Insufficient or improper demarcation and the great pressure around indigenous lands create a chaotic scenario of exhaustion of natural resources.

A lack of control and knowledge with respect to the causes of the degradation of the environment is one of the factors contributing to the acceleration of this process on indigenous lands.

With the contact between societies, traditional means of survival as well as important seeds were lost. Consequently, a varied plant-based food security system that was essential for healthy nourishment was lost. The rupture of this system brought about great misery for the indigenous communities, and severely contributed to an increase in environmental degradation.

Current food supply systems prioritize cultivations that require frequent rotation, eroding the soil and eliminating natural resources, which is contrary to sustainable use of the land.

A reduction in food diversity caused by genetic erosion is observed on most indigenous lands. Sometimes, the nutritional basis is restricted almost entirely to rice and manioc.

Animal species on reserves are becoming ever rarer, and other sources of protein are not valued as they were in the past. These include lianas, manioc, broad beans, corns, beans, pumpkins, squash, sweet potatoes, peanuts and other plants that could support the indigenous food security system.

The search for new ways to build the Suruí’s autonomy has historically involved the local communities in activities introduced to their cultural universe that succeeded when developed in the white man’s world, but when developed in indigenous lands resulted in a collapse, generating frustrations and compromises for indigenous peoples and their leaders.

In this context of frustration, discontinued activities, and lack of human and financial resources, human misery is established. When it happens, the society loses respect for its own values and begins to
use its local resources unwisely. This process brings about the fragmentation and exhaustion of local natural resources. In the end, what remains is hunger, illness and a society without any support and energy to live.

In order to assure that their people would not have the same uncertain destiny as many indigenous peoples—and that they would have the opportunity to create experiences adaptable to other tribes, allowing those tribes to establish their own sustainable ethno-development process—the Suruí decided to design a management plan for their territory.

Their intention is to create a holistic program, through an educational methodology, in order to create a new way of transmitting their knowledge regarding the management and use of natural resources for food supply, construction, and marketable products, without endangering their socio-environmental sustainability.

The Metareilá Association of the Suruí has led this initiative. To this end, the Association conducted a meeting in which multiple institutions were present, including: FUNAI’s Department of Indigenous Patrimony and the Environment (Departamento de Patrimônio Indígena e Meio Ambiente, DEPIMA); FUNAI’s Regional Executive Administrative Office (Administração Executiva Regional da Funai) in Cacoal; the Brazilian Institute for the Environment and Renewable Natural Resources (Instituto Brasileiro do Meio Ambiente e Recursos Naturais Renováveis, IBAMA); the Brazilian Agricultural Research Agency (Empresa Brasileira de Pesquisa Agropecuária, EMBRAPA); the Municipal Health Agency (Secretaria Municipal de Saúde); the Brazilian National Health Foundation (Fundação Nacional de Saúde, FNS); the Brazilian Environmental Ministry’s Coordinating Agency for the Amazon (Secretaria de Coordenação da Amazônia do Ministério do Meio Ambiente); and Kanindé.

The Paitery Program of the Suruí seeks to deal with matters regarding their survival by experimenting and discovering ways to take care of their current needs and prepare them to face future demands in an integrated, autonomous and sustainable manner.
The Sete de Setembro Indigenous Reserve is surrounded by the Cacoal municipal district (Rondônia state) and Aripuanã (Mato Grosso state). The reserve has an area of 248,068.13 hectares, with 1200 inhabitants distributed across 26 villages, where they practice agriculture, fishing, hunting, collection of food and forest products, and maintain small coffee plantations (inherited from illegal settlers who left the area in the early 1980s).

The Suruí made first contact with non-indigenous society in 1969. Since then, they have faced several different threats to their community and territory including illegal logging, mining and the pollution of their water resources from farming runoff. Illegal timber extraction has been one of the most potent threats, resulting in the fragmentation of local communities and the destruction of forests inside the Suruí territory.

The illegal extraction of timber from Suruí lands first began almost two decades ago and has forced the Suruí to seek alternative options to reduce the pressure on their community from the illegal logging operations, which bring in minimal income to very few members of the Suruí while exposing them to the hazards of alcoholism, violence and destruction of their natural environment.

Only in 1983, after many confrontations with the Brazilian Government and settlers, did the Suruí finally reclaim part of their lands. But located outside the reclaimed territory were raw materials that were used to create traditio-
nal artifacts, such as the taquara, traditionally used to make arrows. Meanwhile, within their borders remained coffee plantations that belonged to the settlers and were inherited by the Suruí and subsequently became part of their first experience with the modern economic system. Encouraged by FUNAI, they divided their population—who were used to living in large malocas (roundhouses)—into 10 villages located near the coffee plantations and set at the end of the official demarcating “lines” of the settlement project.

Before official contact, according to the data of researcher Jean Chiappino, the Suruí population would have consisted of approximately 800 people. The elders have terrible memories from that period. They say that although the white men brought some good things, “with their machetes and knives, the white men also brought disgrace and death.”

The Suruí elders disagree with Chiappino’s data. They assert that the number of their people living during the period of first contact was around 5,000. Two years later, the number was reduced to 250 people. The majority of the ensuing mortality was caused by a measles epidemic occasioned by a visit to a settlers’ camp.
Guidelines and Paradigms of the National Sustainable Ethno-Development System

**Guidelines**

In order to realize the plan, the Suruí sought to develop a methodology able to implement:

- Sustainable indigenous agro-environmental policies
- Participatory agro-environmental diagnostics
- The development of proposals covering specific environmental concerns
- Training of environmental liaisons through an educational methodology
- Sustainable agro-environmental management
- Sustainable ethno-development programs
- The organization of a multimedia environmental information database.
Leading Frameworks

- Establish socio-environmental sustainability by gradually improving the quality of the indigenous society’s well-being.
- Recognize/appreciate and recover the indigenous traditional knowledge related to their survival and sustainable use of natural resources.
- Consider the gender perspective, recognizing/appreciating the participation of women as an agent capable of bringing positive change to local environmental realities.
- Respect all age groups in order to bring about the involvement of the whole population.
- Recognize/appreciate the family unit of production and survival, valuing its existence as a primary organizational unit while also respecting community organizations.
- Restore food security and associated community health through improved food supply policies.
- Enable access to environmental information.
- Develop environmental activities through the use of educational methodologies.
Objectives of the Management Plan

General Objective

To implement the Paitery Environmental Management Program by establishing procedures and guidelines that attend to socio-cultural needs and that create the proper conditions for the responsible use of natural resources, subsequently addressing cultural recognition and environmental conservation.
Specific Objectives

- To carry out a technical and scientific survey of the fauna of the Sete de Setembro Indigenous Reserve that was not realized during the participatory agro-environmental diagnostic; the diagnostic's information was provided only from indigenous oral information.

- To develop projects that promote alternative food production; “live” pharmacies (natural remedies); sustainable habitation; and generation of surplus for commercialization.

- To draft a natural resource management plan, emphasizing multiple-use forest resources in order to recover the already degraded forest areas.

- To promote the Suruí culture through the creation of a Center for Indigenous Instruction and Research in order to disseminate knowledge of their culture at the local, national and international level.

- To develop an indigenous marketing logo in order to distinguish the indigenous product in local and national markets.

- To found a Suruí agro-environmental school as an instrument to transmit environmental knowledge regarding natural resource use.

- To found an indigenous university.

- To advance the environmental protection of the Reserve.
Methodology

Sub-programs were created according to structural and thematic areas. The structural area refers to the foundation upon which project planning, execution, management and monitoring are developed. It also refers to multiple human activities that are necessary to achieve objectives and to guide specific projects. Each sub-program has technical guidelines that guide project development.

For the management plan—which seeks to change paradigms related to the use and conservation of natural resources—approximately 20 years of planning will be forecast, projecting sustainable actions in social, cultural, environmental and economical terms.

In order to succeed, the management plan requires the ongoing assistance of technicians and specialized consultants who can make arrangements for its execution, in partnership with the Suruí. Such technical assistance must be larger at the beginning of plan implementation and must diminish gradually, ceasing over the long term.

To support planned activities, it will be necessary to seek out official funding sources with a willingness to transfer funds directly to the indigenous organization. The plan also can be implemented with resources originating from economic activities that will allocate part of their profits to a cooperative fund.

Project development is based on the Paitery Program of the Suruí. During the process, there will be monitoring and evaluation meetings. Through these meetings, it will be possible to bring about modifications when necessary, reinforcing the dynamic quality of the project.
Structural Sub-Programs

- **Diagnostic and Participatory Strategic Planning**
  To support sustainable natural resource management in the Sete de Setembro Reserve, a participatory agro-environmental diagnostic was development. This diagnostic must serve as the basis for the drafting of the multiple-use forest management plan and for many other projects related to natural resource use in the Reserve.

- **Transmission of Knowledge and Information**
  Through the formal educational system and other kind of educational systems - such as an agro-environmental school, a center for cultural experience and an environmental library - it is expected that a strong system of knowledge and technology dissemination will be constructed for the benefit of the Suruí.

- **Autonomy to manage and monitor the project**
  The implementation of capacity-building activities that transmit knowledge, develop participatory diagnostics and promote the proactive participation of the Suruí in all projects will ensure the Suruí’s autonomy in the plan’s management and monitoring. Specific activities must be developed through the training of members of the indigenous society to enable them to assume their responsibilities.

  Plan management must be carried out by indigenous organizations with a team trained to manage financial resources and projects. Each organization must establish which sub-program will be executed and must draft a specific project to be implemented.
It is not advisable that two different organizations develop the same sub-program, because it will make the sub-program’s management and decision-making difficult.

## Thematic Sub-programs

### Food Security

#### Restructuring of Seed Bank

The plan places special attention on the process of restoring traditional food production systems as an alternative to current systems, which are being implemented with adverse technologies.

An autonomously managed seed bank must be generated by giving priority to foods that germinate underground and that enable rotation of harvest cycles. The seed bank also must take into account those foods with short cycles that must be gathered soon after maturation. Additionally, it is important to select fruits and plants that achieve maturation in dry seasons.

### Subsistence

Through the restructuring of the seed bank and production systems, it will be possible to ensure a better response to the internal demands for better quality food and to diminish the dependence on low quality products that are acquired outside the villages, products which almost always are old and contaminated.

### Nutrition Education

The need was established for a deeper analysis regarding the modification of traditional customs with respect to nutrition. The analysis would seek to catalog the abandoned foods as well as examine the introduced foods and their implication in the appearance and increase of diseases.
Agro-Forestry Gardens

Agro-forestry gardens are areas of production around individual houses. The projects to be developed will seek to enrich these gardens with medicinal species; native and introduced fruits; plants used to make handicrafts; and ornamental plants. Because there is a large quantity of sustainable compost in these spaces, it will be possible to improve the food production system in rural areas.

Integrated Healthcare

Existing problems regarding healthcare already are being resolved. Nevertheless, it is necessary to hold more meetings to enable deeper discussions on the following aspects:

Water

The water supply and its infrastructure are precarious. The potable water supply must be improved in almost all of the 24 indigenous villages. Semi-artesian wells must be constructed and outfitted with electric or solar pumps, thereby reducing the use of diesel generators.

Basic Sanitation

The concern regarding basic sanitation originates from the environmental degradation that is partially caused by toxic residues deposited in micro-basins along those indigenous lands that lie near the boundaries of large agricultural farms. Basic sanitation is also affected by stockbreeding, colonization and other internal and external activities that degrade the environment.

The environment surrounding the indigenous villages is very fragile and is commonly a source of infection by parasitic diseases. There is also a large waste of organic material that could be used as compost for trees that could generate fruit and improve food security.

The need was established for a sanitation project to improve the health of the Suruí, one that builds local commitment and decreases environmental impacts.

Training of Indigenous Healthcare and Sanitation Agents

There must be an investment in indigenous health agents to enable them to study medicine and nursing, thereby improving local healthcare.
It is also necessary to train indigenous sanitation promoters to work with sewage, garbage and sanitary education and other matters related to primary healthcare in the villages.

**Medical Care**

The need was established for differentiated and non-discriminatory healthcare treatment, for which the guidance of an indigenous promoter and a trained healthcare professional is fundamental. The plan states that traditional food should be offered during treatments, which should give preference to the procedures of indigenous traditional medicine.

**Participation of the Suruí**

The participation of the Suruí in discussions and demands related to institutions providing healthcare—such as municipal healthcare councils and sanitary districts—must be conducted with technical sufficiency. It is necessary to offer technical training for the participants so they can fulfill their responsibility as advisors.

**Appreciation for and Restoration of Traditional Healing**

The devaluation of traditional medicine and its substitution by Western medicine were responsible for the disappearance of ancestral knowledge regarding diseases and thousand-year-old healing practices. Support and encouragement for traditional healing practices must occur in order to strengthen the shamans and those indigenous persons who practice traditional medicine.

**Use of Alternative Medicine**

It is important to consider healing potentials through alternative medicine before initiating allopathic treatments. This procedure potentially can reduce treatment costs and prevent a number of side-effects of allopathic medicines.

**Sustainable Medicine: “Live” Pharmacy**

It is necessary to support initiatives for the processing of plants and other raw materials in order to enable the sustainable production of medicines.

The advantages of a “live” pharmacy for the processing of medicinal herbs and their processing for the manufacture of ointments, syrups and other types of commonly used medicines must be promoted. Through these means, it will be possible to meet the need for new medicines and new means of processing traditional medicines.
**Education**

**Formal Methods of Apprenticeship through Official Schools of the Brazilian Education Ministry**

It is necessary to reinforce the continuation and amplification of the training of indigenous teachers, eventually transferring this responsibility to the community itself.

The creation of a standardized school that make possible indigenous-appropriate training is a long-held desire of the Suruí. Today, there are a few indigenous persons studying in universities in Porto Velho and Cacoal, Rondônia. The objective is to found an indigenous university inside the Reserve to serve the Suruí and other indigenous students in Brazil.

**Free Methods of Apprenticeship through Informal Education**

In contrast to formal education, here the intention is neither to graduate indigenous people nor to enable them to understand non-indigenous culture, but to prepare them to establish the procedures that maintain their own sustainable development.

Emphasis has been placed on training for family units of production as opposed to just individual students.

An agro-environmental school will be created for the Suruí, which will consist of a capacity-building center and opportunities for environmental experience embracing the areas of integrated health; agro-forestry systems; forest management; alternatives for sustainable production and economic verticalization; ecotourism; and marketing.

The school will be constructed in the Branco River region, the area of first contact between the Suruí and modern society; the family units of production and representatives from all villages will participate in its construction.

The school will be autonomously administered by the indigenous people themselves through the Meta-reilá Association, and eventually will have the support of other institutions.

Additionally, a center for culture and technology will be created. At this center, indigenous and non-indigenous researchers will be encouraged to work together, jointly carrying out cultural and scientific research through agreements and partnerships with research institutions, universities, NGOs and entrepreneurs.

**Operational Infrastructure**

In the villages, there are only two schools. It is necessary to additionally construct four standardized schools with one classroom each and three schools with two classrooms each to reinforce and develop activities related to bilingual formal education.

Additionally, an agro-environmental school must be constructed. The school will serve all villages and will work with the family units of production. The school will operate four times each year, each time for a period of twenty days.
Culture

Cultural Support and Diffusion

The creation of a Suruí Culture and Technology Center must support the development of indigenous cultural recognition activities. At the center, demonstrations of indigenous handicraft manufacture will be made for the public in general. The center also will host scheduled courses and the reception of tourists who visit the region.

In order to offer greater support to these activities, visual products will be developed that demonstrate the value of the Suruí language, myths, traditions and rituals. Such products could include t-shirts, postcards, books and other materials that can be sold in the Center. An internet site also will be created to publish information regarding the Suruí culture.

Indigenous Handicrafts

A center will be constructed in Riozinho, next to the Metareilá Association’s building, to carry out the development of handicrafts created by Rondônia indigenous peoples. The handicrafts will be sold in national and international markets.

Sustainable Agro-Environmental Management

The Suruí people have sought activities capable of providing financial resources to meet their needs beyond the subsistence level. Projects must be developed to create carefully planned alternatives, paying special attention to the budget in order to guarantee the success of the activities.

The Multiple-Use Forest Management Plan and the Reserve Reforestation Plan must be guided by a forest engineer and implemented by the Suruí themselves. One of the goals to be achieved is the certification of these plans.

Context of Projects Being Developed

In Linha 14, a project is being developed wherein a huge coffee plantation was recently installed. For the plantation, the land was prepared with mechanization and chemical manure was used—the same procedure employed in conventional plantations. However, this project is still under implementation and is encountering difficulties regarding irrigation.

In this project, there are no other types of crops, and no basic recommendation was observed regarding land conservation—such as surface cover and cultivation along contour lines—which could reduce the loss of nutrients and an irrigation deficit. New crops congenial to the coffee cultivations must be introduced in order to diversify production and stabilize the system. These practices will be implemented in the Agro-Environmental School and in the project itself.

In Linha 11, there is a project named “Program of Support to Agricultural Production Activities in Indigenous Reserves,” developed by the Brazilian Agriculture Ministry. This project has commenced with activities for the sustainable production of aquarium fish and cattle fodder. However, the project has not been properly monitored by EMATER, the Institute for Technical Assistance and Rural Extension, which was in charge of the project’s technical assistance. For example, a dam was breached and no repairs were made. Now, a new dam must be constructed and new alevins (fish in their larval stage) must be acquired, since it is the traditional nutritional basis of the Suruí.

The project’s objectives and its implementation must be completely reorganized because the project has the same problem as the project in Linha 14: it doesn’t have any technology for land conservation, sustainable composting or a more diverse and stable composition of agro-forestry systems.
Stabilization of Areas of Food Production

The current state of food production areas in indigenous lands shows a dependent, unstructured and unplanned system with low diversity and quality which rapidly loses effectiveness, subsequently requiring a constant change of location.

The use of agro-environmental methodologies of food production with low environmental impacts and effective sustainability aims at recognizing the value of, rand restoring seed banks, subsequently increasing variety and establishing a more steady production of food over the year. The plantations will undergo an agro-forestry process through the use of sustainable fertilizers and land conservation.

Economic Sustainability

Technical Support

In order to succeed, the search for sustainable economical alternatives requires technical knowledge regarding natural resources such as soils, adapted species and hazards such as diseases and blights. During the application of agro-forestry and animal husbandry, it will be necessary to receive technical capacity building, even when it regards extensive, older types of production practices.

Training in Production Technologies and Markets

The sale of raw material taken from nature has been the most common practice among the poor rural populations. However, income derived from rural sustainable production practices is exponentially greater. Indigenous individuals must be trained in production techniques and acquire knowledge regarding the market so that the Suruí can define fair prices for indigenous products.

Marketing Strategies

Marketing can be a powerful tool in building consumer product interest. The packaging and the description of a specific indigenous product are extremely important for the product’s success in the market. Also, the creation of a logo to identify the Suruí product is fundamental to building value.

Exploration and Establishment of Markets

A marketing consultant must be hired, one able to encourage conversation and contacts between the indigenous people, producers and consumers in order to identify people who wish to buy products that recognize indigenous culture.

Study of Internal and External Market Sustainability

Once the market has been conquered in a specific area, it is important to obtain short, middle and long-term perspectives from the producers who compete in the market, even at the international level.

It is necessary to hire a consultancy to draft these studies so that the Suruí can ensure a reliable market for their products.
**Environmental Sustainability**

**Cultural Appreciation**
Activities that recognize the value of the realization of rituals and traditions must be encouraged across the entire management project.

**Correction of Acquired Environmentally Degrading Activities**
All the agricultural activities that have been developed in the Reserve must be analyzed and re-adapted. Considerations should include soil conservation; criteria for succession in agro-forestry systems; sustainable composting; and other practices that contribute to the improvement of agricultural production and an increase in financial income.

**Sustainable Use of Natural Resources**
Many innovative solutions to the natural resource exploitation problem have been offered that can be implemented through partnerships. Projects that address the environment require indigenous environmental liaisons that must be prepared to discuss and consider the environmental dimension.

The organization of a natural resource information database is needed. The database would enable, in a short time, the initiation of a survey regarding potential projects for the sustainable use of these resources and benefits to be acquired with respect to nutrition, healthcare and environmental conservation.

**Apiculture**
The Brazilian indigenous affairs agency, FUNAI, has developed a program for beekeeping in indigenous reserves. It is part of a basic strategy to train indigenous environmentalists who live in the community and who will become the main liaisons for discussions regarding the environment and participatory development of sustainable survival alternatives.

**Forest Nursery/Reforestation**
The development of an agro-forestry activity generates a huge demand for fruit tree seeds to serve as the foundation for the management systems. The sustainable production of seeds in the villages must be encouraged because it represents significant savings regarding their acquisition and transport. The seed production also will offer an open classroom to build environmental consciousness.

The Suruí’s goal is to plant one million trees and to install small nurseries in all villages. This must be implemented in a decentralized way, with part of the seeding conducted in domestic areas.

Another objective is to offer tree seeds to be planted by the settlers who live beyond the indigenous territory. The project will be initiated by planting seeds along the banks of rivers to restore the gallery forest.

This an educational initiative because farmers and small producers can restore the gallery forest, protect water resources and accomplish the objective of restoring 80% of the legal reserve to forest, as mandated by the Brazilian Forest Code.
**Agro-Forestry Systems**

Because of the installation of nurseries, it will be possible to advance quickly in the installation of agro-forestry systems in the villages.

**Extractivism**

The exhaustion of extractive resources in the region due to deforestation necessitates the installation of sustainable extractive production systems through the planting of native seeds such as *tucumã* and *inajá*, which are used for indigenous handicrafts.

**Environmental Education**

Environmental education must be developed in the villages in order to provide more environmental and technical knowledge.

**New Means of Production**

Because of the Management Plan, it will be necessary to familiarize the indigenous people with the new ways of production, which doesn’t mean brushing aside the traditional system.

The recognition/appreciation of the family unit of production and marketing will be encouraged, valuing the tradition of cooperation in community production work.

Part of the social sustainability objective will be achieved if individual and collective responsibilities can be clearly and concisely defined according to the program.

**Protection, Environmental Recovery and Benefits**

The forest ecosystems are the ecosystems most affected by the selective extraction of timber and by mining. On a smaller scale, the current food production system also affects the environment because the lack of rotation prevents the recovery of the land, impeding its reuse.

Rural areas can and must be maintained. It is necessary to develop a new model for agro-ecosystems and plant succession, demonstrating the possibility of continued use of the areas for long periods without jeopardizing future socio-environmental needs.

Since the Brazilian State is not taking the initiative, the Suruí must construct their own environmental protection system through which they can establish an Indigenous Land Protection Plan, in which the indigenous people will be environmental promoters and have control over their patrimony.

**Territorial Protection: Vigilance and Surveillance**

At present, vigilance and surveillance activities are not self-sustainable and constantly face interruptions. It is important to develop an economically sustainable system in the broad sense, where resources are generated expressly for this purpose.

Here, the proposal is to train indigenous environmental promoters to develop vigilance and surveillance activities. For this, they will require the necessary tools and infrastructure such as capacity-building courses, vigilance posts, vehicles and materials.
Negotiation of Environmental Debt Benefits

Ecological ICMS (Impostos Sobre Circulação de Mercadorias e Prestação de Serviços, Brazilian State Taxes on Goods and Services)

Public policies must be established to deliver Cacoal’s Ecological ICMS resources to the indigenous organization, which must apply them to land protection.

Clean Development Mechanism (CDM)

The CDM is an instrument of the United Nations Framework Convention on Climate Change that seeks to bring about a decrease in atmospheric CO₂ through its sequestration. The biomass found on protected indigenous lands would be important for this function. This kind of negotiation is already underway in several conservation units in Costa Rica and Bolivia. Through attendance at meetings and conservation activities, it will be possible to give prominence to the Amazon forest for application of the CDM, primarily to indigenous lands.

The proposal is to search for partnerships in order to develop activities capable of ensuring the forest’s survival as well as payments for environmental services deriving from this protection.

Biodiversity

Because of the disappearance of certain genetic resources from indigenous lands and the loss of the associated knowledge of their use developed by their inhabitants, it is necessary to develop a biodiversity conservation program. For this, it is essential to restore traditional practices of conservation and use of genetic resources and endemic ecosystems.

One of the goals of this plan is to identify new partners such as the Brazilian Agricultural Research Agency (EMBRAPA), NGOs and research institutions in order to promote local biodiversity knowledge and conservation and the training of indigenous people to develop research and activities for the protection of fauna, flora and genetic resources.
Housings and Adapted Indigenous Construction

Suitable housing is one of the first conditions that must be met to improve the well-being of a people. In order to develop sustainable projects that are of low cost and reduced environmental impact, it is important to conduct activities that enable the sustainable use of alternative construction technologies through the use of bamboo and other sustainable alternatives for raw material.

However, this doesn’t require that the villages surrender their architectural originality and tradition. A mix of traditional architecture with means of construction that use more modern materials is certainly achievable, as long as this synthesis respects indigenous building knowledge and maintains the beauty of indigenous malocas.

Other important needs to be met include installations such as fences for grazing, gardens and orchards. An alternative is the use of “live” fences instead of steel fences.

Across time, it is possible to observe the gradual abandonment of construction techniques that are more sustainable than the current ones. Because of this, the use of traditional materials is recommended, such as those from a variety of palm trees.

There is also the need to restore the traditional architecture with some modifications, requiring the creation of a housing program where part of the raw material and workforce will be provided by the Suruí.
Means of Transportation

Construction and Maintenance of Roads Used Exclusively By Indigenous People

The construction and maintenance of roads used exclusively by the indigenous people falls under the responsibility of multiple government agencies, both local and national: the federal government through DNIT (National Department for Infrastructure and Transportation); the state government through DER (the State Roads Department), brigades and subcontracted consortiums; and the municipal districts’ secretaries of transportation.

The construction of roads enable any illegal natural resource prospecting should be forbidden. Instead, the construction of roads that link one village to another must be encouraged.

Transportation System

The Suruí transportation system is unstable and unreliable. Today, for surveillance and vigilance activities, the Suruí use vehicles that belong to FUNAI; for transportation of agricultural products, an old truck; and for health emergencies, a FUNASA vehicle. All of these means of transportation are very poorly maintained.

The Suruí people need their own vehicles so that they can transport their agricultural production, protect their lands, and attend to health emergencies.

Required Operational Infrastructure

In the villages, there is a lack of infrastructure to enable the execution of activities and to ensure sustainability.

Each program must have a plan for required infrastructure.

Following is a general list of these requirements.

For Vigilance

- 2 Toyota 4x4s, double cabin
- 2 Toyota 4x4s, double cabin, with closed body
- 12 motorcycles for preventive vigilance
- Construction of 3 vigilance posts
- Acquisition of material to be used in the vigilance posts
- Furniture for the vigilance posts
- 12 GPS handhelds
- 3 laptops
- 3 solar panels.
For Production

- 2 trucks
- 1 tractor to make road repairs
- 1 small tractor with cabin
- 20 horse-drawn wagons
- 20 storage facilities to hold the product
- 2 machines to collect grain
- 2 machines to separate coffee grains from the bean pulp
- 20 grain–drying facilities
- 3 aquaculture tanks
- Agricultural tools
- 40 wheelbarrows
- 1 aluminum boat (8 meters)
- 1 15hp outboard engine
- Material for nurseries.

For Education

- Construct schools in the villages
- Construct a university
- Construct an indigenous library
- Construct an agro-environmental school
- Acquire computer equipment for the schools and university
- Acquire scholastic equipment and books related to environmental and indigenous education.

For Cultural Recognition/Appreciation

- Construct a center for Suruí culture and technology
- Construct a cultural experience center
- Construct a building in Riozinho to showcase and sell cultural materials and other indigenous products.

For the Improvement of Means of Transportation

- Construct and restore roads linking the villages.

For the Improvement of Village Architecture and Basic Sanitation

- Construct housing using non-indigenous raw material but without disrespecting indigenous architectural principles
- Construct special malocas (traditional housing) in all villages for gatherings and greetings
- Construct appropriate facilities for baths and commodes
- Construct a basic sanitation system (water treatment and sewage).
Energy Production/Supply

Biodigester
It is necessary to train indigenous people to work with biodigestors.

Electric Energy
Five indigenous villages must be served by the electrical energy system.

New Potentials for Energy Production

Multi-Fuel Motors
Today, there are new technologies that can transform certain fruits and tree oils into fuel that can be used in multi-fuel motors. This market can be approached by the Suruí because they have many babaçu (a small fruit) palm trees on their lands.

Hydraulic Energy
Irrigation systems that use sustainable technologies must be prioritized because costs are not high and the systems are efficient for small areas.

Solar Energy
Solar energy is a clean energy technology that can be adapted to the Suruí’s everyday way of life. Its initial cost is not very high and maintenance needs are reduced, making it an excellent option especially in the warm season.
Criteria of Sustainability

Socio-Cultural Sustainability

- Cultural recognition/appreciation and recovery in many areas of knowledge
- Training in multiple thematic areas
- Improvement of community well-being
- Adaptation of modern activities to indigenous culture
- Adaptation of indigenous customs to modern activities
- Recognition/appreciation of the family unit of production and environmental resource use
- Development of a cooperative trade system
- Autonomous planning and execution of projects
- Individual and collective responsibility regarding project implementation and adjustment
- Realization of a cultural festival.

Environmental Sustainability

- Physical and territorial integrity of the Reserve
- Sustainable management of natural resources
- Recovery and encouragement of traditional ways of using natural resources
Criteria of Sustainability

Restructuring/replacement of acquired environmentally degrading activities

Reforestation.

Technical Sustainability

- Technical support through direct assistance and consulting
- Training of indigenous technicians.

Economical Sustainability

- Marketing strategies and production verticalization
- Short and medium term market analysis
- Agreements and other kind of partnerships
- Rotating fund for Suruí forest management
- Evaluation of the plan in each of the three years in order to analyze results and draft future objectives.