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**PRE-PROJECT REPORT**

**MANAGEMENT AND UTILIZATION OF PACA  
(GUADUA SARCOCARPA)**

**PREPARED FOR ITTO**

**BY**

**THE GOVERNMENT OF PERU  
NATIONAL INSTITUTE FOR NATURAL RESOURCES  
INRENA**



## PRE-PROJECT REPORT

### PROJECT IDENTIFICATION

- (a) Title: Management and utilization of Paca (*Guadua sarcocarpa*)
- (b) Serial number: PPD 4/95 Rev.1 (M)
- (c) Implementing agency: NATIONAL INSTITUTE FOR NATURAL RESOURCES (INRENA)
- (d) Host government: PERU
- (e) Starting date: 2 May 1996
- (f) Actual duration: 03 months
- (g) Actual pre-project cost:

Source	Contribution in US\$	Equivalent in national currency
ITTO	40,100.00	89,824.00
Gov't of Peru	14,200.00	31,808.00
Total	54,300.00	121,632.00

## PART 1. PRE-PROJECT SUMMARY

### 1. BACKGROUND PRE-PROJECT INFORMATION

The main objective of this Pre-Project was to compile basic information on the bamboo species *Guadua sarcocarpa*, commonly known in the region as "paca" or "marona", so as to prepare a project proposal aimed at developing the knowledge base, the technology and other components related to the sustainable utilization of the enormous potential of this resource, which has a natural distribution in the south of the Peruvian tropical forests, covering an estimated area of some 4 million hectares and which is currently not being utilized.

The management and utilization of *Guadua sarcocarpa* will incorporate a forest species that has the advantage of having a short rotation period into the commercial forest production chain. Similar bamboo species have been given multiple uses and applications in other parts of the world such as Asia, and represent a source of income and employment for the communities. The utilization of this species would require the development and application of the techniques and processes used in those countries, adapting them to the specific characteristics of this species, the market and the expectations of the communities directly or indirectly involved. The project proposal is aimed at the management of paca in order to obtain shoots which are used as a source of food for humans and in the furniture and crafts industries. These three areas could contribute to the economic and social development of the communities in the Iberia-Inapari region in the Madre de Dios Department, as well as contributing to the conservation of the environment.

The management and utilization of paca in Inapari, in the Acre river region, would require the use of management concepts and harvesting techniques for tropical paca forests, which have not been previously used in the country. Paca is a species that despite being abundant has no known use by the community, who have no knowledge of how to process this species; on the contrary, they consider it to be an undesirable obstacle and often burn and destroy it. Thus the Project will provide an alternative for the sustainable development of the Amazon communities and for the conservation of natural resources in general and forest resources in particular, in this region.

However, Peru does not have qualified personnel at the national and regional levels to immediately implement the project. An important component of the initial project activities should be the training of national technical personnel for the development of the paca industry in Peru. Similarly, for the management and utilization of this species, it will be initially very important to train the communities, to have access to sources of information and to promote the project and the products. Afterwards, during the project implementation stage, it will be essential to generate information and to establish a data base containing information related to the biology, properties, production, processing, etc., of this species, in order to transfer and promote knowledge and technology to other similar ecological areas where paca can be sustainably and rationally utilized whilst maintaining the natural ecological balance of the area.

The Development Objective of the Pre-Project was: to propose sustainable species conservation and utilization policies and strategies in order to facilitate the protection of the natural biodiversity of the Peruvian natural forests.

The specific objective of the Pre-Project was to develop a full project aimed at defining and promoting the utilization of the Paca species (*Guadua sarcocarpa*). This Project was developed with the participation of a technical expert from a member country of the International Tropical Timber Organization where techniques for the utilization of similar bamboo species have been developed.

As a result of the Pre-Project, a Project Document has been prepared for the Management and Utilization of paca (*Guadua sarcocarpa*) in the Iberia-Inapari region of the Madre de Dios Department, over an area of 2,000 ha.

The expected project outputs are as follows:

- Implementation of an experimental sustainable management and utilization model for paca in an area of 2,000 ha.
- Implementation of a training and promotion program on the management and uses of paca.
- Installation of a pilot production plant for the canning of paca shoots.
- Installation of a pilot production plant for the production of paca rods.

The strategy adopted to initiate the implementation of the project was to recruit an international expert with experience in the utilization of the *Guadua* genus of the Poaceae family, to which paca belongs, in accordance with ITTO guidelines. A work team was established, made up of the international consultant, a national consultant and a forest expert from the professional staff of INRENA; the team made a reconnaissance and verification tour of the Iberia-Inapari region, the natural area of distribution of the *Guadua sarcocarpa*, that will be finally selected as the project implementation area. The region is accessible by both land and air, and borders the neighbouring countries of Bolivia and Brazil.

One of the priority activities for the team was to organize a meeting with agricultural officers and specialists as well as with representatives of agricultural and community authorities and associations of the Puerto Maldonado and Tanbopata regions, in order to take note of their suggestions and experiences and to ascertain their expectations. Everyone concluded that despite the fact that the utilization of the paca species in the region is negligible, if it were to become a viable activity, it would represent an alternative to mitigate the destruction of the forests, improve the quality of life of the communities and generate productive employment.

The project proposal falls within the framework of the sustainable development policy of the agricultural sector, that, through the Ministry of Agriculture, promotes activities such as research and transfer of technology. To this end, the functions of the decentralized public bodies of the Ministry, such as the National Institute for Renewable Resources - INRENA, include the identification, evaluation and promotion of the appropriate use of renewable natural resources in order to ensure their conservation and rational utilization.

## **2. PROJECT OUTPUTS**

### **Outputs achieved**

A working Document:

Project: "MANAGEMENT AND UTILIZATION OF THE PACA SPECIES" *Guadua sarcocarpa*

### **Development objective**

To generate work and income for the communities through the rational management and utilization of paca, as well as to ensure the conservation of the ecosystems and natural biodiversity of the moist tropical forests of the Inapari region of Peru.

### **Contribution to the attainment of the development objective**

The formulation of this project represents the basis for the procedures required for the approval and financing required for its speedy implementation. The Project will provide a Paca management and utilization model that will constitute an important tool to achieve the sustainable development of the communities in the region. At the same time, the project will contribute to the conservation of natural resources and biodiversity by increasing the productivity of the moist tropical forest through a greater use of the abundant and widely distributed forest species which are currently not being utilized.

### 3. THE PARTICIPATION OF THE PRE-PROJECT BENEFICIARIES

A meeting was organised with the participation of institutions, public authorities, agricultural associations and loggers from the Puerto Maldonado area and the Tambopata Province, to present the activities of project "Management and utilization of Paca" and to exchange experiences, opinions and suggestions on the characteristics, current use and future utilization of Paca.

In work meetings that public officials of the Agricultural sector from the Madre de Dios sub-region and local authorities held with the international consultant, ideas were exchanged and suggestions were made about the project and there was general agreement about the relevance of the project for the utilization of Paca for the benefit of the local community. Good results were expected in view of the good qualities that this species has demonstrated in other continents where bamboo is used in a similar fashion to timber, and there was a general consensus on the fact that this project represents a viable alternative for the development of the region and the conservation of the environment at a time when the local populations are exerting great pressure on the forest resource.

Meetings were also organized with the forestry and agricultural producers association of the Province of Tambopata, Comunidad Nativa de Bélgica and with riparian communities. These meetings generated a great deal of interest and it was concluded that Paca can and should be utilized in view of the fact that the current activities do not provide adequate returns and in particular because they are leading to the destruction of the forest in general and of Paca in particular. The participants felt that transfer of technology and initial financial support were two very important factors for the local population which is estimated to be around 700 who are currently unemployed and have no economic resources. Therefore, this project represents an alternative for the generation of employment and the improvement of the quality of life of the local population, through the application of a simple processing technology and the utilization of Paca. The local communities expressed their support for the project and their desire to participate in its development.

With regard to the information and research available on this species, Paca is generating a great deal of interest among scientists and university researchers who have been undertaking studies to produce information and have been gathering botanical samples of the Guadua genus. These experts are convinced that these species will be economically significant in the short term because of the comparative advantages they have with regard to the major markets of the USA and Europe in relation to Asian countries.

### 4. LESSONS LEARNED

#### a. Lessons learned about development aspects

The participation of an international consultant in this field provided valuable information on the experiences and progress made in other countries in the harvesting and processing of bamboo, and this will facilitate the transfer and use of technology. This will in turn lead to a shift from the harvesting of timber products with long rotation periods over large areas to the harvesting of a species with short rotation periods over small areas. This can avoid the destruction of extensive forest areas and encourage the appropriate and sustainable use of forest resources and the conservation of the environment.

The various activities envisaged in the Project Document on "**Management and Utilization of Paca**" will definitely contribute to the attainment of the development objective, especially in relation to aspects related to economic growth to improve the quality of life of the local communities and achieve the sustainability of forest resources and the conservation of biodiversity.

The project activities shall include the production and promotion of products in the national and international markets, and this will contribute to the sustainable economic development of the region.

**b. Lessons learned on operational aspects**

The Implementing Agency was the National Institute for Natural Resources - INRENA, which established a specialised team with the participation of the International Consultant who was responsible for the preparation of the Project Document and who was supported by national specialists.

The technical team compiled the existing information on the subject in the project offices and made field visits to the project area, especially to the Inapari region. The suggestions and expectations of the local authorities and communities were a very important factor in the project document preparation process. The time frame for the implementation of the Pre-project was short, but these time constraints were overcome and the Project Document was duly prepared.

An aspect that is worth mentioning is the limited or total lack of information regarding the physical, biological, management, utilization and processing characteristics of Paca available in the country. Similarly, it is worth pointing out that during the field reconnaissance visits it was confirmed that Paca had its last flowering and seeding period in the years 1992 and 1993, and its regeneration was therefore limited. Currently it is in an abundant natural regeneration process over large areas of forest. Because of the above, no data were obtained on the yield of the natural areas with Paca, as no populations of Paca were found in the area that were acceptable for sample gathering in order to carry out physical and chemical analyses and tests.

**5. RECOMMENDATIONS**

In projects of this nature, where the sources of basic information required for their implementation are insufficient, it is essential to strengthen the data base through the participation of highly qualified personnel with knowledge of the subject matter and to maintain an ongoing communications network with the main organizations and/or institutions from other ITTO member countries where technologies and management methods have been developed for this species or for similar species.

**PART II: MAIN TEXT**

**6. PRE-PROJECT OUTPUTS**

The outputs of this Pre-project were as follows:

Project Document: "MANAGEMENT AND UTILIZATION OF PACA (*Guardia sarcocarpa*)"

The development of this Project Document represents the achievement of the specific objective of the Pre-project and constitutes a firm proposal to be submitted to the International Cooperation Agencies in order to negotiate its financing, particularly with the International Tropical Timber Organization.

From the technical, ecological, economic and social standpoints, the impact of the results of this Project will become evident upon project initiation, which will be aimed at achieving the established objectives and goals in order to achieve sustainability in the management and utilization of the large areas of distribution of this species in the area under study.

Finally, it must be pointed out that the new development approach adopted by Peru stipulates that the State is a regulatory body, which regulates and promotes economic activities, assigning a productive role to the private sector under conditions of sustainability. For this model to function properly it is necessary to promote and implement projects which must not only generate employment but must guarantee the sustainability of the resource based on the application of appropriate resource management technologies which must be environmentally friendly.

## 7. EVALUATION SUMMARY

(a)	Specific Objectives	=	Achieved
(b)	Outputs	=	Achieved
(c)	Program	=	Completed as planned
(d)	Expenditures incurred	=	As per budget

## PART III: CONCLUSIONS AND RECOMMENDATIONS

- a. Local communities, producer associations and project beneficiaries, all actively participated in the drafting of the Project Document and expressed their commitment to carry out joint activities during project implementation.
- b. There was not sufficient basic information available for the formulation of the project; the incipient natural regeneration of the species being studied - **Paca** - , did not allow for the gathering of sufficient data or field samples for the formulation of the Project. However, the inclusion of a Sub-Program for Research in the Project activities to be implemented will provide additional elements that will facilitate the formulation of the proposed Work Plans.
- c. Due to the limited or non-existing information available in the country, it was difficult to obtain technical and/or scientific information on the physiological and productive aspects of the Paca species.

### OFFICER IN CHARGE OF THE REPORT

Name : Ing. ANTONIO MORIZAKI TAURA  
Position : Director General of Forestry  
Date : 30 April 1995

*(Signature and seal of the Ministry of  
Agriculture)*