

**ASSESSMENT OF FOREST PLANTATION MANAGEMENT AT JARI CELULOSE  
S.A. IN ALMEIRIM REGION, STATE OF PARÁ – BRAZIL**

**CONDUCTED ACCORDING TO THE PRECEPTS OF FSC AND THE SCS FOREST  
CONSERVATION PROGRAM**

**Certification Program accredited by FSC**

**Certificate registered under number:**

SCS-FM/COC-00077P

**SUBMITTED TO  
JARI CELULOSE S.A.**

Vila Munguba – S/Nº  
68240-000 - Monte Dourado  
Estado do Pará  
BRASIL

Coordinated by Vanilda Rosângela de Souza

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**BY**

**SCIENTIFIC CERTIFICATION SYSTEMS**

2200 Powell St., Suite 725

Emeryville, CA 94608, USA

[www.scscertified.com](http://www.scscertified.com)

Contact at SCS: Dave Wager - [dwager@scscertified.com](mailto:dwager@scscertified.com)

Contact at Jari Celulose S.A: João Antonio Prestes – [jprestes@grupoorsoa.com.br](mailto:jprestes@grupoorsoa.com.br)

## **Organization of the report**

This report is the result of the assessment by a team of auditors and is divided into two sections. The Public Summary and the basic information required by FSC (Forest Stewardship Council) are presented in section A. This section will be open to the general public and has the purpose to provide a general view of the evaluation process, the administrative and management programs, and the plan of action in regard to the forests, as well as the result of the assessment. Section A will be posted on SCS web page ([www.scs-certified.com](http://www.scs-certified.com)) at most 30 days after re-certification. Section B contains more detailed information for the use of the company.

## **Re-certification process**

Jari Celulose re-certification process at Almeirim Region and Monte Dourado District, State of Pará, Brazil. Jari Celulose S.A. manages an area of 1,259,958.37 ha. A part of this, with 427,736 ha is the object of this certification. The area devoted to planted forest operations involves 129,223.5 ha of which 60,229 ha are effectively planted, 57,133 ha are available for additional plantings, 8,574 ha are for infra-structure, and 3,286 ha are set aside for permanent preservation areas.

## **FOREWORD**

SCS (Scientific Certification Systems), an FSC (Forest Stewardship Council) accredited certifier, was commissioned by JARI CELULOSE S.A. to carry out the process for recertification of forest plantations at Gleba Jarí, located at Almeirim region, State of Pará. According to FSC/SCS system, forest operations that comply with the international standards for forest management can be certified as “well managed” and, therefore, will be eligible to use the FSC logo for market purposes.

In October, 2008, an interdisciplinary team of specialists in natural resources was commissioned by SCS to perform the evaluation. The team collected and analyzed documented material, performed public consultation through e-mail and regular mail, performed interview, and field and office audits for five days at the client’s properties for the recertification assessment. Following the data collection phase, the team concluded that the company complied with all FSC criteria and, therefore, recommended its recertification.

This report has the purpose of supporting the recommendation for recertification by FSC of Jari Celulose S.A. planted forest management area in the region of Almeirim, State of Pará, as a followup to the already existing certificate (SCS-FM/COC-00077N). Some Major Corrective Actions issued by the evaluation team after the field audit were submitted to Jari Celulose. The company complied with all of those before the completion of this report, as verified by SCS. If recertification is granted, SCS will post this public summary on the SCS webpage ([www.scscertified.com](http://www.scscertified.com))

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## 1.0 GENERAL INFORMATION

### 1.1 – DATA REQUIRED BY FSC

<b>Company</b>	<b>JARI CELULOSE S.A.</b>	
Contact:	João Antonio Prestes, Diretor	
Address:	Vila Munguba – S/Nº 68240-000 – Distrito Monte Dourado, Estado do Pará, Brasil. Caixa Postal 121	
Telephone	+55(93) 3736-6202	
Fax	+55(93) 3736-1180	
E-mail	<a href="mailto:jprestes@grupoorsa.com.br">jprestes@grupoorsa.com.br</a>	
WEB	<a href="http://www.jari.com.br">www.jari.com.br</a>	
Type of certification.	Single area, single management plan.	
Number of FMU.	1	
Number of areas in the FMU with less than 100 ha	--	
From 100 to 1.000 ha	--	
From 1.000 to 10.000 ha	--	
More than 10.000 ha.	1	
Location of the forest to be certified	(JARI I)	(JARI II)
Latitude	Lat 0°20' 00" S and 1°40' 00" S	Lat 0° 20'00" S and 1° 20'00" S
Longitude.	Long 51° 50'00" W and 53° 20'00" W	Long 51° 40'00" W and 52° 40'00" W
Forest region.	Tropical	
Forest area under assessment in the FMU	427,736 ha	
With less than 100 ha	--	
From 100 to 1.000 ha	--	
From 1.000 to 10.000 ha	--	
More than 10.000 ha.	427,736 ha	
Land tenure.	Private (100%)	
Number of forest workers (including contractor workers) in the certified area.	2,500	
Forest protection area, protected from	88,838.00 ha APP	

harvesting and managed, preferentially for conservation.	
Forest area defined as High Conservation Value Forest.	A wildlife corridor with 82 ha located in between operational areas number 26, 11, and 28 was defined as a High Conservation Value Forest (Figure 1).
List of high conservation values present.	Connectivity area; biologic and ecologic corridors (wildlife and vegetation diversity)
Productive forest area.	129,223.5 ha
Productive forest area classified as “plantations” for the estimation of the Annual Accreditation Rate.	60,229.00 ha
List of commercial wood included in the assessment (scientific and common names).	Eucalypts ( <i>Eucalyptus urophylla</i> , <i>E.pellita</i> , <i>E. deglupta</i> , other <i>Eucalyptus</i> spp., urograndis hybrids: <i>E. urophylla</i> x <i>E. grandis</i> .) and <i>Pinus</i> spp.
Approximate annual volume authorized for harvesting.	1,700,000 t over bark logs/year
List of product categories certified jointly (FM/COC) that, therefore, can be sold as FSC product.	Logs, wood chips, and eucalytp and pine forest residues.

## 1.2 FOREST MANAGEMENT CONTEXT

The forest management practiced by Jari Celulose S.A. must follow national and state norms and laws pertaining to the activity. The following main regulations must be complied with:

At federal level:

- a. The Brazilian Forest Code (Law # 4771/65, changed by the Law 7803/89).
- b. Provisional Measure # 2166-67, from Aug. 24<sup>th</sup>, 2001 which alters the Law # 4771/65 (Forestry Code).
- c. Law of the National Conservation Unit System (Law # 7803/89).
- d. CONAMA Resolution # 303, from Mar. 20<sup>th</sup>, 2002, on Permanent Preservation Areas parameters, definitions and limits.
- e. IBAMA Normative Instruction # 93, from Mar. 3<sup>rd</sup>, 2006.

At state level:

- a. State policy on the environment (Law # 5887/95).
- b. Bill of sales when products are traded.

At municipal level:

- a. Payment of ISSQN when using constructor services.

Additionally, payment of all labor taxes at federal level are mandatory, including:

- a. Social security
- b. Severance fund (FGTS)
- c. Contribution to corporate bodies (Union fees)

### **1.2.1 Environmental Context**

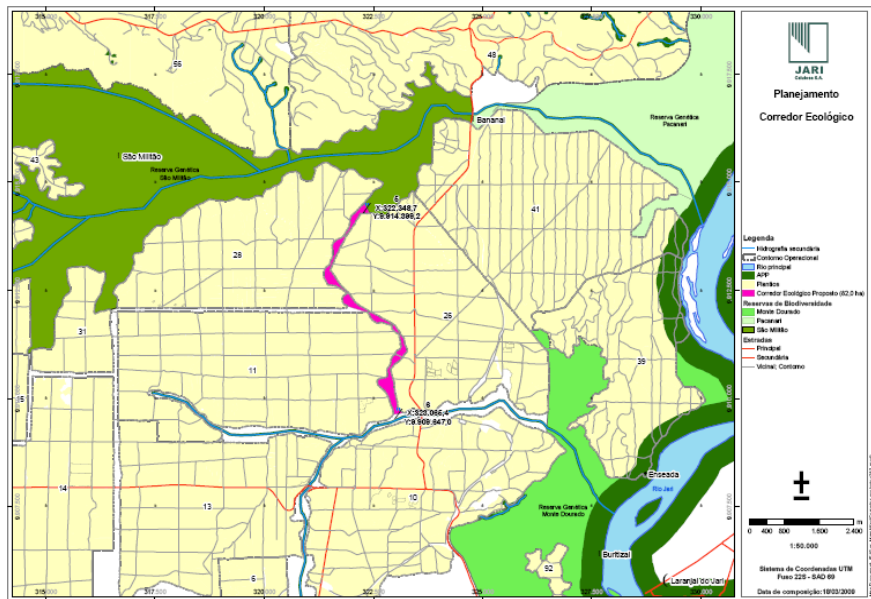
Jari forests, also known as Vale do Jari, which are the object of certification, are located in the municipality of Almeirim, Monte Dourado District. They are crossed by two secondary drainage systems (Jari and Paru rivers) with a main system of which the Amazon river is part. Paru river marks the western limit of the property; Jarí river crosses the property at the middle and marks the boundary between the States of Pará and Amapá; and the Amazon river marks the southern limit of the property.

The majority of the soils at Jari are Yellow Latosol (Oxisol), Cambisols (Inceptisols), and Podzols (Ultisols) with their several map units. Other types of soil occur in lesser extents such as the “terra roxa estruturada” (Alfisol) and the Plinthosols. The soils under upland forest vary in gravel, sand, silt, and clay contents.

The climate in the region can be characterized as Equatorial Hot and Humid with a rainfall regime with two well defined seasons: a rainy season, from January to July, when 80 % of the annual rainfall accumulate; and the dry season, from August to December. The annual rainfall is high and concentrated in the first half of the year. The monthly temperatures are high all year round, with the annual average of 26° C, the mean of maximum temperatures of 34° C., and the mean of the minimum of 22° C. The temperature range is reduced and reaches 20° C between the absolute maximum and minimum temperatures. The average wind velocity is between 2 and 4 m/s. However, occasional wind gusts can peak at more than 100 km/h.

The predominant vegetation is the Dense lowland, submontane, and montane tropical rainforest. These are under the influence of rivers (Floodplain forests), Open lowland submontane tropical rainforest with vines, and submontane with palm trees. The dominance of trees (25 to 50 m in height) is continuous with several endemic species from paleotropical families intermixed with other neotropicals of African origin such as *Lecythidaceae* and *Vochysiaceae*. This forest formation is multistratified, of the type of vegetation in the northern region. Two regional forest formations known as “Matas de várzea” (floodplain forests) which are periodically flooded, and “Matas de igapó” (river forests) which are permanently flooded are included in the multistratified forest formation.

The forests at Jari support a rich wildlife with many mammal, bird, reptile, amphibian, and invertebrate species in general that play their roles in nutrient cycling, seed dispersion, and energy flow. These processes not only maintain the forests but, also, help in their regeneration. At Jari Celulose areas, 215 bird, 38 mammal, 33 reptile, and 6 amphibian species were recorded between 2004 and 2006.



**Figure 1. Location of Jari Celulose S.A. ecologic corridor.**

### 1.2.2 Socio-economic context

Created in 1967, Jari Celulose established its headquarters in the municipality of Almeirim, Munguba District, approximately 18 km from Monte Dourado. Within the company area there are three municipalities (Almeirim-PA, Laranjal do Jari-AP, and Vitória do Jari-AP) with more than 100,000 inhabitants and one of the greatest natural and planted forest management operational infrastructures in the Amazon. Jari Celulose had a great influence on the economic development in the municipality of Almeirim, mainly on the residential nuclei of Laranjal do Jari and Vitória do Jari. Almeirim was, historically, formed as a logistic base for the colonial exploration in the region and established as a municipality in 1930. Laranjal do Jari and Vitória do Jari started in consequence of Jari Project activities and became municipalities in 1989 and 1997, respectively.

Between 1967 and 1981, Jari Celulose S.A. was characterized as an enterprise focused on self-sufficiency. From 1982 on, the company favored a greater degree of market autonomy in order to decentralize the services. This led to the creation of a formal market in Laranjal do Jari, including service providers and suppliers. In summary, the economic development of the municipality of Almeirim was the result of several actions established simultaneously in the amazon, among which is the Jari Project.

The basis of the economy in the municipality of Almeirim was shared by three large sectors: agriculture, cattle, and plant extraction. The agriculture is mainly of subsistence based on cassava. The plant extraction is characterized by the collection of Brazil-nut (*Bertholletia excelsa*) which is traded mainly in the international market. Log extraction is done mostly with no reforestation or management policies and is the main cause of deforestation in the region. The exception is the presence of some companies such as Jari Celulose that adopts forest management for pulp wood production and Orsa Florestal that manages forests to produce sawn timber and seeks further value addition to non-wood products. Jari Celulose is one of the largest forest and development enterprises in the region, and also in the Amazon.

In the municipality of Almeirim, the main form of transportation is by the river. There is a large number of boats that are not registered by the proper authorities. The municipality is not considered as a touristic route. The flow of people through the region takes place mainly by the Monte Dourado District due to Jari Project, as well as along the border with the municipality of Laranjal do Jari-AP.

At Monte Dourado, the Orsa Group/Jari Celulose S.A. is the owner of almost all real estates (residential or not) and is the concession holder for power and water services. The supply and distribution of water are under the responsibility of Companhia de Saneamento do Pará (COSANPA) that tends 100 % of residences in the area. All residences are served with the sanitary sewage system and residue treatment. However, these services are restricted to the planned areas. In the remaining rural communities, there is no public system of potable water supply. In these communities, water is collected from wells or directly from the rivers. In the municipality in general, the access for the local population to the main public services such as electric power is a great challenge. Large companies receive subsidized electric power from the large hydroelectric plants that supply the country. However, this does not ensure supply of electric energy to the residences. There is no sanitary sewage system or residential sewage treatment in both the urban and rural areas in the municipality of Almeirim. In these places, the destination to solid wastes and waste water is given individually and indiscriminately, depending only on each one's possibilities. The most common destination is the outhouse pit.

The rate of illiteracy in the municipality is higher than the state average. There is no committee or organization. There are 34 associations, five unions, and one club registered at the city hall (Secretaria Municipal de Saúde, 2008).

According to a survey by Jari, prior to the arrival of Orsa Group at Jari valley in 2000, there were 98 rural communities. This represents more than three thousand families and nearly 14,500 people living within the area under the influence of Orsa Group. Most of these people are part of traditional communities and have always lived in the region. Others arrived recently in search for job opportunities at the agroindustrial ventures. Some communities are in the region for 60 years, while others for less than 20 years. Among the 98 communities, 80 % have primary schools and 46 % have community organizations. Cassava crop is the main economic activity in 70 % of the communities. The second most important economic activity (in 26 % of communities) is Brazil-nut gathering.

Although there are long established large landholdings in the area, according to the socio-environmental survey done by Jari in 2005, nearly 95 % of properties are smaller than 200 hectares. The main issues faced by these proprietors are the legalization of land tenure and land procurement by new migrants. Because of the large extension of land and the availability of forest resources, the company areas became a lure to land squatters and illegal timber harvesters. This created a strong social pressure, enticed by activists with different economic interests (union organizations, community representatives, timber harvesters, and others). In this context, the company has been working in a socially responsible manner by seeking peaceful and synergistic coexistence with the actors, both inside and outside its areas. This is to ensure protection and sustainability of its natural resources in pace with social and economic development of the local society.

### **1.3 FOREST MANAGEMENT**

### 1.3.1 Background

The settlement for exploitation of forest resources at Jari valley, where JARI CELULOSE S.A. estates are located, started in 1882 with José Júlio de Andrade, a migrant from the State of Ceará. He established an operation to gather Brazil-nut and to collect rubber on a 16,000 km<sup>2</sup> land base. In 1948, this estate was acquired by a group of Portuguese and Brazilian merchants which pursued the same exploitation system and added agriculture, cattle, and regular navigation. In 1967, the land base was acquired by the American entrepreneur Daniel Keith Ludwig, who established Jari Florestal e Agropecuária Ltd., popularly known as Jari Project. From then on, Brazil-nut gathering and rubber collection activities were terminated. New activities included extraction and processing of minerals, planted silviculture, and pulp production. The company invested in infrastructure and built a thermoelectric plant at the Munguba industrial district and opened new occupation fronts. Urban areas were established within the company area, including Monte Dourado Headquarters, the residential and commercial areas and three additional villages. Supply depots were established to serve the population but were totally run by the company, then known as Companhia do Jari.

In 1982, the company was acquired by CAEMI group with participation of the federal government. During the 1980s, the company productive and organizational structures were reformulated and a trend of outsourcing services and supplies was set out. Thus, the number of workers directly hired by the company was significantly reduced. A significant portion of the workers that lived in the company village and were laid off chose to remain in Laranjal do Jari, motivated by the possibility to continue to provide services to local companies.

In 2000, there was a new change in the company direction. It became part of ORSA Group that already operated in the region, producing boards, corrugated cardboard boxes, and kraftline paper, and controlled by Orsa Florestal. At this stage, the following targets were established: self-sufficiency in wood; to reach high technologic and productive levels in forest activities so that self-sustained production of pulp and fuel wood can be achieved; to define a new and increased pulp production scale, within the environmental carrying capacity and the availability of technology both in industrial and reforestation areas; and to reach a better equilibrium in the utilization of renewable and non-renewable sources of energy by introducing Santo Antônio hydroelectric unit.

Orsa Group has the control of *SAGA Investimentos e Participações* and *Grupo Orsa Participações S/A* holdings and has become one of the largest companies to produce pulp, container paper and cardboards in the country. Its main organizations are *Orsa Celulose, Papel e Embalagens* (which operates in the States of São Paulo, Goiás, and Amazonas), *Jari Celulose* and *Orsa Florestal* (in the States of Pará and Amapá), *Marquesa* (in the States of Pará and São Paulo), and *Fundação Orsa* (in the whole country).

*Orsa Florestal* was created in 2002 with the objective to manage forests for timber harvesting to supply sawmills and to subsequently add value to non-timber products from the native forest, as well as to generate agroindustrial businesses in conjunction with adjacent communities. These projects are locally developed and followed up by Fundação Orsa technical team.

In September, 2000, Jari Celulose was certified by ISO 14001 for its continuous work focused on environmental aspects and, in 2004, it received the FSC certification for the sustainable forest management.

### 1.3.2 Use of soil

Jari Celulose S.A. is an industry that produces bleached eucalypt pulp. Its headquarters and mill are located at Munguba industrial district, approximately 18 km from Monte Dourado, in the municipality of Almeirim, State of Pará. In addition to the management of native forests, the company develops eucalypt plantations to supply the pulp mill. Therefore, the wood used by the company is exclusively from its own planted forests. Jari occupies an area (Glebas Jari I and II) of 1,259,958.37 ha of which 117,362.7 ha are potential areas for forest plantings and 545,024.9537 ha are for management of native forests that were handed to Orsa Florestal S.A. The area covered by Jari Celulose S.A. operations is 129,223.5 ha which represent 9 % of the total Orsa Group area. This shows that pulp production can be maintained or increased without substantial environmental pressure, since the expansion of plantation areas does not imply opening of native vegetation areas. The situation of soil use by Jari Celulose, in 2007, can be summarized as shown on Table 1.

**Table 1. Soil use at Jari Celulose S.A. operation area.**

Description of use	Area (ha)
Cultivated	60,229.1
Available for planting	57,133.6
Forest infra-structure	8,574.1
Permanent preservation areas	3,286.7
<b>Total</b>	<b>129,223.5</b>

*Estação Ecológica Rio Jari* and *Reserva Extrativista do Rio Cajari* conservation units are located near Jari Project area. The surrounding areas are mostly public forests and some communities and a few private properties. Therefore, there are land tenure problems, conflicts over land possession, and illegal harvesting of forest products. Concerns about possible socio-environmental impacts were expressed at the public consultation, as presented at section 3.3.5.3.

### 1.3.3 Areas out of the scope of certification

The areas under certification are private properties, duly registered and recognized by the proper agencies. However, the Group owns 287,197.42 ha outside the scope of certification. These include areas in the process of appropriate documentation with INCRA. On or around these areas, there is no indigenous settlement. However, there is a large number of riverside settlements in the surrounding areas, which are considered to be traditional settlements. Furthermore, there are land squatters and families that “acquired” land lots from the squatters and live within the company lands. In the case of riverside settlements, they include those who arrived at the time of José Júlio de Andrade, during the first half of the 20<sup>th</sup> Century, and also those who arrived at the time of the “Portuguese”, in the early 1950’s. However, there are at least two communities (Recreio and Arumanduba) that, according to the survey, settled in

the 19<sup>th</sup> Century. All established communities are in the process to regularizing their land tenure situation.

## **1.4 MANAGEMENT PLAN**

### **1.4.1 Management objectives**

Short term objectives:

- To supply the pulp mill with wood only from planted forests;
- To warn collaborators involved in the process about FSC principles and criteria;
- To define planning, implementation, and wood harvesting aiming at sustainability with the use of proper technology;
- To seek constant valuation and commitment of its collaborators;
- To respect communities affected by the management;
- To monitor forest productivity by seeking improvement opportunities; and
- To use socio-economic, environmental, and cultural criteria when taking decisions.

Medium term objectives:

- To adjust the operational structure to the demands and availability of raw-material;
- To develop technology in ways to obtain better efficiency in the use of forest resources so that perpetuity of the forest business is ensured;
- To improve the sustainable wood production process on the basis of forest/environment relation.

Long term objectives:

- To use management practices that ensure longevity to the business;
- To promote sustainable development in the region;
- To stimulate and strengthen the communities social organization;
- To conserve the biodiversity in the region; and
- To ensure sustainability of forest resources and ecosystems.

### **1.4.2 Forest composition**

Jari Celulose S.A. properties include an area (Glebas Jari I and II) of 1,259,958.37 ha distributed over Laranjal do Jari and Vitória do Jari municipalities in the State of Amapá, and in Almeirim, State of Pará. Jari Celulose uses wood only from its own planted forests which cover 427,736 ha with eucalypt for bleached pulp. Jari Celulose S.A. operational areas cover

129,223.5 ha of which 117,362.7 ha are potential for forest plantations, including those already in use and others available for additional plantings.

Land use at Jarí Celulose S.A. with exotic tree species plantings started in 1968. Since then, basically three groups of species were used: gmelina (*Gmelina arborea*), *Pinus caribaea* var. *hondurensis*, and eucalypts (*Eucalyptus* spp.). From early 1990 on, it was decided to use only eucalypts in plantings by using urograndis hybrids as the basic material. Land use with planted forests follow the distribution as shown in Table 2.

**Table 2. Distribution of areas planted by Jari Celulose S.A. with eucalypts**

Species	Area (ha)
<i>Eucalyptus urograndis</i> (several hybrids)	56,762
<i>Eucalyptus urophylla</i>	1,115
<i>Eucalyptus pellita</i>	13
<i>Eucalyptus deglupta</i>	19
<i>Pinus</i> spp.	101
Experiments with other species	2,219
<b>Total</b>	<b>60,229</b>

### 1.4.3 Silvicultural systems

Forest productivity is a basic factor for the stabilization of an enterprise. The use of silvicultural techniques along with the development of research projects has produced significant improvements in forest activities (operational and productivity) and led the company to reach forest productivity to competitive levels in the national scenario. These improvements are seen through the results obtained in monitorings done by the company.

The development of the forest is monitored starting at the second year after planting through the age of wood harvesting with continuous (annual) inventories. This process produces estimates of the Mean Annual Increment (MAI) which are used to estimate future production and to take decisions regarding management operations to be performed and wood stock control.

Jarí Celulose adopts well defined operational procedures for all silvicultural activities, always aiming at the reduction of costs and at respect to social and environmental aspects. These procedures are the basis for the company forest development.

### 1.4.4 Management system

## SILVICULTURE

**Forest establishment:** at this stage, seedling production, soil preparation, planting, and replanting are included.

*Seedling production:* the commercial seedling production is accomplished by vegetative propagation (cloning) through rooting of mini-cuttings. In conformance with the tree improvement program, the vegetative material is selected and the most productive clones are multiplied for commercial plantings.

*Soil preparation:* soil preparation is characterized by the minimum cultivation and can be subdivided into:

- a) Ant control;
- b) Initial clearing of the terrain with rolling chopper and rake;
- c) Pré-emergency and post-emergency herbicide application;
- d) Liming;
- e) Furrowing on mechanizable areas (or digging pot holes on non-mechanizable areas)
- f) Application of phosphate;
- g) Planting;
- h) Replanting up to 20 days after planting; and
- i) Application of fertilizers up to 20 days after planting (150 kg/ha), and at 60 to 90 days after planting (85 kg/ha).

*Planting:* planting is done in a pre-defined spacing, depending on the relief of the terrain, the soil characteristics, the production potential of the genetic material, and the final form of utilization of the raw-material. At Jari Celulose S.A., the spacings in use are 3 m x 3 m or 3.5 m x 2.6 m, depending on the genetic material. The planting period is the whole year. In the Summer, irrigated planting can be necessary. Replanting is done around 20 days after planting.

*Prevention and control of forest fires:* for the case of forest fires Jari Celulose has established an Emergency Attention Plan to perform corrective and mitigation actions. The forest fire surveillance and prevention system is made up of observation towers, fire crews, and maintenance of fire-breaks and trafficability around the forest stands. There are trained crews for direct intervention, adequately equipped for the action. At the same time awareness and training activities are developed with local communities to prevent forest fires.

## **Cultural treatments**

Cultural treatments are weed control operations in order to maintain the planted area free of competition. The objective is to allow cultivated plants to make the maximum use of the elements necessary for their development (water and nutrients). The annual weed control is accomplished with the use of chemical products (herbicides) or mechanically (with a sickle), depending on the characteristics of each location. In the case of chemical weeding, this control is performed by using systemic herbicides (glyphosate).

## **WOOD HARVESTING AND TRANSPORTATION**

### **Pre-harvesting inventory**

The pre-harvesting forest inventory is done by the Planning Management, normally, around 30 days before harvesting. 200 m<sup>2</sup> rectangular plots are laid out to measure trees at a

sampling intensity of one plot per hectare. This procedure allows the estimation of the volume of wood to be harvested, with mean errors smaller than 3 %.

### **Pre-harvesting clearing**

Pre-harvesting clearing consists of removal of the vegetation from the understory of planted stands. It is done manually or with mechanization, depending on local conditions. This operation is necessary when tree felling is done with chainsaw. In mechanized harvestings, the pre-harvesting clearings can be spared, depending on the state of development of the understory.

### **Cutting and cleaning of logs**

Depending on the pattern of the forest to be harvested, the initial volume, the time of harvesting, the type of soil, and other variables, the harvesting system to be utilized in a given area is defined. Three harvesting systems can be adopted: 1) manual harvesting by using chainsaw; 2) harvesting with a harvester; 3) harvesting with a feller-buncher. In manual harvesting, the trees are felled on a set direction, delimbed, and bucked into 4.0 m logs with 5 % variation. In mechanized harvesting, both harvester and feller-buncher, all operations are performed by a single operator.

### **Log removal**

Log removal is an operation to carry cut logs from the stand to the piling site on the road side from where they will be transported to the mill. The process used by the company is by using forwarders, due to their high efficiency and suitability to the regional conditions.

### **Transport**

The road transportation is done with 70 t capacity trucks. The logs are placed on the trailers by using grapple carriers. By using a forwarder, trucks can be loaded directly without the need to pile the logs on the road side or at intermediate log yards.

In railway transportation, the logs are transferred to the wagons. The Jari Calulose railway extends through approximately 68 km. Two tractors and 92 wagons are used. 80 of those are for log loads (platform type), and 10 for minerals (wagon), and two for heavy equipments.

### **Road maintenance**

The road maintenance operation is performed, normally, at harvesting sites and at main road transportation ways with one to three months ahead of the harvesting. It is done systematically, involving the main and the secondary roads where logs will be carried. Fire breaks are kept clear during the whole year in order to make it easier to reach the internal areas of the stands as well as to prevent fire. At planting time, 25-30 cm high earth mounds are built in the width of the road on steep sites. These mounds are to reduce the speed of running water and to direct it to containment wells (measuring on average 2.0 m x 2.0 m x 1.0 m). These are built at the end of the mounds at the side of the road (within the planting stand) in order to reduce as much as possible the erosion process.

## **ENVIRONMENTAL PLANNING**

All production activities in operation (silviculture, harvesting, and transport) at Jarí Celulose are regulated by the Environmental Management System (MBR ISO 14001:2004). In this system, the adopted environmental planning aims to provide a guideline and technical subsidies to the operational area of the FMU. The purpose is to conform with the environmental law and with environmental concepts applied to different activities in the company.

Some environmental practices adopted in several operational activities were defined about aspects identified on the “Evaluation and Record of Environmental Aspects and Impacts” and established as environmental impact mitigating measures:

- Seedling production by mini-propagation in which the use of water, pesticides, and other inputs are rationalized through modern and automatic systems to control temperature, humidity, and irrigation in the nursery;
- Planting of trees selected for each type of soil to make efficient use of nutrients;
- No fire is used in site preparation or in any other production phase;
- Minimum cultivation is adopted in order to reduce turning of soil over and to increase incorporation of plant residues and mulching. By banning the use of fire, adequate conditions of soil were maintained, thereby preserving its physical, chemical, and biological characteristics;
- Establishment and development of the tree improvement program which allowed reduction in cultivated areas (for the same volume demanded) and, also, projection of increase in production capacity without need to expand planted areas;
- Soil survey over planted areas to rationalize operations and the use of specific preparation practices for each soil unit in use;
- Pest control through monitoring of their populations in order to identify specific needs for intervention (control only at critical moments). When intervention is needed, adequate techniques are used that are specific for the stage of development of the pest;
- Investments in research and development to increase forest productivity and to review the projected need to expand planted areas and the silvicultural practices to be carried out according to correct environmental standards.

### **1.4.5 Monitoring system**

Jari Celulose performs monitorings and presents executive summaries for the following items:

- Labor accidents, with or without absence, including its own personnel and those of contractor companies;
- Labor hand permanence on the job;
- Compliance with labor and tax laws by contractor companies;
- Emergency attention plan;

- Water potability analyzes;
- Land tenure (company and communities);
- Social impacts;
- Soil fertility;
- Erosion processes;
- Pest and disease outbreaks (nursery and planted stands):
  - Leaf-cutting-ants;
  - *Costalimaita ferruginea* and leaf eating caterpillars);
  - Invasive species;
- Climatic conditions;
- Micro watershed hydrology;
- Wildlife;
- Forest fires;
- Forest productivity.

#### **a. Monitoring of nutritional state**

The monitoring of nutritional state has the objective of pin pointing nutritional imbalances after the forest has been established or in establishment phase. It starts at 18 months after planting when the plants accumulate the majority of nutrients at the maximum rate. At this stage, two phenomena occur simultaneously that favor nutrient absorption: high physiological demand for the formation of the crown, mainly leaves, and the establishment of the root system, already almost totally formed. Therefore, the stand nutritional diagnosis at this period can indicate need for corrective fertilization that must be applied at around 24 months.

#### **b. Monitoring of hydrographic micro-watershed**

The monitoring of micro-watershed is focused, mainly to the verification of the effects of forest activities on hydrologic (water quantity and quality) and biogeochemical (biogeochemical balance of nutrients) aspects of the micro-watershed in the region. By taking into account the different soil and climate conditions prevalent in experimental micro-watersheds, the integrated analysis of the results contribute to the correct planning of forest management practices in search of sustainability through:

- Establishment of hydrologic indicators of sustainable management of forest plantations, including their levels, considering the instantaneous comparison of results from the same forest activity (for example, clear-cutting) on hydrologic parameters in different soil and climate conditions;
- Establishment of physical models of how the micro-watershed functions in terms of direct flow, hydrologic response to rainfall, water balance, biogeochemical nutrient cycling in forest plantations;
- Continuous improvement in forest plantation management practices.

### **c. Monitoring of pests and diseases**

The monitoring of pests and diseases has the objective to identify the species, time of outbreak, and other information necessary to generate recommendation on their control with optimum use of resources and minimum damages to commercial plantations and to the environment. The most important pests in planted forests are the leaf-cutting-ants and defoliating caterpillars. For each one of those, the company maintains a differentiated control program such as:

#### **Leaf-cutting-ant control**

Ant control is a permanent activity. It starts before harvesting the eucalypts and extends through the whole forest cycle. The control is done with application of poison bait (sulfloramide). It can be applied semi-systematically or by localized actions. A thermo-fog device can also be used to apply "SUMMIFOG". During all silvicultural activity phases, surveillance is maintained to spot ant outbreak or the appearance of new ant hills. Between five and six months after the control measures, new survey is done to evaluate damages and remnant infestations as a way to determine the effectiveness of the control and the need of further actions.

#### **Control of eucalypt defoliating caterpillars**

Two methods to control defoliating caterpillars are used: 1) application of a biologic product with *Bacillus thuringiensis*; and 2) distribution of a natural enemy (*Podisus* spp.). this is an insect native to the Amazon. Control measures are adopted depending on what the monitoring of outbreak shows. The outbreak period in the region coincides with the rainy season. During this period, a permanent surveillance is maintained, starting with a low sampling intensity. The sampling intensity is increased if caterpillars were observed. In these locations, surveillance becomes intense in order to determine the need of control measures.

The control of occasional pests is divided into two phases: 1) detection of outbreak spots; and 2) evaluation of outbreaks. The monitoring team performs systematic searches to detect outbreaks throughout the planted stands to identify damage causing agents and evaluation of symptoms such as damage to the plants, defoliation, changed leaf colors, presence of insect droppings or leaves along the trails, abnormal presence of birds (feeding on the insects), and others. All survey data are recorded in forms.

### **d. Long-term monitoring of the impact of forest management (native and planted) on the biodiversity in the neotropical landscape**

For this monitoring program, Jari has a proposal to implement:

- (i) Long-term monitoring of eucalypt plantations and secondary forests;
- (ii) Long-term monitoring of managed native forests (pre- and post-impact);
- (iii) Long-term monitoring of primary forest plots as control areas.

Based on the results from the landscape study at Jari, the monitoring will be focused on the diversity of birds, mammals, and waste eating beetles (Scarabaeinae), also popularly

known as dung-rollers. After the initial phase of establishment, it is expected to form a detailed set of indicators to reflect changes in local and regional ecologic integrity.

**e. Monitoring of climatic conditions at Jari Celulose S.A. areas**

The monitoring in the company areas is performed to identify climatic variations among plantation regions. Manual rain gauges are used in areas closest to Monte Dourado and Munguba (where daily data collection is possible) and, in more distant sites, automatic rain gauges with which data collection is done fortnightly.

**f. Water potability analysis**

The water for human consumption is periodically analyzed with regard to potability in order to check the quality of its treatment, in compliance with the law.

**g. Emergency attention plan**

Jari has established an Emergency Attention Plan (PAE) which defines procedures for emergency situations in order to reduce the potential risks of injury, damages to properties, the environment, and to the whole community to the minimum. The possible emergency situations are:

- Forest fires;
- Leakage and spillage of oils and fuels;
- Leakage and spillage of pesticides.

**1.4.6 Estimate of the maximum sustained production**

Forest productivity is a basic factor for the stability of the enterprise, mainly because this parameter determines the need for land occupation. The mean productivity of *Eucalyptus* sp. plantations used to be 15 m<sup>3</sup>/ha.year in late 1980's. It increased to 27.4 m<sup>3</sup>/ha.year in 1992. In stands harvested in 2004, the mean productivity was 31 m<sup>3</sup>/ha.year. This gain in productivity is the result of research in genetic improvement and in silvicultural techniques among which are:

- Introduction of new species and provenances;
- Hybrid program;
- Clonal development strategy;
- Use of biotechnology tools to select for disease resistance and in micro-propagation of eucalypts;
- Studies on soil structure and fertility;
- Plant nutrition;
- Spacing, thinning, pruning, etc.

By taking into account the interaction between soil and genetic material in areas under plantation, the expectation in regard to productivity by soil type and management situation exceeds the industrial demand.

### 1.4.7 Present and projected production estimates

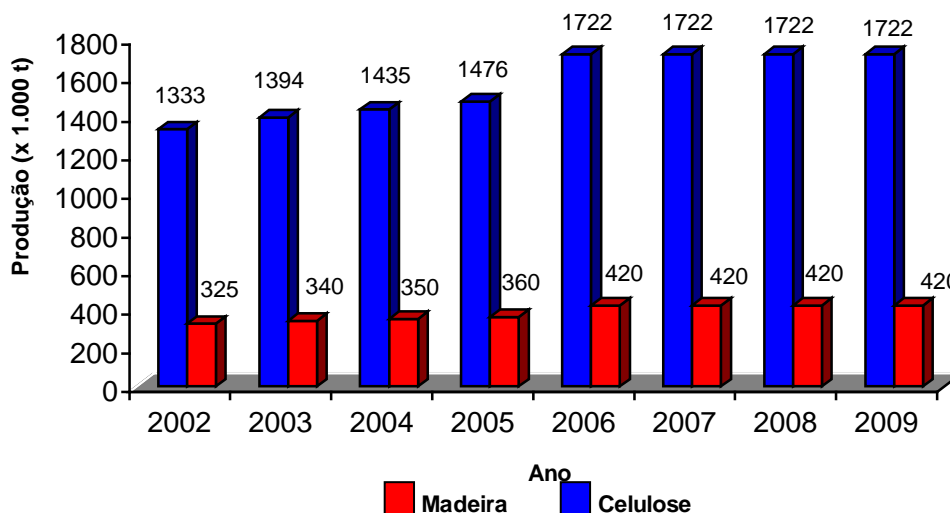
The forest inventory is the base for monitoring of wood stock, growth, and forest dynamics. To this effect, Jari adopts sampling techniques to estimate quantitative and qualitative characteristics of the forest for the drafting of short- medium-, and long-term plannings.

The data collection in this activity involves establishment of plots according to recommendation directly associated with the objective of the inventory:

1) Continuous inventory – done in areas not included in the Integrated Harvesting Plan (PIC), with sampling intensity of one plot for each 10 hectares;

2) Pre-harvesting inventory – done just before the harvesting to obtain more recent information about the stands to be harvested, with sampling intensity of one plot for each five hectares.

The Jari Celulose mill supply plan is ensured by the productivity of its forests. It is based on historical data. This plan is based on historical production data and the industrial demand. For the year 2009, a production of 1,722,000 t of wood is predicted, for the production of 420,000 t of pulp (Figure 2).



**Figure 2. Eucalypt wood production at Jari Celulose, with expected expansion of the industry**

## 2.0 STANDARD USED IN THE ASSESSMENT PROCESS

The standard used in JARI CELULOSE certification process was the SCS Interim Standard for Forest Plantation Management Certification in Brazil, version 2, November, 2008. This standard is in great part based on the FSC Standard for Forest Plantation in Brazil (version 9.0), which was approved by FSC Brasil but with pending approval by FSC International. The standard can be found at SCS web page

([http://www.scsertified.com/forestry/forest\\_programmat\\_fm.html](http://www.scsertified.com/forestry/forest_programmat_fm.html))

### 3.0 ASSESSMENT PROCESS

#### 3.1 *DATES OF ASSESSMENT*

- Re-certification audit: Nov. 2<sup>nd</sup> to 7<sup>th</sup>, 2008.

#### 3.2 *ASSESSMENT TEAM*

**Vanilda Rosângela de Souza** is a forestry graduate from USP (University of São Paulo) with doctor degree from UFPR (Federal University of Paraná) in Wood Technology. She has over twenty year experience in the profession. She held the position of researcher, consultant, and service provider for private companies in Brazil. For the forest departments in companies, she has developed, established, and carried out forest quality control programs. She has also developed research to improve forest productivity and wood quality. She has worked in timber harvesting for more than seven years. In the environmental sector, she has carried out studies and developed programs to minimize environmental impacts caused by forest activities. She has developed management programs to deal with waste generated by forest operations. She has also developed requirements handle chemical products and introduced new products. She has coordinated natural forest fragment studies and projects on reclamation of degraded areas. In the social sector, she has developed human resources qualification programs (training and recycling), involving subjects such as productivity, quality, labor safety, and environment. She has developed projects, established, and carried out environmental education programs for the northern region in the State of Paraná. In the industrial sector, she has developed and carried out programs to integrate Forest x Industry aiming to improve the final product cost and to reduce the production costs; she has also carried out studies and programs for a better use of raw material. She coordinates the SCS certification program in Brazil through Sysflor and has acted as auditor in several processes of preliminary evaluations, certification and recertification of forest management units, including both planted and natural forests, as well as chains of custody of a variety of wood products.

**Ana Cristina Mendes de Oliveira:** a biology graduate from Universidade Federal de Minas Gerais, M.Sc. in animal behavior and Doctor degree in sustainable development in the humid tropics from the Universidade Federal do Pará. She is adjunct professor III at the Department of Biology of the Universidade Federal do Pará, advisor professor of the graduate program in zoology of the Museu Paraense Emilio Goeldi, and collaborating researcher at Instituto de Pesquisa Ambiental da Amazônia. Dr. Ana Cristina has spent 13 years in the Amazon, working in ecology, mainly with wildlife. In forest certification, she has participated as auditor in 10 forest certification and re-certification processes in the Amazon. Her experience extends to auditing in planted forest management in the southern region in Brazil.

**Josué Rogério de Souza** is a forestry graduate from Universidade Federal Rural do Rio de Janeiro (UFRRJ) and agriculture technician from Escola Agrotécnica Federal de Inconfidentes (EAFI), Minas Gerais. He has over 12 years of professional experience in sustainable forest management in the Amazon and is, presently, coordinating the forest licensing process at Mil Madeiras company in Itacoatiara where he had acted, also, as

forest manager for 6 years. This is the first company to be certified by FSC. He has experience in drafting, managing, and following up forest management projects as an independent professional in the Amazon.

**Rossynara Batista Cabral Marques** is a graduate in forestry (1995) from Instituto de Tecnologia da Amazônia and specialized in environmental engineering from Universidade Federal do Amazonas (UFAM). Presently, she is pursuing a specialization in forest administration at Universidade Federal do Paraná (UFPR). She has experience in forest management in the Brazilian Amazon and in the management of projects in partnership with logging companies and communities. As the coordinator of the Promising Initiative Component of the ProManejo project of Ibama for five years, she articulated forest management assistance actions, as well as the implementation of training centers in the Amazon among different government environmental agencies. Her experience in community forest management includes work carried out in Latin America. Since 2000, she has participated in the MFC Work Group in which she has contributed with public policy proposals. Her experience in forest certification involves work with Imaflora (Brazil) and Centro de Investigación y Manejo de Recursos Naturales Renovables (CIMAR - Bolívia). In the social area, she established and is presently in charge of the development in the community forest management plan within conservation units in the State of Pará. The work includes support for training, adjustment of harvesting techniques for reduced impact on the communities, work safety, and community administration. She worked, also, as an aid to Instituto de Desenvolvimento de Florestas do Estado do Pará (IDEFLOR) at the board of the Public Forest Management with the assignment to draft and implement a system to monitor the Pará State forest concession process. Since 2007, she has worked for Sysflor (Certificações de Manejo e Produtos Florestais Ltda.) which represents SCS (Scientific Certification Systems) in Brazil as auditor in forest management and chain of custody. Fo far, she has completed more than 10 audits in chain of custody and 6 in forest management in northern Brazil.

### **3.3 ASSESSMENT PROCESS**

The recertification process at Jari Celulose was started with a Public Consultation held on Oct. 25<sup>th</sup>, 2008. FSC and a number of environmental, social, and economic institutions acting locally, regionally, and nationally were notified through e-mail and regular mail. The multidisciplinary team of auditors specialized in forestry, environment, economics, and social areas started the work by verifying the documents and the formal procedures in management. A data bank was structured with information contained in the Jari company geodatabase (years 2007-2008) in support of field verification of planned forest management macrozoning with the activities that were effectively performed. In the field, the auditors verified operational procedures in harvesting, planning, monitoring, and work safety. They verified, also, the environmental aspects, following the itinerary described in item 3.3.1.

On the last day of assessment, the auditors convened in order to analyze the information gathered during the field work and to confront them with FSC Principles, Criteria and Indicators. Finally, a list of major and minor corrective actions required was drafted and presented at the closing meeting to the company directors and the technical staff.

#### **3.3.1 Itinerary**

### Phase 1 – Field Audit

The itinerary followed by the auditors during the assessment process is shown on Table 3.

**Table 3. Itinerary of the audit team for recertification assesement at Jari Celulose S.A. in 2008.**

<b>Date</b>	<b>Gleba Jari I</b>	<b>Auditor</b>
Nov. 2 <sup>nd</sup> , 2008	Transfer of auditor team to Monte Dourado District	all
Nov. 3 <sup>rd</sup> , 2008	Audit opening meeting: breief presentation of audit procedures; presentation of activities developed by the company. Meeting to plan the logistics for the field audit.	all
	Analysis of documents (programs, maps, projects etc.)	Vanilda
	Analysis of documents (programs, maps, projects etc.). Visit to the harvesting areas to verify conservation areas (APP); visit to areas adjacent to the FMU including the proposed 5 % control area.	Ana Cristina
	Analysis of documents (programs, maps, projects etc.). Verification of the company social development, environmental education, and training programs.	Rossynara
	Analysis of documents (programs, maps, projects etc.). Structuring of the databank to characterize Orsa areas for the audit.	Josué
Nov. 4 <sup>th</sup> , 2008	Visit to the harvesting areas, checking of work conditions, sanitation, and work safety. Visit to the Almeirim Public Prosecuting Counsel. Public meeting at Laranjal do Jari.	Vanilda
	Visit to the ecologic corridors proposed as HCVF; visit to the floodplain areas within the FMU and verification of conservation areas (APP and RL).	Ana Cristina
	Visit to Bom Jardim and Açaizal communities; visit to Vitória do Jari Rural Workers Union and to SINTRACOMVAJ at Laranjal do Jari; Public meeting at Laranjal do Jari.	Rossynara
	Public meeting at Laranjal do Jari.	Josué
Nov. 5 <sup>th</sup> , 2008	Visit to Bituba community; interview with the mayor of Almeirim (Mr. Botelho); interview with the Almeirim Public Prosecuting Counsel; public meeting at Almeirim.	Vanilda
	Visit to the seedling nursery and the chemical storage facility; verification of documents at the office.	Ana Cristina

	Visit to Bituba and Goela da Morte communities; verification of forest operations involving operational plan, tree felling, bucking, skidding, safety conditions, environmental issues, opening of skidding trails, maintenance and conservation of forest roads; identification of stumps from different areas to trace the chain of custody; public meeting at Almeirim.	Rossynara
	Verification of forest operations involving operational plan, tree felling, bucking, skidding, safety conditions, environmental issues, opening of skidding trails, maintenance and conservation of forest roads; identification of stumps from different areas to trace the chain of custody; public meeting at Almeirim.	Josué
Nov. 6 <sup>th</sup> , 2008	Visit to Bituba and Goela communities; analysis of documents at the office; meeting to verify compliance with P&C.	Vanilda
	Verification of documents on monitoring and environmental surveys; meeting to verify compliance with P&C.	Ana Cristina
	Visit to Acapumum and Acarapi communities; verification of the work and estate safety management plans; verification of documents at the office; meeting to verify compliance with P&C.	Rossynara
	Visit to Acapumum and Acarapi communities; verification of documents at the office; meeting to verify compliance with P&C.	Josué
Nov. 7 <sup>th</sup> , 2008	Verification of documents at the office; verification of compliance with P&C; drafting of conditions; presenting of conditions to the company officials.	all

### **Phase 2 - verification of compliance with Major CAR**

Jari Celulose complied with all pre-conditionings and sent the documents proving the adopted corrective actions to the auditors. The auditors assessed the documents and concluded that the corrective actions required were complied with (item 4.2).

#### **3.3.2 Avaliação do sistema de manejo**

For the evaluation of social aspects, the audit was geared toward consultation with union representatives and community leaders by visiting communities that are most difficult to access and that are in a frail condition due to external pressure under the present regional scenario. Public agencies dealing with the environment and forest activities were consulted. Company employees and representatives of the local society that were present at the public consultation held at Laranajal do Jari and Almeirim were also consulted. The issues that were assessed included those related to safety conditions, labor, transport, meals, collective

agreements, community land tenure and business sustainability, training, sanitation, and socio-environmental actions.

For the analysis of environmental aspects, maps provided by the company were analyzed and checked with the actual situation in the field. Also, occurrence of any environmental irregularity was observed. During the visit, attention was focused on areas protected by law such as Permanent Preservation Areas (APP) and the legal reserves (RL). The objective was to verify whether they were being used for any production activity or under any human disturbance such as opening of roads, surface water discharge, selective harvesting, illegal hunting, and others. Visits were extended to remnants of the natural vegetation to assess the degree of degradation and the efficiency of protection or conservation actions. Special attention was paid to the maintenance of internal roads, by verifying the adopted procedures and their impacts on water bodies and on the natural vegetation. Native wildlife monitoring and environmental education activity (ecologic trail) sites were also visited.

For the analysis of the forest conditions, several sites with operations such as inventory, felling, skidding, and transport were visited. A database structured by the auditor Josué, with information from Jari company geodatabase (years 2007-2008) was used as a support tool for field verification. This database was matched with a Landsat 5 images taken in 2006 and a SRTM radar image that covered all project area. This structure was assembled in a GIS (ArcGis version 9.2) environment and was connected to a GPS to enable real time navigation in the management. With this base, it was possible to quickly match the planned macrozoning of the company forest management area with the activities that were effectively performed. Areas where operations had been finished were also visited to check the impacts caused. Several aspects were checked such as the road maintenance conditions, the exotic invasive species control, the planning systems, the forest production control, the records and the map base, as well as all pertaining documents.

The assessment team concluded that the analysis of documents and field visits were sufficient and well represented the actual situation, thereby ensuring the quality of the audit. The team assessed, also, the phytografic conditions in which Jari Celulose is included, and the relation between the company and the local society.

### **3.3.3 Stakeholder consultation**

According to SCS procedures, the consultation to the most relevant stakeholders is an important component in the assessment process. The consultations took place prior to the field work by sending mails to a large number of entities (list at annex 1). The stakeholders included union leaders, public agency representatives, private organizations, political leaders, and residents in the vicinity of company properties. The main purposes of the consultation were to:

- Request inputs from the affected parties about the strong and the weak points of the forest management at Orsa Florestal, as well as about the nature of interactions between the company and the neighboring populations.
- Request information whether the person responsible for the forest management consulted the stakeholders in order to identify any high conservation value area.

The main stakeholders in this assessment were identified on the basis of a) information contained in the SCS databank; b) list of names and entities provided by the company; c) list

provided by FSC-Brazil; and d) other sources. The following groups were identified as the main stakeholders:

- Company employees, including management personnel and field workers;
- Contractor workers;
- Neighboring landholders;
- Neighboring communities;
- FSC-Brasil members;
- Local and regional environmental NGO members;
- Local and regional social NGO members;
- Federal, state, and municipal environmental agency officers;
- Other relevant groups.

The assessment team contacted individuals and organizations of the main stakeholders. Only three entities or individuals spoke up about the assessment, although public consultation questionnaires with invitation letters had been sent to 180 organizations and individuals with a description of the certification process. An opportunity was offered them to make comments (Annex 2). The organizations or individuals that made comments and agreed to have their names cited in the report, as well as those that were contacted but did not reply are listed in Annex 2.

### 3.3.3.1 Model – JARI CELULOSE S.A. public consultation

#### INVITATION TO THE PUBLIC MEETING

Forest Recertification at GLEBA JARI I and FAZENDA DO FELIPE (PA and AP)

(JARI CELULOSE and ORSA FLORESTAL)

SCS – Scientific Certification Systems ([www.scscertified.com](http://www.scscertified.com)), an entity accredited by FSC (*Forest Stewardship Council*) to perform Forest Certification, informs you that it is initiating the process of Public Consultation for Forest Recertification, as requested by JARI CELULOSE S.A. for Gleba Jari I and Fazenda do Felipe. In these locations, the company manages eucalypt plantations (52,000 hectares of effective plantations on 115,000 hectares to be certified), as well as native forests (545,000 hectares to be certified from a total of 1,700,000 hectares of company properties). In summary, they involve management of 115,000 ha of planted forests and 545,000 ha of native Amazon upland forest.

JARI CELULOSE is a property of Grupo ORSA and has a long history of activities in the country. Its origin stems from the JARI Company, owned by Mr. Daniel Ludwig between 1967 and 1982. Thereafter, the company was nationalized through acquisition by a group of investors headed by CAEMI. After the year 2000, Grupo Orsa, from São Paulo, acquired the company stock control and aimed to establish forest management in conformance with both the FSC “Certification Standards for Planted Forests” and “Certification Standards for Forest Management in the Brazilian Amazon Upland”.

Presently, the company pulp mill produces nearly 390,000 t/year, of which, 95 % are exported. The total number of company employees is 3,039 (Jari, Orsa Florestal, Fundação, and Marquesa). When these are added to contractor workers, the total rises to 4,668. Specifically in forest activities, there are 3,382 workers of which 1,753 are company employees (Jari, Orsa Florestal, and Marquesa) and 1,629 are contractor workers. These figures place JARI CELULOSE as the main generator of jobs, direct and indirect, in Almeirim (PA) and Laranjal do Jari (AP) regions and are important to the local economy.

The recertification process requires participation of the *people* and the *civil society* through Public Meetings to be held at Almeirim (PA) and Laranjal do Jari (AP) municipalities. The first meeting will take place on November 4<sup>th</sup>, 2008 (Tuesday), from 18:30 h to 20:00 h at ACILAJA, Avenida Tancredo Neves s/n, next to the Post Office, Agreste suburb, Laranjal do Jari (AP). The second meeting will be on November 5<sup>th</sup>, 2008 (Wednesday), from 18:30 h to 20:00 h at Colônia dos Pescadores Z-33, Rua 17 de Março 1766, Nova Vida suburb, Almeirim (PA). The purpose of these meetings is to collect suggestions and evidences to steer the audit toward better assessment of how the forest management progresses in the *social*, *legal*, *environmental*, and *economic* aspects. Therefore, the participation of citizens and representatives of the civil society will be very important so that everybody can express their concerns, comments, suggestions, and criticism, or present evidences that might be helpful to the process. These will be recorded in the minutes and will be shown on the public summary of the recertification.

If it interests you, a Questionnaire is attached and you can fill it in and send by e-mail to [vanilda.souza@sysflor.com.br](mailto:vanilda.souza@sysflor.com.br) or, if you prefer, through fax to (0xx43)3535-4906. Moreover, if you wish to get more information about **FSC Standards for Certification of Brazilian Amazon Upland Forest**, the documents can be obtained from FSC web site

([www.fsc.org.br](http://www.fsc.org.br)) or from SCS ([www.scs-certified.com](http://www.scs-certified.com)). They can be downloaded or requested by contacting us through the mentioned e-mails.

Everybody is invited to participate in the Public Meeting, regardless of having formally received this communication. We would appreciate if you could publicize these meetings to institutions and persons of your knowledge that might be interested to participate in the process.

Vanilda R. Souza  
Auditor of SCS / Sysflor

### 3.3.3.2 Model – Public consultation questionnaire - JARI CELULOSE S.A.

#### PUBLIC CONSULTATION QUESTIONNAIRE GLEBA JARI I AND FAZENDA DO FELIPE, JARI CELULOSE S.A. FOREST RECERTIFICATION

#### PLANTED AND NATURAL FOREST MANAGEMENT ON THE AMAZON UPLAND

<b>Name</b>	
<b>Institution</b>	
<b>Address for contact</b>	
<b>ZIP:</b>	
<b>E-mail</b>	
<b>1. Do you know Jari Celulose S.A.?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>2. Do you have any comment about Jari Celulose S.A.?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>3. What comments?</b>  	
<b>4. Do you have any comment about Gleba Jari I and Fazenda do Felipe, in the municipalities of Almeirim (PA) and Vitória do Jari (AP)?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>5. What comments?</b>  	

**6. Is there any environmental aspect that you consider worthy of attention in the field assessment?**

Yes

No

**What would be these environmental aspects?**

6.1 \_\_\_\_\_

6.2 \_\_\_\_\_

**7. Is there any social aspect that you consider worthy of attention in the field assessment?**

Yes

No

**What would be these social aspects?**

7.1 \_\_\_\_\_

7.2 \_\_\_\_\_

The present questionnaire has the objective to allow citizens from the most diverse backgrounds and interests, or representatives from institutions of the civil society to actively participate in the process of FSC Forest Certification. Therefore, we appreciate if you could send this questionnaire to [vanilda.souza@sysflor.com.br](mailto:vanilda.souza@sysflor.com.br). If you prefer, it can be sent through fax to (0xx43)3535-4906. We request that this questionnaire be publicized to those who, in your understanding, might contribute to the process.

OBS.: a) The issues raised in this questionnaire will not have any identification of the authors as exposed in the documents of the Recertification Process.

b) The participation of the interested parties in the consultation does not imply co-responsibility in the Recertification Process.

### 3.3.3.3 Summary of public concerns and feedback from the team

#### **Social concerns**

- What would be the company obligations in regard to independent professionals and how could they participate in Orsa/Jari activities?

**Reply:** The company does not work with independent professionals in forest management activities.

- Does the failure by contractor companies to comply with labor dues affect Orsa/Jari forest management?

**Reply:** The company performs internal audits to monitor contractor companies obligations and requires, by contract, proof of payment of federal, state and municipal taxes, as well as any other labor dues. Part of these taxes is retained by Orsa, described on the fiscal bill, and collected according to procedures by law.

- Is Orsa/Jari concerned with health related issues in the communities? What are the company duties concerning health and education in the communities?

**Reply:** In partnership with the City Hall and Fundação Orsa, the company develops a training program for community health agents and keeps a close watch on cases of endemic diseases in the neighborhood of company areas. Additionally, the company performs localized actions with the Fundação Orsa team in which social agents visit communities and offer guidance on the basic treatment of water.

- How is the company dealing with regularization of community and isolated individual land tenure issues in its areas? Is there a work, also, in the neighborhood areas? How is society participating in that process?

**Reply:** The community land tenure regularization process is under the coordination of Iterpa (Instituto de Terras do Estado do Pará) and is done through participative diagnostics in the communities. This process involves all communities in the neighborhood of the company.

- After all community land tenure is regularized, will the company support the development of activities in the communities? Will the company continue to support community activities?

**Reply:** Through Fundação Orsa, the company already develops several activities on generation of revenues and socio-educational activities with the communities. These will be continued even after regularization of land tenure.

- Why did the company discontinue water service to Bituba and Goela da Morte communities?

**Reply:** The company does not recognize that Bituba community is a user of the water served at Bituba Camp. The distance between the camp and the community is not viable for access since no resident in the community possesses a vehicle. Moreover, the residents are scattered in the forest, often without any access trail.

- Does Orsa/Jari have any dispute with ITERPA over land ownership?

**Reply:** No! The company holds a term of commitment to regularize the community areas which, in practice, are already being complied with, as mentioned before.

- What will be of the court challenges in the case of land repossession? What will become of the situation of Mr. Boaventura from Bom Futuro Community?

**Reply:** In order to guarantee the company asset and the environmental responsibility, a repossession request was filed in court for all cases of illegal land possession (invasion). Land repossessions are being accomplished in pace with trial decisions.

- Is the company tearing down farmer houses and forcing them out in order to manage these areas?

**Reply:** All land repossession orders are being issued by the Agrarian Court, including the dismantling of constructions, and are being carried out by the military police, following court orders.

- The company reserves 1 % of the revenue to the producers. How can we trace the use of this resource in social actions?

**Reply:** Fundação Orsa funds are used in projects in several areas such as: health, education, children and teenager rights, culture, sports, etc. According to the law, the company renders accounts to the Public Prosecuting Counsel.

- What are the social benefits generated to the municipality with the company forest management certification?

**Reply:** There are numerous benefits such as generation of jobs in compliance with all labor laws; compliance with environmental laws; preservation and sustainable use of natural resources; compliance with fiscal and tax laws; increase in the state and municipal revenues. Moreover, it has been an example of sustainable development in the region.

- Is Orsa/Jari aware that a contractor company discontinued the distribution of basic food supply to the workers for a period and, when it resumed the distribution, it used to split one share into two?

**Reply:** The company is not aware of such issue and believes that it is a misunderstanding since, so far, there has not been any complaint from the workers on the subject.

- How will the issue of communities be dealt with in relation to the increase in size of their areas, for example, the case of Braço community? What will be the limits of these community areas?

**Reply:** All land tenure issues related to communities are being dealt with directly between the communities and Iterpa. If there is any situation in which the company participation is required, all the necessary support is offered to complete the regularization process. In public lands, the dimension of the community areas is associated with the type of economic utilization by the population and the legal rules defined by the state. This is not the case of Orsa.

- Does the company have the right to evict a person that has occupied one of its areas for three years, even if such area is not being used for 10 years?

**Reply:** In order to protect the company asset and the environmental responsibility, a request of land repossession was filed in court for all cases of illegal possession (invasion). Land repossessions are being accomplished in pace with trial decisions.

### **Environmental Concerns**

- Can the FMP (Forest Management Plan) be implemented even without the appropriate title to the land?

**Reply:** The company has titles to all lands under management.

- In the company FMP, is there a specification on the survey of logs 1, 2, 3, and 4 during the inventory? Ten percent of the trees are left for restocking of the area.

**Reply:** One of the characteristics that are analyzed during the 100 % Forest Inventory is bole quality. It can be: 1 (straight and in excellent condition); 2 (slightly crooked); 3 (crooked and low recovery); and 4 (no recovery or commercial value). During the analysis to draft the AOP, all trees with bole quality 3 and 4 are left on the area as remnants. All trees with dbh smaller than 55 cm or larger than 180 cm are also left as remnants. Prior to the selection of trees for harvesting, all those of species that are present, on average, with less than 3 trees per 100 ha (rare species) are also left as remnants. Therefore, the remnant trees on the area exceed 10 %. In the case of AOP 5, the remnant trees amounted to 65 % of the commercial species count and to nearly 40 % of all trees eligible for harvesting. Trees eligible for harvesting are all those with bole quality 1 and 2, with dbh between 55 cm and 180 cm after removal of seed trees (10 % and minimum limit for maintenance), and rare species.

- Are the companies that provide assistance to private producers for eucalypt planting trying to force communities to use IPE (individual protection equipment)?

**Reply:** The company has done an information and awareness work so that the assisted producers adopt correct procedures to apply the necessary products in eucalypt management. This is for their protection and to help them to achieve economically viable productivity. Precautions that the company asks product users are the same as those recommended by the manufacturers and are legally based.

- The development of reduced impact management is under way for some time. What is the limit of area to be recertified and where is it located?

**Reply:** The area included in the Orsa Florestal FMP is in the northeastern region of Pará, at the border with the state of Amapá. They are all together 545,022.51 ha at the northern section of Amazon river, limited by Parú river to the West, Jari river to the East, Estação Ecológica do Jari to the North, and the Amazon river to the South.

- Is there any kind of government control on the company forest management?

**Reply:** In addition to the control on Orsa Florestal Sustainable Management area by competent and active environmental agencies in the region (IBAMA and SEMA – PA), Grupo Orsa maintains an asset protection team that constantly patrol the area under forest management in order to put out forest fires and to prevent illegal deforestation and invasion by land squatters. It maintains, also, a monitoring team with responsibility to verify whether all procedures are being carried out in compliance with the principles and criteria of a certified area. The certifying body also verifies and monitors the implementation of all these procedures.

- Does the forest management cause or will cause harm to the areas where settlers work?

**Reply:** Considering that community areas are being delimited, there will be no harm to the settlers because they will have their rights ensured by land tenure. Wherever community land delimitation has not been finished, traditional limits of family agriculture will be considered.

- Is the company forest management affecting the surrounding conservation unit (Estação Ecológica do Rio Jari and the FLOTA do Parú)?

**Reply:** The area under Orsa Florestal FMP is limited by Estação Ecológica do Jari to the north and Floresta Estadual do Parú to the west. Even considering that APU 5 is located approximately 65 km from Estação Ecológica do Jari, this conservation unit was informed of the AOP 2009 for approval. The company obtained the authorization to proceed with log harvesting at APU 5, since it does not affect the conservation unit.

### **Economic Concerns**

- Should not the timber, that is managed and exported, aggregate values and generate revenues for the municipality, generate taxes, and maintain the trading process in the region?

**Reply:** The company is certain of the importance of processing all export timber in the region, thereby increasing its value and providing more jobs, taxes, and investments in the region. However, at the moment, the company has no condition to verticalize (processing), but it is planned for the near future.

- How is the company working toward the expansion of its productive activities in the communities, given the local reality?

**Reply:** The company has based its position on socio-participative diagnostics done in the communities. It demonstrated the cultural, economic, and social vocations of the region. Along this line, several agroextractivist projects were already established to generate community revenues, aiming at the sustainable development of the region in order to improve life quality. For example, the following projects: Curauá; Assisted eucalypt plantations; Gardens and improvement of cassava productivity.

### **3.3.4 Other assessment techniques**

No assessment technique other than the usual was used, such as field visits, interviews, and verification of documents.

## **3.4 TIME SPENT IN ASSESSMENT**

For the assessment forest management at Jari Celulose S.A., a team of auditors was formed to review all documents that were sent for the audit. The team members had to transfer from their places of origin to the company and performed field audits during five

days. In addition, a time was spent to identify the stakeholders and to send them invitation and the questionnaire. The total time used by the team is presented on Table 4.

**Table 4. Time (hours) spent by individual auditors during the assessment of the forest management at Jari Celulose S.A.**

Activity	Vanilda	Cristina	Josué	Rossynara
Transfer (round trip)	20	8	9	12
Checking of documents	6	4	4	6
Field visit	20	20	22	20
Stakeholders / invitation	-	-	-	6
Discussion (Nov. 11 <sup>th</sup> , 2008)	3	3	3	3
Closing session	5	5	5	5
Sub-total	54	40	43	52

### 3.5 PROCESS TO DETERMINE CONFORMANCES

The certification standards defined by FSC comprise three hierarchical levels: the principles, the criteria to look into each principle in detail, and the indicators for details in each criterion. According to the evaluation protocols of SCS Forest Conservation Program, the assessment team must collectively verify whether a given forest operation is in conformance with any applicable indicator within the relevancy of the certification standard. Each non-conformance with a criterion or sub-criterion must be evaluated in order to determine whether it constitutes a major or minor non-conformance. Not all indicators have the same importance and there is no numerical form to determine whether an operation is in non-conformance. The team uses the collective judgement to evaluate each criterion and to determine its conformance. If an operation is evaluated as in non-conformance for a given criterion, then, at least one indicator must be evaluated as in a major non-conformance.

A Corrective Action Request (CAR) is defined for each non-conformance. Major non-conformance are denoted as Major CAR and minor non-conformances as Minor CAR or just CAR.

#### **Interpretation of Major CARs (pre-conditions), CARs (Minor CARs), and Recommendations**

**Major CARs/Pre-conditions:** correspond to major non-conformances, either alone or in combination with non-compliances of other requirements that results (or is likely to result) in a fundamental failure to achieve the objectives of the relevant FSC requirement. This non-conformance must be corrected or closed before the certification is issued. If a major CAR is determined after certification is awarded, the timeframe for correction is typically shorter than in the case of a minor CAR. The certification will become conditioned to the response from the forest operation to solve the pending issue in the given timeframe.

**CARs or Minor CARs:** these are corrective actions in response to minor non-conformances. They are typically limited in scale or can be characterized as unusual errors in the system. The minor corrective actions request must be complied with within a pre-determined timeframe after the certificate is awarded.

**Recommendations:** these are suggestions presented by the evaluation team, intending to help the company to achieve an ideal performance. Compliance with the recommendation is voluntary and does not affect the maintenance of the certificate. However, recommendations can become conditions if non-compliance with them affects some criterion.

#### 4.0 RESULTS OF THE EVALUATION

Conclusions reached by the assessment team in regard to strong and weak points of Jari Celuloses S.A. forest operation in relation to FSC certification standards are presented in this section. Also, corrective actions request (major and minor) and recommendations for each principle are presented.

#### 4.1 MAIN STRONG AND WEAK POINTS IN PERFORMACE OF JARI CELULOSE S.A. IN RELATION TO FSC P&C.

Principles	Strong Points	Weak Points	Measures
<b>P 01: Compliance with laws and FSC principles</b>	<ul style="list-style-type: none"> <li>• Long term commitment with FSC principles and criteria.</li> <li>• Identification of high conservation value forest.</li> <li>• Compliance with laws pertaining to forest management, with Management Plan duly registered at SEMA (State Secretary of Environment).</li> <li>• Process to register legal reserves already concluded.</li> <li>• The APPs (Permanent Preservation Areas) are respected.</li> <li>• All documents of the company operation are duly registered.</li> <li>• All taxes and charges are paid.</li> <li>• Compliance with union laws.</li> <li>• Compliance with all agreements and treaties.</li> <li>• The person in charge of the Management Plan is trained.</li> <li>• There are measures to protect the area against illegal activities, forest fires, and wildlife protection.</li> <li>• The laws pertaining to the activity are complied with.</li> <li>• Formal commitment of adherence to the maintenance of the forest on a long term.</li> </ul>	Georeferencing of company and community areas must be finished in order to renew the records with INCRA	<b>Major CAR 2008.02</b>

	<ul style="list-style-type: none"> <li>• Effective measures against illegal actions and invasions through an Area Patrol Plan.</li> <li>• Monitoring of the compliance with the law and payment of taxes by service contractor companies.</li> <li>• Respect to international agreements to which Brazil is signatory.</li> <li>• No evidence that Jari Celulose is involved in illegal timber harvesting.</li> </ul>		
<b>P 02: Tenure and use rights and responsibilities</b>	<ul style="list-style-type: none"> <li>• Well documented property titles.</li> <li>• Peaceful land tenure.</li> <li>• Forest management without use of traditional population knowledge.</li> <li>• Respect for land tenure of neighboring communities.</li> <li>• Jari Celulose S.A. demonstrates commitment to promote well-being and educational actions to the local society through the Fundação Orsa Social Program.</li> <li>• Excellent Geographic Information System structure.</li> <li>• The forest management does not interfere with or jeopardize traditional rights of neighboring residents to land tenure or use.</li> </ul>	<ul style="list-style-type: none"> <li>• Need to map already georeferenced land sections/title areas.</li> <li>• Pending administrative or juridical matters involving both the company and land squatters/invaders.</li> <li>• The company needs to establish communication channels with the local communities as a way to prevent and solve conflicts.</li> </ul>	<p><b>Major CAR 2008.02</b></p> <p><b>CAR 2008.05</b></p>
<b>P 03: Indigenous peoples' and traditional communities' rights</b>	<ul style="list-style-type: none"> <li>• Areas for community use duly identified and mapped by the company.</li> <li>• Regularization of community areas tenure through ITERPA in process with company support.</li> <li>• Forest management for non-wood products will be carried out by some communities located in company areas.</li> <li>• Social impact study performed and used to steer the company social activities and to minimize negative impacts of forest management.</li> <li>• The forest management does not jeopardize any right of indigenous or traditional populations.</li> </ul>	<ul style="list-style-type: none"> <li>• Georeferencing of community areas needs to be finished.</li> </ul>	<p><b>CAR 2008.02</b></p>



	<ul style="list-style-type: none"> <li>• Jari Celulose generates great benefits to local communities and to those in surrounding areas in the form of collected taxes, direct and indirect social actions, improvement in life quality, etc.</li> <li>• The forest activity is economically viable and takes into consideration environmental, social, and operational costs and ensures investments for the maintenance of its ecologic productivity.</li> <li>• The company promotes the use of local services and suppliers and generates jobs and revenues in the region.</li> <li>• The equipment used in harvesting and silviculture are adequate for the local conditions (topography, soil type) and is economically viable.</li> <li>• Representative samples of ecosystems existing in the landscape are protected in their natural state and identified on maps.</li> <li>• There are formal procedures to control hunting and fishing.</li> <li>• There is no conversion of forest areas to other non-forest uses.</li> <li>• The management in use stimulates the optimization of forest use and minimizes wastes associated with harvesting operations.</li> <li>• There is a continuous forest inventory program demonstrating that the production estimates are equivalent to the inventory data.</li> <li>• Chemical products, containers, liquid and solid non-organic residues, including fuel and lubricant oils are disposed of in environmentally appropriate manner and location.</li> <li>• There is an adequate fire prevention and control plan.</li> <li>• There is compatibility between the present level of harvesting and growth data.</li> </ul>	<p>monitoring and controlling conditons.</p>	<p><b>CAR 2008.07</b></p>
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	<ul style="list-style-type: none"> <li>• The company does not use genetically modified organisms.</li> <li>• The company generates raw-material for non-wood production.</li> <li>• Increasing productivity is observed which leads to greater efficiency in supplying the mill with raw-material.</li> <li>• No fire is used in site preparation.</li> <li>• The forest product harvesting does not exceed the levels of sustainable production.</li> </ul>		
<b>P 06: Environmental Impact</b>	<ul style="list-style-type: none"> <li>• Environmental impact assessments include wildlife and vegetation surveys and studies.</li> <li>• The permanent preservation areas (APP) are maintained untouched within the forest management areas.</li> <li>• The APP maintains connectivity of natural areas throughout the planted areas.</li> <li>• There is an efficient forest fire preventions and control plan.</li> <li>• The procedures and infrastructures for handling, treating, and final disposal of residues and containers are appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>• Need to present a monitoring and control system with maps showing erosion points along the road system, including gravel quarries.</li> <li>• In the harvesting system, annual cuttings in extensive areas have been done in some areas, with possibility to cause negative environmental impacts.</li> </ul>	<p><b>Major CAR 2008.04</b></p> <p><b>CAR 2008.11</b></p> <p><b>REC 2008.01</b></p>
<b>P 07: Management Plan</b>	<ul style="list-style-type: none"> <li>• There is a management plan, appropriate for the scale and intensity of the proposed operations that is being implemented and updated.</li> <li>• The long term objectives of the management plan and the means to achieve them are clearly described in the management plan.</li> <li>• There is a description of the forest resources to be managed and management systems according to their characteristics.</li> <li>• There are evidences that the planning and the operational teams know about the management plan.</li> <li>• The summary of the management plan is available for public consultation.</li> </ul>	<ul style="list-style-type: none"> <li>• Need to update the Management Plan.</li> <li>• The local community must be informed of forest management activities, as well as of its importance to the conservation of native forests and to the socio-economic development in the region.</li> <li>• The company has not produced evidence of having distributed or made available an updated summary of the management plan to community, union, and association leaders.</li> </ul>	<p><b>Major CAR 2008.03</b></p> <p><b>CAR 2008.08</b></p> <p><b>CAR 2008.09</b></p>

	<ul style="list-style-type: none"> <li>• There are training programs for company employees and for those of contractor companies.</li> <li>• The road system planning, establishment, and maintenance are carried out according to technical specifications.</li> <li>• There are description and justification for the choice of harvesting techniques and equipments.</li> <li>• There is an adequate control and storage of harvested products.</li> <li>• There is a fire prevention and control plan, with trained crews and defined responsibilities.</li> </ul>		
<b>P 08: Monitorin g and assessmen t</b>	<ul style="list-style-type: none"> <li>• The company maintains partnerships with research institutions to perform environmental monitoring in the FMU.</li> <li>• Monitoring and assessment of impacts have been performed in the FMU. There are norms and pre-defined periodicity for all.</li> <li>• Wildlife monitoring is being done, both pre- and post-harvesting, as well as forest reclamation after harvesting, social aspects, and others.</li> </ul>	<ul style="list-style-type: none"> <li>• Need to implement procedures to determine the necessary conditions to monitor and control erosions and gravel quarries.</li> </ul>	<b>Major CAR 2008.04</b>
<b>P 09: Maintena nce of high conservati on value forests</b>	<ul style="list-style-type: none"> <li>• The company develops studies on wildlife and vegetation in the management area.</li> <li>• An 82 ha area was defined as High Conservation Value Forest.</li> </ul>	There is need to present formal mechanisms for the maintenance of HCVF.	<b>Major CAR 2008.01</b>  <b>CAR 2008.06</b>

#### 4.2 PRE-CONDITIONS OR MAJOR CARs

Pre-conditions are major corrective actions (CAR) that are defined in a forest operation after the initial assessment, prior to its certification. Certification cannot be granted as long as there is an outstanding pre-condition.

The following pre-conditions were defined during the initial assessment at Jari Celulose S.A. The company complied with all Major CARs within the period determined by the team of auditors. These were all accepted and closed.

<b>Non-conformance:</b> Although there are corridors formed by APPs in native areas, no HCVF was defined in planted areas (only in the native forest).	
<b>Major CAR 2008.01</b>	Define attributes and the HCVF in the Jari Celulose S.A. FMU and present formal mechanisms for the maintenance of HCVF in formally defined planted areas.
<b>References</b>	P9.c1; P9.c2.i1
<b>Company Actions</b>	
The company presented a written document with the definition of an 82 ha ecologic corridor that permits connectivity among native forests within an extensive planted forest. The corridor is duly mapped and identified.	
<b>Position at the end of the audit</b>	
CAR complied with.	

<b>Non-conformance:</b> The areas included in the scope of certification, as well as community areas were not clearly highlighted on maps and spreadsheets.	
<b>Major CAR 2008.02</b>	Present a map and spreadsheet with information about land sections/titles, distinguishing the areas already delimited from the rest. On the same map, highlight the areas that are in the scope of certification. The information must include specification of Gleba, areas within the scope of certification for each Gleba and community areas.
<b>Reference</b>	P1.c1; P2.c1; P2.c1.i1; P2.c2; P2.c2.i3; P3.c6.i1
<b>Company Actions</b>	
A list with 115 Glebas/land titles was presented. Of these, 81 were already delimited with georeferencing and 34 are still to be delimited. Also, a map was drawn with Glebas highlighted in different colors for delimited and non-delimited areas. Community areas were included on maps.	
<b>Position at the end of the audit</b>	
CAR complied with	

<b>Non-conformance:</b> Since 2007, through Fundação Orsa, the company has conducted social actions with local communities. However, information on these activities are not updated on the management plan.	
<b>Major CAR 2008.03</b>	Update the management plan by including: <ul style="list-style-type: none"> <li>- non-wood products;</li> <li>- results from the social impact assessment and mitigation measures.</li> </ul>
<b>Reference</b>	P4.c4; P4.c4.i1; P7.c2
<b>Company Actions</b>	
The company presented an updated version of the forest management plan including activities involving utilization of non-wood products and assessment of social impact of the company actions on local communities. Non-wood forest product exploration will be carried out, preliminarily, in forests close to the communities ( <i>copaiba</i> and <i>andiroba</i> oil, <i>pracaxi</i> , <i>buriti</i> , Brazil-nut, several seeds, and <i>cipó-titica</i> among others). In the social context, the company presented the results from the work developed with local communities that were initially structured from the identification of their frailty in terms of education, health, citizenship, technical assistance, rural extension, transport logistics, and others. Thus, the company established actions steered, primarily, toward some communities with the objective to support the development of sustainable businesses, with	

priority on agricultural and forest projects and the strengthening of local community enterprises.
<b>Position at the end of the audit</b>
CAR complied with

<b>Non-conformance:</b> Erosion spots were detected along the road system, without monitoring, mapping, or control measures.	
<b>Major CAR 2008.04</b>	Present an erosion monitoring and control program, with maps of all erosion spots along the company road system, including gravel quarries.
<b>Reference</b>	P5.c5.i2; P6.c5; P8.c1.i1
<b>Company Actions</b>	
The company presented procedures to define the necessary conditions for monitoring and control of erosions and gravel quarries. Occurrences of erosion are recorded on PAE (spotted erosion spreadsheet), RVEP (erosion and gravel quarry inspection report), and PRAD (degraded area reclamation plan).	
<b>Position at the end of the audit</b>	
CAR complied with	

## 5.0 DECISION ABOUT CERTIFICATION

### 5.1 RECOMENDATION FOR CERTIFICATION

As determined by SCS Forest Conservation Program protocol, the assessment team recommends that JARI CELULOSE S.A. be re-certified and awarded the FSC 5-year certificate of “well managed forest”, for the period of 2009 to 2014, subject to compliance with corrective actions requests as described on item 5.2. JARI FLORESTAL S.A. has demonstrated that its management system can ensure compliance with all SCS Interim Standards for Certification of Forest Plantations in Brazil, version 02, November 2008, in forest areas subjected to this assessment. JARI CELULOSE S.A. has also demonstrated that the described management system is being implemented in all areas covered by this assessment.

### 5.2 INITIAL CORRECTIVE ACTIONS REQUEST (CAR)

### 5.2 INITIAL CORRECTIVE ACTIONS REQUEST (CAR)

<b>Non-conformance:</b> Jari Celulose does not have a formal channel of dialogue with the local community to record and solve queries and complaints.	
<b>CAR 2008.05</b>	Crete a channel of dialogue with the local community to record and solve queries and complaints.
<b>Deadline</b>	2009 Audit
<b>Reference</b>	P2.c3.i2; P2.c4.i2; P4.c4.i2

<b>Non-conformance:</b> There is no formally defined mechanism for the maintenance of
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HCVF in the Jari Celulose FMU.	
<b>CAR 2008.06</b>	Present formal definition of mechanisms for the maintenance of HCVF in the Jari Celulose FMU, considering: - inclusion in the Management Plan, as well as in the public summary, of specific, applicable, and consistent measures to ensure maintenance of attributes for conservation, with precautionary approach.
<b>Deadline</b>	2009 Audit
<b>Reference</b>	P9.c3.i1; P9.c4.i1

<b>Non-conformance:</b> There are erosion spots without monitoring that need to be corrected.	
<b>CAR 2008.07</b>	Repair erosion spots and monitor critical points (gullies)
<b>Deadline</b>	2009 Audit
<b>Reference</b>	P5.c5.i2

<b>Non-conformance:</b> In the company environmental education, there is no mention of publicity actions including information on the forest management.	
<b>CAR 2008.08</b>	Include publicity actions contemplating forest management in the company environmental education program.
<b>Deadline</b>	2009 Audit
<b>Reference</b>	P4.c4.i2; P7.c4.i2; P7.c4.i3

<b>Non-conformance:</b> There is no evidence that the updated public summary of the management plan is publicized to community, union, and association leaders.	
<b>CAR 2008.09</b>	Present records of publicity of the updated summary of the management plan to community, union, and association leaders.
<b>Deadline</b>	2009 Audit
<b>Reference</b>	P7.c4.i2; P7.c4.i3

<b>Non-conformance:</b> Jari Celulose has no labor safety management plan or systematization of accident and incident records (its own and contractor company's) for analysis. It has not even a CIPA (Internal Committee for the Prevention of Accidents) program integrated between Jari and contractor companies.	
<b>CAR 2008.10</b>	Elaborate and implement a management plan on labor safety, including the systematization and analysis of records of accidents and incidents (its own and contractor company's), and a CIPA program integrated between Jari Celulose and contractor companies.
<b>Deadline</b>	2009 Audit
<b>Reference</b>	P4.c2C.i1; P4.c2C.i7; P4.c2C.i9

<b>Non-conformance:</b> The annual harvesting plan needs to consider sustainability of hydrographic microwatershed within the FMU. Harvesting operations over extensive and continuous areas might affect water production at the microwatershed and, also, might exert negative impacts to the wildlife.	
<b>CAR 2008.11</b>	Present a study to adjust harvesting and planting operations timetables in order to avoid clearcuttings over large extension of land and to operate in a mosaic pattern.

<b>Deadline</b>	2009 Audit
<b>Reference</b>	P10.c2.i2; P10.c2.i3; P10.c2.i5
<b>Company actions</b>	The company presented a document on Management of Forest Stands in Mosaic with maps and timetable of the harvesting plan. Areas to be harvested in 2009 were highlighted and smaller harvesting areas are shown among large planted areas in mosaic pattern.
<b>Position</b>	CAR complied with

### 5.3 – Recommendations

<b>Justification:</b> During field observations, harvestings in subsequent years have been done in adjacent areas in some places.	
<b>REC 2008.01</b>	Avoid harvesting in adjacent areas in subsequent years. Harvest alternate areas along the years as a way to minimize impact on the landscape and to stimulate regeneration , as well as to contain the spread of forest fires.
<b>Prazo</b>	2009 Audit
<b>Referência</b>	P10.c2.i2

### 6.0 – SURVEILLANCE ASSESSMENT

According to FSC Principles and Criteria, a certified company must be subjected to a surveillance audit at least once a year in order to assess the compliance with each corrective actions request and to review the continuity of conformance with SCS Interin Standards for Certification of Plantation Forest Management in Brazil, version 1.0. The public summary of the assessment of the management developed by Jari Celulose S.A. will be available on the SCS web page ([www.scscertified.com](http://www.scscertified.com)).

### 7.0 SUMMARY OF SCS PROCEDURES IN REGARD TO THE INVESTIGATION OF COMPLAINTS

The complete procedures are available at SCS upon request. These were planned and are available to any organization that perceives any problem in regard to SCS Forest Conservation Program and has reason to question SCS for its actions or in regard to an SCS certificate holder. The procedures constitute the first instance and mechanism in attempt to solve problems in a friendly manner to avoid the need to involve FSC. Complaints can come from our clients (e.g. forest owners, companies, or distributors) or from other stakeholders. In order to have a standard in these procedures, the complaints must be made in writing, with supporting evidences, and submitted until 30 days from the occurrence of the action which caused the demand.

The description of the complaint must contain:

- Identification and indication of a contact person in regard to the complaint;

- Clear description of the demanded action (date, location, nature of action) and indication of what parts or individuals are associated with the action;
- Explanation on how the action is violating the FSC requirements, in a most specific manner as possible, in regard to FSC requirements that are applicable to the case;
- Description of the efforts done directly with the certificate holder to solve the issue, in the case of complaints against a certificate holder;
- Proposal of actions to be taken, considering the applicant's opinion.

The formal complaints must be submitted to:

Dr. Robert J. Hrubes  
Senior Vice-President  
Scientific Certification Systems  
2000 Powell Street, Suite 1350  
Emeryville, California, USA 94608  
Email: [rhrubes@scscertified.com](mailto:rhrubes@scscertified.com)

As detailed in the SCS-FSC Certification Manual, the investigations on the complaints will be done confidentially, within a reasonable period of time. If appropriate, corrective or preventive actions will be determined and the solution to any deficiency found in products or services must be carried out and documented.