

**Forest Management and Stump-to-Forest Gate Chain-of-Custody
Certification Evaluation Report for the: TIMBÓ EMPREENDIMENTOS FLORESTAIS S.A.
Conducted under auspices of the SCS Forest Conservation Program
SCS is an FSC Accredited Certification Body**

**CERTIFICATION REGISTRATION NUMBER
SCS-FM/COC-00065P**

Submitted to:
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Organization of the Report

This report corresponds to the results of the assessment team and is divided in two parts. Part A includes a Public Summary and the basic information required by FSC (Forest Stewardship Council). This section will be open to the public and is meant to provide a general view of the certification process, the administrative programs, the plan of action towards the forests, and the final result of the assessment. Section A will be posted at SCS webpage (www.scscertified.com) at least 30 days after certification is awarded. Section B contains more detailed information about the company.

Recertification Process

Timbó Empreendimentos Florestais S.A. Forest Management recertification process in Timbó Grande, Santa Cecília, Irineópolis, Major Vieira and Canoinhas, State of Santa Catarina, Brazil, with an area of 13,557.31 hectares of which, 7,290.00 ha corresponds to pine plantations, 5,205.11 ha to native vegetation preservation areas, and 1,062.20 ha of general infrastructure.

FOREWORD

According to the Forest Stewardship Council (FSC), forest operations complying with international forest management standards can be certified as 'well-managed', and become eligible to use the FSC logo for promotional purposes. This certification is valid for a five-year period; this recertification process shall be repeated every five years.

SCS – Scientific Certification Systems, an FSC-endorsed certification body, was contracted by **Timbó Empreendimentos Florestais S.A.** to conduct a recertification assessment of its forests, previously owned by Agropastoril Novo Horizonte. They are located in Timbó Grande, Santa Cecília, Irineópolis, Major Vieira and Canoinhas in the State of Santa Catarina, Brazil. These forest units total 13,557.31 hectares of which, 7,290.00 ha correspond to pine plantations and 5,205.11 ha to native vegetation preservation areas.

An interdisciplinary team of natural resource professionals collected and analyzed written materials, conducted public consultation through Stakeholder Consultation questionnaires, interviews, and field and office visits for four days at the properties that had been requested for certification assessment. Upon completion of the fact-finding phase of the evaluation, the team concluded that the company is in conformance with FSC Principles and Criteria and recommends that recertification be warranted.

This report is issued in support of a recommendation to award the five-year FSC Certification to Timbó Empreendimentos Florestais S.A. forest management plantations which is located in the State of Santa Catarina. After a painstaking assessment of the management practiced by the company, the assessment team raised some pre-conditions (also known as Major Corrective Action Requests). These were fully complied with, as verified by SCS. Timbó Empreendimentos Florestais S.A. is taking over the management of the areas formerly owned by Agropastoril Novo Horizonte S.A. and will continue with these programs. If certification is awarded, Scientific Certification Systems will post the public summary of the report on its web site (www.scs-certified.com).

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SECTION A- PUBLIC SUMMARY AND BACKGROUND INFORMATION

1. GENERAL INFORMATION

1.1 FSC Data Request

Applicant entity	Timbó Empreendimentos Florestais S.A.
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Fax	+55 (41) 3253-2818
E-mail	fbrun@resourcegmt.com
Website	www.resourcegmt.com
Certificate Type	A single management plan (FMU)
Number of FMU	1
Number of farms of the FMU included in the scope of certification that are	
smaller than 100 ha	0
from 100 ha to 1,000 ha	7
from 1,000 ha to 10,000 ha	4
larger than 10,000 ha	0
Location of certified forest areas:	
Latitude	50° 27' 38" to 50° 42' 38" S
Longitude	26° 28' 21" to 26° 43' 39" W
Forest zone	Santa Catarina plateau
Total forest area of farms included in the scope of certification that is:	13,557.31 ha
smaller than 100 ha	0
from 100 ha to 1,000 ha	2,198.17 ha
from 1,000 to 10,000 ha	11,359.14 ha
larger than 10,000 ha	0
Land tenure	Private (100 %)
Number of forest workers (including contractors) working in the forests within the scope of certification	142
Chemical pesticides used	Mirex-S (Sulfluramide); Glifosato Nortox (Glifosate).
Area of forest and non-forest lands protected from commercial harvesting of timber and managed primarily for conservation objectives	4,513.79 ha
List of high conservation values present ¹	Timbó Empreendimentos Florestais S.A. decided to consider all registered Legal Reserves and Permanent Preservation Areas as High Conservation Value Forests until wildlife and vegetation surveys are finalized and the attributes to be preserved are defined.
Total area of production forest (i.e. forest from which timber may be harvested)	7,290.00 ha

Area of production forest classified as 'plantation' for the purpose of calculating the Annual Accreditation Fee (AAF)	7,290.00 ha
List of main commercial timber and non-timber species included in the scope of certificate (botanical name and common trade name)	<i>Pinus taeda</i> and <i>Pinus elliottii</i> (Pine)
Approximate anual volume authorized for harvesting	205,000.00 m ³
List of product categories included in the scope of joint FM/COC certificate and therefore available for sale as FSC-certified products (include basic description of product - e.g. round wood, pulp wood, sawn timber, kiln-dried sawn timber, chips, resin, non-timber forest products, etc.)	Logs and harvest residues

1.2 Forest Management Context

Timbó Empreendimentos Florestais S.A. is a Brazilian private company founded on March 17, 2008 to take over the forest areas formerly owned by Agro Pastoril Novo Horizonte S.A. The company is managed by RMS do Brasil Administração de Florestas Ltda. and controlled a board of directors with headquarters in Curitiba, Paraná, Brazil (Fig. 1). The company acquired 14.410,76 ha of pine plantations located in Timbó Grande region, State of Santa Catarina for the production of logs to the regional market.

Management flowchart

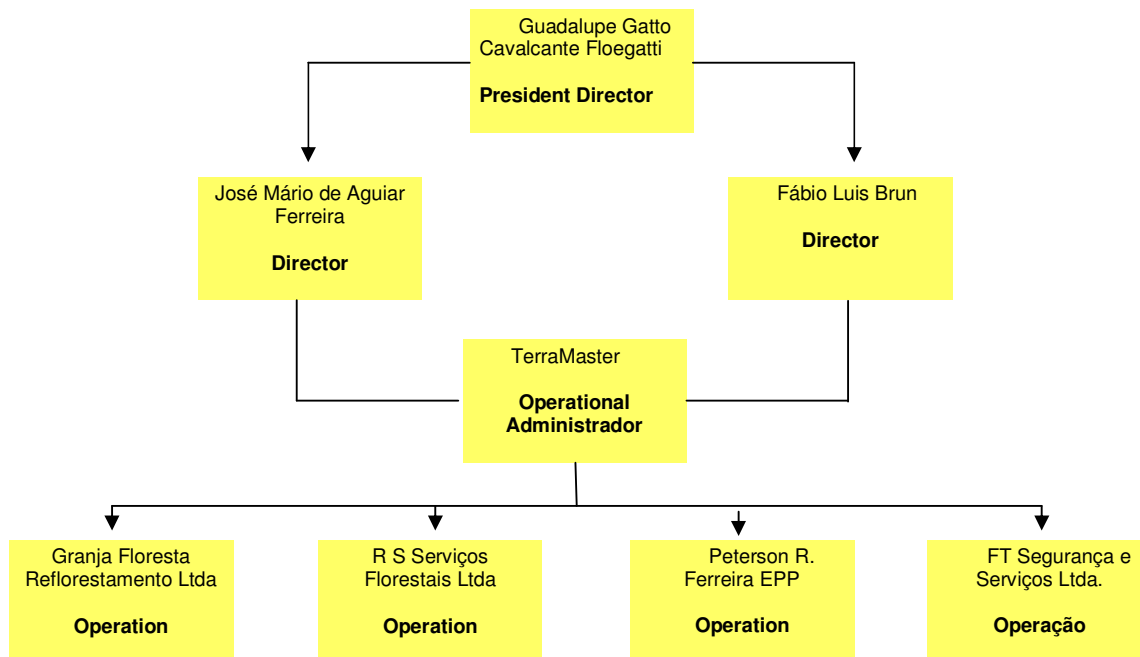


Fig. 1. Organizational structure and forestry board of directors of Timbó Empreendimentos Florestais S.A.

The management of forest plantations established by Timbó Empreendimentos Florestais S.A. abides by the national and state laws pertaining to forest activities. The following regulations must be observed:

At Federal level:

- a. Brazilian Forestry Code (Law 4771/65, amended by the Law 7803/89) – Permanent preservation areas, Legal reserves and mandatory forest reclamation.
- b. Provisional Measure number 2166-67 from August 24, 2001, which alters Law 4.771/65 (Forestry Code).
- c. CONAMA resolution 0004/85 – Permanent preservation
- d. Federal Law 6938/81– Permanent preservation
- e. Federal Law 7754/89 – Permanent preservation
- f. Federal Law 8171/91 – Legal reserve
- g. Provisional Measure number 1956-53 from the year 2000 – restoration of Permanent preservation areas and Legal reserves.
- h. Federal Decree 50877/61 – CONAMA Resolution 357/05 (which revokes 20/86) – determination of maximum pollution charge for each class of use.
- i. Federal Law 7802/89 (regulated by Federal Decree 98816/90) – IBAMA Resolution 84/96 – pesticide use.
- j. Federal Law 6938/81 (regulated by Federal Decree 99274/90 – Environmental Impact.
- k. Federal Law 6938/81 (regulated by Federal Decree 99274/90) – CONAMA Resolution 237/97 – Road infrastructure and gravel quarry licensing).
- l. Federal Law 9605/98 - Legislation on environmental crimes
- m. IBAMA Resolution 162/97 – Federal Law 9393/96 - Rural Land Taxation and Environmental Declaratory Act.
- n. Law 10267/01 – new National Registration of Rural Estates

State Level:

Normative Instruction number 15 – FATMA – Registration of legal forest reserves.

Normative Instruction number 16 – FATMA – Reclamation of degraded forest areas.

Normative Instruction number 20 – FATMA – Forestation and reforestation with tree species

Normative Instruction number 22 – FATMA – Sustainable forest management - Preliminary environmental license

Normative Instruction number 43 – FATMA - Suppression of exotic species in permanent preservation areas

Normative Instruction number 46 – FATMA - Forest restoration

Normative Instruction number 51 – FATMA – Defines procedures and documents required for the creation of Private Reserve of Natural Heritage in the State of Santa Catarina.

Municipal Level

Payment of ISSQN fee when contractor services are used

Moreover, all labor fees at federal level must be paid, including:

- a. Social Security fees
- b. FGTS fees
- c. Payment to corporate agencies (Contribution to Class Union)

1.2.1 Environmental context

Timbó Empreendimentos Florestais S.A. Forest Management Units are located in the Brazilian southern region, more specifically at the northern part of Santa Catarina plateau, next to the border to the State of Paraná.

1.2.1.1 Climate

The climate of the region, following Köppen's climate classification system (SDM, 1997), is of Cfb (mesothermic humid, with cool summers and without dry season) type. The annual mean temperature is 17° C. Frosts are more frequent from June to August when they can average 17.4 frosts/year. The average rainfall is 1,473.3 mm/year.

1.2.1.2 Water resources

Timbó Empreendimentos Florestais S.A. forest management unit stretches over a wide drainage network within the Canoinhas Plateau Hydrographic Region. It is located at the stream sources on the west side of Serra do Mar and drains toward the inland. The main water courses are Rio Timbó which runs across some of the farms of the FMU, Rio do Peixe, Rio Timbó Grande. Rio Tamanduá, Rio Cachoeira and their tributaries run along the borders of Timbó Grande municipality and across some of the company farms. The main and minor watersheds are:

- Peixe (Rio Timbó);
- Tigre (Rio Caçador Grande);
- Rio do Peixe.

1.2.1.3 Geology and relief

The geology at Timbó Empreendimentos Florestais S.A. areas is characterized exclusively by rocks from basalt outpourings known as "Formação Serra Geral". This denomination, which is in general use, was coined by White in 1908 (DNPM, 1974) in his classical work (*Final Report of the Commission of Coal Mines in Brazil*). Under this designation are included the extrusive volcanic rocks in the Paraná basin. These occur in the form of successive outpourings, covering nearly half of the surface in the State of Santa Catarina. Two sequences are highlighted: the Alkaline Sequence, which prevails at lower levels, is represented by basalts and phenobasalts with dykes and flat diabase, occasional sandstone lenses, volcanic sediments, andesites, and volcanic glasses. The Acid Sequence dominates toward the volcanic pack and is represented by dacites and related rocks. In the morphostructural aspect, the relief unit is known as Planalto das Araucárias (IBGE). The relief at Timbó Grande is mainly plateaus with flat, rolling or mountainous surfaces.

1.2.1.4 Soil

The prevailing soils at the sites where Timbó Empreendimentos Florestais S.A. carries out its management activities originate from alkaline, intermediate, and acid volcanic rocks which fit into the category of high aluminum *Latosol Bruno Húmico*, according to EMBRAPA and Projeto Radam (1984). There are also soils known as *Terra Bruna Estruturada* (Tropohumult) and litholic soils (SEPLAN, SC – 1991). On average, these soils are of average to good fertility at sites with flat relieves – these are, in general, suitable for forest management, with only a few exceptions. *Latossolo Bruno Húmico* is characterized as mineral soil, non-hydromorphic, with a sequence of A, B, and C horizons. The B horizon is litholic with a dark color and the A horizon is rich in organic matter (greater than 1 % to 1 m depth), very clayey and well drained, with a low silt/clay ratio. In soils of this category, iron oxide (Fe₂O₃) contents range from 11 % to 29 % and the silica/aluminum (SiO₂/Al₂O₃) ratio ranges from 0.8 to 1.9. Moreover, they show high exchangeable aluminum content and low natural fertility. Thus, they often require application of lime and fertilizers to become suitable for agricultural purposes.

The soils classified as Terra Bruna Estruturada are deep (1 to 2 m), porous and well drained, with sub-angular block structures located, preferentially, at sites with rolling relieves. They can be

found also in steep terrains on soils known as *Terra Roxa Estruturada*. Varied sized rocks can be found on the surface at these sites.

Litholic soils are shallow (0.15 to 0.40 m) with variable natural fertility. The limiting factors for their utilization in agriculture are: steep terrain, limited depth and susceptibility to water deficit, and presence of rocks on the surface.

1.2.1.5 Vegetation and wildlife

From the biodiversity conservation standpoint, the region fits into the eco-region known as *Bosques de Araucária do Brasil* (Brazilian Araucaria Forests). The eco-region is considered to be in a critical level with high priority for conservation due to high level of fragmentation after exploitation of native species and agricultural use. The main types of natural vegetation are remnants of the Mixed Rain Forest, a.k.a. Araucaria Forest which used to predominate in the region. This eco-region is further subdivided into Alluvial Mixed Rain Forest in the plains, Mountain Rain Forest (500 to 1,000 m a.s.l.), and High Mountain Mixed Rain Forest (above 1,000 m a.s.l.).

Yerba maté (*Ilex paraguariensis*) prevails in the understory. Historically, this species played a key role in the regional economy. Timber exploitation and the simultaneous expansion of agriculture caused serious degradation of the native forests and impoverishment of the regional biodiversity. However, because of poor socioeconomic conditions and the use of low technology in the field, barely touched remnants of the native forests can still be found, especially in places with broken terrains and at flood plains. Rare, endangered, and vulnerable plant species can be found in more developed remnants of the native forest (Table 1).

Table 1: Rare, endangered, and vulnerable plant species found in Timbó Grande, SC, region.

Common Name	Scientific Name
Imbuia	<i>Ocotea porosa</i>
Bromélia	<i>Aechmea blumenavii</i>
Xaxim	<i>Dicksonia sellowiana</i>
Canela-sassafrás	<i>Ocotea pretiosa</i>
Marmelinho	<i>Brosimum glazioui</i>
Pinheiro-do-paraná	<i>Araucaria angustifolia</i>

The local wildlife is typical of the Mixed Rain Forest. The dominant group, in terms of species number, is represented by birds. Rare, endangered, and vulnerable wildlife species in the region (Table 2) can be found in more developed remnants of the native forest in farms.

Table 2: Rare, endangered, and vulnerable wildlife species found in Timbó Grande, SC, region.

Common Name	Scientific Name
Papagaio-de-peito-roxo	<i>Amazona vinacea</i>
Puma	<i>Puma concolor</i>
Jaguatirica	<i>Leopardus pardalis</i>
Lontra	<i>Lontra longicaudis</i>
Paca	<i>Agouti paca</i>

1.2.2 Socioeconomic context and a brief history

As previously mentioned, Timbó Empreendimentos Florestais S.A. properties are spread over five municipalities in the State of Santa Catarina. There used to be old native settlements in the region such as of *Kaingang* (Coroados) and *Xokleng* (Botocudos) indians. In addition to some mixed-marriages among Europeans, the most significant portion of the population is made up by Brazilians and *caboclos*, and, secondarily, by European migrants, mainly Italians, Germans, and Polish. The region was the stage of one of the most important messianic movements in the country. That was the Contestado War (*Guerra do Contestado*), a civil war that ended in 1910. This episode is still alive in the memory of the local population. There is still a worship site in a cave that would have served as a refuge for the followers of Monk João Maria, the leader of the movement. The region where the areas of Timbó Empreendimentos Florestais S.A. to be recertified are located is characterized by among the lowest socioeconomic indicators in the State of Santa Catarina. Except for Canoinhas that has a population of over 50,000 and a more dynamic economy, in general, the municipalities in the region have populations ranging from 6,000 (Timbó Grande and Major Vieira) and 14,000 (Santa Cecília). The low economic performance is seen in several social indicators. All municipalities in the region have formal education level lower than the mean of the State. Among them, Canoinhas is the municipality with the highest level of formal education. In other municipalities, more than 5 % of the population over 10 years of age has no formal education. Timbó Grande has the lowest educational level in the State, with 12.25 % of the population with no formal education. A similar situation can be verified in the analysis of the average income of all individuals over 10 years of age. In the State of Santa Catarina, the average income is 4.43 times the minimum wage (m.w.) and, in Florianópolis, it reaches 5.98 m.w. On the other hand, in Timbó Grande region, Canoinhas shows an average income (3.93 m.w.) that is closest to the mean of the State. Timbó Grande has the lowest income, with only 2.06 m.w. These low income levels result from the fact that the population is mostly rural and their economy is based on small scale agriculture. Moreover, they have, at most, only limited extensions of planted forests and wood processing as an economic activity, such as the case of Timbó Grande. The exception is Canoinhas, which is a regional district where industrial, commercial, and service activities, as well as the presence of public institutions, are more significant. In Timbó Grande, there are two main wood based industries: Compensados e Laminados Lavrasul S.A. – Sawmill Section and Veneer Section; and Indústrias Bonet S.A. which produces pines for pulp and paper. Other small wood based companies are:

- SIEMA, manufacturer of wood pallets.
- Indústria FAP,
- Madeireira CS,
- SOMA – wood processing
- EMABRIL, wood processing and bricklet manufacture.

Other urban establishments are devoted to trade and services.

Timbó Grande became independent from Santa Cecilia municipality in 1989. It covers an area of 569 km² and is located in Rio do Peixe Valley at latitude 26° 33' 45" S and longitude 50° 41' 15" W. Its limits to the north with Irineópolis and Bela Vista do Toldo, to the south with Lebon Régis, to the east with Major Vieira and Santa Cecília, and to the west with Calmon and Porto União. According to the year 2000 Demographic Census, the population of Timbó Grande is 6,501, with an average of 4.3 per household. The population is structured into 51.5 % male and 48.5 % female, 42.7 % (2,775) live in the urban and 57.3 % (3,726) in the rural zones. A remarkable feature of Timbó Grande population is the young age: 67 % are younger than 29 years, 27 % are younger than 10 years, and only 6.2 % are over 60 years of age. Only 69 % of the population is literate. A survey by the Timbó Grande City Hall indicated that, in 2002, there were two state schools, 18 municipal schools, and two municipal day-care centers. The healthcare system in Timbó Grande includes a hospital and a network of ambulatories. The most recent health indicators (DATASUS, 1998) showed that annual infant mortality by the first year varies from 26.44 to 41.73 deaths per thousand. These data, however, do not reflect the real situation in each

municipality since they are a generalization from the data collected in Canoinhas. The only other municipality with specific data is Santa Cecília which showed the worst indicators. Therefore, as a municipality next to Santa Cecília, Timbó Grande which, in general, shows the worst socioeconomic indicators, is supposed to have health indicators more similar to Santa Cecília than to Canoinhas. Of 1,508 households in Timbó Grande, 45.8 % are served with running water and 52.5 % with water from wells or watersprings. In only 89 % of the households have toilets. The garbage is collected by the public service in 43.5 % of the households. It must be mentioned that the activities performed by Timbó Empreendimentos Florestais S.A. are potentially damaging to the environment. However, they are properly monitored and any significant environmental impact that could, eventually, affect local populations, mainly in small communities living off the exploitation of natural resources, are controlled through preventive and corrective measures. So far, no incident of such nature has occurred. Given all these socioeconomic factors, it is clear that the municipalities in the region have several social problems.

1.3 Forest Management

1.3.1 Land use

All areas under operation by Timbó Empreendimentos Florestais S.A. and their neighborhoods are recognized for planted forest and exploitation activities, while agricultural uses are of minor economic significance. The rural area of Timbó Empreendimentos Florestais S.A. spreads over five municipalities in the State of Santa Catarina, adding up to 13,557.31 ha distributed over 11 farms (Table 3), all within the scope of certification.

Table 3. Forest farms managed by Timbó Empreendimentos Florestais S.A.

Farm	Area (ha)	Municipality
Araucaria	155.37	Santa Cecília
Bom Sossego	338.55	Irineópolis
Campo Novo	1,366.48	Major Vieira
Machado	677.85	Major Vieira
Malon	325.18	Major Vieira
Passa Dois	2,383.53	Santa Cecília
Ponte Velha	235.32	Canoinhas
Salto do Tamanduá	465.9	Timbó Grande
Tamanduá	3,733.7	Major Vieira
Vaca Branca I	3,492.05	Timbó Grande
Vaca Branca II	383.39	Timbó Grande
TOTAL	13,557.31	

1.3.2 Areas outside the scope of certification

All areas acquired by Timbó Empreendimentos Florestais S.A. are within the scope of certification.

1.3.3 System to control the source, tracing, and identification of forest products

This item refers to procedures adopted by Timbó Empreendimentos Florestais S.A. and highlights the careful handling of products from the wood harvesting sites to the delivery to the market.

1.3.3.1 Risk assessment regarding mixture of FSC-certified with non-certified products

There is no chance to contaminate timber coming from FSC-certified areas because all management areas are included in the scope of certification.

1.3.3.2 Description of the log control system

The company adopts detailed procedures and computerized controls in its business. The timber is sold with the respective bill of sale on which information on harvesting area, FSC certificate number, volume of the load, the carrier, and information on the vehicle are stated.

1.3.3.3. End point of the chain of custody

The chain of custody system of the timber sold by Timbó Empreendimentos Florestais S.A. ends at the point where it leaves the FMU.

1.4 Management Plan

1.4.1 Management objectives

The main objective of the forest management by Timbó Empreendimentos Florestais S.A. is “to promote production of raw-material from the forest by establishing and managing pine plantations, in pursuit of continuous improvement by conserving natural resources and minimizing environmental and social impacts”.

As commitments of the forest management, the company proposes to:

- write down the company’s commitment with FSC forest certification;
- clearly demonstrate the company’s environmental, social, and forest policies;
- help the company’s collaborators to work in conformance with operational procedures of the adopted management system;
- become a guideline for forest certification by helping stakeholders to easily find procedures, manuals, and component programs of the process which are not included in this volume.

The company’s environmental policy is geared toward the development of actions to promote:

- conservation of forests remnants (essential for the preservation of local wildlife and vegetation), water resources, natural areas, and areas of scenic interest;
- reclamation of permanent preservation areas and legal reserves;
- control of illegal activities (hunting, fishing, and sacking).
- environmental education;
- waste management (selective collection);
- minimizing environmental impacts caused by forest management activities;
- reclamation of degraded areas (gravel quarries).

The social management at Timbó Empreendimentos Florestais S.A. is based on boosting the prize of its workers and of the communities in the surrounding areas. In order to fulfill this objective, the company counts on:

- Social Impact Management Plan through which it seeks to create a formal dialogue among workers, the community, and the company;
- Health care and labor safety service;

- Continuing professional training;
- Support for education;
- Program for improvement of housing and lodging infrastructures.

1.4.2. Composition of the forest management unit

The timber used by the company is exclusively from its own planted forests. The areas within the scope of certification are 11 estates registered at the archives in Santa Cecília, Canoinhas and Porto União (Table 4). All these areas are legalized and under the process of georeferencing in order to comply with the legal requirements (Law 10,267/01) of INCRA (National Institute for Colonization and Agrarian Reform).

The company is in process of formalizing its Legal Reserves and Permanent Preservation Areas – in most farms, individually, there are 20 % or more areas with native forests potentially suitable for Legal Reserves. Some are already registered and most of them are in the process of registration. In cases where there is not enough (less than 20 %) land set aside for Legal Reserve, alternatives are being considered for legalization. The Permanent Preservation Areas that fell short of the legal requirements (30 m or 50 m strips of land along water streams) were already adjusted, according to the Environmental Management Plan.

Table 4. Properties of Timbó Empreendimentos Florestais S.A. considered in the scope of FSC certification

Farm	Archive Office	Municipality	Registration	Total Area (ha)	Legal Reserve (ha)	Permanent Preservation Area (ha)
Bom Sossego	Santa Cecília/ Porto União	Irineópolis	1264/ 1666/ 1667/ 908/ 3045/ 25175	338.55	34.54 + 33.16 transferred from Fazenda Vaca Branca	11.82
Malon	Canoinhas	Major Vieira	3389/ 5754	325.18	65.04	25.6
Machado	Canoinhas	Major Vieira	843	677.85	0	33.0
Tamanduá	Canoinhas	Major Vieira	8548/ 9064/ 32052	3,733.70		910.5
Araucária	Santa Cecília	Santa Cecília	2267	155.37	31.07	40.23
Passa Dois	Santa Cecília	Santa Cecília	2266/ 2268/ 2269	2,383.53	476.71	105.6
Vaca Branca I	Santa Cecília	Timbó Grande	2262/ 2263/ 2264/ 2694/ 3455	3,492.05	698.41 + 33.16 transferred from Fazenda Bom Sossego	229.92
Vaca Branca II	Santa Cecília	Timbó Grande	2848/ 3159/ 3160/ 3000	383.39	76.68	Incorporated Above
Salto do Tamanduá I and II	Santa Cecília/ Porto União	Timbó Grande	1236/ 2854/ 18670/ 2166	465.89	92.77	51.90
Ponte Velha	Canoinhas	Canoinhas	8478/ 9884	235.32	47.15	16.09
Campo Novo	Canoinhas/Santa Cecília		3534 / 6703	1,366.48		

Fonte: Map Base - October 2008.

1.4.3 Silvicultural system

Sustainable forest management deals with the study, development, and application of modern techniques to manage forest plantations in order to improve wood quality and productivity in equilibrium with economic development and maintenance of natural resources. Along that line, Timbó Empreendimentos Florestais S.A. has identified factors affecting tree growth and forest production, mainly those associated with the availability of water, light, and nutrients. In order to increase and maintain productivity in successive rotations, a greater knowledge of all those factors and of the impacts to the environment is necessary. They are controlled as in the following flowchart (Fig. 2).

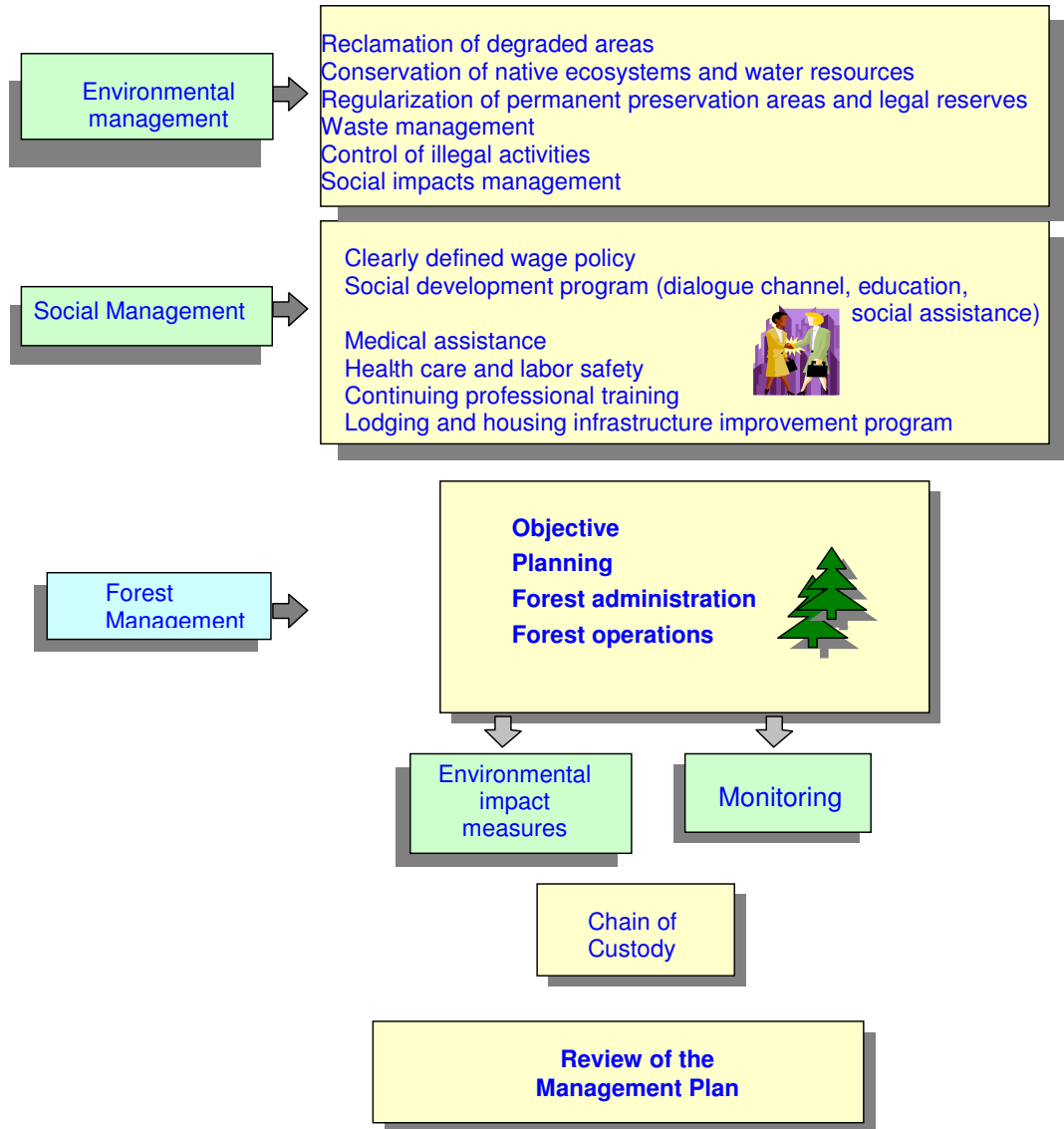


Fig. 1. General structure of forest management at Timbó Empreendimentos Florestais S.A.

The application of silvicultural techniques added to the development of research projects has produced significant improvements (both operational and productivity) in forest activities. These improvements become evident in monitorings performed by the company.

The development of the forest is monitored annually starting at the second year after planting and up to the harvesting, through continuous inventory. This process generates the figures of mean annual increment (MAI), which is used to control and project timber stock, as well as to keep track on productivity and required interventions.

Timbó Empreendimentos Florestais S.A. adopts well-defined operational procedures for all silvicultural activities (Fig. 3), always aiming at the reduction of costs and, at the same time, respecting social and environmental impacts as a base of forest development.

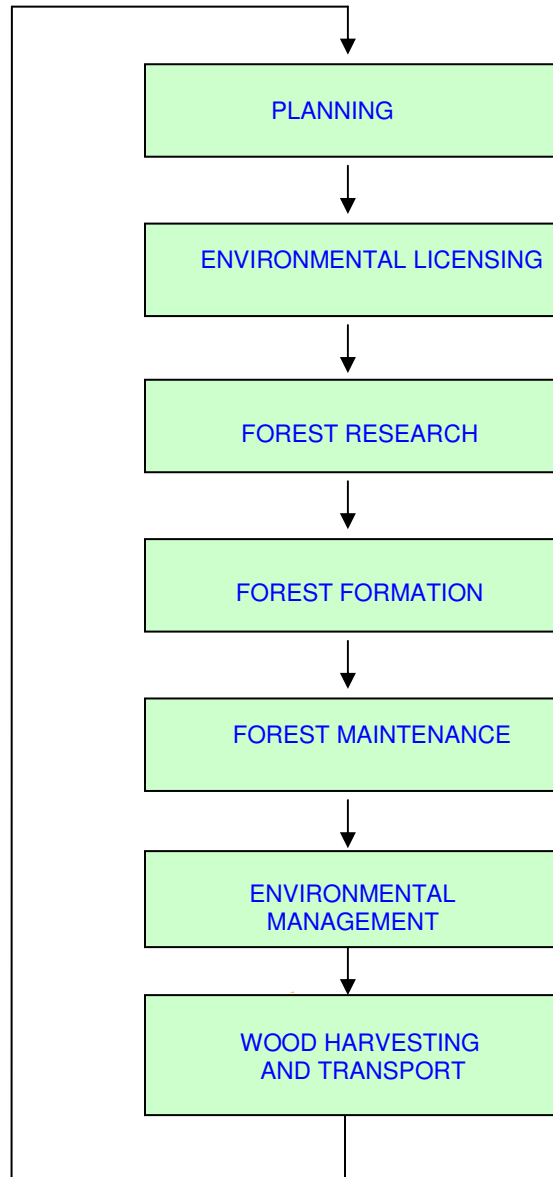


Fig. 3. Operational flowchart of Timbó Empreendimentos Florestais S.A. forest management

1.4.4 Management system

Seedling production: The seedlings selected for use at Timbó Empreendimentos Florestais S.A. operations are purchased from ClonTech company which is based in União da Vitória, Paraná. The seedlings are clones imported from South Africa and the U.S. that have been tested for the local environmental conditions.

Soil preparation: The soil is prepared with tire tractors equipped with subsoiler to break possible soil compaction to a depth of 60 cm along the planting lines. So far, the company has not limed the soil or applied any fertilizers.

Plantation: Tree planting is performed manually because, in most cases, the relief does not allow mechanized operations.

Monitoring and pest control

a) **Leaf-cutting ants:** The monitoring of leaf-cutting ants is part of the services provided by a company called FT Segurança Patrimonial e Serviços under contract. This is also responsible for other forest health and surveillance services, such as monitoring and control of land squatting, vandalism, hunting, fishing, forest fire, and pest outbreaks such as wood-wasp. The control of leaf-cutting ants at the establishment and during the maintenance of forests is meant to reduce the damage to plantations at all stages of development. The operations are carried out by using poison bait, such as “Mirex-S” (Sulfluramide), more intensively at the early stages of stand establishment. In mature stands, ant control measures will depend on the severity of damage.

b) **Wood-wasp:** Timbó Empreendimentos Florestais S.A. has established a partnership with FUNCEMA (National Fund for the Control of Wood-wasp) which, along with the National Program for the Control of Wood-wasp, has conducted evaluation of damage, training, and distribution of specific nematoids used as biological control agents.

Maintenance weeding: The control of weed species is performed by using herbicides, and also mechanically; at the early stages of stand development, weeding is done around the seedlings and mowing in between the rows. In mature stands, weed control is done by mowing in between the rows to the age of crown closure.

Prevention and control of forest fires: In order to prevent forest fire, Timbó Empreendimentos Florestais S.A. has observation towers as part of a regional network formed with other forest companies operating in the region. There is a constant monitoring, mainly during the most critical periods of the year. If there is any forest fire, trained personnel is sent for its control. The main elements of the fire crew are the watchmen (four). They live on the farms and are deployed and equipped as follow:

- A watchman at Fazenda Araucaria equipped with five fire pads and two rakes.
- A watchman in charge of both Fazenda Machado and Fazenda Mallon because of their proximity to each other. He is equipped with eighteen fire pads, two rakes and a portable radio.
- A watchman responsible for both Fazenda Tamanduá and Fazenda Campo Novo which are nearby each other. He is equipped with 18 fire pads, a hoe, a rake, back pumps and a portable radio.
- Two watchmen at Fazenda Vaca Branca and also in charge of Fazenda Salto do Tamanduá, Fazenda Ponte Velha do Tamanduá, Fazenda Bom Sossego, and Fazenda Castanho. They are equipped with thirty fire pads, a rake, and two portable radios.
- Two watchmen at Fazenda Passa Dois equipped with 12 fire pads, a water sprinkler, a back pump, and a portable radio.

Beside the equipments mentioned above, there are 12 fire pads, three hoes, a cutter, an ax, a scythe, and a fire starter at the head office.

During the driest periods, mainly from July to September, every morning, the watchmen patrol the farms under their responsibility and inform the head office by radio about the current situation or any possible risk of fire. The forest managers are informed about the location of forest crews and about the number of personnel deployed to each place. In emergency situations, these personnel are called to control the fire. The firefighting crew remains standing by in constant communication with the head office 24 hours a day, including weekends. In cases of fire, the first control is conducted by the watchman and by the personnel deployed to the farm. If the fire is severe, the watchman informs the head office so that crews from nearby farms are deployed for reinforcement. If necessary, a crawler tractor is used and the personnel from the saw-mill are also deployed. In cases of several incidences, the company places water barrels throughout the farms to fill up the pumps. If the fire gets out of control, the firefighting brigade opens firebreaks with axes, chainsaws, and the crawler tractor. Once the fire is under control, the area is watered with the pumps and watchmen remain in strategic sites.

There is a sign posted at the company yard indicating the degree of fire risk of the day and the watchmen at the farms are informed about the situation. The company uses the FMA (Formula Monte Alegre) method to determine the fire likelihood index.

$$I_{\text{present}} = I_{\text{cum.}} \cdot F + 100/UR$$

Where:

I_{present} = index estimated for the specific day;

$I_{\text{cum.}}$ = sum of indices from previous days;

F = Index correction factor (Table 5);

Ur = Relative air humidity (%);

Table 5. F correction factors based on daily rainfall

Daily rainfall (mm)	F
Lower than or equal to 2.4	1.00
2.5 to 4.9	0.70
5.0 to 9.9	0.40
10.0 to 12.9	0.20
Higher than 12.9	0.00

The interpretation of fire risk level estimated with FMA method (Table 5) follows the scale shown on Table 6. This index is cumulative and is based on the relative humidity at 01:00 PM and precipitation is used to restrict its daily accumulation.

Table 6. Scale of fire risk according to Monte Alegre Formula

I_{present}	Danger level
Lower than or equal to 1.0	Null
1.1 to 3.0	Small
3.1 to 8.0	Medium
8.1 to 20.0	High
Higher than 20.0	Very High

Forest fire risk survey at Timbó Empreendimentos Florestais S.A. farms.

- **Fazenda Araucaria** has at its borders Klabin S.A. and L Shamaedeck Ltda. FMU. Risk of forest fire is low because these companies also have efficient fire monitoring and control systems.
- **Fazenda Bom Sossego** has Fazenda Rigesa (Rigesa Celulose e Papel e Embalagens S.A.) as its neighbor and the farmers Abegair Castanho Pereira, Altair Carneiro, Nilson Castanho, Jordão Pereira, and Rosinha Cunha Pereira. The risk of forest fire increases a little because of the presence of farmers in the vicinity. However, the proximity to Fazenda Rigesa contributes to a better control.
- **Fazenda Campo Novo** has at its borders Klabin S.A., Seiva, Big Safra Participações, and Fazenda Tamanduá (one of Timbó Empreendimentos Florestais S.A. farms) and the farmers Sebastião Grein Costa, Airton Wilicznsk, and the São Roque Settlement. Fazenda Campo Novo is more susceptible to forest fire due to its proximity to the settlement.
- **Fazenda Machado** has at its borders Fazenda Rigesa and the farmer Victor de Deus Bueno.
- **Fazenda Mallon** is next to farms owned by Rigesa Celulose e Papel, and Pirâmide Ltda. It is also next to the properties of Mr. João Rafael Silva Oliveira, Durvalina Costa Bueno, and Arilda Aparecida da Rocha Bueno.
- **Fazenda Passa Dois** is in the vicinity of L Shamadeck Ltda, Agro Pastoral Gaboardi Ltda, Indústrias Zipperer S.A., Laminas e Compensados Sul Ltda farms and the farmers João Augusto Stefanos, Ademir Menegussi, Nicanor Gomes de Campos, Norberto Dalla Costa, Sebastião Ferreira, and Erocy Luvisa. There is a high risk of forest fire along the municipal road that crosses through the farm, from the stand number 181 to 116.
- **Fazenda Ponte Velha Tamanduá** is in the vicinity of Luiz Albinaus, Edson Luiz Hacker, Lademiro Nogatz, Enoemia Padilha Pereira, José Adilson, and Antonio Sergio Neppel properties and also the farms which belong to a company called Evasa – Agro Pecuária Mafra S.A. There is a risk of fire along the border with the farmer Bernardo Maeski.
- **Fazenda Salto Tamanduá** is in the vicinity of farmers Carlos Emílio Shimidt, Adilson Castanho, and Sebastião Froguel. There is a risk of forest fire along the road crossing the farm.
- **Fazenda Tamanduá** is in the vicinity of farms belonging to Rigesa, Seiva (Seiva S.A. Florestas e Indústrias) and Fazenda Campo Novo (one of Timbó Empreendimentos Florestais S.A. farms) and the farmers Melmiro Correa Nunes, Max Furtado de Souza, João Radael Silva de Oliveira, and Francisco Grein.
- **Fazenda Vaca Branca** is in the vicinity of farms belonging to Faquibrás Agro Industrial Ltda., Antônio Alves dos Santos, Pedro Alves dos Santos, Sebastião Alves dos Santos, Miguel Alves dos Santos, Paulo Tibes Antunes, Sebastião Maria, Carlos Emílio, Walter Schimidt, Virginia Tibes Pinto, Altair Pellizzaro, Diamantina Tibes Nizer, Jociel Tibes Grein, and Rosalina Tibes dos Santos. Two forest fires have occurred on this farm. The first was on October 6, 2004, which affected approximately five hectares with pine plantations. The most severe forest fire happened on August 21st and 22nd. The company reported it to the Regional Civil Police Department. The fire affected 20 hectares with pine plantations. There is a higher probability of forest fire along the borders with farms owned by Wiegando Olsen S.A. and Carlos Emílio Shimito.

Timber harvesting

Timbó Empreendimentos Florestais S.A. timber harvesting is semi-mechanized and is meant to supply pine logs to primary processing industries (sawmills and veneer mills) established at Timbó

Grande. These industries, in turn, supply processed raw-material to Compensados e Laminados Lavrasul S.A., established at Canoinhas, that manufactures plywood, veneer, blanks, and panels.

Pre-harvesting clearing

The stands where timber will be harvested are cleared of understories. This operation is performed manually, by using scythes.

Felling

At both selective thinning and clearcutting, the operations are semi-mechanized. Tree felling and debranching are performed with chainsaw and the logs are removed by skidding.

Environmental Planning

The environmental management plan is used as a guideline and to provide technical support to the FMU operational sector in order to comply with the current environmental legislations and with the concepts applied to different activities.

a) Definition of conservation areas

The sites assigned as conservation areas were identified and quantified. The permanent preservation areas were identified on maps and marked in the field in order to prevent any kind of impact.

b) Protection of native forest fragments

All fragments, independently of their sizes, must be identified on maps and located in order to ensure mitigation of edge effects.

c) Ways to reclaim conservation areas

Different ways to reclaim conservations areas are recommended, including the planting with native tree species, natural regeneration, and others.

1.4.5 Monitoring system

Timbó Empreendimentos Florestais S.A. monitors the following:

- Rational use of pesticides
- Pests and disease.
 - Leaf-cutting ants: *Acromyrmex* spp.
 - Wood-wasp: *Sirex noctilio* – controlled with support from EMBRAPA, through partnership with FUNCEMA
 - Invasive species: control of bamboo
- Labor accidents
- Workforce replacement
- Compliance with labor and tax laws by contractors
- Vegetation (permanent plots)
- Endangered wildlife
- Environmental education
- Reclamation of degraded areas
- Forest fire
- Forest productivity in volumes measured and production estimates
- Drinking water analysis
- Waste management
- Operational yield
- Seedling planting quality (mechanized, semi-mechanized, and manual).

- Product yield
- Social impacts
- Farm maintenance.

a) Wildlife and vegetation inventory and monitoring project

This project was established for the inventory of the biological diversity and is meant to increase the knowledge about the regional biodiversity. Moreover, they provide subsidies for the conservation area management plan. The permanent plots are monitored by a UNICENTRO (Universidade Estadual do Centro Oeste) staff for the control of bamboo.

The wildlife surveys that UNICENTRO conducted for Timbó Empreendimentos Florestais S.A. include mammal and bird communities found in different ecosystems. An initial report of vegetation and wildlife protection plan has been drafted.

b) Drinking water analysis

The water used for human consumption is periodically analyzed in order to monitor the quality of its treatment, in conformance to the current law.

c) Control and monitoring of exotic and native invasive species

Biological invasion takes place when animal or plant species are introduced into a given environment, get adapted to it, propagate, and dominate the native species. This causes loss of biodiversity and changes the natural ecological cycles. Not all exotic species can be considered invasive and not all invasive species are exotic. The problem is not associated with the number of invasive species; it is with the level of aggressiveness and domination of native species.

Timbó Empreendimentos Florestais S.A. is aware of the negative impacts caused by invasive species to the environment. Therefore, the company is committed to prevent, control, and eradicate them from Legal Reserves and Permanent Preservation Areas. The invasive species which are controlled at Timbó Empreendimentos Florestais S.A. are basically pine (exotic) and a native bamboo.

d) Waste management

The waste monitoring determines criteria to manage waste generated at Timbó Empreendimentos Florestais S.A. operational and administrative areas. The aspects focused on are the record, handling, temporary storage, and proper waste disposal.

e) Plan to control areas with initial erosion processes

The erosion control plan is applied to control erosion processes in selected areas within the company properties. The reclamation projects are drafted during the first semester and are put into effect in the second semester of each year. The land reclamation sites can be changed in case of a higher priority in other unpredicted erosion sites that eventually may appear.

1.4.6. Estimate of the sustainability of forest production

The production plan is based on the estimate by using the forest inventory data and on records of incoming logs. This plan is drafted and controlled by the forest manager. Before the harvesting phase, a pre-harvesting inventory is performed in order to estimate the volume to be harvested.

The system currently in use is still empirical. However, by observing the planted stands, it becomes evident that the company has preferred to purchase logs instead of harvesting from its own forests. This becomes evident by the advanced ages and delayed thinnings in its own forests.

1.4.7. Estimate of current and planned production

The planted pine plantation are used basically to supply logs to the Lavrasul sawmill and veneer mill, which are located in Timbó Grande (SC). The production estimates for the next five years are shown on Tables 7 and 8.

Table 7. Estimates of timber volumes (st) to be harvested at Timbó Empreendimentos Florestais S.A. FMU from 2004 to 2009, per management phase.

Management Phases	Year					
	2004*	2005*	2006*	2007*	2008*	2009**
Clearcut	310,000	228,900	396,700	284,700	339,100	247,176
Second Thinning		48,900	27,000	15,000	47,300	0
First Thinning	47,400	57,200	46,800	13,600	6,300	344,614
TOTAL	357,400	335,000	470,500	313,300	392,700	591,790

* historical values

** from 2009 on, figures correspond to estimates by Timbó Empreendimentos Florestais S.A.

Table 8. Estimate of timber volumes (st) to be harvested at Timbó Empreendimentos Florestais S.A. FMU from 2004 to 2009, per diameter class

Diameter Classes (m ³)	Year					
	2004*	2005*	2006*	2007*	2008*	2009**
8 to 14	21,100	25,000	25,700	13,000	15,500	18,300
15 to 17	36,800	43,000	44,200	22,200	25,400	29,100
18 to 24	98,000	101,000	133,300	87,800	114,800	100,100
> 24	201,500	166,000	267,300	190,300	237,000	132,000
TOTAL	357,400	335,000	470,500	313,300	392,700	279,500

*historical values.

** estimates by Timbó Empreendimentos Florestais S.A.

When the forest management was transferred to Timbó Empreendimentos Florestais S.A., this company decided to operate with a more detailed sorting by diameter classes and its estimates of harvesting from 2009 on are shown in Table 9.

Table 9. Estimate of timber volumes (st) to be harvested at Timbó Empreendimentos Florestais S.A. FMU from 2009 on, per diameter class, according to this company estimates

Diameter classes (cm)	Volumes (st)
8 to 10	16,245
11 to 18	172,658
19 to 25	178,443
26 to 35	119,108
> 35	105,336
TOTAL	591,790

1.4.8 Use of chemical pesticides

The pesticides used at Timbó Empreendimentos Florestais S.A. for the establishment of forests are basically to control ants and competing vegetation (Table 10). These products are not characterized as WHO class Ia and Ib and are not based on chlorinated hydrocarbons. They are not characterized as highly persistent and do not generate derivatives that remain biologically active and cumulative in the food chain. Thus, they have not been banned by International Agreements. The products are applied in a controlled manner. The workers involved in the application of these products were trained and use all required safety equipments. The products are applied in a way to minimize health risks and damages to the environment.

Table 10. Pesticides used at Timbó Empreendimentos Florestais S.A.

Class	Product	License	Target Pest	Active Principle	DL50 Oral (mg/kg)	DL50 Dermal (mg/kg)
Insecticide	Mirex-S	Yes	Leaf-cutting ants	Sulphluramide	>2.000 (rats)	>2000 (rats)
Herbicide	Glifosato Nortox N.A. (liquid)	Yes	Weed	Glifosate	>2.000 (rats)	>4.000 (rats)

The active ingredient of Mirex-S is Sulphluramide which has been banned by FSC. However, it is still in use by the company under an approved derogation process.

2 STANDARDS USED IN THE ASSESSMENT PROCESS

SCS Interim Standard for Forest Plantation Management Certification in Brazil (version 01 from February 2007) was used to assess Timbó Empreendimentos Florestais S.A. forest management. Most part of this standard is based on FSC Standard for Forest Plantations in Brazil (version 9.0) which was approved by FSC Brazil, but is still to be approved by FSC International. The Standard can be found at SCS website:

http://www.scs-certified.com/forestry/forest_programmat_fm.html.

3 THE ASSESSMENT PROCESS

3.1 Assessment Dates

- Stakeholder consultation held on October 13th, 2008 at 07:00 PM in Timbó Grande;
- Field assessment conducted from October 13th to 16th, 2008

3.2 Assessment Team

Dr. Vanilda R. S. Shimoyama 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 to handle chemical products and to introduce 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. For SCS, she has participated in the certification / recertification processes of eight forest management units, involving planted and natural forests. She has carried out more than 32 audits in Northern, Southern, Central, Southeastern, and Western Brazil.

Dr. Jarbas Yukio Shimizu is a forestry graduate from the Universidade Federal de Viçosa with M.Sc. in Forest Sciences from the University of Florida (USA), Ph.D. in Forest Genetics from North Carolina State University (USA), and post-doctor in Population Genetics from Oregon State University (USA). Other trainings include Forest Gene Resources Conservation and Forest Tree Species Micro-propagation in Japan; Conservation and Use of Phylogenetic Resources in Spain and Environmental Management System Lead Auditor intensive course in Brazil. He has more than 30 years experience in activities such as development of forest research projects in cooperation with IBDF/PNUD-FAO, and subsequently as a researcher for Embrapa Florestas, where he worked in silvicultural area, tree improvement, forest genetics, and conservation of forest gene resources. He was also the leader of several conservation and genetic improvement projects and held the position of Technical Director of the National Forest Research Center. He has also worked as a consultant in silviculture and improvement of fast growing tree species for official forest research institutions and forest companies in Chile, Mexico, Mozambique, Uruguay and Brazil. He has offered intensive tree improvement courses at Universidad Nacional de Colombia and at Universidade Estadual do Centro-Oeste (UNICENTRO-Campus de Irati), PR. He has also acted as advisor and co-advisor to forestry graduate students at both master and doctor levels at Universidade Federal do Paraná.

Dr. Rosemeri Segecin Moro is a graduate and M.Sc. in Biological Sciences from UFPR and doctor in Biology from UNESP (Universidade Estadual de São Paulo) Rio Claro campus. She has been an Associate Professor at Universidade Estadual de Ponta Grossa (UEPG) since 1987 in General Biology Department. She has also been teaching a course in Land Management since 2005 (UEPG) covering subjects such as Landscape Ecology and Environmental Planning. She has also held the teaching position on Environmental Management since 1998. She has advised a number of undergraduate and graduate students. She has developed projects in environmental issues sponsored by Fundação Araucaria and has a research partnership, through FAUEPG, in Nature Conservation with ICMBio, COPEL, and others. She has taken part of several research teams to elaborate Management Plans for Preservation Units and municipal Master Plans. She has been a member of the Board of Directors of Parque Estadual de Vila Velha and of the State Advisory Committee on Riparian Forests in the State of Paraná.

Dr. Aníbal Rodrigues is graduate in Agronomy (1976) and M.Sc. in Rural Sociology (1979) from Universidade Federal de Viçosa, and Doctor in Environment and Development from Universidade Federal do Paraná (2001) and Centre Nacional de la Recherche Scientifique/CNRS. He has experience in Agronomy and worked on the following subjects: rural development, strategies for development, socio environmental diagnosis, sustainable development and p&d systematic approach. He has coordinated field projects in socio economic research program in Guaraqueçaba rural area. He has developed technical scientific projects on family agriculture in the State of Paraná. Partnership: Grupo EDEN/Univ. Paris VII and IAPAR, from January 19 to February 8, 1987, Lisboa and Paris.

3.3 Assessment Process

Empreendimentos Florestais S.A. was extremely open, with positive attitude, and eager to help the auditing team with the arrangements of schedules and field visits, as well as in providing the necessary information such as reports and data on cost, social programs and labor, research and development, and statistics on production. The staff and the technical personnel involved in all phases of assessment were also very helpful and their openness was the key factor for the success of the auditing team within the set period of time.

The planted forest recertification assessment started on Oct. 13th, 2008 with an opening meeting, followed by the scheduling of field visits, checking of documents in the office, and field visits. At the end of the day, a Public Consultation has held at the city parish at 07:00 PM. In the following days, the auditors verified operational procedures in the field in wood harvesting, planning, tree felling, transport, labor safety. They assessed also the social and environmental aspects, according to the previously established itinerary. On the last day, the auditors convened to analyze the information gathered during the field work and to check them with the Principles, Criteria, and Indicators of the SCS Certification Interim Standards for Planted Forests. At the end of the session, preconditions corrective actions (CAR) with defined deadlines, and recommendations were established. These were presented to the board and the technical staff of the company at the closing meeting.

3.3.1 Itinerary

The itinerary of the auditing team for the assessment of forest management at Timbó Empreendimentos S.A. is shown on Table 11.

Table 11. Assessment team schedule and itinerary during the audit of the forest management at Timbó Empreendimentos Florestais S.A.

Date	Action	Farm/Place	Auditor
	Assessment opening meeting		
	Checking of documents (programs, maps, controls etc.)	Office	All
	Visit to FATMA (State environmental agency) to verify pending issues, licenses etc.	Caçador	Rosemeri
13/10/2008	Visit to Fazenda Vaca Branca to evaluate harvesting operations; interview with employees of service provider companies; verify conditions	Timbó Grande	Jarbas

	at pesticide storage area; inspect conditions of conservation areas; and conservation of forest roads.		
	Visit to public/community leaders. Visit to the neighboring family which is disputing an area at Fazenda Vaca Branca.	Timbó Grande; Vicinity to Vaca Branca	Vanilda, Anibal
	Stakeholder Consultation	Timbó Grande	All
	Harvesting and environmental assessment	Tamanduá, Vaca Branca, Passa Dois and Bom Sossego	Rosemeri
14/10/08	Assessment of timber harvesting activities (manual), skidding, cross-cutting. These activities are conducted by contractor companies. The assessment team interviewed employees and some contractors. Issues such as labor safety and labor health care were also evaluated.	Mallon	Vanilda, Anibal
	Checking of documents at Terramaster (this company coordinates operational activities) office.	Terramaster office	Vanilda
14/10/08	Meeting to re-schedule the itinerary of visits.		
	Meeting with representatives from Novo Horizonte S.A. and Timbó Empreendimentos Florestais S.A. to clear issues on forest management.	Novo Horizonte office	Vanilda, Jarbas
	Assessment at Fazenda Mallon and Fazenda Machado to evaluate harvesting operations, interview contractor's employees, verify the conditions of permanent preservation areas and conservation and maintenance of forest roads.	Mallon Machado	Jarbas, Anibal
	Checking of documents at Terramaster office.	Timbó Grande	Jarbas, Anibal
	Assessment of new plantations and wetlands.	Malon and Machado	Rosemeri
	Assessment of planning and forest inventory	Terramaster office	Vanilda
	Checking of documents (programs, maps, projects etc.).	Terramaster office	Vanilda Jarbas
	Visit to Timbó Grande rural workers union.	Timbó Grande	Anibal
15/10/08	Interview with workers in the office, medical care and labor safety departments, planning, records, management and human resources (training).	Terramaster office	Anibal
	Visit to the "Pastoral da Terra"	Timbó Grande	Anibal

	Committee		
	Meeting to evaluate conformance with FSC Principle, Criteria, and Indicators; drafting of corrective actions requested and recommendations.	Hotel	All
16/10/08	Closing meeting and presentation of assessment results to Timbó Empreendimentos Florestais S.A., TerraMaster, and Novo Horizonte S.A..	Office	All

3.3.2 Assessment of the management system

Vanilda and Jarbas assessed the social aspects through surveys of primary and secondary data related to several representative instances of the local and regional civil society, as well as the public environmental agencies concerned with forest activities. It was also given attention to working conditions, including safety, training, transportation, food, wage, and conformance with legislation. To that effect, the assessment team interviewed contractors. Special attention was paid to interviews with local leaderships and to visits to local communities. Representatives of local institutions were also interviewed during the auditing process.

For the analysis of environmental aspects, visits were coordinated by Jarbas and Rosemeri. Maps provided by the company were inspected and checked with the actual situation in the field, especially in regard to environmental issues. Special attention was given to areas protected by law such as Permanent Preservation Areas and Legal Reserves. The objective was to verify whether these areas were not in use for production purposes such as with pine plantations or submitted to any sort of disturbances either by the company, the neighbors, or the population in general. Among disturbances, there could be opening of roads, surface water discharge, selective exploitation, illegal hunting, or any other forms of disturbance. Sampling assessments were conducted in remnant natural vegetation in order to assess the level of man-made disturbances and the efficiency of protection and conservation measures. Special attention was given to the maintenance of internal roads, the procedures and their impact on water streams and on the remnant natural vegetation. Areas where wildlife and vegetation monitoring programs, as well as environmental education activities are under way were also visited.

For the analysis of forest operations, visits were coordinated by Vanilda and Jarbas. These included site preparation, planting, harvesting, skidding, and transport. Other areas included sites where these operations had already been finished in order to assess their impacts on the environment. The situation of forest road maintenance, control of invasive species, planning systems, forest production control, records and map bases, as well as all related documents were verified.

3.3.3 Selection of farms for assessment

The farms selected for detailed assessment are shown below on Table 12.

Table 12. Timbó Empreendimentos Florestais S.A. farms selected for assessment

AUDITOR	FARM/PLACE
Vanilda	Vaca Branca, Mallon, adjacent neighbors, public and community leaders, administrative company office.
Rosemeri	Tamanduá, Vaca Branca, Malon, Machado, Bom Sossego, Passa Dois
Jarbas	Vaca Branca, Mallon, Machado
Aníbal	Vaca Branca, Mallon, adjacent neighbors, public and community leaders

3.3.4 Sites visited

Table 13 shows the main reasons why the assessment team visited each of the selected farms. In several instances, a given site was audited on different days and under different perspectives in order to obtain a thorough view of forest activities.

Table 13. Reasons for the visits to farms of Timbó Empreendimentos Florestais S.A. FMU

PLACE AND FARMS	REASON
Timbó Grande and region	- Stakeholder Consultation, visit to public and community leaders - Field verification of community socioeconomic conditions, verification of possible conflict, company-community integration, and level of accessibility to natural resources in company areas.
Tamanduá, Passa Dois, Bom Sossego.	- Field checking of map data and environmental issues: protection of remnant natural areas; marking, protection, and reclamation of Permanent Preservation Areas and Legal Reserves; road conservation, erosion and silting processes; verification of inventory projects and wildlife and vegetation monitoring.
Vaca Branca	- Field checking of map data and environmental issues: protection of remnant natural areas; marking, protection, and reclamation of Permanent Preservation Areas and Legal Reserves; road conservation, erosion and silting processes; verification of inventory projects and wildlife and vegetation monitoring.
Mallon,	- Visit to the area on dispute - Verification of silvicultural operations involving manual and mechanized herbicide application, general conditions of forest roads, safety of personnel transportation, and pesticide storage.
	- Field checking of map data and environmental issues: protection of

Machado	remnant natural areas; marking, protection, and reclamation of Permanent Preservation Areas and Legal Reserves; road conservation, erosion and silting processes; verification of inventory projects and wildlife and vegetation monitoring. - Verification of wetlands and conditions water intake areas.
Mallon, Machado	- Verification of silvicultural operations involving manual and mechanized herbicide application, general conditions of forest roads, safety of personnel transportation, and pesticide storage. - Assessment of harvesting operations, such as skidding and cross-cutting; maintenance of forest roads; working conditions; transportation system, labor safety, food and cleanliness of rest areas.
Bom Sossego	- Assessment of the area with potential for transformation into a Private Natural Reserve Heritage (“Monge João Maria” Cave)
Caçador	- Visit to the regional office of the state environmental agency (FATMA) to verify licensing processes, pending issues, pertaining laws and other aspects.
Timbó Grande Office	- Analysis of documents and interview with the personnel in charge of inventory, monitoring and conservation areas. - Storage, handling and control of pesticides.

3.3.5 Stakeholder consultation

According to SCS procedures, stakeholder consultation involving the most relevant local leaders is one of the most important components of the forest management assessment process. Stakeholder consultations were held before the field assessment by sending letters to a number of institutions (Annex 01). There were several consultations in several localities throughout the assessment. Moreover, the assessment team interviewed representatives from several segments of the civil society and people living in the neighborhood of the FMU. The assessment team interviewed labor union leaders, representatives from public institutions and private organizations, local leaders and politicians; people living in the vicinity of Timbó Grande city were also interviewed. The main objectives of the consultation were to:

- Gather information from stakeholders about their perceptions on the strong and weak points of Timbó Empreendimentos Florestais S.A. forest management and the interaction of the company with the neighboring population.
- Verify whether forest managers have arranged stakeholder consultation to identify any High Conservation Value Areas.

The main stakeholders involved in this assessment were identified from a list presented by the company and by checking other sources. The following groups were defined as the main stakeholders:

- Company employees, including directors and field personnel
- Contractors
- Neighboring property owners
- People living in the neighborhoods
- FSC-Brazil members
- Local and regional members of environmental NGO
- Local and regional members of social NGO
- Company clients
- Federal, state, and municipal environmental agency officials (license, inspection)
- Other relevant groups.

3.3.5.1 Model - Stakeholder consultation at Timbó Empreendimentos Florestais S.A.

INVITATION LETTER PUBLIC MEETING

FSC certification of planted forest management conducted in Timbó Grande and Santa Cecilia regions, State of Santa Catarina

TIMBÓ EMPREENDIMENTOS FLORESTAIS S.A.

SCS – Scientific Certification Systems (www.scs-certified.com) – FSC-endorsed entity invites you to a stakeholder consultation that marks the beginning of field assessments as part of the process of **FSC Recertification** requested by Timbó Empreendimentos Florestais S.A. The sites to be assessed in the company properties span over five municipalities in the Timbó Grande and Santa Cecilia regions, in the State of Santa Catarina. At these sites, planted pine forests cover 13,869.23 ha to be recertified; 7,624 ha are effectively planted to pines and 4,409 ha are set aside for native vegetation conservation areas.

The objective of **Timbó Empreendimentos Florestais S.A.** forest plantations is to supply logs for primary processing industries such as sawmill and veneer mill in Timbó Grande. These companies, in turn, supply raw-material to Compensados e Laminados Lavrasul S.A., which is located in Canoínas; this company manufactures plywood, veneer, blank, panels etc.

Timbó Empreendimentos Florestais S.A. general objectives are in regard to establishment of forest stands to produce timber for industrial purposes – raw-material for sawmill and veneer industries, and the possibility to protect watersheds. These objectives can only be fulfilled if the sustainability of the system as a whole is maintained, either in the aspects production and quality of the forest and products or in the use of production techniques that are compatible with the equilibrium and conservation of the environment. It is assumed that a productive combines planting of species for industrial use with preservation of the regional wildlife and natural vegetation.

Timbó Empreendimentos Florestais S.A. seeks to perform its social functions in order to contribute with the development of Timbó Grande region. The company values the workforce and, since certification was awarded, it has stimulated contractor companies to hire local workforce. The percentage of local workforce is as high as 70 %.

Specifically in the education area, Timbó Empreendimentos Florestais S.A. has worked in partnerships with research institutions and state universities; it offers internship programs for students from several institutions. Moreover, it developed an Environmental Education Program for children and promoted improvements in education level of its employees, among other activities.

Timbó Empreendimentos Florestais S.A. guarantees its commitment with the sustainable development of the region by applying monitoring programs and conservation of biodiversity, soil, and water resources, always focused on minimizing the impacts of its activities on the environment by using adequate management techniques.

The forest certification process requires participation of the **people** and of the **civil society**. Therefore, you are invited to attend the **Stakeholder Consultation** to be held on **October 13, 2008 at 06:30 PM** at São José Catholic Church, located at Rua Germano Alves de Almeida, Centro, Timbó Grande, SC.

It is emphasized that the participation of representatives of several instances of the civil society is essential because Forest Certification assumes an exercise in citizenship from the part of individuals and institutions directly interested in the issue. Similarly, the applicant must perform its forest management in conformance with FSC Principle and Criteria, which assumes that the company promotes a management that is *socially fair, environmentally adequate, and economically viable*.

It is important to mention that the **Stakeholder Consultation** will be held without the presence of the company. Its objective is to gather suggestions and concerns that can be used as subsidies for the field assessment to evaluate the performance of forest management in *social, legal, environmental, and economic* aspects. Thus, your participation is important so that everyone can bring up concerns, comments, suggestions, criticism, or expose new evidences that may be useful in the process. These will be fully recorded in the presence of all participants.

The meeting will be divided into two parts:

- a) Presentation of the forest certification process, according to FSC (Forest Stewardship Council) Standards; at this phase, participants can clear any doubt.
- b) Expression of concerns or aspects that participants would like to see included in Timbó Empreendimentos Florestais S.A. forest recertification process.

For a more effective contribution, you can find attached a **Stakeholder Consultation Questionnaire** that can be filled out and sent to the following email: vanilda.souza@sysflor.com.br or, if you prefer, by fax **(0xx43) 3535-4906**. Moreover, if you have interest in obtaining more information about the **Standards** used by SCS for Forest Certification in Brazil, this document can be found at SCS website (http://www.scs-certified.com/forestry/forest_programmat_fm.html). It is possible to download the document in Word format free of charge.

Therefore, **everyone is invited** to participate in the Public Meeting, **independently of your having formally received this form or not**. We request that you **publicize** the event and the attached Questionnaire to institutions and people of your knowledge that may have interest in taking part of the process.

Respectfully

Vanilda Rosângela de Souza
SCS / Sysflor Auditor

contribute to the process.

OBS.: a) The identity of the contributors that make observations in this questionnaire will not be exposed in the documents of the Certification Process.

b) The participation of interested parties in this Public Consultation does not imply any co-responsibility in the Certification Process.

3.3.5.3 Summary of stakeholder concerns, perspectives, and responses from the team, where applicable.

Social Concerns

- Agropastoril Novo Horizonte and Timbó Empreendimentos Florestais S.A. should make public the purchase and sale processes, considering that the forest and industrial activities of both companies correspond to most of the employment in the municipality.
Reply: Because of the terms in the contract, Timbó Empreendimentos Florestais S.A. cannot publicize such information. However, when Timbó Empreendimentos Florestais S.A. took over the management, identification boards were posted at all farms and local leaders were contacted.
- Since Timbó Grande is a small city, there are not many choices of leisure, especially for young people. How does the company see this issue? Is there any interest in improving it?
Reply: Timbó Empreendimentos Florestais S.A. understands that this issue is in the responsibility of the public administration. However, the company is ready to offer support to the public administration on this matter.
- There is a great deal of community satisfaction by the fact that Agropastoril Novo Horizonte and, presently, Timbó Empreendimentos Florestais S.A. forest management was awarded with FSC certification, thereby requiring that the company comply with legal requirements and promotion of socioeconomic and safety improvements. How does Timbó Empreendimentos Florestais S.A. intend to continue handling these issues and the programs that were under way?
Reply: Timbó Empreendimentos Florestais S.A. is happy to have acquired certified forests and has committed itself to continue with good management practices and with necessary improvements in order to maintain the FSC “good management” certificate.
- The environmental education program used to be one of the main channels of communication and of access to the community. Does the company intend to continue this program?
Reply: Timbó Empreendimentos Florestais S.A. understands that environmental education is an important channel of communication and it will be maintained within the company Social Development Plan.
- The office of Terra Master, the operational administrator, is always closed. How does Timbó Empreendimentos intend to maintain a dialogue channel to solve claims from the community?
Reply: During the transition phase there were some difficulties and adjustments were needed for the effective establishment of TerraMaster team in Timbó Grande. The office is already open during business hours and ready to receive any type of communication. Besides this communication channel, Timbó Empreendimentos Florestais S.A. office telephone was also put at the community disposal.

Economic concerns

- The community is concerned about possible implications to the municipality of the acquisition of

Agropastoril Novo Horizonte forest operations by a foreign company. How does the new owner see this issue?

Reply: Timbó Empreendimentos Florestais S.A. continues normally with the forest activities since the acquisition. The capital is foreign but the company is Brazilian and managed by Brazilians. The company sees no implication from the fact that its capital is foreign.

Environmental concerns

- How does the company see the possible damaging effects of the expansion of pine monoculture to the environment in Timbó Grande region? How is it possible to attenuate these damages?

Reply: The company believes that, as in any other crop, pine plantations also cause some impact. However, Timbó Empreendimentos Florestais S.A. practices modern and adequate techniques to minimize such damages.

3.3.6 Other assessment techniques

No other assessment technique was used, besides those normally in use such as field visits, interviews, public consultation, and checking of documents.

3.4 Total Time Spent on Audit

For the assessment of Timbó Empreendimentos Florestais S.A. forest management, an assessment team was set up to verify all company documents and visit operations at FMU. At the farms included in the scope of certification, employees and stakeholders were interviewed in order to gather subsidies and evidences of conformance or not to FSC principles and criteria. In all, 198 assessment hours were spent *on location*. That corresponds to 24.7 working days (Table 14).

Table 14. Working hours dedicated by auditors to different stages of assessment of Timbó Empreendimentos Florestais S.A. forest management

Activity	Auditors			
	Vanilda	Rosemeri	Jarbas	Anibal
Stakeholder consultation - preparation	16	0	0	16
Stakeholder consultation - meeting	4	4	4	4
Documentation	12	14	12	6
Field	12	22	20	8
Assessment meeting	8	8	8	8
Closing meeting	3	3	3	3
Total	55	51	47	45

3.5 Process of Determining Conformance

The certification standards defined by FSC involve three hierarchical levels: the Principles which cover general aspects, the Criteria which detail each principle, and the Indicators which detail each criterion. According to SCS Forest Conservation Program assessment protocols, the assessment team, collectively, must decide whether a given forest operation is in conformity with any applicable indicator within the relevance of the certification standard. Each non-conformity to a criterion or sub-criterion must be evaluated whether it is a major or a minor non-conformity. Not all indicators have the same importance and there is no numerical form to determine whether a given operation is in non-

conformity. The team must use a collective judgement to evaluate each criterion and decide on its conformity. When an operation is considered to be in non-conformance for a given criterion, at least one of its indicators must be evaluated as in non-conformity. Corrective actions request (CAR) are defined for each non-conformity. Major non-conformities are known as Major CAR and minor non-conformities as minor CAR or just CAR.

Interpretations of Major CAR (Preconditions), Minor CAR and Recommendations

Major CAR/Preconditions: these are major non-conformances, either individually or in combination with non-conformances to other indicators, result (or are likely to result) in a fundamental failure to achieve the objectives of FSC criterion, given the uniqueness and fragility of forest resources. These are corrective actions that must be complied with or closed prior to the award of the certificate. If major CAR is identified after certification, the timeframe to correct it is typically shorter than for a minor CAR. The certification will remain contingent on the certified operations response to the CAR within a defined time frame.

Minor CAR: these are corrective action requests in response to minor non-conformances, which are typically limited in scale or can be characterized as an unusual lapse in the system. Corrective actions must be closed within a specified time period after awarding the certificate.

Recommendations: these are suggestions that the audit team presents in order to help the company to achieve an ideal performance. Actions toward the recommended issues are voluntary and do not affect the maintenance of the certificate. Recommendations can be changed to CAR if the company performance with respect to a given criterion is affected by the negligence in complying with these recommendations.

4 RESULTS OF THE EVALUATION

Verification of conformance to major CAR

Timbó Empreendimentos Florestais S.A. has complied with all pre-conditions and sent in the documents demonstrating that the corrective actions were adopted. The assessment team evaluated the documents and concluded that the corrective actions requested were complied with (item 5.2).

Table 15 shows the findings by the evaluation team as to the strengths and weaknesses of the forest management operation relative to the FSC Principles of forest stewardship. Corrective action request (CAR) related to each principle are also presented.

Table 15. Main strengths and weaknesses of the forest management at Timbó Empreendimentos Florestais S.A. in relation to FSC P&C.

Principle/Subject area	Strengths relative to the standard	Weaknesses relative to the standard	CAR/REC #s
<p>P1: Compliance with the law and with FSC Principles</p>	<p>Conformance with federal, state and municipal laws and their requirements.</p> <p>Payment of all fees and taxes. Respect to all International Agreements and Treaties sanctioned by Brazilian National Congress</p> <p>The company is concerned with monitoring and preventing illegal activities at its properties, including illegal hunting.</p> <p>There is long-term commitment to comply with FSC Principle and Criteria</p> <p>Permanent Preservation Areas and Legal Reserves will be preserved and there is long-term commitment to preserve them.</p> <p>Library with legal aspects and international conventions associated with social environmental aspects.</p>	<p>Logs stored at Permanent Preservation Areas were observed.</p> <p>Recent pine plantations (from July 2007 to June 2008) were verified in some Permanent Preservation Areas (areas close to water streams).</p> <p>Fazendas Tamanduá, Bom Sossego, Machado and Ponte Velha II need to have their Legal Reserves regularized.</p> <p>There are non-conformities associated with labor laws, fiscal fees related to integral payment (in cash) to all workers (direct employees and contractors) working at the FMU.</p> <p>There is no plan for reclamation of degraded land, specifically for gravel quarries.</p> <p>Existence of a cave which, by local tradition, is considered to be one of the latest hideouts of Monk João Maria, a messianic leader of the Contestado War. However, this cave has not yet been evaluated for the creation of an RPPN (Private Reserve of Natural Heritage).</p>	<p>Major CAR 2008.04</p> <p>Major CAR 2008.05</p> <p>Minor CAR 2008.08</p> <p>Minor CAR 2008.07</p> <p>Minor CAR 2008.15</p> <p>REC 2008.02</p>

P2: Rights and responsibilities of land use and tenure	There is clear documentation and evidences of rights to use the forest resources in the properties.	Need to definitely solve the dispute over part of Fazenda Vaca Branca with a local family.	Minor CAR 2008.09
	There is no local community with legal or custom right to use of the forest area, except during araucaria seed harvest.	The company needs to anticipate and permit controlled gathering of araucaria seed by the local communities.	REC 2008.03
P3: Indigenous and traditional peoples' rights	There is no indigenous or traditional community in the vicinity of the company properties. Thus, this Principle is not applicable	Even though there is no indigenous population in the region, the company should preserve areas and sites with special cultural, religious, and historical values associated with Guerra do Contestado (Constestado War).	REC 2008.02

<p>P4: Community relations & workers' rights</p>	<p>Generation of jobs in one of the neediest regions in the State of Santa Catarina.</p> <p>Boosting the local economy by hiring contractors and suppliers in the region.</p> <p>The company executes social projects, which have contributed for the general development, mainly in Timbó Grande, where the Human Development Index is the lowest in the State of Santa Catarina. Timbó Empreendimentos Florestais S.A., which is taking over the management of these forests, must give continuity to such programs.</p> <p>The company has established a simple and efficient communication channel with the local population and cooperators through a P.O. Box with pre-paid postage.</p> <p>The company provides support to public institutions, mainly in social and education issues.</p> <p>The company is concerned with the training and education of its employees, according to the Management Plan, mainly in regard to safe timber harvesting procedures.</p> <p>Benefits offered to its cooperators, which are better in comparison to the regional workforce.</p> <p>Significant improvements in the system to monitor labor safety.</p>	<p>The Social Development Plan must be reevaluated on issues of education requirements (including environmental education), health and improvement of income, incorporating actions and programs developed during the first five years of certification; the company shall also articulate its actions with other regional companies and social leaders.</p> <p>Insufficient number of radio sets for communication in working areas.</p> <p>The social impact survey has not been updated and does not contain mitigating measures to potential negative impacts.</p> <p>The mechanism to solve complaints and claims of the community associated with the FMU operations has not been formalized, and there are no response mechanisms.</p> <p>The list of Individual Protection Equipment required for every forest activities has not been updated. Forest workers have not been informed about mandatory Individual Protection Equipments for each function.</p> <p>The transportation of forest workers is not always in conformance with the weather conditions of the region.</p> <p>The efficiency of first-aid training programs has not been assessed.</p>	<p>Major CAR 2008.01 REC 2008.01</p> <p>Major CAR 2008.02</p> <p>Minor CAR 2008.10</p> <p>Minor CAR 2008.11</p> <p>Minor CAR 2008.12 REC 2008.7</p> <p>REC 2008.05</p> <p>REC 2008.04</p>
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<p>P5: Benefits from the Forest</p>	<p>The forest activities are economically feasible and take into account environmental, social, and operational costs, ensuring investments for maintenance of its ecologic productivity.</p> <p>The equipments are technically adequate and economically viable.</p> <p>The company promotes the use of local services and suppliers.</p> <p>FMU environmental services are identified.</p> <p>Wood harvesting does not exceed the sustainable production levels</p>	<p>Lack of a program to minimize waste of timber resulting from cross-cutting the logs and sorting into diameter classes.</p> <p>The company does not promote development of non-timber activities at the Legal Reserves.</p>	<p>Minor CAR 2008.13</p> <p>REC 2008.06</p>
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<p>P6: Environmental Impact</p>	<p>There are evaluations of the impacts caused by several activities by the company.</p> <p>There is a description of mitigating measures of Forest Management environmental impacts for each activity.</p> <p>There are evidences of initiatives to control hunting and records on the occurrence of such events.</p> <p>Representative samples of natural ecosystems are being protected and their areas are marked on the maps.</p> <p>There are firefighting and prevention programs.</p> <p>No pesticide classified by the World Health Organization as of types 1A and 1B is used; no pesticide based on chlorinated hydrocarbons is used, nor those which remain biologically active and get accumulated in the food chain.</p> <p>Chemical products, containers, liquid or solid non-organic residues, including fuels and lubricant oil are disposed of in an environmentally-friendly manner and in adequate place.</p> <p>No Genetically Modified Organism is used.</p> <p>No natural forest is converted into areas for other purposes.</p>	<p>There is no evaluation of the impact of forest management on natural ecosystems. There is need to improve the Wildlife Survey Program to provide a background to the forest management, with emphasis on rare and endangered species.</p> <p>Evaluation of environmental impact by timber harvesting equipments and mitigating measure are lacking.</p> <p>There is a need to improve conservation conditions at sites with relevant cultural value in the company FMU.</p> <p>The Waste Management Plan needs to be reviewed, including final destination.</p> <p>Even though the organization has developed a program to eradicate exotic species from Permanent Preservation Areas and Legal Reserves, it is necessary to formalize deadlines and determine areas where such activities will be performed.</p> <p>There is not a plan to reclaim degraded areas, specifically for gravel quarries.</p> <p>The storage of pesticides is non-conformant with the current law and with the manufacturer's instructions. No information is given to the neighbors about pesticide applications, or about precautionary measures adopted by the company for this activity.</p> <p>The Legal Reserves at Tamanduá, Bom Sossego, Machado, and Ponte Velha II farms are still to be formalized.</p>	<p>Minor CAR 2008.14</p> <p>Minor CAR 2008.18</p> <p>REC 2008.02</p> <p>Minor CAR 2008.16</p> <p>Minor CAR 2008.17</p> <p>Minor CAR 2008.15</p> <p>Minor CAR 2008.19; 20; 21</p> <p>Minor CAR 2008.08</p>
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<p>P7: Management Plan</p>	<p>There is a Management Plan which is adequate to the intensity of the operations proposed. It has been put to practice and updated. The long-term objectives and the means for fulfillment are clearly described.</p> <p>There is a plan to prevent forest fire, including surveillance structure (observation towers, communication means and equipment), silvicultural practices (firebreaks maintenance), identification of water intake sites and accesses routes, and ready accesses to equipments and trained crews with clearly defined responsibilities in firefighting.</p> <p>A summary with the main elements of the Forest Management Plan is available to the public.</p>	<p>There is not a clear description of areas assigned for native forest preservation, plantation, infrastructure, and their locations on the Management Plan.</p> <p>The Management Plan needs to be updated by eliminating inconsistencies and descriptions of activities unrelated to forest management. It must be updated with recent data.</p> <p>The cartographic base and the FMU maps still contain errors in relation to the actual situation in the field in a number of aspects such as roads, dams, stands etc.</p> <p>The Management Plan does not include actions to identify and protect rare and/or endangered species.</p> <p>There is no evaluation of impacts from wood harvesting equipments and no mitigating measure has been adopted.</p>	<p>Major CAR 2008.03</p> <p>Minor CAR 2008.22</p> <p>Minor CAR 2008.23</p> <p>Minor CAR 2008.14</p> <p>Minor CAR 2008.18</p>
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<p>P8: Monitoring & Assessment</p>	<p>Monitoring data are recorded, retained, and are available for the planning and review of forest operations.</p> <p>The following indicators, among others, are studied and monitored:</p> <p>Yield of all forest products</p> <p>Growth rate, regeneration, and phytosanitary conditions of the forest.</p> <p>Economic viability, productivity, and efficiency of forest management.</p> <p>Frequency of forest fire and areas affected.</p> <p>Soil fertility</p> <p>The work method allows to monitor and trace every forest product from its source</p>	<p>There is not a program to monitor wildlife and vegetation.</p> <p>In the process to transfer certified areas from Agropastoril Novo Horizonte to Timbó Empreendimentos Florestais, failures were observed in regard to data bank required to ensure ecologic productivity of the forest.</p> <p>There is no survey regarding forest fragments and connectivity among them.</p>	<p>Minor CAR 2008.24</p> <p>Major CAR 2008.06</p> <p>Minor CAR 2008.25</p>
<p>P9: Maintenance of High Conservation Value Forest</p>	<p>More than 20 % of Timbó Empreendimentos Florestais S.A. area is protected with native forest reserves – possible HCVF will be designated within these protected areas.</p> <p>There are conservation areas representing local ecosystems and their ecologic integrity is ensured.</p>	<p>There is a need to define specific areas as High Conservation Value Forests.</p>	<p>Minor CAR 2008.26</p>

P10: Forest Plantation	Good extension of plantations shown on maps, with percentages of protected natural ecosystems.	The Management Plan does not include descriptions of areas dedicated to planting, conservation, and infrastructure nor their location on maps.	Major CAR 2008.03
	The selection of species is based on the general adaptation to the site and on conformity to the objectives of the management plan.	No APP (Permanent Preservation Areas) containing exotic species has been located on maps. These are needed for later definition, in conjunction with the state environmental agency, of plans to eradicate exotic species and reclaim these areas	Major CAR 2008.05
	There are strategies to protect water resources, including erosion control and soil conservation techniques.	There is no evaluation of impacts from wood harvesting equipments and no mitigating measure has been adopted.	Minor CAR 2008.17
	High level silvicultural techniques.	The company has not updated the survey on social impacts.	Minor CAR 2008.10
	Measures to prevent and minimize outbreaks of pest and forest fires.		
Integrated pest management methods used.			

5 CERTIFICATION DECISION

5.1 Certification Recommendation

As determined by the full and proper execution of the SCS Forest Conservation Program evaluation protocols, the evaluation team hereby recommends that Timbó Empreendimentos Floresgtais S.A. be awarded the FSC certification as a “Well-Managed Forest” subject to the corrective action requests stated in Section 5.2. Timbó Empreendimentos Florestais S.A. has demonstrated that its system of management is capable of ensuring that all of the requirements of the SCS Interim Standard for Planted Forest Management certification in Brazil, Version 01 from November 2007 are met over the forest area covered by the scope of certification. Timbó Empreendimentos Floresgtais S.A. has also demonstrated that the described system of management is being implemented consistently over the forest area covered by the scope of the certificate.

5.2 Initial Corrective Action Requests (CAR)

Timbó Empreendimentos Florestais S.A. accomplished all the preconditionings and sent documents to the auditors to show the corrective actions performed. The auditors assessed the documents and concluded that the corrective actions were complied with.

Background/Justification: Agropastoril Novo Horizonte developed social projects which have helped the general development, mainly of Timbó Grande municipality where the Human Development Index is the lowest in the State of Santa Catarina. Timbó Empreendimentos Florestais S.A., which is taking over the management of these areas, shall continue with these programs.	
Major CAR 2008.01	Timbó Empreendimentos Floresgtais S.A. must reevaluate the guidelines of the Social Development Plan including the following requirements: Education (including environmental education). Health. Sanitation Income improvement The new guidelines must incorporate Actions and Social Programs developed during the first five years of Forest Management certification in order to ensure the implementation/improvement required for the continuity of such actions.
Reference	FSC Criterion P4.c1.i2
Company action/Auditor’s Observation: In order to reevaluate the guidelines of the Social Development Plan, Timbó Empreendimentos Florestais S.A. is updating its social diagnostics, which were previously done by Agropastoril Novo Horizonte S.A. The company presented a preliminary social development plan including the four items mentioned in the CAR. This will be revised and, possibly improved with the completion of social diagnostics. The results from these diagnostics will be evaluated at the audit to be held in July 2009.	
Position until the date of the report: CAR complied.	

Background/Justification: Communication equipments at work areas are essential for the general operations, mainly in emergency situations. Even though the company has radio communication in the work areas, radio sets are not in sufficient number and most of them do not function properly.	
CAR Maior 2008.02	The company must comply with P4.c2C.i8 requirement related to availability and adequate operating conditions of communication equipments at work areas.
Reference	FSC Criterion P4.c2C.i8
Company action/Auditor's Observation: The company acquired a new communication system, including both fixed and repeater radio stations, 12 portable radio sets and other accessories. Fiscal documents referring to the acquisition of this material were presented.	
Position until the date of the report: CAR complied.	

Background/Justification: The Management Plan presented by the company is outdated and does not include, among other items, description and characterization of forest resources to be managed. Precise information on areas to be recertified is lacking.	
Major CAR 2008.03	The company must update its Management Plan and include tables with the following data: Total area of each farm. Legal Reserve areas Permanent Preservation Areas; and Areas effectively planted with pine.
Reference	FSC Criterion P7.c1.i7
Company action/Auditor's Observation: Timbó Empreendimentos Florestais S.A. revised the areas within the scope of certification and updated the information requested (total area, conservation areas, and areas effectively planted)	
Position until the date of the report: CAR complied.	

Background/Justification: According to Brazilian law, the company must preserve the integrity of the protected areas. However, it was verified that Permanent Preservation Areas were being used as log storage site.	
Major CAR 2008.04	The company must discontinue log storage at Permanent Preservation Areas
Reference	FSC Principle P1 – Legislation/ Forestry Code
Company action/Auditor's Observation: The logs stored at Permanent Preservation Areas were removed. The company sent out a memo to harvesting contractors stating the prohibition of this practice, along with a letter informing the incident and a request to avoid it.	
Position until the date of the report: CAR complied.	

Background/Justification: Strips of Permanent Preservation Areas (including wetlands), as well as the Legal Reserves should not be disturbed.	
Major CAR 2008.05	The company must identify on maps all Permanent Preservation Areas containing exotic species so that, in near future, it can define eradication and reclamation plans in accordance with environmental agencies.
Reference	FSC Criteria P1.c1.i2; P10.c6.i3
Company action/Auditor's Observation: The company indentified on the maps all Permanent Preservation Areas on which pine are present. However, more detailed maps will be drawn only after georeferencing the areas	

Position until the date of the report: CAR complied.

Background/Justification: After changes in the administration of the certified forests, previously owned by Agropastoril Novo Horizonte, the new owner, Timbó Empreendimentos Florestais S.A., ended up without the historic data (information/records) needed to continue with the work after five years of certification of forest management.

Major CAR 2008.06	Agropastoril Novo Horizonte must ensure the transfer of certified areas to Timbó Empreendimentos Florestais S.A., including the data bank, which is required to maintain the ecologic productivity of the forest.
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Reference	FSC Criterion P8.c2
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Company action/Auditor's Observation:
Timbó Empreendimentos Florestais S.A. formally requested the essential electronic data for continued ecological productivity of its forest operations. Some documents were received, such as the Social Impact Management Plan, Environmental Impact Management Plan, and the Characterization of Vegetation and Wildlife, in addition to the Audit Reports.

Position until the date of the report: CAR complied.

Minor CAR

Background/Justification: According to the labor law, fiscal fees need to be paid based on the total value paid monthly to the employees and not in reference to the base wage, except if there is no additional overtime hour, on the road hours, and production-based bonuses.

Minor CAR 2008.07	The company needs to comply with the labor law in regard to fiscal fees on whole payments (in cash) to all employees (direct and contractors) working at the FMU.
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Deadline	July 2009
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Referência	FSC Criterion P1.c2.i1
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Background/Justification: Timbó Empreendimentos Florestais S.A. has already registered almost all of its Legal Reserves, as mentioned in the registration of its properties. However, there are still four farms that need to have their Legal Reserve areas registered.

Minor CAR 2008.08	The company needs to regularize the Legal Reserves at Tamanduá, Bom Sossego, Machado, and Ponte Velha II farms.
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Deadline	2009 Annual Audit
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Reference	FSC Criterion P1.c7.i1; P6.c4.i2
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Background/Justification: Timbó Empreendimentos Florestais S.A. has followed the dispute in court over part of Fazenda Vaca Branca with land squatters.

Minor CAR 2008.09	Timbó Empreendimentos Florestais S.A. needs to present annual reports on court actions regarding the dispute over part of Fazenda Vaca Branca.
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Deadline	2009 Annual Audit
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Reference	FSC Criterion P2.c1.i2; P2.c3.i4
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Background/Justification: Timbó Empreendimentos Florestais S.A. has not updated the social impact survey done for the certification, making it impossible to compare situations of communities prior to, during, and after the interventions with the social programs in the last five years.

Minor CAR	The social impacts (positive and negative) of Timbó Empreendimentos
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2008.10	Florestais S.A. activities must be reassessed and updated. For negative impacts, the company needs to develop and perform mitigating measures.
Deadline	2009 Annual Audit
Reference	FSC Criteria P4.c4.i1; P10.c8a

Background/Justification: Timbó Empreendimentos Florestais S.A. has not presented a formal process to address complaints and other communication it receives from stakeholders near the areas where it engages in management activities.	
Minor CAR 2008.11	Timbó Empreendimentos Florestais S.A. needs to formalize claim and complaint solution procedures at the communities associated with the forest management operations, including a mechanism for solution of complaints.
Deadline	2009 Annual Audit
Reference	FSC Criterion P4.c5.i1

Background/Justification: The audit team did not see evidence of monitoring of use and replacement of individual protection equipments.	
Minor CAR 2008.12	The company needs to review the list of required individual protection equipments, including raincoats, and other items that might be required.
Deadline	2009 Annual Audit
Reference	FSC Criterion P4.c2C.i4

Background/Justification: Timbó Empreendimentos Florestais S.A. adopts the multiple forest use system and produces logs in specific diameter classes and lengths. This process has generated a certain amount of logs short of the standard that could be used for other purposes.	
Minor CAR 2008.13	The company needs to establish a program to minimize waste of timber associated with cross-cutting into different diameter classes and lengths.
Deadline	2009 Annual Audit
Reference	FSC Criterion P5.c4.i1

Background/Justification: In the evaluation of environmental impacts of forest management by Timbó Empreendimentos Florestais S.A., only final details on the surveys of vegetation, wildlife, habitat, water resources, and sites with relevant historical and cultural values that were started in the last years were missing.	
Minor CAR 2008.14	For the studies on wildlife, vegetation, and sites with relevant historical or cultural values, the company needs to: <ul style="list-style-type: none"> Complete with updated surveys and study data. Identify each of them on maps. Present an updated list of endemic, rare and/or endangered species based on these surveys. Insert survey results in the Management Plan. Determine areas reserved for refuge, feeding and reproduction of endemic, rare, and/or endangered species. Include projects to identify and protect endemic, rare and/or endangered species in the Management Plan.
Deadline	2009 Annual Audit
Reference	FSC Criteria P6.c2.i2,i3; P7.c1.i9

Background/Justification: All areas from where material (gravel, earth, sand etc.) is removed are expected to be reclaimed. The auditors did not find evidence of land reclamation in these areas.	
Minor CAR 2008.15	The company needs to establish by July 2009 a plan to reclaim degraded areas, specifically those used to extract gravel, including georeferencing of the area. This plan should be implemented and a preliminary report should

	be presented for verification at the next annual audit.
Deadline	May 2009 (presentation of the plan); 2009 Annual Audit (preliminary report)
Reference	FSC Criteria P1.c1.i2; P6.c2.i4

Background/Justification: According to Principle P6.c7.i1, there must be a Waste Management Plan, including identification, classification, transportation and final disposal. Timbó Empreendimentos Florestais S.A. has shown a plan to collect waste, but it needs to be put to practice, including final destination. The waste generated in the field has been taken to the city by contractors but the final destination is undefined.	
Minor CAR 2008.16	The company needs to review its Waste Management Plan, including the definition of its final destination.
Deadline	July 2009
Reference	FSC Criterion P6.c7.i2

Background/Justification: Even though the company has developed a plan to eradicate exotic species from Permanent Preservation Areas and Legal Reserves, it has not formalized it and has not defined and detailed the areas where such activities will be put to practice.	
Minor CAR 2008.17	The organization need to review and formalize its program to control exotic species in preservation areas including: The estimate of total areas per farm, and; Timetable
Deadline	July 2009.
Reference	FSC Criterion P6.c9.i2

Background/Justification: The assessment team observed soil damage caused by skidding equipments, which is aggravated by operations carried out in rainy periods.	
Minor CAR 2008.18	The company needs to evaluate the impacts caused by wood harvesting equipments and adopt mitigating measures.
Deadline	2009 Annual Audit
Reference	FSC Criterion P6.c5.i2; P7.c1.i6; P10.c6.i2

Background/Justification: The auditors observed pesticides stored in a manner inconsistent with the current law and the supplier's instructions.	
Minor CAR 2008.19	The company needs to establish a standardized system to store pesticides temporarily in the field, throughout its application period, in a way that they be protected against moisture and kept away from the reach of animals and unauthorized personnel.
Deadline	2009 Annual Audit
Reference	FSC Criterion P6.c6.i2

Background/Justification: The company has not adequately controlled all pesticides used at the FMU in an efficient and precise manner, with registration of inflow, volumes used and in stock, and also return of containers.	
Minor CAR 2008.20	The company needs to establish a system to control the inflow, stock and outflow of pesticides in the storage and the return of empty containers, including a constant monitoring in the office.
Deadline	2009 Annual Audit
Reference	FSC Criterion P6.c6.i2

Background/Justification: The company lacks formal procedures (informative material) to inform the neighbors about pesticide application, including precautionary measures adopted.	
Minor CAR	The company needs to prepare printed material about the pesticide use

2008.21	and distribute it amongst its neighbors.
Deadline	2009 Annual Audit
Reference	FSC Criterion P6.c11.i1

Background/Justification: The company Management Plan does not currently include the correct description of forest resources to be managed, nor of silvicultural systems, technical specification, or procedures used.

Minor CAR 2008.22	The company needs to review its 2008 Management Plan and include descriptions of the forest resources to be managed, silvicultural systems, technical specification, and procedures. Inconsistencies and descriptions of actions not pertaining to forest management should be eliminated from the Management Plan.
Deadline	July 2009
Reference	FSC Criteria P7.c2.i1; P8.c4.i1

Background/Justification: The company has been improving its cartographic base and making maps of its FMU. However, it is still possible to see discrepancies between the maps and the actual situation in the field in a number of aspects, such as roads, dams, stands etc.

Minor CAR 2008.23	The company needs to present a plan to update its farm maps, according to short-, medium-, and long-term operational plan in order to portray the actual situation in the field, including toponymy.
Deadline	July 2009
Reference	FSC Criterion P7.c1.i7

Background/Justification: The company has not presented a plan to monitor the composition and changes in vegetation and wildlife at the FMU.

Minor CAR 2008.24	The organization needs to elaborate a plan to monitor changes in wildlife and vegetation, including: Selected bio-indicators Methods used Timetable
Deadline	2010 Annual Audit
Reference	FSC Criterion P8.c2.i2; P8.c2.i4.

Background/Justification: The connectivity among preservation areas is very important for wildlife protection but the company has not assessed the connectivity between these areas.

Minor CAR 2008.25	The company needs to present a survey on forest fragments and connectivity.
Deadline	2009 Annual Audit
Reference	FSC Criterion P8.c2c.i3

Background/Justifications: Agropastoril Novo Horizonte and Timbó Empreendimentos S.A. have defined all registered Legal Reserve Areas and all Permanent Preservation Areas as High Conservation Value Forests until the wildlife and vegetation surveys and the definition of attributes to be preserved are finalized.

Minor CAR 2008.26	After finalizing wildlife and vegetation surveys, and defining attributes to be preserved, Timbó Empreendimentos Florestais S.A. needs to: Define specific areas qualified as High Conservation Value Forest. Perform stakeholder consultation Define and adopt a system to monitor the attributes. Elaborate and adopt a management plan to ensure maintenance or enhancement of these attributes.
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Deadline	2010 Annual Audit
Reference	FSC Criteria P9.c2.i1; P9.c3.i1; P9.c4.i1

Proposed recommendations

Background/Justifications: The company has been developing social projects, which have helped to develop the region, mainly Timbó Grande; this municipality has the lowest Human Development Index in the State of Santa Catarina.	
REC 2008.01	The organization should articulate its Social Development Program with those of other companies in the region and with local leaders. P4.c4.i3.

Background/Justifications: Within the property of Timbó Empreendimentos Florestais S.A., there is a cave which, according to a local tradition, is considered to be one of the last refuges of monk João Maria, a messianic leader of the Contestado War. It is a place of popular devotion, of great scenic beauty, that attracts a significant number of visitors. It has a special cultural, religious, and historical significance.	
REC 2008.02	The company should conduct a viability study to create Gruta do Monge (Monk's Cave) Private Reserve of Natural Heritage. P1.c7.i2

Background/Justifications: The Araucaria Forest produces a vast supply of nuts (pinhões) during the autumn and winter months. The gathering of these nuts represents a significant income to the local communities.	
REC 2008.03	The company should evaluate the possibility to allow local communities to access Araucaria Forests within its properties to collect pinhões (regional tradition). P2.c2.i1.

Background/Justifications: Significant improvements in labor safety monitoring system depend on continuous evaluation and training.	
REC 2008.04	The company should assess the effectiveness of first-aid training programs. P4.c2D.i2.

Background/Justifications: Even though the company performance has been in conformance with the law, it has been observed that not always the shuttling of workers is done in an adequate manner so that they be protected from harsh weather conditions.	
REC 2008.05	The company should assess the conditions of forest workers shuttling so that it becomes adequate to the local weather. P4.c2E.i1.

Background/Justifications: As the municipalities where Timbó Empreendimentos Florestais S.A. performs its activities show the lowest Human Development Index in the State of Santa Catarina, initiatives are welcome, especially in training and income generation suitable to the forest economic characteristic of the region.	
REC 2008.06	The company should promote the development of non-timber activities, such as beekeeping, handcraft, production/gathering of medicinal plants etc, in Legal Reserve areas. P5.c2.i3.

Background/Justifications: Significant improvements in labor safety monitoring system depend on continuous evaluation and training.	
REC 2008.07	The company should post on visible points (on workers shuttling vehicles, or at support bases and/or leisure areas) signs indicating the Individual Protection Equipments that are required for each function. P4.c2C.i4.

6 SURVEILLANCE EVALUATIONS

According to the FSC principles and criteria, a certified company must go through an assessment audit at least once a year in order to check the compliance with each corrective action request and to review the continuity of conformances to SCS Interim Standards for the certification of forest management in Brazil, version 1.0. The public summary of the assessments of Timbó Empreendimentos Florestais S.A. will be available on the SCS webpage (www.scs-certified.com).

7 SUMMARY OF SCS PROCEDURES ON COMPLAINT INVESTIGATION

Following is a summary of the SCS complaint investigation procedures. The full procedures are available at SCS upon request to any organization that feels any problem regarding the SCS Forest Conservation Program and has reasons to question SCS for its actions or in regard to an SCS certificate holder. The SCS procedures for the investigation of appeals include the first court and mechanism for friendly solution, thereby avoiding the need to involve FSC. Complaints can originate from our clients (for example, forest owners, companies or retailers) or from other stakeholders. In order to have a standard in this procedure, the complaints should be made in writing, followed by support evidences and submitted within 30 days after the occurrence of the actions that gave rise to the complaint.

A **complaint** is a written expression of dissatisfaction, other than **appeal**, by any person or organization, to a certification body, relating to the activities of staff of the SCS Forest Conservation Program and/or representatives of a company or entity holding either a forest management (FM) or chain-of-custody (CoC) certificate issued by SCS and duly endorsed by FSC, where a response is expected (ISO/IEC 17011:2004 (E)). The SCS Complaint Investigation Procedure functions as a first-stage mechanism for resolving complaints and avoiding the need to involve FSC.

An “**appeal**” is a request by a certificate holder or a certification applicant for formal reconsideration of any adverse decision made by the certification body related to its desired certification status. A certificate holder or applicant may formally lodge an appeal with SCS against any adverse certification decision taken by SCS, within thirty (30) days after notification of the decision.

The written Complaint or Appeal must:

- Identify and provide contact information for the complainant or appellant
- Clearly identify the basis of the aggrieved action (date, place, nature of action) and which parties or individuals are associated with the action
- Explain how the action is alleged to violate an SCS or FSC requirement, being as specific as possible with respect to the applicable SCS or FSC requirement
- In the case of complaints against the actions of a certificate holder, rather than SCS itself, the complainant must also describe efforts taken to resolve the matter directly with the certificate holder
- Propose what actions would, in the opinion of the complainant or appellant, rectify the matter.

Written complaints and appeals should be submitted to:

Dr. Robert J. Hrubes
Senior Vice-President
Scientific Certification Systems
2200 Powell Street, Suite 725
Emeryville, California, USA94608

Email: rhrubes@scscertified.com

As detailed in the *SCS-FCP Certification Manual*, investigation of the complaint or appeal will be confidentially conducted in a timely manner. As appropriate, corrective and preventive action and resolution of any deficiencies found in products or services shall be taken and documented.