



SUSTAINABLE ENVIRONMENTAL SOLUTIONS

Some basic concepts for the understanding alignment

SUSTAINABLE FOREST MANAGEMENT PLAN (PMFS)

“Forest Management is a set of techniques used to gather carefully part of the big trees in such a way that the smaller ones to be gathered in the future will be protected. With the use of management, wood production can be continuous throughout the years.”

(source: www.manejoflorestal.org)

PLAN OF FOREST EXPLOITATION (PEF)

“Total or partial suppression of the vegetation of the area that is to be converted with exception of the species that are not allowed to be cut.”

N° 233 December 21st, 2005 Complementary Law

❖ How is the wood exploitation in the state of Mato Grosso

- **Forest Inventory (100%) in the PMFS** – Field demarcation of **all** the commercial, remaining trees and seed holders.
- **Inventory by Sampling in the PEF** – Statistical Survey by sampling.
- **Elaboration of the Project** – Data processing collected in the field, entry of the property documents and also of the Project holder, aiming at the generation of forest credits.
- **Presentation of the Project to SEMA** – Analysis, Field Inspection and concession or not of the project.
- **AUTEX** (Permission for Forest Exploitation) – Legal Document for the felling of commercial trees.
- **CLCF** (Release receipt of the Forest Credit) – Legal Document for the wood trade and generation of GF.
- **GF** (Forest Guide) – Legal Document for wood transportation.
- **CCSEMA**- (Consumer’s Register List) – Responsible for consolidation, Monitoring of the forest credits and discharge of the GF’s.

PMFS and PEF: *the problems:*

- **Forest Inventory (100%) in the PMFS** – Fragility in the control system of the forest exploitation and in the inspections.
- **Sampling Inventory in the PEF** – **Data** collected without accuracy and of easy manipulation.



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- **Elaboration of the Project** – Phase in which the manipulation of the results happen in the field, generating a false volumetry, that supplies the virtual credit market responsible for a great part of the hidden wood illegally exploited, due to the inefficiency of the processing system, control and inspection.
- **Presentation of the Project to SEMA** – Fragility and lack of control in the field inspection phase, leading to the concession of unsuited or non-existent projects (virtual).

❖ **The legality that also enforces the illegality. How can this be explained?**

The Solution:

ELETRONIC INVENTORY OF THE TREES OF THE PMFS AND PEF

- *Electronic Sustainable Forest management Plan (e-PMFS)*
- *And Electronic Forest Exploitation Plan (e-PEF)*

❖ **IWF TAG (Chip)**

Forest Inventory – Field Demarcation of all the remaining commercial trees and seed holders that nowadays is made of aluminum platelets, by the **IWF TAG (Chip)**, thus, making possible, in a cryptographed way, to record the geographic coordinates and all the information of the trees such as: the scientific and vulgar name, height, diameter, volumetry, etc.

Elaboration of the project – To make totally impossible the manipulation of the data collected in the field, guaranteeing the security and veracity of the information, eliminating the generation of the **VIRTUAL CREDITS (non-existent wood, false volumetry, substitution of the species)**, that is, the amount of physical and accounting wood will always be the same.

IWF TAG (Chip): Chip distribution will be totally controlled, that is, it will obey an only one series numbering.

❖ **RFID**

Mobile Solution: Electronic Tracking and Monitoring of the Trees of the PMFS and PEF with Chips



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IWF Tag

IWF

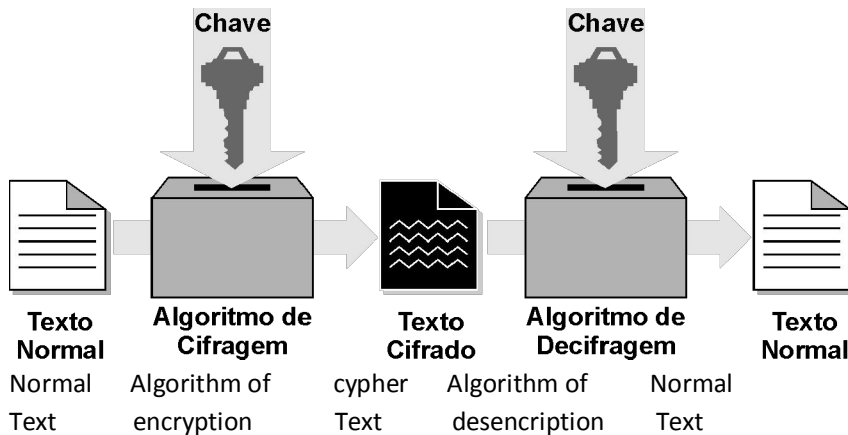




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❖ Security

Library with the implementation of algorithms for cryptography (Blowfish, MD5, SHA1, TEA).



❖ Example: Forest Inventory (100%) in the PMFS

In a property, 80% of its area is allotted to a legal reserve, where the only means of forest exploitation is through a PMFS. The volume of wood to be released in this project is from the forest inventory done in the property. This volumetry is defined through the diameter and the height of all the commercial trees that exist in the reference area. The volumetry generated in a management project, once approved by the environmental organ, becomes a legal document for exploitation, transportation and wood trade.

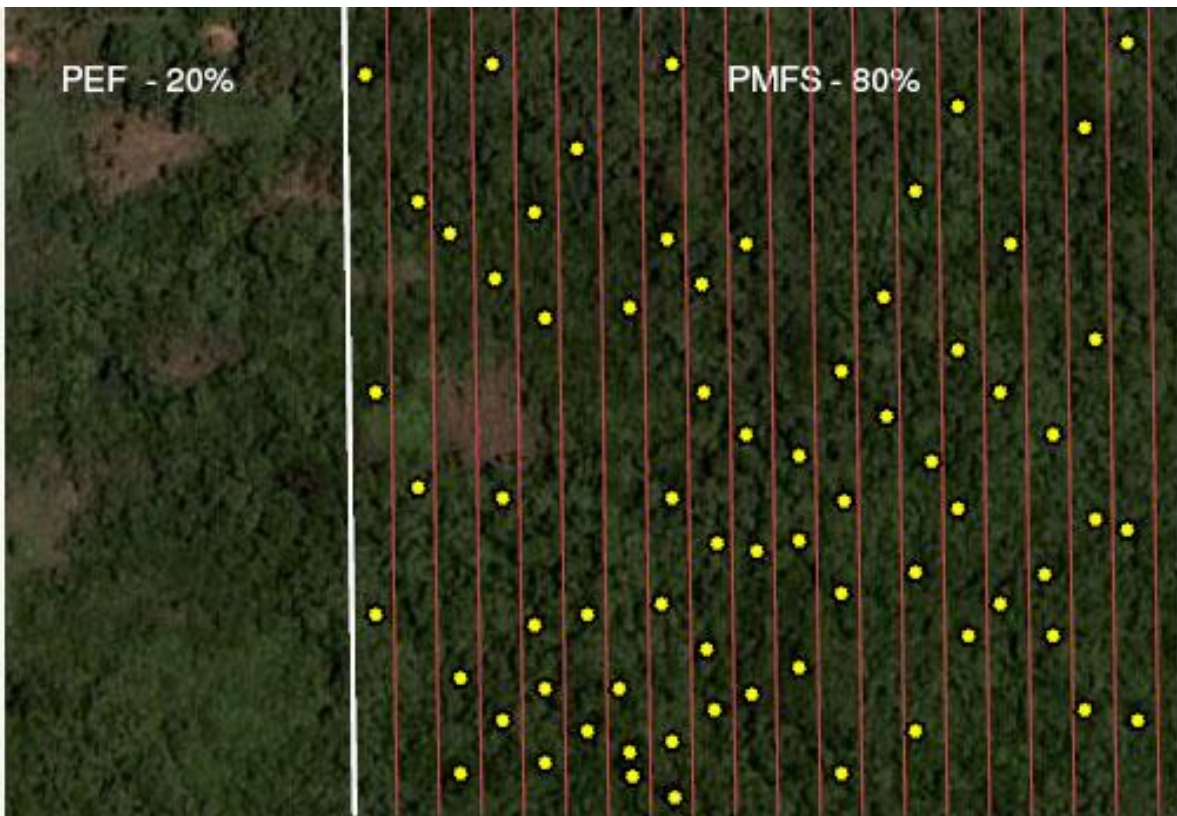
Due to the fragility and rusticity of how this forest inventory is done, the fraudulent manipulation is easy in all the phases of the process, in the field and in the office, that is, the vulnerability to frauds are a constant in the management and wood trade in Brazil. These frauds comprise important points such as: enlargement of the diameter, height increase, invention of non-existent trees, altered specifications, inspection and control system led by corruption.

These are factors that generate the so-called “virtual credits” or “paper factories” which supply the whole market of trading of illegal wood in Brazil, transforming it in legal wood, besides stimulating the wood exploitation in protected areas and Indian reserves.

With the implantation of the WEB FLORESTAL System, we will have an electronic corporative system to assist the Forest management Process that exists, definitely eliminating all possibilities of data manipulation, that supply the illegal trading of wood.



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❖ Technical team IWF

- **Researcher Dr. Elvio Luiz Schelle (Ph.D)**

PhD in Environment by The University of Sheffield – England

Knowledge and experience in environmental and mineral projects and studies mainly in the Amazon and Center West regions, as well as in some places of the province of South Yorkshire England.

- **Kleber Denis Pinto**

Expert in information security – UFSC

Knowledge and experience in Projects of Technology of Information for the corporative systems to the government of the State of Mato Grosso.

- **Contacts**

BRAZIL:

Brasília – DF – SBN, Qd2 Lt12 - Bloco F - Edifício Via Capital, 201 CEP 70041-906 Fone: +55 61 3964-3060

Cuiabá – MT – Rua Machado de Assis, n.13, Quadra 31, Santa Cruz CEP 78068-182 Phone Number: +55 65-3664-1361

ENGLAND:

Sheffield – UK – 226, Howard Road -S6 3RX Phone: +44 114 232-6094

www.iwfplanet.com