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SYNTHESIS REPORT ON EX-POST EVALUATION OF TWO ITTO COMPLETED PROJECTS ON GEOGRAPHIC INFORMATION SYSTEM / DEMONSTRATIONS AREAS

PROJECTS

PD 57/99 Rev.2 (F)
Sustainable Management of Production Forests at the Commercial Scale in the Brazilian Amazon – Phase I

PD 176/02 Rev.1 (F)
Use of Remote Sensing Technology and Information Systems to Support Forestry Legislation Monitoring in the Republic of Congo

Prepared for ITTO

by

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ACRONYMS

CARPE	**Usaid regional Project in the Congo Basin**
CIFOR	**Center For International Forestry Research**
CNIAF	**Centre National d´Inventaire ET Amenagement Forestier**
EMBRAPA	**Empresa Brasileira de Pesquisas Amazonicas**
FMS	**Forest Management System**
GIS	**Geographic information system**
GPS	**Geographic Position System**
IBAMA	**Institto Brasileiro de Meio Ambiente**
IFT	**Instituto Florestal Tropical**
IMAZON	**Amazon Institute of People and the Environme**
ITTO	**International Tropical Timber organization**
MDDEFE	**Ministère du Développement Durable, Economie Forestière et Environnement**
MEOF	**Economic Monitoring Operations**
MOP	**Monitoring Enterprise Operational**
NGO	**Non Gubernamental Organization**
PD	**Project Document**
PLANEJO	**Planing and Control of Forest management Operations**
Sema	**Secretaria de Meio Ambiente, Estado do Pará**
SFM	**Sustainable Forest management**
UFTA	**Universidade Federal do Pará**
WRI	**World Resources Institute**

INTERNATIONAL TROPICAL TIMBER ORGANIZATION – ITTO

REPORT OF EX-POST EVALUATION
EXECUTIVE SUMMARY

1. **INTRODUCTION**

The primary purpose of this evaluation is to provide a concise diagnosis of two projects related to Geographic Information System (GIS) and Demonstrations Areas for sustainable forest management (SFM), so as to point out the successful and unsuccessful outcomes, the reasons for successes and failures, and the contribution of the projects towards the achievement of ITTO's Objective 2000, and to draw lessons that can be used to improve similar projects in the future.

The ex-post evaluation was carried out to draw lessons about the project PD 57/99 Rev. 2 (F) and PD 176/02 Rev. 1 (F). This assessment focused on the formulation and implementation of the project with respect to: i) the results and achievements of its objectives and products, and ii) the impact and sustainability of its results. These two projects take part of a thematic pool of projects to be ex-post evaluated, related to the improvement of the SFM practices and control, as so, the evaluation had given special emphasis to the impact of the projects on the whole context of the SFM, in contribution to the ITTO´s Year 2000 objective. The two projects subjected to the Ex-post Evaluation are as follows:

PD 57/99 Rev.2 (F)	Sustainable Management of Production Forests at the Commercial Scale in the Brazilian Amazon – Phase I. Evaluator: Jorge Malleux (Peru).
PD 176/02 Rev.1 (F)	Use of Remote Sensing Technology and Information Systems to Support Forestry Legislation Monitoring in the Republic of Congo. Evaluators: Jorge Malleux (team leader) and Germain Zasy Ngisako (D. R. Congo).

2. GENERAL INFORMATION ABOUT THE PROJECTS

2.1. Project PD 57/99 RevR. 2 (F), Brazil.

Sustainable forest management in the Brazilian Amazonia region, where timber exploitation, is a pioneer activity, must play a crucial role in the conservation of the environment and contribute to the economy of the Amazon region, however the destructive process affecting their natural resources of the current logging activities can be regarded as mining, the renewable value of the forest is simply not considered. Although highly selective, the application of inadequate operational techniques usually results in significant damage to the remaining forest. In many cases, logged-over forests are legally or illegally cleared, burnt out and converted into agricultural land. In this process, biodiversity decreases as many endemic animals and plants disappear.
Thus the need to establish demonstration projects at commercial scale and with the active involvement of timber enterprises was the main objective of this project. This important stimulation to adopt good forest management practices deemed especially important in the Eastern Amazon, as being the most important timber producing region in the Amazon. It was expected that this would complement another ongoing ITTO Project in the Tapajós Forest, in the western part of Pará State.
The project was originally planned for a five-year period beginning January 2000 and ending December 2004. The project actually began in November 2002 for a first phase of two years.

The budget approved by ITTO was US$ 1,404,132.00 of which US$ 753,954.00 was committed from ITTO and the balance from counterpart funding. During the execution of the project US$ 162,814.00 were added to the budget, of which US$ 15,000.00 represented the bank interest earned from the ITTO amount and the balance from counterpart funding.

2.2. Project PD 176/02 Rev. 1 (F), Republic of Congo

The limited application of forest legislation would hinder the implementation of sustainable forest management, and can restrict access to timber markets sensitive to environmental considerations. An increasing share of consumers, governments of importing countries and to some extent, the finance sector

institutions, want to ensure that their participation on forest activities in Africa promotes sustainable forest practices, avoiding informal or illegal logging.

Given the lack of information or insufficient information, these actors can make conservative decisions as to give preference to wood from other sources or origins, which actively promote sustainable forest practices, rather than other of which no reliable information to ensure the implementation of appropriate systems of control against illegal logging and illegal timber trade.

The development objective of the project was "to contribute to the sustainable management of forest resources of the Republic of Congo through the systematic application of forest legislation," and facilitate greater access to international markets for wood. The project was designed to focus on resolving three key issues: (i) the restriction of access to timber markets sensitive to environmental considerations, because the international community of the wood becomes more and more managerial for sustainable forest products prefer a more sustainable source, (ii) the need for accurate and timely information on forest companies, forest concessions and protected areas, and (iii) the existence of factors limiting the use of information existing public authorities to enforce forest law systematically.
The total project budget was $ 892,414, broken down by source as follows: $ 577,676 to the International Tropical Timber Organization (ITTO), $ 121,408 for the Government of Congo and $ 193,330 for the WRI.

3. GENERAL ASSESSMENT

3.1. PD 57/99 Rev.2 (F) “Sustainable Management of Production Forests at the Commercial Scale in the Brazilian Amazon – Phase I”.

3.1.1. The key problems intended to solve

The concept of sustainable forest management based on the application of Reduced Impact Logging practices becomes an attractive alternative to use the economic potential of the forests while maintaining their environmental and economic value. However after over two decades of research on sustainable forest management, there is a generalized skepticism about the effectiveness of the recommended techniques. Even though several research projects conducted in the region show positive results about the effectiveness of the proposed systems, commercial loggers seriously hesitate to adopt them. This led to the paradoxical situation that the research results have been incorporated in the Brazilian forest management regulations, but in practice not all the timber companies follow them.

3.1.2. Project Achievements: efficacy

Output 1.1.: Project infrastructure established and maintained

Actually this output shouldn’t be considered as that, because the establishment of the project infrastructure is a regular procedure in all projects. Nevertheless it is important to notice that the EA had difficulties with the administration of the ITTO’s funds, in view of the serious restrictions and procedures to be followed until the funds were used. The solution was the signature of a contract for the project funds administration by the Tropical Forest Institute (IFT) since November 2005. The database of the “Bom Manejo” virtual community (http://www.catir.sede.embrapa.br) was installed and regularly updated.

Output 1.2.: A FMS-prototype validated by partner enterprises in the eastern Brazilian Amazon considering technical, environmental and economic aspects.

Technical Guidelines for Forest Management as well as for Reduced Impact Harvesting – RIH, were produced and used by the partner enterprises. The software MOP (Monitoring Enterprise Operational Performance), MEOF (Economic Monitoring of Forest Operations) and PLANEJO (Planning and Control of Forest Management Operations) were developed, tested and have been used by timber enterprises, research institutions, universities and government agencies involved in forest management. However, the regarding the concept of “validation” the Executing Agency (Embrapa), considers that the actual validation will be done during the second phase of the project. In any case on the logical framework, the verifiable indicators are: studies on ecological impacts, economic feasibility studies and technical feasibility studies, although the indicators and means of verification have not necessarily a clear and direct correspondence with the output referring to validation, but having as means of verification: a) the Inspection reports from IBAMA, b) project progress reports, c) publications, d) presentation and workshops and, e) ITTO evaluation reports.

Output 1.3.: A system for monitoring and evaluating the social, ecological and economic impacts of the FMS defined and tested.

A tool to monitor the social, ecological and economic impacts of the FMS, including impacts on local communities was developed, including, procedures to monitor logging damage. The criteria and indicators as well as relevant methodologies produced by the project have been used by universities and research institutions. ITTO Criteria and Indicators were applied in the Forest Management Units of Cikel (Rio Capim, ABC and Martins) and Juruá (Arataú and Santa Marta) and a manual for auditing forest management projects was developed in collaboration with IBAMA. The auditing procedures have been successfully implemented by IBAMA and the Environment secretariat of the State of Para (SEMA) for the analyses of forest management projects in the Amazon region located in public and private forests.

However it sorted it out that the monitoring of the social and economic impacts didn't receive the same importance or priority as the ecological one.

Output 2.1.: Project results documented and disseminated through field days, publications and technical meetings.

More than 40 documents were prepared in the course of the execution of the project, including books, papers, manuals, progress reports, folders, banners etc. In addition, two field days were organized and a home page (http://www.cpatu.embrapa.br/BomManejo) was created. A final seminar was organized which was attended by nearly 200 people, including scientists, the industrial sector, policy makers and students. Project results were also disseminated through presentation at national and international conferences, many technical meetings and through the involvement of graduate and undergraduate students.
The only remark to this output is the fact that even though that most of this, technical reports, scientific articles etc. were based or inspired on the project woks, several of this documents didn't mention the project or ITTO's contribution.

Output 2.2.: A strategy and mechanism to transfer the FMS to timber enterprises of the Brazilian Amazon defined with the participation of relevant parties.

The project did not elaborate a consistent and detailed strategy for the transfer the FMS tools to the timber enterprises, this task, according to the former project responsible, was left aside for to the project's second phase[1].

3.1.3. General overview of the project operation : efficiency

The main idea of the project was to develop, test, evaluate and transfer a Forest Management System (FMS) for use by timber enterprises working under typical production conditions found in *terra firme* forests of the Brazilian Amazon. The FMS consists of a set of tools designed to assist a forest enterprise in the planning, implementation, evaluation and monitoring of its operations to achieve sustained economic benefits under current and foreseeable environmental and social conditions. There are two types of tools: silvicultural, including tools for planning timber harvesting, and managerial, for the economic planning and control of the enterprise's operations.

Two timber enterprises were selected as project partners, Juruá Florestal Ltda. and Cikel Brasil Verde Madeiras Ltda., both are representatives for a large number of forest enterprises in the Amazon.

After the development of the silvicultural and managerial tools, the Forest Management System Prototype (FMS-P) was tested and implemented at an operational scale by these two partner timber enterprises. In addition, a system to monitor the ecological, social and economic impacts of the FMS was developed and tested.
Training was provided in close co-operation with the Tropical Forest Institute (IFT – Instituto Floresta Tropical). The project technical and scientific staff trained the enterprises technical staff in the utilization of the forest management tools (computer software, silvicultural field procedures, etc), the supervision of forest operations, as well as the monitoring of the FMS-P in order to identify its direct and indirect impacts, with special emphasis in the identification of problems and opportunities created during the implementation process. Based on the results of the continuous assessment by the project partners, the FMS tools were

[1] In 2009, after the Project completion, a new proposal was submitted to ITTO by EMBRAPA, aiming to implement a second phase of the Project, which in fact was already mentioned on the Project document of the PD 57/99 Rev. 2 (F)

revised and adapted for a better practical use.

Project design

The aim of the project was adequately delivered concerning the origin, justification and its strategy; however the development objective seems to be rather limited in relation to the real goal of the project, which goes far from just to “encourage the adoption of good forest management practices...” in fact that could have limited the focus of the project. Indeed the verifiable indicators for the development objective are also very limited in regard to the whole context.

The specific objectives are also well elaborated, although there is no a good consistency between to the outputs and the measurable indicators. For instance the specific objective is to “test and evaluate” a FMS, while the output refers to the “validation” and these two concepts are not necessarily the same (test is a critical examination, and validation is to make officially). That could be a narrow line in between of both concepts but also could make a big difference in practice.

In summary there are some problems with the actual interpretation of certain limits and details at the level of the objectives and verifiable indicators.

Project Operation

In general the project was very well organized and operated, generating good synergies with the private forest enterprises and other public and private institutions, as well as some NGOs. The project succeed to convince two emblematic forest companies to jointly and actively participate in the implementation and adoption of the FMS tools developed by the project.

EMBRAPA gave a strong support to the project and also incorporate it as a permanent program, implementing an special building for the called *Bom Manejo* project.

The several partners involved in the project (IFT, CIFOR, UFPA, IMAZON and the private enterprises Cikel and Jurua), demonstrated a very serious compromise with the project and honoured all their commitments.

Strategy

The project based its strategy on intensive training activities in close collaboration with IFT and other partners, including the Federal University of Pará (UFPA), organizing workshops, field days, and producing an impressive number of technical and scientific documentation and disseminating them.

As it was indicated above the output of the project was to develop a Strategy and mechanism to transfer the SFM to timber enterprises of the Brazilian Amazon. However, there is still not a full proposal for the mentioned strategy, which is necessary for the continuation of the ongoing activities and a possible second phase.

Accomplishment of objectives and products.

Specific objective 1: *A Forest Management System (FMS) for effective and sustainable use of forest resources by medium and large size timber enterprises in the terra firme forests of the Brazilian Amazon*, was developed, tested, evaluated and have been adopted in principle by two forest enterprises in the Brazilian Amazonia, a large one (Cikel) and a medium size (Jurua). However it is necessary to continue working intensively in the dissemination of the FMS tools in a more large extend, in order to generate a critical mass of forest enterprises adopting this system and contributing to the sustainability of the Brazilian Amazonian forest. Indeed additional work has to be done in order to validate the full FMS developed by the project.

Specific objective 2: *The project has contributed to a wider dissemination of the FMS* (through field days, training, courses, seminar, publications and technical meetings) amongst medium and large size timber enterprises in the *terra firme* forests of the Brazilian Amazon, including those interested in certification and good forest management. Although a strategy and mechanism to continue disseminating and transferring the FMS to timber enterprises of the Brazilian Amazon is crucial in order to generate a critical mass of forest enterprises dealing with FMS. Actually this is the main objective of the project’s second phase, already submitted to ITTO by Embrapa in 2009.

3.1.4. Impact

a) Regarding the Specific Objectives
A Forest Management System (FMS) for effective and sustainable use of forest resources by medium and large size timber enterprises in the *terra firme* forests of the Brazilian Amazon was developed, tested, evaluated and have been adopted to a large extent by forest enterprises in the Brazilian Amazonia.

The project has contributed to a wider dissemination of the FMS (through field days, training, courses, seminar, publications and technical meetings) amongst medium and large size timber enterprises in the *terra firme* forests of the Brazilian Amazon, including those interested in certification and good forest management. A strategy and mechanism to continue disseminating and transferring the FMS to timber enterprises of the Brazilian Amazon to be applied in the project's second phase, which was developed in tight cooperation with highly relevant partners in Brazil.

b) Regarding the Development Objective

The project has contributed to the achievement of the development objective, if related to its literal presentation "*encourage the adoptions of good forest management practices"* , through:

- Good forest management practices are being adopted by medium and large size timber enterprises in the terra firme forests of the Brazilian Amazon.
- The auditing procedures developed by the project for the analyses of forest management projects in the Amazon are being adopted by IBAMA and SEMA.
- Technical guidelines for forest management as well as for reduced impact logging and a set of five software are being used by timber enterprises and Amazonian universities in their courses of forest engineering.
- Dissemination and use of scientific project findings by experts, technicians and governmental authorities.

c) Regarding the ITTO's 2000 objective

Moving as rapidly as possible towards achieving exports of tropical timber and timber products from sustainably managed sources, renaming this commitment as 'ITTO Objective 2000'. In this context PD57/99 Rev. 2 (F) has contribute largely with this objective, disseminating and promoting the FMS and several tools in the State of Para, the northern region of Brazil, which is the largest and most important zone about natural forest area and timber production from the Brazilian tropical forest.

3.1.5. Sustainability

The project has successfully developed important synergies within the main forest actors and generate a good institutional environment. The *Bon Manejo* project became a permanent and very well appreciate program of EMBRAPA, at the same time some of the most important tools have been officially adopted by IBAMA and other relevant institutions responsible for the sustainable environmental development, and management of forest resources.

However it will be necessary to have more time to actually obtain a real impact at the regional and national level, for which a second phase of the project is advisable.

3.1.6. Lessons learnt

Lesson 1: The project design should consider more concrete, clear and measurable indicators, which also allow a better evaluation of results.

Lesson 2: It is necessary to establish one clear and detailed baseline both biophysical and socioeconomic, to better understand the impacts of the project once completed, and later compared to the starting point.

Lesson 3: Despite the interest shown by some forest companies to participate in the project, it was confirmed that most of them still have some suspicion and reticence to adopt FMS and its tools, in part, because they are afraid about additional controls from the government and the higher operating costs resulting from the adoption of new FMS tools, developed by the project.

Lesson 4: The joint work of various institutions, public, private and civil society (contributes to the achievement of many objectives and goals of a project of this size and operational complexity.

Lesson 5: Detailed and consistent economic and social information is absolutely necessary to better understand the real impact of the project, both at the regional and enterprise level.

3.1.7. Conclusions

The project has proved of great importance in the regional context of Amazon, for the implementation of sustainable forest management system of the Brazilian Amazon Forest, and great expectations in some private forest companies that are interested in adopting the sustainable forest management tools.
The project has developed synergies with various actors in the public and private sector, and civil society, with which it has worked hard for the implementation of sustainable forest management proposal.system.

The specific objectives and expected project results have been largely fulfilled in an efficient and professional manner, however there are some aspects that are necessary to continue working on as the case of the FMS validation, the development of a comprehensive strategy and detailed comprehensive plan for dissemination of good forest management tools developed by the project..

The training activities undertaken by the project, have allowed a large number of officials, technicians, professionals, students to have assimilated the knowledge developed by the project and become trainers and promoters of FMS.

The project fails in developing decisive information on the economic impact of implementing the FMS Tools.

3.1.8. Recommendations

There are a number of documents, information and valuable experience which is necessary to systematize and disseminate.

There are some products and results, in the elaboration of the logical framework matrix, which require a more precise and detailed explanation due to the ambiguity or inadequacy of the indicators and means of verification.

In consideration of the request for funding for a second phase of the project, it is necessary to include in the proposal a specific output regarding the validation of the FMS tools produced during the first phase, as well as the dissemination strategy of the products made during the first phase.

It is necessary to develop anecologic, social and economic baselines as a starting point for assessing the impact of the adoption of the FMS developed by the project, particularly if a second phase of the project. is foreseen.

The economic feasibility of the implementation of SFM tools is essential to understand its impact on the economy of the forest enterprise and the forest sector production in the Brazilian Amazon.
In a possible adoption of a second phase of the project, it needs a careful development of the logical framework matrix, so that the expected results, indicators and means of verification are specific, realistic and clearly contribute to evaluate the fulfilment of specific objectives.

3.2. PD 176/02 Rev.1 (F) “Use of Remote Sensing Technology and Information Systems to Support Forestry Legislation Monitoring in the Republic of Congo”

3.2.1. The key problems it intended to solve

Given the lack of information or insufficient information, these actors can make conservative decisions as to give preference to wood from other sources or origins, which actively promote sustainable forest practices, rather than other of which no reliable information predominate, to ensure the implementation of appropriate systems of control against illegal logging and illegal timber trade.

Recent information on procedures, allowed to confirm that unsustainable logging of natural forest resources are present in several African countries (Liberia, Cameroon, Democratic Republic of Congo), which has tarnished the reputation of African wood, creating the need for Republic of Congo to show to his partners that wood from forest of Congo, is produced in a context where laws are enforced practicing sustainable forest management.

After an ITTO mission in October 2002, forestry experts identified some obstacles regarding the SFM in the Republic Republic of Congo, including the lack of information or insufficient information, as well as limited human resources trained to ensure compliance with legislation; while the implementation of forest legislation does not necessarily guarantee SFM, breach of legal and SFM roles leads to illegal or informal practices.

The Republic of Congo's Forest law enacted in 2000 and created services to promote and facilitate the implementation of sustainable forest management. But the application of this law has been problematic due to certain constraints, including the lack of trained personnel and financial resources of information or its poor quality.

To address this problem it was started a collaborative program between de Republic of Congo and the WRI (World Resources Institute), to generate and develop a system to manage forest resources more effectively and ensure the implementation of forest legislation, based on WRI's experience gained in other countries of the sub region of Central Africa, producing a project proposal submitted for consideration to ITTO, which was achieved in 2002, having begun the operation of the project on 2004.

3.2.2. Project Achievements: efficacy

The development objective of the project was "to contribute to the sustainable management of forest resources of the Republic of Congo through the systematic application of forest legislation," and facilitate greater access to international markets for wood. The project was designed to focus on resolving three key issues: (i) the restriction of access to timber markets sensitive to environmental considerations, because the international community of the wood becomes more and more managerial for sustainable forest products prefer a more sustainable source, (ii) the need for accurate and timely information on forest companies, forest concessions and protected areas, and (iii) the existence of factors limiting the use of information existing public authorities to enforce forest law systematically.

Operational development of the project

The project evaluated was implemented by WRI as the implementing agency, and the National Center for inventory and management of forest resources and wildlife (CNIAF) of the Directorate General of Forest Economy, Ministry of Sustainable Development, of Forest Economy and of Environment (MDDEFE) as collaboration.collaborating agency

According to various reports and technical progress, the project focused mainly on the work of specific objective 1, having developed a major program of CNIAF's staff training, but found many difficulties in the acquisition of updated satellite images and sound quality (the problem of cloud cover), in addition, the project failed to develop a partnership with the private sector (forest concessionaires) and, finally, coordination of the work and activities relating to the practical application of the results at project, especially in relation to specific objective 2 was not efficient.

In general the products related to the specific objective 1 were well developed, however the achievement of the products 1.4 (indicators of good practices in forest concessions) and 2.1 (trained personnel to mobilize resources for forest law enforcement and corporative compliance) as well as 2.3 (timber forest legislation, assessed by using the system generated on specific objective 1), were not successfully accomplished.

Output 1.1.: Congolese personnel trained to use and maintain monitoring tools of products 1.2, 1.3 and 1.4.

6 technicians were trained, from CNIAF and the Club of Friends of the Environment NGO, with expertise in remote sensing, GIS and GPS mapping. However, the project's budget could afford to train a much larger number of people. The as the nature of software and its regular updates are necessary activities to be developed permanently.

Output 1.2.: A geographic information system of forest concessions in place and functioning. (Indicator # 1).

The system (computers and peripheral equipment, software, procedures, methods, etc.) was installed and launched. Two new computers were purchased at the end of the project to ensure the normal continuation of activities beyond the project; unfortunately a virus has destroyed most of the files, while not provided a backup to save them.

Output 1.3.: An interpretation of satellite imagery to identify forest roads in forest areas has been completed. (Indicator # 2)

The first series of images were acquired and interpreted, throughout the territory of the Congo, near to the end of the project (the purchase has been problematic due to lack of availability of Landsat images and cloudiness in the southern region of the country).

CNIAF officials today are not very knowledgeable about the details of the purchase of pictures. In any case, it is assumed that there was a lack of provisions to comply fully with this product.

In order to compensate in some cases the absence of images and maps of forest roads they organized some of the missions on the ground with GPS, however the lack of vehicles and other field equipment, limited seriously this alternative.

The availability of data on paper, Internet and the website has not been completed; the CNIAF is just hangged on the MDDEFE's web site, with a limited space.

Output 1.4.: Indicators to see if logging practices in forest concessions in respect of the forestry law and a database established and organized (Indicator # 3).

Even the different progress reports and completion report of the project recognizes that very few have been developed about indicators to use the remote sensing and GIS, there is not any accurate report about this matter, which is considered as very important for the validation of the tool.

There was a poor coordination with private forest operators, and external consumers more over if the main aim of the project was to develop a tracking system to identify and prevent illegal logging for timber exportation. The insufficient development of indicators and improved monitoring systems on the ground and the lack of strategies for the use of information acquired and improve forest law enforcement, are evident.

Output 2.1.: Staff is trained to use the information generated by the Specific Objective 1 to effectively mobilize resources to enforce forest law.

A few workshops to inform staff MEFE about the capacity and content of the maps and databases produced by the project were organized, although this effort is not reflected in practice, for the law enforcement. However the MEFE utilities already use satellite images and consult regularly with the project team and make the information available for a better administration of the forest resource as a whole regarding the following aspects: delimitating the forest concessions, participating and solving inter users conflicts, evaluating the state of the conservation areas, and other demands coming from different other sectors (agriculture, land use planning, defense, etc).

An Interactive Forestry Atlas produced by WRI in collaboration with CNIAF, and has provided training in the use of this Atlas. This result is probably one of the most important contributions of the project and very important for the sustainability of the achieved objective. Also, through CARPE (USAID regional project in the Congo Basin), the project allowed the implementation of a partnership between WRI and the Rural Development Institute at the University Marian N'Gouabi for the development and implementation of a training curriculum on GIS, remote sensing and mapping.

Output 2.2.: Government efforts to improve forest management and law enforcement are given to the public.

The project did a limited support to the implementation of forestry legislation To improved to improved forest management and law enforcement, especially for the control of illegal logging and illegal timber trade is generally low, although it is necessary to recognize the project's contribution to conflict resolution: (i) for example, degrees of overlap in a given area, a better identification of problems, planning of field missions, identifying additional areas for the parties involved, (ii) development of support processes and monitoring and operations management classification in protected areas, (iii) the assessment and monitoring of new contracts to the administration requested and delineation, (iv) report on the state of development in areas allocated to forestry, (v) contribution to the solution in the delays related to the planning process management, (vi) the identification of specific locations of the activities of logging companies.

Output 2.3.: Compliance by companies in the forestry legislation and all other commitments are evaluated using a system that combines the information generated by a specific objective.

The evaluation mission considers this product difficult to measure, in view of the lack of information regarding this matter and the difficulties to contact private forest operators, during the mission.

The MDDEFE uses satellite images and data generated for them by the project, to identify areas potentially

subject to illegal logging; however it is necessary to have updated photos, which is very expensive. On the other hand the monitoring tasks in the field of MDDEFE are rare and expensive.

3.2.3. General overview of the project operation: efficiency

Design and objectives of the project:

Though that the aim of the project was more focus on effective enforcement of forest legislation, related almost exclusively to the availability of an improved and updated information, it is convenient to clarify that the resolution of the logging and illegal timber trade can not only be related to data management. Actually, there are several other factors to consider, such as strengthening forest management, implementing improved operating contracts customs controls, undertaking field controls or "tracking" and so on. Second, the specific objective 2 is ambiguous and unrealistic, and it makes it difficult to interpret in a practical and concrete way, landing on a proposal for practical results.

The strategy:

(i) The technical training is completed, but could have been much more important in relation to the project budget, which would have been much appreciated at the national level, (ii) the controls on the ground in data collection was limited or insufficient because of the serious limitations of transport (not budgeted for the purchase of vehicles), (iii) dissemination of the results is poor, and (iv) there is a lack of participatory approach with the forest actors, including the private sector (timber companies) and other users.

With respect to management:

The structure of the budget is considered quite unbalanced in relation to priorities (training, equipment, field control), (ii) lack of adequate coordination and information exchange between the executing agency and the administrative and operational authority including the collaboration agency (CNIAF), (iii) the administration of the project was executed remotely, and, (iv) lack of a more proactive participation in the project by the MDDEFE in operating the project.

With respect to results and outputs:

The project has achieved the successful installation of a GIS and remote sensing methodology and laboratory, to train staff of CNIAF and other institutions, as well as university students. The implementation of a remote sensing laboratory performed a great service to the Government in various public sectors (Land Management, Department of Defense, Geological Survey, among others), despite the limitations for field work and remote sensing data collected but not updated in the period of the duration of the project. With the close collaboration of the PAGEF project, CNIAF is producing and updating regularly the Atlas Interactive of the forest cover and state for the whole country

3.2.4. Impact

There is no doubt that the project has generated an important impact on the Congo's forest sector, providing the implementation of a GIS and remote sensing system and tools, which is of extreme importance for the better administration of the forest resources, even though that core objective of the project has not been achieved in full, specially the one related to the significant improvement on controlling the informal or illegal forest practices (logging and trading).

Actually, it results very difficult to identify or determine the actual relationship between the GIS system using remote sensing methodologies and the reduction on the above mentioned activities, indeed the project did not give enough attention to this matter, and concentrate its efforts on the accomplishment of the first specific objective.

The impact of the project in consideration to the ITTO's year 2000 objective, has been achieved in the sense that the project contribute to improve the capacity of the country for a better assessment and planning of the use of its forest resources.

3.2.5. Sustainability

If we refer only to the main objective of the project which is related to the improvement of law enforcement using SIG and remote sensing tools, it will be very difficult to assume that the project developed a

sustainable strategy and plan, nevertheless the implementation of the laboratory of GIS and remote sensing as a permanent and important unit of CNIAF, could be considered as a very good step on this way.

3.2.6. Lessons learnt

Lesson 1: There is important to identify and elaborate a more careful analysis for the logical framework matrix, having in consideration the real capacity of the involved institutions and the whole context of the forest sector.

Lesson 2: Controlling illegal logging and trading is a complex task that requires to manage several other elements, rather than only or basically remote sensing and GIS systems.

Lesson 3: The executing agency should be 100% present *in situ*, during the whole operation of the project and to commit with the follow up of the activities, in the short and medium term, after the project completion.

Lesson 4: Training and education of national staff should be one of the highest priority in any project in a developing country, in order to obtain the desired sustainability.

3.2.7. Conclusions

The analysis of the project document reveals the following observations:

a) Unrealistic project design and little practical elaboration of the indicators and verifiable means;

b) Imbalance of budgetary resources for the benefit of expatriate staff, vis-à-vis the priorities of training in project management, training, laboratory equipment, transportation for field monitoring, forestry extension;

c) Excellent contribution to the mapping of forest and natural resources for sustainable forest management in the country and support to other services beyond the MEFE;

d) MDDEFE: Management / administration with low transparency by the Executing Agency and the lack of a participatory approach;

e) Good participation and response of local staff is very helpful for forest management, but insufficient to improve forest law enforcement, while great efforts are required to ensure the continuity of the program in CNIAF, related to the GIS laboratory;

f) Proper development of measures for cooperation between the collaborating agency (CNIAF) and the implementing agency (WRI) to ensure continuity and sustainability of project achievements.

3.2.8 Recommendations

In light of the findings, the mission team recommends:

a) A continuous training on GIS operation and physical means to ensure continuity and sustainability of project achievements;

b) A great effort should be done to ensure the acquisition of satellite imagery to ensure the long-term goal of the project;

c) To establish a space and a permanent mechanism for coordination and complementarity with other initiatives related to law enforcement and forest production control;

d) To strengthen and improve the equipment of the laboratory and remote sensing and to improve the competitiveness of the forest service personnel;

e) Try to establish a relationship between the mapping and effectiveness on controlling illegal logging activities around and in the forest concessions and protected areas;

f) Continue updating of the forest atlas and other relevant cartographic and statistical information, and its dissemination among the different forest users, compromising their commitment for sustainable forest practices.

3.3. Final and general appraisal of the two projects in relation to:

These two projects take part of a thematic pool of projects to be ex-post evaluated, in relation to the improvement of the SFM practices and control, as so, the evaluation had given special emphasis to the impact of the projects on the whole context of the SFM, in contribution to the ITTO's Year 2000 objective.

4. Brief summary and general conclusions

4.1. Brief summary

ITEM	PD 57/99	PD 176/02
Efficacy	The project demonstrate a very good efficacy in relation to the results, and out puts, however a more careful elaboration of the specific objective and out puts could help for an ever better qualification, almost all the outputs were achieved.	The project accomplished most of the outputs related to the specific objective 1, and fails to do the same with the second specific objective, which in opinion of the evaluators was not well formulated in the project document.
Efficiency	The managerial context of the project was also very good and just some small difficulties related to the administration of the budget were solved rapidly.	Considering that the most important objective of the project had a strong demand of official decisions and that the Executing Agency was an external institution from the official forest-related public administration context, it resulted very difficult to assess the actual efficiency of the project. Moreover the budget structure was not the adequate one vis a vis the priority of the project.
Strategy	The project gave a great importance to the training activities, as main element of its strategy, however a better involvement with a large number of the private sector could be desirable	The project concentrates most of its efforts to the implementation of the GIS System and remote sensing laboratory, too low attention to the development of a system linking these elements to the identification and control of illegal logging and trading activities.
Design	In general the project was well designed, but some details on the logical framework matrix, particularly on the indicators and means of verification, were not clear and helpful for the evaluation	The design of the project intents to solve a mega problem through a limited resources and tools, outputs and indicators did not help very much to assess the achievement of the main outputs.
Impact	The impact of the project was very good among the context where the project was implemented, however a larger extend of forest operators could contribute to a better impact. Impacts on social and economic aspects were not sufficiently elaborated	The impact of the project among the official institutions of the government, especially on the MDDEFE and CNIAF, was very good, but very weak on the context of the law enforcement.
Sustainability	The executing agency make all the necessary efforts and steps in order to obtain a good perspective for the sustainability	The Congo's Government gave a very high importance to the project and make important efforts in order to guarantee the continuity of results from the specific objective one.

4.2. General conclusions

Both projects were very relevant concerning the particular problematic of the forest sector in each of the two countries, moreover the projects were also very relevant in relation to the ITTO's 2000 objective.

Both projects make a great effort in order to be more effective and efficient; however managerial capacity and availability of resources coming from the national counterparts were very different; in the case of PD 57/99 Rev.2 (F) the Executing Agency is a strong official entity and develop very good synergies with the

private sector and the civil society (but could be better). Regarding the PD 176/02 Rev.1 (F) the Executing Agency was an international NGO, and the collaborating one was the Ministry of Forest Economy and Sustainable Development, dealing with a very complex and sensitive problem in which the official sector should take the lead.

In both cases were found some difficulties with the formulation of the logical framework matrix, in particular with the outputs and indicators, which generate some confusion or misunderstanding regarding the actual expected results, in the case of PD 176/02 Rev.1 (F), the second specific objective was too ambitious and less realistic in consideration to the limited resources and lack of a clear strategy on how to link the results of the specific objective one to the specific objective two.

The total monetary resources allocated by ITTO in both cases was enough, nevertheless the problem was the elaboration of the budget which was clearly unbalanced for the project PD 176/02 Rev.1 (F).

Training and dissemination activities play an important role in both projects, and should continue being the most important elements on their follow-up.

Annex 1

Terms of Reference

Ex-Post Evaluation of ITTO Projects on Geographic Information System / Demonstrations Areas

I. Background

ITTO is an intergovernmental commodity organization established in 1986 to administer the provisions and operation of the International Tropical Timber Agreement (ITTA), particularly in the promotion of international trade in tropical timber, the sustainable management of tropical forests and the development of tropical forest industries through international cooperation, policy work and project activities.

The two projects that will be the subject of the Ex-post Evaluation are as follows:

PD 57/99 Rev.2 (F)	Sustainable Management of Production Forests at the Commercial Scale in the Brazilian Amazon – Phase I
PD 176/02 Rev.1 (F)	Use of Remote Sensing Technology and Information Systems to Support Forestry Legislation Monitoring in the Republic of Congo

The background information of the projects is provided in Annex to the Terms of Reference.

II. Purpose and Scope of Evaluation

A) Purpose

The primary purpose of the evaluation is to provide a concise diagnosis of two projects related to Geographic Information System / Demonstrations Areas so as to point out the successful and unsuccessful outcomes, the reasons for successes and failures, and the contribution of the projects towards the achievement of ITTO's Objective 2000, and to draw lessons that can be used to improve similar projects in the future.

B) Scope of Work

a) Analyze and assess for each project:

1. The overall role and contribution of the project in light of sectoral policies, development programmes, priorities and requirements to achieve the rehabilitation of degraded forest lands and the sustainable management of forest resources in the country concerned.
2. Specific measures taken to incorporate project results in the national forestry and environmental policies and legislation.
3. The current management status of the forests within the project's area of influence, the effectiveness of the project's implementation and its effectiveness in promoting sustainable forest management as defined in the ITTO Guidelines and Criteria and Indicators for Sustainable Forest Management.
4. The effectiveness of the project area as a demonstration area or model forest for sustainable forest management.
5. The contributions of the specific studies in various forestry-related disciplines prepared by the project to the development of forestry in the project's area of influence and on other similar and/or related projects being implemented in the countries concerned.
6. The results and potential impact of the applied research conducted by the project (if any) on Geographic Information System / Demonstrations Areas practices and its contribution to the overall forestry-related knowledge in the region.
7. The impact of project activities on the livelihoods of target populations.
8. The effectiveness of dissemination of project results.
9. The overall post-project situation in the project's area of influence.
10. The unexpected effects and impacts, either harmful or beneficial, and the reasons for their occurrences.
11. The cost efficiency in the implementation of the project, including the technical, financial and managerial aspects.
12. Follow-up actions in order to enhance uptake of project results.

13. The project's relative success or failure, including a summary of the key lessons learnt; and the identification of any issues or problems that should be taken into account in designing and implementing similar projects in the future.

b) Provide a synthesis to:

1. assess the overall role and meaningful contribution of the two projects in achieving sustainable management of forest resources in tropical timber producing countries taking into account ITTO's objectives, the ITTO Yokohama Action Plan and Objective 2000, as follows:
   - Adopt a forest policy and apply legislation;
   - Secure the permanent forest estate;
   - Apply reduced impact logging;
   - Train the work force, including supervisors, in reduced impact logging;
   - Limit timber harvest to the sustained yield capacity;
   - Raise public awareness that timber harvesting can be consistent with the sustainability of tropical forests; and
   - Focus forest research on the analysis and use of existing data and knowledge.
2. assess the overall appropriateness of the design and objectives, outputs and implementation approach of the two projects in light of its efficiency and effectiveness to assist promoting sustainable forest management.
3. evaluate the overall contribution of the two projects to forest rehabilitation in the tropics and to the restoration, management and rehabilitation of degraded and secondary tropical forests.
4. evaluate the overall impact on and relevance of the two projects for the Executing Agencies, the forest industry sector and local communities being served and the countries concerned.
5. evaluate the overall attainment of the objectives and assess the overall effectiveness of the two projects.
6. evaluate the overall appropriateness of the costs and cost structure and use of resources within the two projects.

And make recommendations on:

1. the needs for similar projects in the future.
2. the objectives of such future projects.
3. innovative approaches/designs for projects aiming at promoting sustainable forest management in the tropics.
4. the effectiveness of the two projects' approach to promoting sustainable forest management.
5. appropriate target groups, e.g. countries, government, organizations, forestry sector, local communities.
6. the organizational arrangements of the project.
7. follow-up and evaluation practices.
8. supplemental, alternative activities, processes, procedures, and/or follow-up programmes in the field of Sustainable Forest Management, if appropriate.
9. further actions needed to sustain or increase the intended effects on sustainable forest management and Objective 2000 and to draw conclusions which may be of relevance to other ITTO projects in the field of sustainable forest management.

III. Approach

A) Composition of the evaluation team

The team will be composed of two consultants. One of the consultants will be the Team Leader in charge of the final report and the presentation of the results at the Forty-seventh Council Session in Guatemala, in November 2011. The assignment of the other consultant will be made on a regional basis: the second consultant will carry out the mission to Congo. The assignment of specific tasks within the TOR will be left to the Team Leader based on the individual expertise of the members of the team.

B) Consultation during evaluation exercise

The team will maintain close liaison with ITTO and will carry out its work in close cooperation with the concerned Executing Agencies and Governments in the countries concerned. Although the team should feel

free to discuss with the authorities concerned all matters relevant to its assignment, it is not authorized to make any commitments on behalf of ITTO.

C) Activities and report of the team

The work required in this evaluation will consist of:

1. Desk review of project-related documents and materials provided by ITTO.
2. Missions in Brazil and the Republic of Congo. The consultants will visit each project's Executing Agency headquarters for a further desk review of project materials and to carry out evaluation work in collaboration with the Executing Agencies. The missions shall also include a field visit to each of the projects' area of influence to review field implementation and to evaluate the project results and impact, and should include discussions with project stakeholders and target beneficiaries. Approximately five to six working days are required for each project.
3. Preparation of an Ex-post Evaluation Report for each project in accordance with the Scope of Work and the checklist contained in the ITTO Manual for Project Monitoring, Review and Evaluation. The report for Brazil should be in English, and the reports for Congo should be in French;
4. Preparation of a synthesis report [see b) Scope of Work] of the two ex-post evaluation reports in one of ITTO's languages, focusing on the overall assessment of the projects' relative success in contributing to ITTO's Objectives, the Objective 2000 and the ITTO Yokohama Action Plan 2002-2006, summarizing the key lessons learnt; and identifying any issues or problems which constrained their contribution to the achievement of Objective 2000.
5. Presentation of the synthesis report (to be called: Overall Executive Summary) at the Forty-seventh Session of the International Tropical Timber Council (November 2011, Guatemala).
6. Preparation of an article for possible publication in the ITTO Tropical Forest Update (TFU), in consultation with the editor, containing an overview of the projects and summarizing the lessons learned from the evaluation work. Appropriate high-resolution photographs should be provided.

In writing the Ex-post Evaluation reports, the team will have the opportunity to discuss its preliminary findings, conclusions and recommendations with the representatives of each of the Executing Agencies, Governments and ITTO before the final version of the report is made. Responsibility for the final content of the reports, however, remains with the evaluation team.

D) Duration of the assignment

The duration of the assignment will be eight weeks for the Team Leader, and three weeks for the second consultant (Republic of Congo). Travel time for each project to be visited will be approximately one week. The remaining time will be used for preparation of the evaluation and report writing.

E) Proposed Work Schedule

- July 2011 — Desk review
- Aug. /Sept. 2011 — Field visits
- 18 Sept. 2011 — Submission of draft reports to ITTO Secretariat and to each of the Project Executing Agencies for comments and suggestions.
- 08 Oct. 2011 — Submission of the final ex-post evaluation reports and the overall executive summary to ITTO Secretariat.
- Nov. 2011 — Submission and presentation of the Final Report at the Joint Session of the Committees during the Forty-seventh Council Session in Guatemala (team leader).

F) Proposed Consultants

- Jorge MALLEUX, Team Leader (Brazil & Republic of Congo – 8 weeks)
- Germain ZASY NGISAKO, Consultant (Republic of Congo – 3 weeks)