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## **META-EVALUATION OF PREVIOUSLY EVALUATED ITTO PROJECTS**

### **Lessons learned & good practices towards sustainable management of tropical forests**

#### **Summary Report**

#### **8. Forest information systems**

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## THEMATIC SUMMARY REPORT No. 8

### Forest Information Systems

#### 1. INTRODUCTION

There is currently a lack of systematic and reliable information on forest resources and forest-based industries in many countries. There is also a need for further development of forest information systems which can support policy and market development for sustainable forest management and associated further processing of tropical timber and timber products. Improved transparency on forest sector would greatly facilitate international efforts against illegal logging and illegal timber trade. Adequate information is necessary for governments in assessing performance and revising forest policies and regulations. Both the public and private sectors need sufficient information for decision making on investments.

ITTO has supported many countries to develop Forest Information Systems (FIS) together with various activities in this area including training, collection, compilation and dissemination of information and other related activities. The purpose has been to improve availability and quality of information on the forest sector. ITTO coordinates with member countries and other international organizations the collection, compilation and dissemination of information on tropical forests, industrial production and trade of tropical timber products.

These actions have been taken in view of achievement of the ITTA objective (i) *Strengthening the capacity of members for the collection, processing and dissemination of statistics on their trade in timber and information on the sustainable forest management*, and objective (h) *Improving market intelligence and encouraging information sharing on the international timber market with a view to ensuring greater transparency and better information on markets and market trends, including the gathering, compilation and dissemination of trade related data, including data related to species being traded*.

#### 2. KEY ISSUES

- The quality of planning, supervision, monitoring and evaluation is often weak due to lack of sufficient information on forest resources, production and markets, and environmental values and services of forests.
- The quality of data is often weak, not least because of manual systems used in data collection and processing. The credibility of FIS relies on the accuracy and timeliness of the data processed and the information disseminated.
- The value added of processed statistical data is still largely limited. Comprehensive data analysis has not yet been given due attention. Therefore, FIS inputs to policy development and decisions have often remained limited. In order to have a full impact on policy reform and management decisions, an effective planning and control system is needed. FIS needs to go beyond mere data capture and correction of errors to include analysis and effective dissemination mechanisms.
- In many countries, the national FIS is understood as a tool for the government. However, forest and market information is needed by the private sector and other stakeholders but their needs are not always recognized.
- Inconsistencies of data produced by different government agencies create confusion among stakeholders and can lead to unnecessary conflicts in pursuing policy objectives.
- Lack of equipment and qualified personnel for the processing, analysis, validation and dissemination of information is frequently observed; the status of information units can be low and its budgetary resources limited. This is often due to the fact that the top management has not realized the value of information systems as a management tool.
- The scattered and dispersed nature of the forest information among the different institutions and geographic levels of the country represents a particular challenge for FIS development.

- Due to limited available resources, many national FIS have been developed through a piecemeal approach focusing on certain elements (e.g. timber tracking, industrial wood consumption). Various FIS components are not therefore integrated within the same modular framework and data inconsistencies are common, reducing its value for supervision and monitoring.
- Dissemination of statistical information suffers from delays and may not be directed to all the relevant target groups. This undermines the benefits from the investment in information systems. Data collected from the field is not reported back to middle management that perceives itself as a simple provider of information rather than as an effective user in day-to-day decision-making process.

### **3. LESSONS LEARNED**

#### ***Project design***

- In view of the dynamics and complexities of the forest sector, the design of national forest information system projects, should allow sufficient flexibility to facilitate technical and administrative adjustment over time.
- The FIS design should be targeted at meeting information needs of different stakeholders.
- To limit the scope of FIS projects, their strategy could initially be based on minimum requirements and the entire systems can be built up by phases through a modular approach within a comprehensive FIS framework.
- The entire FIS scope can be extensive and may include such elements as forest inventory data on different levels, concessions, community forests, reforestation activities, industries, non-timber forest products, wildlife and hunting, prices, markets, etc.

#### ***Project implementation***

- Many projects targeted at improving data capture and processing have found that annually publishing information on timber production and trade supplied by the concessionaires and the timber industry companies is not sufficient for effective sectoral control and administration. It is necessary to have a closer and more frequent control of the source data supplied by the private sector and to establish field check procedures.
- The implementation of a FIS project requires the involvement of multidisciplinary and well trained personnel, with a capacity to transfer their knowledge. An experienced team, good working conditions and good personal links with the production sector has resulted in efficient project implementation. The core project team can be relatively small but needs in-depth understanding on the sector combined with knowledge on information technology.
- Compilation of statistical information into reports is the first phase which needs to be complemented by analysis of data. Studies based on statistical analysis add value to the information generating insights for policy design, organizational development, and investment opportunities in the forest sector.
- The transfer of a new technology that requires change in work procedures may initially cause fears and resistance to change. It is important to effectively communicate on the objectives and the expected situation to maintain confidence and enhance cooperation among the involved parties.
- In the specification of the equipment, growing demands due to improved awareness and skills of potential users should be anticipated in order to accommodate increasing volumes of data to be handled in the future.
- Sufficient funds should be allocated for training, with emphasis on database managers, to ensure the efficiency of the system, to be more autonomous in solving day-to-day problems, and to have an exposure to new developments. Training is also needed on the use of webpages.

- To ensure effective management and project sustainability, a stable team of qualified personnel is required as frequent key staff rotation has disrupted many development efforts.
- A number of FIS projects have extensively relied on external expertise, creating a continued dependence on their inputs. The same can happen if the project software is based on tailor-made applications rather than relying on those which are broadly used in forest organizations for other purposes.
- Use of hand computers for field-level data capture can reduce problems of data accuracy and consistency in forest inventory and field control of timber harvest. Concessionaires should be encouraged to adopt this kind of technology.
- Security policies and procedures are needed for FIS control including automatic back-up copies of the system, which should be kept outside the facilities of the institution.
- If the FIS is not properly institutionalized and the status of the information unit remains marginal, the project's sustainability is endangered.
- The interaction of the forest authority with the industry staff can be developed to ensure timely supply of data to FIS.
- A good forest information system can be adjusted to also cover the needs of other areas. The experience gained and the lessons learned can help in the building up and operation of new systems of information (e.g. biodiversity or other environmental aspects) for the country.
- The use of electronic means is important to improve the dissemination of the information, but printed material is still often necessary for reporting on main indicators.
- Implement dissemination and outreach procedures at all levels related to the information resources (database) and statistics available through the system, so that they can be used by different users and can generate actions that will contribute to the consolidation of the system;

#### **4. GOOD PRACTICES**

##### ***Project design***

- FIS projects require detailed planning. They would benefit from being part of clear national/ organizational strategies to improve information systems.
- Flexibility is often needed to ensure effective implementation in changing conditions.
- A limited number of strategic requirements can be focused on in the initial phase of building up of information systems.
- In decentralized institutional setting, sub-national bodies can be given a broader role than just data collection.
- Phasing of this kind of projects can be risky due to risks related to institutional or organizational changes. Also overambitious scope and targets should be avoided.
- Strong government commitment is necessary for achieving the targeted results and awareness need to be created among top management on the strategic importance of reliable up-to-date information.

##### ***Technical aspects***

- Spatial information is a key aspect of any FIS which needs to be integrated with Geographic Information Systems.
- Land holding and tenure arrangements and regulatory requirements should be considered in the FIS design.
- Four basic sub-systems need to be covered: data collection, data processing and storage (data base), data analysis, and dissemination and access to data.

- Modular approach can be useful for individual sub-systems of information on specific topics, but interaction, coordination and compatibility among various data bases need to be ensured. Also, the integration of statistical, economic and forest data is necessary and provides effective management and control tools.
- Specific measures are often needed for acceptable quantification of illegal forestry operations and the production and raw material use of the informal sector (e.g. periodic sample-based surveys).
- Reconciling data on timber flows in different stages of the logistic chain is important for data consistency.
- Consideration of statistical requirements of reporting to ITTO and other international bodies in the FIS design will allow cost-efficient reporting in due course.
- Clarity on conversion factors from log to sawnwood is needed from the beginning; particularly those applied for import and export data.
- Statistical theories and methods can improve and optimize data collection and analysis.
- Building up consistent time-series on critical indicators adds value to the information produced.
- In decentralized systems, appropriate communication technology can ensure better links among different levels of organization.
- Engaging the private sector and other stakeholders, and providing results to them contributes to their support to improved systems.
- Compatibility of the designed FIS with the budgetary framework is necessary.
- Clarity of responsibilities among participating organizations and their different levels is critical for economic efficiency.
- Systems depending on external expertise and services tend to have low cost-efficiency and can suffer from unexpected risks.

### ***Capacity building and dissemination***

- Building up statistical information capabilities of the participating organizations may require special efforts.
- Training should cover all the levels, including data collectors and users of data.
- Training is also often needed for effective dissemination.
- Wide dissemination in different forms to all relevant stakeholders is desirable including yearbooks, information bulletins, newsletters, CD-ROMs, web portals, and other interactive means; these different ways are complementary.

### ***Implementation arrangements***

- Project steering group has a particularly critical role to ensure effective implementation of FIS projects due to the need for inter-agency coordination and cooperation.
- Multidisciplinary working groups and thematic sub-groups can be helpful in working out the detailed FIS components.
- Effective interrelationship among available skills (experienced, high-level personnel), the required technological levels (specialized hardware and software) and efficient organization and management of the project is a key factor of success.
- Private sector can be effective in implementation if the government does not have sufficient staff and capacity, and when flexibility is needed in implementation.

**Sustainability**

- FIS needs to be institutionalized and supported with adequate budgetary and staff resources. The information unit in forest agencies needs a clear mandate and appropriate place in the organization to ensure its continuous role.
- Sustainability of FIS projects requires strengthening links with the involved parties, comprehensive system manuals, reliability of information, effective dissemination, and established procedures of statistical analysis.
- An agreed follow-up and monitoring arrangement can help ensure sustainability.
- Effective dissemination of results showing the value of information produced contributes to sustained stakeholder support to operation of the information systems.
- Specific exit strategies in the project design and during implementation are often required for ensuring sustained operation of the FIS.
- Regional-level sharing of experiences through networking is helpful for further development of the national FIS.

**SOURCES**

This thematic summary is based on the ex-post evaluation reports of the following projects:

PD 29/96 Rev.1 (M)	REINFORCEMENT OF THE NATIONAL SYSTEM FOR THE COLLECTION AND PROCESSING OF FOREST STATISTICS AND SUPPORT FOR THE TRAINING OF FIELD UNITS
PD 34/94 Rev.1 (M)	ESTABLISHMENT AND IMPLEMENTATION OF A FOREST STATISTICAL INFORMATION SYSTEM
PD 27/95 Rev.3 (M) II 1	ESTABLISHMENT AND OPERATION OF A FOREST STRATEGIC INFORMATION CENTER (CIEF) PHASE II STAGE 1
PD 56/00 Rev.3 (M)	ENHANCEMENT OF THE FOREST STATISTICS INFORMATION AND MANAGEMENT SYSTEM (STATFOR) THROUGH THE INTEGRATION OF TWO COMPUTER MODULES: COMPILATION OF MANAGEMENT INVENTORY DATA AND MANAGEMENT OF EXPORT LOG LUMBERYARD (GABON)
PD 27/95 Rev.3 (M) II 2	ESTABLISHMENT AND OPERATION OF A FOREST STRATEGIC INFORMATION CENTER (CIEF) PHASE II STAGE 2
PD 24/95 Rev.1 (I)	THE IDENTIFICATION, PROPERTIES AND USES OF THE TROPICAL TIMBER IMPORTED TO CHINA FROM LATIN AMERICA
PD 35/94 Rev.4 (M,I)	FOREST PRODUCTS MARKETING ORGANIZATION FEASIBILITY STUDY
PD 167/91 Rev.1 (M)	DIAGNOSIS AND EVALUATION OF THE BRAZILIAN FORESTRY SECTOR