ITTO PD 599/11 Rev.1 (M)

Development and Testing of National Forest Stock Monitoring System (FSMS) with Improved Governance Capabilities at all Levels of the Forest Administration
(Philippines)

Ex-Post Evaluation Report
Patrick B. Durst

10 August 2023

Table of Contents

List of Abbreviations

CBFMA	Community-Based Forest Management Agreement
CITES	Convention on International Trade of Endangered Species of Wild Fauna and Flora
CEM	Committee on Economic and Market Intelligence
CFI	Committee on Forest Industry
CLO	Certificate of Lumber Origin
CTO	Certificate of Timber Origin
CENRO	Community Environment and Natural Resources Office
CoC	Chain of Custody
DENR	Department of Environment and Natural Resources
DO	Development Objective
EA	Executing Agency
EO	Executive Order
FAO	Food and Agriculture Organization of the United Nations
FLEGT	Forest Law Enforcement, Governance and Trade
FMB	Forest Management Bureau
FSMS	Forest Stock Monitoring System
ITPLA	Industrial Tree Plantation Lease Agreement
IFMA	Integrated Forest Management Agreement
IT	Information Technology
ITTA	International Tropical Timber Agreement
ITTO	International Tropical Timber Organization
NFSMS	National Forest Stock Monitoring System
NGO	Non-Governmental Organization
PENRO	Provincial Environment and Natural Resources Office
PSC	Project Steering Committee
PWPA	Philippine Wood Producers Association
RENRO	Regional Environment and Natural Resources Office
RFID	Radio Frequency Identification
SIFMA	Socialized Industrial Forest Management Agreement
SMF	Self-Monitoring Form
TLAS	Timber Legality Assurance System
TLA	Timber License Agreement
UAT	User Acceptance Testing
VLO	Verification of Legal Origin

Acknowledgements

Part I. Executive Summary

1.   Introduction

The project was selected for ex-post evaluation by the Committee on Economics, Statistics and Markets and the Committee on Forest Industry (CEM-CFI), at their Fifty-Sixth Sessions in November 2022, to establish how well the project served its purposes and to draw up recommendations for future action.

2.   Evaluation scope, focus and approach

The ex-post evaluation was conducted per its terms of reference covering a review of relevant documents and information and a work programme to the Philippines.

3.   Project facts

The project was intended to help establish greater assurance of the legality of timber harvested, surety of payment of forest fees, and improved transparency of forest-related data in the Philippines. The Specific Objective (SO) of the project was to develop and test an integrated, real-time, multi-tiered, configurable, online National Forest Stock Monitoring System (NFSMS) with improved governance capabilities at all levels of the Forest Administration. This was to contribute to the realization of the Development Objective (DO) of improving forest governance, institutional law enforcement capacity, stakeholder coordination and forest sector competitiveness. The project had three planned outputs: (i) National Forest Stock Monitoring System (NFSMS) module to support 100% "back-to-stump" traceability for wood production; (ii) NFSMS module to support Verifications of Legal Origin (VLO) of timber; and (iii) configuration of an online, multi-tiered and integrated NFSMS environment with field data entry modules.

4.   Findings and lessons learned

The Executing Agency (EA) faced an avalanche of adversities in implementing the project, which collectively caused the project duration to extend to 88 months instead of the planned 18 months. Several challenges were beyond the control of ITTO and the EA; others could have been better anticipated and mitigated.

The NFSMS that was developed under the project successfully unified the three project outputs, allowing for traceability of timber and lumber back to the stump of origin, confirming payment of relevant fees and forest charges, and verifying legitimacy of permits and approvals. The system makes use of handheld digital data recorders, radio frequency identification (RFID) nail tags affixed to tree stumps and the associated harvested logs, RFID scanning applications to identify and verify logs in transport, and QR code labels affixed to processed lumber for tracking purposes.

While the project achieved the basic objectives of developing and testing the NFSMS, the system has not been deployed nationwide as originally envisioned, largely due to changed conditions of the forestry sector in the past decade. At the time the project was formulated, the Philippines was still logging timber from natural forests, but just prior to the start of the project, a moratorium halted virtually all harvests of timber from natural forests. The NFSMS developed under the project is well suited for tracking and monitoring high-value timber harvested from natural forests, but is less appropriate for use in tracking lower-value, small-diameter timber harvested from plantations. Without renewed impetus to modify and adjust the NFSMS to focus on plantation-grown timber and imported raw materials) and update the system with newer technologies, there is little expectation of genuine sustainability of the modest gains initially achieved by the project.

Several important lessons can be drawn from the findings related to the project's implementation, including:

- Consistent and active stakeholder engagement in project formulation and implementation serves to strengthen project design and execution, resulting in more relevant outcomes and stronger buy-in for eventual implementation.

- Retirements and staff movements within EAs can be highly disruptive, threatening the smooth implementation of projects. Contingencies should be planned to ensure continuity of project implementation in the face of possible staff transfers.

- Strong fundamental political commitment to smoothly implement projects is essential to transcend frequent changes in government administrations and leadership.

- To maximize effectiveness and relevance, EAs and ITTO need to remain sharply attuned to changing policies and context and be correspondingly flexible in adjusting project objectives, outputs, and activities, as appropriate.

- Projects that experience long delays between project formulation and effective start-up should be routinely subjected to rigorous review before commencing operations to ensure the original assumptions, risks, planned activities and outputs are still valid.

- Projects aiming to introduce new technological innovations should be cognizant of technological requirements and the corresponding capacities and limitations of countries, especially concerning aspects such as internet connectivity, adeptness of staff to adjust to new technologies, financial resources for maintaining and supporting systems, etc.

- Technological advances occur rapidly and adequate support mechanisms are required for projects that are highly dependent on evolving technologies. When specialized IT systems are being developed, long-term IT maintenance and support services should be contracted well beyond the initial system development phase.

5.   Conclusions and recommendations

5.1   <u>Conclusions</u>

- The project achieved the basic objectives outlined in the project document and produced expected outputs, but took far longer to implement than anticipated.

- The changed policies and context of forestry in the country (especially the moratorium imposed on logging in natural forests and the shift to dependence on plantation-grown timber) diminished the relevance and urgency of the originally planned project approach. Reconsideration of the project objectives, outputs, and activities was warranted but did not occur.

- Because of changing needs and the evolving nature of timber harvesting in the Philippines, full deployment of the NFSMS was not accomplished.

- The NFSMS developed by the project could be the basis for a relevant broad-based timber monitoring system, but it requires updating to be compatible with current technologies and additional functionalities are needed to monitor timber sourced from plantations and tracking of imported raw materials.

- Without additional updating and re-orientation of the NFSMS to focus on timber sourced from plantations – particularly those privately owned – and its deployment in the major timber-producing areas of the country, there will be negligible lasting impact from the project.

5.2   Recommendations

For DENR and FMB:
- DENR should undertake a thorough review of the NFSMS developed under the project, determine priorities for needed adjustments and formulate a practical plan for moving forward with systems and modules with utility to meet the current needs of the forestry sector. This may necessitate DENR investing further to update the NFSMS to allow for effective and efficient monitoring of the harvesting, transport, processing and marketing of timber sourced from plantations.

- As the legal and regulatory requirements for lawfully harvesting timber from plantations in the Philippines are relatively minimal, adaptation of the NFSMS for monitoring and tracking plantation-grown timber should likewise be kept simple and easy to use. Consistent with Philippine regulations and international practice, monitoring and tracking of relatively low-value, small-diameter, plantation-grown timber could practically be accomplished with geo-referencing and photo documentation of the plantations being harvested, and tracking of timber by "batches" rather than individual logs.

- If DENR does not have the necessary in-house capacity to maintain and update the NFSMS, the agency should enter a long-term support and maintenance contract with a qualified IT service provider to backstop the deployment and implementation of the NFSMS.

- Once an updated and relevant NFSMS is developed, DENR should follow through with a comprehensive program of training and equipment purchases to facilitate the rollout of the revised NFSMS nationwide, with priority given to the CARAGA region. Implementing rules and regulations should be finalized and issued to facilitate field deployment of the system.

For ITTO:
- The experience of this project points toward the need for more rigorous identification and assessment of risks related to administrative, regulatory, legal, and bureaucratic requirements of member countries and the potential adverse consequences of frequent turnover of staff in EAs. These risks should be acknowledged directly in the formulation of project documents and the appraisal of project proposals.

- Whenever there occurs a lengthy gap (e.g., more than two years) between the time a project is formulated and approved and the start of actual project implementation, a rigorous review of the project context, assumptions, and relevance of the logical framework should automatically be triggered before the project is allowed to commence. Where changing conditions call into question the relevance of the original project approach, appropriate revisions of the planned objectives, outputs, and activities should be made before proceeding with the project.

- For projects with unusually long delays in implementation and/or numerous extensions, the frequency of backstopping monitoring visits should be increased to identify and overcome the causes of delays.

  - More effort should be made to facilitate the learning and sharing of experiences from past and ongoing projects of related nature across member countries, to build on best practices, and avoid unnecessary duplication..

Part II. Main Text

1.   Introduction

The Committee on Economics, Statistics and Markets and the Committee on Forest Industry (CEM-CFI), at their Fifty-sixth Sessions in November 2022, decided that an ex-post evaluation for the ITTO project: PD 599/11 Rev.1 (M) "Development and Testing of National Forest Stock Monitoring System (FSMS)[1] with Improved Governance Capabilities at all Levels of the Forest Administration (Philippines)" should be carried out to establish how well the project served its purposes and to draw up recommendations for future action.

Project Number: PD 599/11 Rev.1 (M)

Project Title: Development and Testing of National Forest Stock Monitoring System (FSMS) with Improved Governance Capabilities at all Levels of the Forest Administration (Philippines)

Host Government: Philippines

ITTO/ITTA Context: The project relates to Article 1, Objectives d, l, n, and p of ITTA 2006, as well as Action c of Expected Outcome 3 and Actions a1 and a2 of Expected Outcome 4 of the ITTO Action Plan 2008-2011. The project also built on earlier ITTO-supported projects PD 41/99 Rev.2 (M), PD 353/05 Rev.2 (M,F,I) and PP-A/39-170 and recommendations of a national forum on "Strengthening Policies and Opportunities for Forests Investment in the Philippines" organized by ITTO, the Food and Agriculture Organization of the United Nations (FAO) and the Philippine Wood Producers Association (PWPA) in 2009. Although formulated prior to the adoption of the ITTO Strategic Action Plan 2022-2026, the project was aligned with Strategic Priority 2 relating to economies and tropical timber trade.

---

[1] The timber stock monitoring system developed with support from ITTO is alternately referred to as the "Forest Stock Monitoring System (FSMS)" and, more commonly, the "National Forest Stock Monitoring System (NFSMS)." For clarity, the system developed by the project is referred to as the "National Forest Stock Monitoring System (NFSMS)" throughout this report except when referencing the explicit text used in the project document (e.g., in the project Objective and Outputs) that uses the term "Forest Stock Monitoring System (FSMS)."

2. Evaluation Scope, Focus and Approach

The purpose of the ex-post evaluation was to provide an in-depth diagnosis of the project to identify the successful and unsuccessful outcomes, the reasons for successes and failures, the contribution of the project toward the achievement of ITTO's relevant objectives, and to draw lessons that can be used to improve similar projects in the future.

The scope of the ex-post evaluation encompassed the following aspects, as elaborated in the evaluation Terms of Reference:

i.   assess the project's design and contribution to the achievement of its respective objectives.

ii. assess the achievement of the project's outputs and specific objectives, with a focus on the National Forest Stock Monitoring System (NFSMS).

iii. evaluate the impact and relevance of the project, detailing their impact on development and specific objectives related to the improvement of governance capabilities at all levels of the forest administration.

iv. assess the overall post-project situation for the project, including the conditions of its intended direct and indirect beneficiaries.

v.   define and assess unexpected effects and impacts, either harmful or beneficial, and present the reasons for their occurrences.

vi. analyze and assess implementation efficiency, including the technical, financial and managerial aspects, and the causes and reasons for the substantial delay of the implementation.

vii. assess the overall sustainability of the project after completion and include appropriate recommendations to safeguard the continuing of their positive impacts and enhance utilization of the technologies (if applicable) and other results developed by the projects.

viii. taking into account the results of the evaluation, make an overall assessment of the project's relative success or failure, summarize the key lessons learnt, and identify any issues or problems which should be taken into account in designing and implementing similar projects in future.

ix. assess the overall cost of the project with original budget provisions, and their respective linkage with the overall results.

x.   prepare the evaluation report in accordance with the references for the Project Evaluation Report, as contained in the ITTO Manual for Project Monitoring, Review and Evaluation.

xi. assess the projects' contribution to the relevant ITTA objectives (2006) and ITTO Strategic Action Plan 2022-2026.

xii. prepare one or more articles for possible publication in the ITTO Tropical Forest Update (TFU), in consultation with the editor, containing an overview of the project and summarizing the lessons learned from the evaluation work. Appropriate photographs should also be provided.

The evaluation was conducted in a manner that aimed to answer the questions identified in the evaluation checklist of the ITTO Manual for Project Monitoring, Review and Evaluation. The evaluation was conducted by a single evaluator, Patrick B. Durst (U.S. national), a forestry and natural resources consultant, based in Thailand.

The basic approach adopted for the evaluation included:

i. a review of relevant ITTO manuals, the project document, project reports and correspondence, a project brochure, and relevant literature and information on timber tracking and traceability. A list of key documents reviewed is included in Annex 1.

ii. a work programme to the Philippines from 5 to 9 June 2023, including briefings, meetings, discussions, and interviews with representatives of the Government of the Philippines, particularly the Department of Environment and Natural Resources (DENR) and its Forest Management Bureau (FMB), members of the project implementation team, the key Information Technology (IT) service provider (i.e., contractor), and other stakeholders; as well as visits to field locations where the system developed under the project was tested. The work programme schedule is included in Annex 2. A list of individuals met and interviewed is attached as Annex 3.

A draft report of the evaluation was submitted to the ITTO Secretariat and the Government of the Philippines Executing Agency for comments and suggestions prior to its finalization and submission to the ITTO Secretariat.

3.   Project facts

<u>Background and origin of the project</u>

In August 2009, the FMB, ITTO, FAO, and the Philippine Wood Producers Association (PWPA) jointly organized a national multi-stakeholder forum on "Strengthening Policies and Opportunities for Forest Investment in the Philippines." Included in the policy action plan adopted by the forum was a recommendation for *"institutionalization of Chain of Custody (CoC) and timber tracking."* The action plan further recommended submitting a proposal to ITTO to help develop a timber tracking system.

During the above-mentioned forum and subsequent formulation of the project proposal, it was acknowledged that the existing system for tracking stocks of timber from the forest to processing facilities was ineffectual and outdated. It entailed tedious and time-consuming data encoding and was inadequate for tracking timber with confidence, rendering full CoC monitoring practically impossible. In addition, the procedures for documenting and marking timber were widely acknowledged to be susceptible to forgery, tampering, and fraud.

With the Philippine timber sector facing widespread uncertainty due to frequent policy changes, a declining resource base, overlapping tenurial claims on timber lands, and perceptions of mismanagement, it was recognized that more robust measures were needed to rebuild confidence in the timber sector. The PD 599/11 Rev.1 (M) project was intended to help establish greater assurance of the legality of timber harvested, surety of payment of forest fees, and improved transparency of forest-related data.

Development Objective (DO)

The DO of the project was "to improve forestry governance, institutional law enforcement capacity, stakeholder coordination and forest sector competitiveness through improved data management."

Main problems to be addressed

At the time the project was formulated, the existing forest information and timber monitoring systems in the Philippines were not sufficient to support full legality verification, CoC management, or field law enforcement required to further improve forest management. Integrated "back-to-stump" timber tracking was not possible, forest charges were not systematically calculated and validated, and the capability for analyzing and reporting on timber stocks was limited.

Specific Objective (SO) and Outputs

The SO of the project was "to develop and test an integrated, real-time, multi-tiered, configurable, online national Forest Stock Monitoring System (FSMS) with improved governance capabilities at all levels of the Forest Administration."

The planned project outputs were:

Output 1   Forest Stock Monitoring System (FSMS) module to support 100% "back-to-stump" traceability for wood production developed.

Output 2   Forest Stock Monitoring System (FSMS) module to support Verifications of Legal Origin (VLO) developed.

Output 3   Online, multi-tiered and integrated FSMS environment with field data entry module configured.

Project Rationale

Widespread criticism of the timber sector in the Philippines, coupled with growing international demand for legality assurance and CoC verification, pointed toward the need for improvements in the country's forest governance, including through a more comprehensive and robust forest stock monitoring system. DENR, the lead government agency tasked with monitoring the performance and compliance with forestry regulations, struggled with overseeing the actions of thousands of forest tenure holders,

including those operating under Timber License Agreements (TLAs), Integrated Forest Management Agreements (IFMAs) and Industrial Tree Plantation Lease Agreements (ITPLAs), Socialized Industrial Forest Management Agreements (SIFMAs), and Community-Based Forest Management Agreements (CBFMAs)[2]. A more effective and systematic mechanism for forest monitoring and enforcement was deemed necessary. Conversely, it was expected that forest agreement holders would benefit from simplification of processes and procedures, more expeditious approvals of required permits, and validation of legality of forest products. At the time of project formulation, there were also strong advocates for revitalizing the forestry sector who recognized that establishing a robust system of legality assurance could help rebuild confidence in the sector and enhance market opportunities. Such a system was seen as one way to support efforts to curtail illegal logging, which was rampant in natural forests at the time (see further elaboration on *Evolving forestry context in the country,* in section 4.1.1, page 6).

<u>Starting Date and Duration of the Project</u>

The project was approved and financed in 2011 and officially commenced with the first disbursement from ITTO in May 2013. Originally planned for only 18 months duration, the project experienced a series of major delays (see additional information on the cause of delays under *Efficiency and operational aspects*, in Section 4.1.2, page 13) and was extended several times, eventually concluding after 88 months.

<u>ITTO Contribution</u>

The total approved ITTO contribution to the project was US$497,930. The Government of the Philippines contributed US$290,113. The bulk of the ITTO contribution (US$274,145) was budgeted for sub-contracts to procure the support of a specialized IT service provider. The budget also allocated $12,536 for project personnel, $51,000 for duty travel, $72,800 for capital items, $11,075 for consumable items, and $76,374 for ITTO monitoring, evaluation and administration. An unspent amount of US$61,045 was returned to ITTO following the final audit.

<u>Executing Agency (EA)</u>

The Philippines Forest Management Bureau (FMB) was designated EA for the project.

---

[2] As of 2009, there were 4 TLAs, 154 IFMAs/ITPLAs, 1,813 SIFMAs, and 1,790 CBFMAs in effect in the Philippines. By 2021, there were 48 IFMAs, 1,508 SIFMAs, and 1,958 CBFMAs in effect.

4. Findings and lessons learned

4.1 Findings

4.1.1 Project achievements

<u>Planned versus realized objectives and outputs</u>

The EA worked in close collaboration with a specialized IT software service provider (CAI-KONEK Ventures, Inc.[3]) to develop an overarching National Forest Stock Monitoring System (NFSMS) that integrated all of the functions outlined in the Project Document into a single platform. The developed NFSMS successfully unified the three Project Outputs: 100% "back-to-stump" traceability for wood production, verification of legal origin of timber and wood products, and an online, multi-tiered and integrated NFSMS environment with field data-entry features.

The development of the NFSMS began with the project team formulating and clarifying the "Technical and Functional Specifications," which served as the foundation of the system. These specifications were based on existing regulations and legal requirements for the inventory, harvesting, transport, and processing of timber and wood products. To ensure the features of the NFSMS aligned with the identified needs, the EA project team engaged intensively with the IT service provider to foster a common understanding of the system's purpose and functionality. An iterative process between the EA and the CAI-KONEK team allowed for all of the features of the system to be tested, debugged, and approved under a User Acceptance Test (UAT) protocol. Equipment needed to implement the NFSMS was purchased and tested. Finally, the NFSMS was field tested during three pilot trials and initial training on the system was conducted with DENR staff.

In support of Output 1, "Forest Stock Monitoring System (FSMS) module to support 100% 'back-to-stump traceability' for wood production developed," the planned activities outlined in the project document were largely completed. These included an extensive review of existing traceability gaps, a survey of existing supply chain data-entry processes and procedures required by DENR regulations, drafting of "Functional and Technical Specifications" for the traceability module, development of online data entry and file upload interfaces, construction of data validation elements and reporting formats, drafting of a user guide and system maintenance documentation, development and testing of the system software, and initial training.

Planned activities in support of Output 2, "Forest Stock Monitoring System (FSMS) module to support Verification of Legal Origin (VLO) developed," were satisfactorily completed. These included reviewing the existing VLO processes based on DENR regulations, formulating the "Functional and Technical Specifications" to reflect VLO and payment of relevant forest charges and fees, developing

---

[3] Now known simply as CAI.

the online data entry and CTO/CLO upload interfaces, drafting a user guide and system maintenance documentation, field testing the system software, conducting initial training, and planning for nationwide implementation. The system that was developed was deemed to be fully consistent with agreed ASEAN Criteria for Timber Legality.

In support of Output 3, "Online, multi-tiered and integrated FSMS environment with field data entry module configured," the planned activities were mostly completed. These included developing the integrated NFSMS, with five system applications, allowing for real-time online sharing of data and approval of requests at relevant levels of the DENR organizational structure, drafting of user guides and system maintenance documentation, field testing of the system, and initial training. Six one-week orientation sessions were conducted for regional clusters of DENR field staff (totalling more than 300 individuals) to introduce the NFSMS, but the sessions were introductory in nature rather than comprehensive training.

The NFSMS was developed under the project in line with the country's existing laws and regulations on timber production and in accordance with international forestry principles and timber legality standards. Embedded in the system is a database of all Philippine timber trees, along with growth and yield volume tables by species. It also flags all timber species listed under the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES) that could potentially require special attention and authorizations.

The NFSMS is designed to make use of handheld digital data recorders, radio frequency identification (RFID) nail tags affixed to tree stumps and the associated harvested logs, RFID scanning applications to identify and verify logs in transport, and QR code labels affixed to processed lumber that is associated with specific logs at the time of breakdown. The system allows for traceability of timber and lumber back to the stump of origin, and confirms regulatory compliance, payment of relevant fees and forest charges, and legitimacy of permits and approvals.

The NFSMS is an integrated web-based system with six modules:

Module 1: Registration. All DENR-issued permits and agreements that involve timber harvesting are entered into the NFSMS, with supporting authorization documentation, permits, long-term management plans, environmental compliance certificates, free and prior informed consent agreements, etc.

Module 2: Inventory. All timber harvesting on public lands requires a 100% inventory of trees to be cut. Under the NFSMS, Community Environment and Natural Resources Office (CENRO) staff inventory all trees to be harvested, with corresponding measurements of diameter, merchantable and

total height, species, and location. RFID tags are nailed to the base of all trees to be harvested for which full back-to-stump traceability is desired. Inventory data is recorded in handheld data recorders with RFID reader capability and linked to the individual RFID nail tags. The inventory module of the NFSMS automatically generates a "cutting list" of trees to be harvested from each particular logging block, including volume tables generated from growth and yield data stored in the system database.

Module 3: Felling, bucking and scaling. When CENRO approvals have been granted for harvesting, based on the cutting list generated, the permittee is informed and logging can commence. A CENRO scaling team verifies the volume of timber to be transported. RFID tags are attached to each bucked log and associated with the tag nailed to the base of the standing tree from which the log was derived.

Module 4: Transport. After required forest charges have been paid, permit holders may apply to the CENRO for a Certificate of Timber Origin (CTO) to authorize transport of the harvested timber. Once the CTO has been approved in the NFSMS, transport can proceed. The legitimacy and legality of the load can be verified at any point during transport (e.g., at DENR checkpoints) by scanning the affixed tags using handheld RFID readers. Verification can also be done, both online or offline, by scanning the QR codes embedded in the transport documents with the same device or with an Android mobile phone (although the latter requires an internet connection – often not available in the field).

Module 5: Wood processing. Under the NFSMS, logs are further validated upon arrival at a wood-processing plant and cleared for entry. During breakdown of the logs in the wood-processing plant, the lumber produced from each log is labeled with QR codes linked to the corresponding RFID log tag from which the lumber was cut.

Module 6: Verified legal origin. The NFSMS facilitates rapid checks and approvals at various levels and verifies the authenticity of documentary evidence of legal harvest, transport and processing. An NFSMS-generated verified-legal-origin (VLO) certificate can subsequently be issued by the system.

An important aspect of the NFSMS is that it allows for rapid and efficient filing and transfer of data and documentation, and electronic approvals by relevant offices in separate-but-distant locations (e.g., harvesting sites, CENROs and Provincial Environment and Natural Resources Offices (PENROs)). This significantly streamlines approval and verification processes and minimizes the risk of malfeasance. A constraint to fully realizing these advantages, however, is the unreliability of internet connections in some parts of the country. Where internet connections are lacking, the NFSMS allows for offline data and information recording but transfers to users at other sites are delayed until internet access is re-acquired.

<u>Impacts and effects</u>

Despite many challenging constraints, the project did a creditable job in developing and testing a workable NFSMS, demonstrating the feasibility of a robust timber-tracking system and the potential for streamlining online administrative approvals through an integrated, multi-tiered system. However, the NFSMS has not been implemented nationwide as initially envisioned and the project therefore has had relatively little long-term impact. This is primarily because the context under which timber is currently harvested in the Philippines has shifted to a very high dependency on timber grown in privately-owned plantations (see *Evolving forestry context in the country* below). No timber is currently harvested from natural forests on public lands and only small volumes are harvested from plantations grown on public lands. Although the NFSMS developed under the project is well-suited to monitor and track high-value timber from natural forests, it is less appropriate for use in tracking lower-value, small-diameter timber harvested from plantations. Unfortunately, the project was unable to expand the system to address the less rigorous timber tracking and legality verification requirements related to timber sourced from private plantations.

Evolving forestry context in the country

At the time the project was formulated in 2009, a relatively small volume of timber was still being legally harvested from natural forests, mostly managed under IFMAs, CBFMAs, and SIFMAs.[4] Most of the country's timber harvest had already shifted to plantation-grown wood. However, various officials in government and the private sector were advocating for an increased volume of timber harvest from natural forests and a revitalization of the timber sector, including expanded wood exports. For this to happen, they recognized the need for improved forest management and better governance. Central to that strategy were plans to develop assurances of timber legality and curtail the illegal logging that was prevalent throughout much of the country. Together with the hoped-for passage of new forestry legislation (i.e., the "Sustainable Forest Management Act"), the ITTO project was intended to contribute toward rebuilding confidence in the forest sector.

While the NFSMS developed under the project can, in theory, be used to track timber harvested from either natural forests or plantations, the greatest value of the system is in tracking timber from natural forests, which traditionally were the focus of much illegal and unsustainable logging. For the most part, the legality and sustainability of timber from plantations have seldom been questioned in the Philippines and the demand for implementing a comprehensive system tracing individual logs back to the stump in this context is far less than for timber derived from natural forests on public lands. Thus, much of the relevance of the project in developing a system to track timber from natural forests hinged on the continuation of logging of native tree species.

---

[4] According to Philippine Forestry Statistics 2009, of the total legal log harvest of 801,520 cubic meters in 2009, only 107,284 cubic meters (13%) were harvested from natural forests.

In February 2011, the President of the Philippines abruptly issued Executive Order (E.O.) 23. Among other actions, E.O. 23 ordered a complete nationwide moratorium on harvesting timber from the natural forests situated on public lands. This unexpectedly undermined the relevance of the project as originally conceived. The moratorium is still in place to this day, meaning that no legal timber harvests can be made in publicly owned natural forests.[5] Thus, the relevance and utility for many of the functions envisioned for the NFSMS as originally planned by the project were significantly lessened.

Further depressing the forestry sector was the fact that the "Sustainable Forest Management Act" failed to gain passage, despite repeated re-introduction in each new Congressional session over several decades. Interestingly, a provision of the draft "Sustainable Forest Management Act" requires DENR to establish an NFSMS.

In contrast, regulations governing the growing, harvesting and marketing of timber grown in privately-owned plantations in the Philippines was largely deregulated. Plantation owners were only required to register their plantations with DENR and complete Self-Monitoring Forms (SMFs) to facilitate hauling timber at the time of harvest. For timber grown in plantations on public land (e.g., in IFMAs, CBFMAs, and SIFMAs), the regulatory requirements were slightly more rigid (e.g., requiring 100% inventory of trees to be harvested), but monitoring regulations were still far less rigorous than previously required for timber cut from natural forests.

Given the shift toward timber production from plantations in the Philippines, it is unfortunate that the ITTO project did not include modules in the NFSMS to validate the origin of plantation-grown timber and track it through transport and processing stages. As the legal requirements related to plantation-sourced timber are comparatively less complex, it would have been appropriate and seemingly uncomplicated to develop NFSMS applications for plantation wood as part of the project. To accommodate these revisions, the official outputs and related activities in the project document could have been modified accordingly, with approval of the project Steering Committee, to result in an NFSMS with greater utility.

Specific Objective

The project completed most of the planned activities, produced the anticipated Outputs and largely met the basic expectations of the Specific Objective ("Development and testing of an integrated, real-time, multi-tiered, configurable, online national Forest Stock Monitoring System (FSMS) with improved governance capabilities at all levels of the Forest Administration"). Although multiple constraints

---

[5] Legal harvests of trees grown naturally on privately owned lands is still possible with relevant approvals, but the actual volume of such legal harvests of naturally grown timber total less than 10,000 cubic meters annually.

delayed the implementation of the project, the planned NFSMS was successfully developed and tested. While initial orientation and training was provided to DENR staff, the system has not been deployed in the field beyond pilot testing, largely due to structural and policy changes in the forestry sector since the formulation of the project. Despite the system's lack of implementation, the project demonstrated the feasibility of the NFSMS to trace timber and lumber through chains of custody and to verify legality. The project also prompted exhaustive review and debate of existing regulations and the legal framework for timber harvesting, transport, and processing in the country, and to that extent, it contributed to improved governance capabilities of DENR. However, these discussions and reviews resulted in minimal governance reforms or revisions attributable to the project.

Development Objective

Largely as a result of structural and policy changes in the forestry sector (e.g., issuance of E.O. 23), the NFSMS has not been deployed nationwide as originally envisioned at the time of the project formulation. As such, the project has contributed little toward achieving the overall Development Objective ("To improve forestry governance, institutional law enforcement capacity, stakeholder coordination and forest sector competitiveness through improved data management"). The NFSMS does provide the potential for legality verification in line with rigorous international trade requirements, such as those under Forest Law Enforcement, Governance and Trade Timber Legality Assurance Systems (FLEGT TLAS) and the Lacey Act, fulfilling one of the measurable indicators related to the DO in the Project Document. But, the other two measurable indicators relating to the DO (i.e., "Philippines FSMS deployed nationally by 2015" and "FSMS supports a Philippines Timber Certification Standard by 2016") have not been achieved.

Unexpected effects

For DENR staff that had the opportunity to explore the potential of the NFSMS modules, one of the positive experiences was to realize the ease with which the system facilitates forest and timber inventory. Currently, inventory practices are still conducted using tedious hand recording of data and manual calculations of volumes. The NFSMS potentially simplifies forest inventory and the compiling of cutting lists, where required (e.g., harvests of plantation timber from CBFMA holdings). The Inventory Module of the NFSMS draws upon stored growth and yield data and volume tables for all timber species in the Philippines and is capable of automatically generating consolidated inventory and cutting lists. For such applications to be widely applied in the field, however, additional training would be required to familiarize CENRO field foresters with the NFSMS Inventory Module and ensure each unit is adequately equipped with data recorders.

There is also potential for the NFSMS to be modified and updated to provide more robust CoC tracking of imported timber that provides the raw materials for the thriving tertiary manufacturing sector for

doors, windows, knock-down cabinets, and furniture that are mostly re-exported (largely to Japan). Although this potential was recognized as the project was being implemented, no follow-up has been initiated to date.

Another potential adaptation of the NFSMS could be made to allow for documentation and tracking of salvage operations of naturally-damaged/felled high-value timber species such as mancono (*Xanthostemon verdugonianus*), known as Philippine ironwood. Although harvesting live standing trees of any naturally grown species on public lands is banned under E.O. 23, naturally downed trees could potentially be approved for salvage if assurances could be made that recovered wood was actually from documented downed trees.

Finally, there is renewed interest in some circles to push for a relaxation of the E.O. 23 moratorium on harvesting of timber from natural forests, especially in the CARAGA Region. Robust application of the NFSMS could be used to assure concerned officials and the public that limited harvesting of natural forests could be done in a well-regulated and monitored manner.

Environmental impacts
The project was implemented without significant adverse impacts on the environment. To the extent that the project strengthened forest governance and built greater awareness of elements for safeguarding sustainable forest management, the impacts on the environment were positive. The project was expected to contribute to the lessening of illegal logging over time, but without nationwide deployment of the NFSMS, the contributions of the project in this regard have been negligible.

Local communities
The project had no significant impacts on local communities – either harmful or beneficial.

<u>Sustainability</u>
While the project achieved the basic objectives of developing and testing the NFSMS, the system has not been deployed nationwide as originally envisioned, largely due to changed conditions and context of the forestry sector in the past decade. By allowing the system to lie idle, the sustainability of the gains initially achieved by the project is in doubt.

Since the NFSMS was developed, some aspects of the system have fallen behind current technology advances (e.g., the QR codes generated by the NFSMS are no longer compatible with newer versions of Android mobile phones). The source code for the NFSMS modules was made available to the EA by the IT service provider that developed the system, but it is beyond the capacity of EA team members to make significant revisions to the code.

Initial introductory training on the NFSMS was provided to selected DENR field staff in 2019, but inquiries at the time of the ex-post evaluation in 2023 indicated that staff who were trained did not receive enough training to be proficient in using the system and that skills have diminished as a result of not having continued exposure to the system. Also, many staff who received initial training have moved to different positions with new responsibilities unrelated to timber harvesting, while others have left DENR altogether. Finally, not all field units have not been fully equipped with data recorders and other hardware needed to utilize the system. The result is that the overall capacity for implementing the NFSMS in the field without additional training is currently severely lacking.

At present, there is little indication of a strategy by DENR to pursue additional modifications of the NFSMS and apply it nationwide. Without renewed impetus to modify and adjust the NFSMS to focus on plantation-grown timber and imported raw materials, and update the system with newer technologies, there is little expectation of genuine sustainability of the modest gains initially achieved by the project.

4.1.2 Project formulation and implementation

Stakeholder involvement

Leading up to the formulation of the project, FMB organized a series of consultations with forest industry, NGOs, academia, and government agencies, with additional inputs from international organizations. The objective of the consultations was to identify priorities for revitalizing the forestry sector, improving forest governance, and increasing forest investment. Recommendations included calls for development of a modernized CoC timber-tracking system and verification of legal origin of timber. Consultations with various stakeholders continued throughout the project formulation phase.

During project implementation, however, stakeholder engagement was limited. Most project activities were implemented directly by the EA project team, working in close collaboration with the IT service provider (CAI-KONEK). From an ex-post perspective, it appears there may have been missed opportunities for greater consultation with more diverse stakeholders during the development of the NFSMS modules, especially with forest agreement holders (IFMAs and CBFMAs in particular) and owners of private plantations.

There was good collaboration with DENR field staff, forest owners, tenure holders, and wood processing plants in the three provinces where the NFSMS was piloted (i.e., Quezon, Bukidnon, and Agusan del Sur), but these interactions were of very short duration and limited in scope.

The project may also have benefited from greater collaboration and coordination with the FAO-EU FLEGT Programme, which was simultaneously supporting work in the Philippines aimed at enhancing legality assurance and sustainable forest management.

Ownership and commitment to the project by DENR and FMB was strong during the period of project implementation, particularly exemplified by DENR advancing its own funds to meet contractual obligations when ITTO fund disbursements were suspended. However, DENR commitment to achieving the long-term objectives framing the project appears to be tenuous, with few indications that DENR is investing additional resources to make the revisions and updates to the NFSMS necessary for widespread implementation.

Appropriateness of the project design

The overall need for improved forest governance, including stronger monitoring and enforcement tools, was evident at the time of project design. At that time, harvesting of timber from natural forests was still legally possible and such harvests provided an unfortunate smoke-screen for a great deal of illegal logging, transport, processing, and marketing of high-value timber from natural forests. Thus, the focus of the project design to develop a system to verify legal timber operations and conversely control timber poaching, illegal activities, and associated trade was valid for the conditions that existed at the time. The vertical logic, as presented in the project document by way of the Problem Analysis, the Problem Tree, the Objectives Tree, and the Logical Framework Matrix, was also valid at the time of project formulation.

However, in 2011 (between the time of project formulation in 2009 and before the start of project implementation in 2013), E.O. 23 was issued, imposing a moratorium on logging in all natural forests in the country. In a single stroke, E.O. 23 abruptly made virtually all harvesting of naturally grown trees illegal. Thus, enforcement officials no longer needed specialized tools and procedures to differentiate legal timber from illegal, since all logs of species coming from natural forests on public lands were deemed illegal. With extremely few exceptions allowing limited harvesting of naturally grown trees on private lands, the only legal harvests of timber after the issuance of E.O. 23 became those sourced from plantations, which in the Philippines were almost all exotic species that were easily identified and differentiated from native natural species.

It is surprising that the issuance of E.O. 23 did not trigger a major reconsideration of the project in light of the fact that E.O. 23 undercut several of the assumptions underpinning the project. Officials may have perceived the moratorium on harvesting of timber from natural forests under E.O. 23 would be short-lived and/or DENR staff may also have been "distracted" by the uncertainty of the DENR re-organization ("rationalization") ongoing at the time the project was about to commence.

In hindsight, however, it would have been well justified and prudent to reorient the project in line with the evolving forestry sector at the time. This would logically have included an increased focus on supporting the streamlining of approvals and the regulatory framework for plantation-grown timber and imported wood, while de-emphasizing the project focus on tracking and tracing of naturally-grown timber.

The SO and Outputs adopted in the project document, the horizontal logic, indicators, and means of verification are adequate, but overlapping and confusing. The design would have been more logical with one single Output related to the development and testing of the NFSMS (rather than three overlapping Outputs), a second Output related to training and capacity building needed to maintain and operate the system, and a third Output related to field deployment of the NFSMS.

The specific activities and measures to be taken to prepare for the eventual national implementation of the NFSMS are particularly vague in the project document. Under each of the three project Outputs, a task is included that calls for, "Planning for national deployment." But no details were elaborated in the project document's logical framework or activity plans on the specific measures to be taken to prepare for national implementation of the NFSMS. This ambiguity likely led to eventual failure to achieve widespread deployment of the system as part of the project or following its completion.

The assumptions outlined in the Logical Framework Matrix were generally valid for accomplishing the specific tasks of developing and testing of the NFSMS. However, the key assumptions underpinning the project's ability to contribute towards achieving the Development Objective (i.e., political will in DENR to deploy the NFSMS nationally, clear definition and implementation of a Philippines Certification Standard, and additional modules of the NFSMS to be developed to bridge potential remaining gaps) have not held firm, which further explains inaction in nationwide deployment to date.

All of the risks identified in the project document were valid concerns. Among those listed, the most serious threat to long-term sustainability of the project achievements related to the limited ability of FMB and DENR to effectively maintain and update/adapt the NFSMS in the mid- to long-term.

Additional serious risks that should have been identified in the Project Document include: i) the possibility of lengthy project implementation delays resulting from complex government administrative and legal requirements; ii) the possibility of frequent EA staff reassignments at both technical and managerial levels that disrupt the continuity of project implementation; (iii) the risk of peace and order disturbances that curtail the ability to travel and work in some forested areas of the country; and iv) the possibility of government policy changes that undercut the relevance of some aspects of the planned NFSMS. All of these additional risks are not uncommon elements facing projects

in the Philippines and therefore should have been acknowledged, along with mitigating plans, in the project document.

Efficiency and operational aspects

In terms of completing planned tasks within allocated budgets, the project made efficient use of funds provided. The project budget was managed appropriately, in accordance with established norms and standards, as confirmed by independent audit.

The EA constituted a project team and Technical Working Group to implement the project. Managerial guidance was provided by the Director of FMB and the Project Steering Committee, which formally met three times, in 2015, 2016, and 2017. Records indicate that the Project Steering Committee could have undertaken more rigorous reviews of project implementation and given more serious consideration to the potential need for revisions of the project activities and outputs in light of the lengthy delays in implementation and changing context of forestry in the country. Managerial oversight of the project also suffered from a lack of continuity, with FMB being headed by no less than five different directors over the course of the project.

The EA faced an avalanche of adversities in implementing the project, which collectively caused the project duration to far exceed original expectations. Several of the challenges were beyond the control of ITTO and the EA; others could have been better anticipated and mitigated.

Initially, 18 months were spent on two futile efforts to contract an IT service provider through international public bidding as required by Philippine law, after which the EA was allowed to directly negotiate a contract with a service provider. Adding to the difficulties at the initial start-up phase, the DENR re-organization dispersed many staff constituting the original project implementation team. In 2015, more than two years after the project officially commenced, FMB formed a new project team. The new team drafted a revised set of selection criteria and finally began engaging with the IT firm CAI-KONEK in October 2015.

Once contracted, by all accounts, CAI-KONEK worked in a highly professional manner and delivered the software modules underpinning the NFSMS in a timely manner and of good quality. Shortly after CAI-KONEK commenced work, however, release of project funds from ITTO was suspended due to the organization's funding impairment. To its credit, DENR stepped in to provide bridging funds that enabled CAI-KONEK to continue work on the system software modules, which were completed and ready for field testing by late 2016.

As part of the NFSMS software development, the various modules were subjected to extensive User Acceptance Testing (UAT) conducted by FMB staff. The UAT process was not as efficient as desired due to frequent absences by the EA technical staff, conflicts with other work assignments, and reluctance on the part of some staff to participate.

The first field testing of the NFSMS was conducted in Quezon Province in October 2016. Subsequent field testing in the CARAGA region of Mindanao, as originally planned in the Project Document, was delayed until 2018 due to security concerns resulting from the Marawi armed conflict that restricted travel of DENR staff.

An unspent balance of US$61,045 remained at the close of the project. ITTO agreed in principle to allocate the remaining balance for the development of "additional functionalities" for the NFSMS, but administrative delays (again relating to cumbersome procurement requirements of the Philippine government) prevented the EA from contracting additional IT services. A workplan for the additional tasks was therefore not submitted as requested by ITTO and the unspent balance was returned to ITTO in 2022.

Seven project progress reports were submitted to ITTO by the EA, covering periods from July 2015 to March 2018. The required project completion report and the project technical report were submitted in October 2019 and the final audit report was submitted to ITTO in September 2020. The project progress reports could have been prepared in greater detail, elaborating more clearly the specific work that was accomplished each reporting period. As forest stock monitoring under the NFSMS includes many complex steps, it would have been helpful if the progress reports, the project completion report, and the final technical report had included a detailed flow chart of how the system was expected to function.

Effectiveness

During the main phase of module development, CAI-KONEK had more than 10 staff dedicated to the software development work. The CAI-KONEK team engaged intensively and effectively with counterparts in the EA project team over a period of several months to fully understand the requirements and functions expected of the system. Unfortunately, the IT services contract entered into with project funds covered only 18 months, which proved to be inadequate duration for making ongoing adjustments to the system, providing desired "additional functionalities," upgrading applications as technology evolved, and providing other support services and maintenance. The need for such support should have been anticipated, planned for, and budgeted.[6]

---

[6] For example, under another similar government IT services contract, CAI-KONEK provides ongoing support for a period of not less than five years.

The NFSMS developed under the project was deemed effective, relative to the needs for tracking timber from natural forests. Although the system can also theoretically monitor the harvest, transport, and processing of timber from all types of forests and ownerships, its full application is generally not required nor well-suited for tracking timber sourced from plantations. It is a weakness of the project that no effective action was taken by the EA and ITTO to revise the project at an early stage to accommodate development of the "additional functionalities" to support CoC and verification of legality of timber from plantations. The importance of focusing on timber sourced from plantations was flagged in the Third Project Progress Report (July-December 2016), with the statement that the EA would "submit detailed mechanics for additional functionalities [for addressing plantation-grown timber], including a Revised Project Work Program based on the funds [still] to be released by ITTO." Unfortunately, this revised focus was never realized.

While the technical feasibility of the software modules and the supporting hardware were proven during the development and testing of the NFSMS, there is little evidence of consideration of alternative hardware to determine the most cost-effective equipment and tools. For example, the RFID nail tags adopted for use by the project cannot easily be nailed directly into tree stumps or logs, thus requiring the additional use of a power drill to bore guide holes for the nails. There were also reports that timber producers were concerned about the high cost of the RFID nails should they be required to shoulder the costs during implementation of the NFSMS. While the equipment and tools adopted by the project may well have proven to be the best options, there appears to have been little review and/or testing of alternatives. At the time the project was being implemented, there were many countries and organizations around the world that were testing and implementing various systems for tracking timber and verifying legality. The project undoubtedly could have benefited from more detailed exchanges with experts in other countries to learn from their experiences, thus leading to greater efficiency and effectiveness.

Project proposal appraisal process

The recommendations of the ITTO Expert Panel were constructive in strengthening the problem analysis and assumptions, measurable indicators, and the logical framework as eventually adopted in the project document.

4.2 Lessons learned

● Consistent stakeholder engagement in project formulation and implementation serves to strengthen project design and execution, resulting in more relevant outcomes and stronger buy-in for eventual implementation. As such, robust stakeholder engagement should be maintained throughout.

● Retirements and staff movements within EAs can be highly disruptive, threatening the smooth implementation of projects. Contingencies should be planned to ensure continuity of project implementation in the face of possible staff transfers.

● Strong fundamental political commitment to smoothly implement projects is essential to transcend frequent changes in government administrations and leadership.

● To maximize effectiveness and relevance, EAs and ITTO need to remain sharply attuned to changing policies and context and be correspondingly flexible in adjusting project objectives, outputs, and activities, as appropriate.

● Projects that experience long delays between project formulation and effective start-up should be routinely subjected to rigorous review before commencing operations to ensure the original assumptions, risks, planned activities and outputs are still valid.

● When project implementation is delayed excessively, projects should be subjected to mid-term evaluations (even if not anticipated in the original project budget) or given more intensive scrutiny by the Project Steering Committee to determine if major revisions are needed. In some instances, projects that are excessively delayed and/or deemed no longer relevant should be halted.

● Projects aiming to introduce new technological innovations should be cognizant of technological requirements and the corresponding capacities and limitations of countries, especially with respect to aspects such as internet connectivity, adeptness of staff to adjust to new technologies, financial resources for maintaining and supporting systems, etc. Where limitations are significant, simple tools are likely to be more relevant and effective than complex technologies.

● Technological advances occur rapidly and adequate support mechanisms are required for projects that are highly dependent on evolving technologies. When specialized IT systems are being developed as part of a project, long-term IT maintenance and support services should be contracted well beyond the initial system development phase.

5.   Conclusions and recommendations

5.1   Conclusions

- The project achieved the basic objectives outlined in the project document and produced expected outputs, but took far longer to implement than anticipated.

- The changed policies and context of forestry in the country (especially the moratorium imposed on logging in natural forests and the shift to dependence on plantation-grown timber) diminished the relevance and urgency for the originally planned project approach. Reconsideration of the project objectives, outputs, and activities was warranted but did not occur.

- Because of changing needs and the evolving nature of timber harvesting in the Philippines, full deployment of the NFSMS was not accomplished.

- The NFSMS developed by the project could be the basis for a relevant broad-based timber monitoring system, but it requires updating to be compatible with current technologies and additional functionalities are needed to monitor timber sourced from plantations and tracking of imported raw materials.

- Without additional updating and re-orientation of the NFSMS to focus on timber sourced from plantations – particularly those privately owned – and its deployment in the major timber producing areas of the country, there will be negligible lasting impact from the project.

5.2   Recommendations

For DENR and FMB:

- DENR should undertake a thorough review of the NFSMS developed under the project, determine priorities for needed adjustments and formulate a practical plan for moving forward with systems and modules with utility to meet the current needs of the forestry sector. This may necessitate DENR investing further to update the NFSMS to allow for effective and efficient monitoring of the harvesting, transport, processing and marketing of timber sourced from plantations.

- As the legal and regulatory requirements for lawfully harvesting timber from plantations in the Philippines are relatively minimal, adaptation of the NFSMS for monitoring and tracking plantation-grown timber should likewise be kept simple and easy to use. In line with common practice in other countries, and consistent with Philippine regulations, monitoring and tracking of relatively low-value, small-diameter, plantation-grown timber could practically be

accomplished with geo-referencing and photo documentation of the plantations being harvested, and tracking of timber by "batches" rather than individual logs.

- If DENR does not have the necessary in-house capacity to maintain and update the NFSMS, the agency should enter a long-term support and maintenance contract with a qualified IT service provider to backstop the deployment and implementation of the NFSMS.
- Once an updated and relevant NFSMS is developed, DENR should follow through with a comprehensive program of training and equipment purchases to facilitate the rollout of the revised NFSMS nationwide, with priority given to the CARAGA region. Implementing rules and regulations should be finalized and issued to facilitate field deployment of the system.

For ITTO:

- The experience of this project points toward the need for more rigorous identification and assessment of risks related to administrative, regulatory, legal, and bureaucratic requirements of member countries and the potential adverse consequences of frequent turnover of staff in EAs. These risks should be acknowledged directly in the formulation of project documents and in the appraisal of project proposals.

- Whenever there occurs a lengthy gap (e.g., more than two years) between the time a project is formulated and approved and the start of actual project implementation, a rigorous review of the project context, assumptions, and relevance of the logical framework should automatically be triggered before the project is allowed to commence. Where changing conditions call into question the relevance of the original project approach, appropriate revisions of the planned objectives, outputs, and activities should be made before proceeding with the project.

- For projects with unusually long delays in implementation and/or numerous extensions, the frequency of backstopping monitoring visits should be increased to identify and overcome the causes of delays.

- More effort should be made to facilitate the learning and sharing of experiences from past and ongoing projects of related nature across member countries, to build on best practices, and avoid unnecessary duplication.

Annex 1 – List of Project Documents Reviewed

Approved project document (2011)

Project Inception Report (March 2013)

First Project Progress Report (July 2015 - December 2015)

Second Project Progress Report (January 2016 - June 2016)

Third Project Progress Report (July 2016 - December 2016)

Fourth Project Progress Report (January 2017 - March 2017)

Fifth Project Progress Report (April 2017 - June 2017)

Sixth Project Progress Report (July 2017 - November 2017)

Seventh Project Progress Report (December 2017 - March 2018)

Minutes of the First Meeting of the Project Steering Committee (April 2015)

Minutes of the Second Meeting of the Project Steering Committee (March 2016)

Minutes of the Third Meeting of the Project Steering Committee (April 2017)

Project Technical Report (October 2019)

Project Completion Report (October 2019)

Final Audit Report (August 2020)

National Forest Stock Monitoring System (NFSMS) cum Timber Tracking (project brochure)

"Introducing the National Forest Stocks and Monitoring System" (ITTO Tropical Forest Update 30/3-4, 2021)

Annex 2 – Tentative itinerary of the ex-post evaluation

DATE	TIME	ACTIVITY/PROGRAM	VENUE
June 04, 2023			
		Arrival to Manila	
June 05, 2023			
	9:00 AM - 10:00AM	Meeting with FMB Director for Courtesy Call	Office of the Director
	10:00AM - 12:00NN	Briefing	FMB Conference
	1:30PM - 4:00PM	Demo/Presentation on how NFSMS works	TBA
June 06, 2023			
	8:30AM - 10:00AM	Travel to CAI-STA Office, BGC, Taguig City	
	10:00AM - 12:00NN	Meeting with CAI-STA	BGC, Taguig City
	12:00NN - 2:00PM	Break	
	2:00PM - 3:30PM	Travel back to FMB	
June 07, 2023			
	6:00AM	Travel to Butuan City	
	9:00AM - 10:00AM	Courtesy Call with DENR-RED Region 13, Butuan City	DENR-Region 13 Regional Office
	10:00AM - 12:00NN	Briefing at Regional Office	
	12:00NN - 1:30PM	Break	
	1:30PM - 3:30PM	Travel to CENRO Talacogon	
	3:30PM - 5:00PM	Meeting with CENRO Talacogon Technical Personnel	CENRO Talacogon
June 08, 2023			
	9:00AM - 12:00NN	Meeting with CENRO Talacogon Technical Personnel	CENRO Talacogon
	12:00NN - 1:30PM	Break	
	1:30PM - onward	Travel to DENR-Region 13 Regional Office, Butuan City	DENR-Region 13 Regional Office
June 09, 2023			
	7:00AM	Travel back to Manila	
	1:00PM	Exit Meeting at FMB	FMB Conference Room

Annex 3 – List of interviewees

Name	Position/Office
	DENR Central Office
Marcial C. Amaro, Jr.	Assistant Secretary, for Policy, Planning and Foreign Assisted and Special Projects, DENR, and concurrent Director of DENR Biodiversity Management Bureau (former Director of DENR-FMB)
Arleigh J. Adorable	Director, DENR-FMB
Roberto Oliveras	Adviser to the Director, DENR, FMB
Ma. Teresa G. Aquino	Chief, Forest Management Specialist, DENR-FMB Forest Resources Conservation Division (PD 599/11 Rev.1 National Project Coordinator)
Raul M. Briz	Supervising Forest Management Specialist, DENR-FMB Forest Resources Conservation Division (PD 599/11 Rev.1 Assistant National Project Coordinator)
Adrian Vincent P. de Luna	Forest Management Specialist II, DENR-FMB Forest Resources Conservation Division
Arsenio R. Alonzo	Information Systems Analyst III, DENR-FMB
Nathaniel M. Estay	Network Specialist, DENR-FMB
Paul Brian Lachica	IT Specialist, DENR-FMB
Richelle S. Ricohermoso	SFMS, DENR-FMB
Junielle Concio	SFMS, DENR-FMB
	DENR Regional Office, Region 13
Nonito M. Tomayo	Regional Executive Director
Maritess M. Ocampo	Assistant Regional Director for Technical Services
Felrose C. Deguitos	Forester II, Enforcement Division, DENR Region 13
Jessie M. Coraler	Forest Ranger/Enforcement Division – Region 13
	DENR PENRO, Agusan del Sur
Jojo Q. Montillano	Administrative Assistant (ADAS) III
	DENR CENRO, Talacogon
Vince A. Estopito	Community Environment and Natural Resources Officer
Cherlie B. Tahanlangit	Environmental Management Specialist II/ Alternate, Planning
Irene D. Ybanez	Forest Technician I/ Chief, Forest Utilization Unit
Jolito A. Pabella	Development Management Officer II, Conservation & Dev. Section
Lemual S. Lagat	Development Management Officer III
Jordan C. Sernicula	Forest Ranger
Maria Leonora Ebasco	Forest Ranger (with PENRO at time of project field testing)
	CAI
Florideliza M. Cueto	Business Development Manager
Avegail de Guzman	Account Manager
	Others
Neria A. Andin	Chairperson, Professional Regulatory Board for Foresters (former Director of DENR-FMB)
Ricardo Calderon	Former Director of DENR-FMB

	Others
Mayumi Quintos-Natividad*	Former Assistant Director of DENR-FMB
Engr. Rene S. Taclay	Operations Manager, Talacogon Woodworks, Inc.
Annalyn Estay Espina	Provident Tree Farms, Inc.
Shella Mae B. Matrido	Provident Tree Farms, Inc.
Ryan V. Vita	Forestry and Biodiversity Portfolio Coordinator, FAO/Philippines
Erica Pohnan*	FLEGT Specialist, FAO Regional Office for Asia and the Pacific
Jeremy Broadhead**	KAMI Project Manager, European Forest Institute
Barney Chan*	ITTO Trade Advisory Group

* interviewed via Skype or Viber

** interviewed via email