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11 APR 2023

MEMORANDUM

FOR :

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Assistant Secretary for Policy, Planning and
Foreign Assisted and Special Projects

CHERYL LOISE T. LEAL
OIC-Director, Policy and Planning Service

ARLEIGH J. ADORABLE, *CESO III*
OIC-Assistant Secretary for Field-Operations
Westerns Mindanao and Director, in concurrent
Capacity, Forest Management Bureau

ATTY. CRIZALDY M. BARCELO, *CESO III*
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Regional Executive Director, Region II

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Regional Executive Director, Region III

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Regional Executive Director, Region IV

FRANCISCO E. MILLA, JR., *CESO III*
Regional Executive Director, Region V

FROM :

THE DIRECTOR
Foreign Assisted and Special Projects Service

SUBJECT :

PROJECT COMPLETION REPORT OF THE PROJECT TITLED: "PARAMETERS AND INDICATORS FOR MEASURING SUCCESSFUL REFORESTATION PROJECTS IN LUZON, PHILIPPINES"

This refers to the completion of the Project titled, "Parameters and Indicators for Measuring Successful Reforestation Projects in Luzon, Philippines. This Project was funded under the Special Projects Fund (101.A.02.d) and implemented by the University of the Philippines Los Baños Foundation, Inc. (UPLBFI) through the Forest Development Center (FDC) from December 28, 2020 to October 31, 2022.

MEMO NO. 2023-311

The Project was able to accomplish 100% of its physical outputs and activities and disbursed 100% of the total project cost amounting PhP1,999,800.

We would like to put forward the following recommendations as indicated in the Project Completion Report (PCR):

1. The study proposes that the parameters and indicators in the draft M&E framework be considered and/or incorporated in the enhancement of policies relating to reforestation programs and/ or project.
2. Reforestation projects should have realistic, attainable and clear objectives with measurable outputs and outcomes. Target area should be small and manageable in the long term, with gradual expansion once planted areas are already established.
3. Reforestation projects should be implemented by the DENR Field Offices in close collaboration with local stakeholders like LGUs, local communities, academe, NGOs, etc. that are trained and capacitated.
4. DENR budget to include investments in support systems to ensure the effective and efficient implementation of reforestation projects at the field level should be reprogrammed.
5. Enhance the awareness and capacity of field implementers on the existing and new policies and guidelines through appropriate communication plans and training programs for each phase of project implementation.
6. Gathering and analysis of baseline information (e.g., soil, water, carbon stocks, biodiversity, socio-economic profiling, market scanning for potential products, socio-economic profiling, etc.) are important and needed for planning, implementation and as basis for the medium- and long-term evaluation of outcomes and impacts of the NGP. Adequate resources should be provided for these activities to be properly conducted.
7. To avoid bias, third party evaluation of reforestation programs should be adequately funded and they must be conducted by agencies/institutions, other than the project implementers and DENR.
8. Species suitability to the site rather than availability should be the dominant consideration in determining what species should be planted. Also, the species should be adaptable to the actual site conditions like climate, soil, and biotic environment.
9. The DENR needs to shift its focus from the targets to the welfare of the beneficiaries. Seedling production must be reserved to the POs and should benefit from this activity. POs should be given sufficient time to produce the seedlings as well as to learn proper way of cultivating them. This activity helps them earn extra income that give them the opportunity to invest on assets that could help them better manage the NGP sites.

We would like to commend the FMB and the participating regions and field offices for their valuable contribution to the Project and in providing needed assistance during the field data gathering and conduct of key informant interviews to POs, LGUs, private sectors, academe and DENR staff.

Lastly, the result of this study would serve as a guide by the DENR Field Implementing Units in evaluating the performance of the reforestation projects in their respective jurisdictions.

Attached is a copy of the Project Completion Report submitted by the Project for your reference.

For your information and consideration.

AL O. OROLFO, *Ph.D.*

Cc:

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Undersecretary for Policy, Planning and
International Affairs

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Department of Environment and Natural Resources
Foreign-Assisted and Special Projects Service
Project Completion Status Report

I. PROFILE
Project Title: Parameters and Indicators for Measuring Successful Reforestation Projects in Luzon, Philippines
Fund Source/s: DENR Fund 101.A.02.d (Conduct of Special Studies, Design and Development in Support of Biodiversity, Forestry, Mining and Environmental Management Operations)
Total Project Cost: PhP 1,999,800.00
Signing Date: March 13, 2020 (PSG approval)
Duration: One year and six months
Effectivity Date: (upon issuance of NTP)
Closing Date: December 28, 2021 (original date) Project Extensions: June 28, 2022 (with 6 months extension) October 28, 2022(with 4 months extension)
Implementing Agency: Forest Development Center through the UPLBFI
Sector: Forestry
Regions: 1,2,3 and 5
Beneficiaries: FMB and DENR Regional Offices
Description: The Government had implemented various massive reforestation programs and projects which include the National Greening Program (NGP). However, the common perception regarding reforestation is that these are largely a failure, with little to show on the ground and livelihood pressures continuing to degrade remaining forests (Chokkalingam et al. 2006). While reforestation reports in the country showed that trees planted were approximately 1.7 M ha of forest between 1960 and 2002, only 50% was estimated to have survived (FMB 2002). Ensuring the long-term success of reforestation projects is one of the challenges faced by the country. Le et al. (2012) stated that most evaluations of reforestation success have focused on attaining planting area targets and few evaluations on the environmental or socio-economic success of reforestation projects. Little is known about what influences the success of reforestation projects and in what situations reforestation projects succeed or fail. This study intends to address said gap on what influences the success or failure of reforestation projects and come up with standards and parameters for measuring and determining reforestation success. This study hopes to contribute to the improvement of the country's reforestation activities and help fast track the greening of our forestlands.

Objective:

The overall objective of the study is to develop standards and parameters for successful reforestation projects.

Specifically, the study aims to:

a) Determine the factors affecting the success of reforestation projects.
b) Develop a framework to measure the performance of reforestation projects; and
c) Provide policy recommendations to guide in designing, implementing, monitoring and evaluation of reforestation projects.

Expected Outputs:

1. Standards and Parameters for Successful Reforestation Projects;
2. Framework to Measure the Performance of Reforestation Projects;
3. Policy brief

II. Project Performance

1. Physical Performance

The Project accomplished 100% against its overall target. The original project duration is one (1) year from December 28, 2020 to December 28, 2021. However, during the 1st quarter of the project implementation, UPLBFI reported that there were delays on the project activities due to the health protocols and travel restrictions imposed by the Government due to the COVID-19 pandemic. As a result, the Project requested for a six (6) month extension of the Project duration or until June 28, 2022. Due to same reason, additional four (4) month project extension was requested by UPLBFI. The Project officially ended on October 31, 2022.

Progress Billing	Deliverables	Updates/Outputs
Progress Billing No. 1 (15%) PhP299,970	Inception Report	***Completed*** The draft Inception Report was submitted on 28 January 2021 and this was presented to FASPS and technical bureaus concern last 9 February 2021. The revised Inception Report was submitted on 24 February 2021. The payment for the Inception Report amounting to PhP299,970.00 was released last April 30, 2021.

Progress Billing No. 2 (30%) PhP599,940	First Progress Report compromising the following: • Technical Report on Review of Literature • Compilation of Policies Draft survey instrument • Proceedings of expert meeting Preliminary Assessment Report on the Performance of Reforestation Projects based on the result of secondary data gathering and expert's consultations	***Completed*** The 1st Progress Report was submitted on 28 June 2021. The payment for the 1st Progress Report amounting to PhP 599,940.00 was released last September 2, 2021
Progress Billing No.3 (35%) PhP699,930	2nd Progress Report comprising the following: ▪ Survey and Field Report ▪ Draft Report on Standards and Parameters for Successful Reforestation Projects ▪ Draft Assessment Report on the Performance of Reforestation Projects ▪ Draft Assessment Report on the Practices in Reforestation Projects ▪ Report on Review and Analyses of Policies ▪ Draft Policy Brief	***Completed*** The Project Team has submitted the 2nd Progress Billing Report on June 22, 2022 comprising the following reports: a) Draft Report on Standards and Parameters for Successful Reforestation Projects; b) Draft Assessment Report on the Performance of Reforestation Projects; c) Draft Assessment Report on the Practices in Reforestation Projects; d) Report on Review and Analyses of Policies; and e) Draft Policy Brief last June 28, 2022 for review and facilitation of the 2nd Progress Billing payment.
Progress Billing No.4 (20%) PhP399,960	▪ Project Completion Report ▪ Presentation of the PCR ▪ Final Assessment Report on the Performance of Reforestation Projects ▪ Final Assessment Report on the Practices in Reforestation Projects ▪ Final Framework on	***Completed*** The Project completion report including all final assessment reports and policy brief were submitted on October 31, 2022. The payment for the last Progress Report amounting to PhP399,960.00 was released last November 2022.

	Monitoring and Evaluation of Reforestation Projects ▪ Final Report on the Framework on Monitoring and Evaluation of Reforestation Projects ▪ Final Report on Standards and Parameters for Successful Reforestation Projects ▪ Final draft policy brief	
PhP1,999,800	**TOTAL**	

2. Financial Performance

The project cost amounting to PhP1,999,800 was granted to Forest Development Center (FDC) through UPLBFI under the DENR Special Project Fund in accordance with the approved Contract. The budget release was based on the approved Work and Financial Plan (WFP). The first release amounting to PhP299,970 was downloaded last April 2021. The second release amounting to PhP599,940 was downloaded last September 2021. The third release amounting to PhP699,930 was downloaded last August 2022 and the last release amounting to PhP399,960 was downloaded last November 2022. The budget was released through List of Due and Demandable Accounts Payable – Advice to Debit Account (LLDAP-ADA).

Based on the submitted Financial Report (FR) as of December 2022 and Project Completion Report (PCR), the project was able to utilize all the downloaded funds. The details of objects of expenditures are as follows:

UACS	Approved Budget	Total Released budget (as of 9 Dec 2022)	Cumulative expenditures (as of 9 Dec 2022)	Unexpended balance
Travelling expenses – local	75,000	75,000	75,000	-
Office supplies and Materials expenses	36,066	36,066	36,066	-
Medical Dental and Laboratory	32,000	32,000	32,000	-
Survey Expenses	580,000	580,000	580,000	-
Other professional services	540,790	540,790	540,790	-
Representation expenses	176,000	176,000	176,000	-
Taxes, Duties and Licenses	359,964	359,964	359,964	-
Other maintenance and operating	199,980	199,980	199,980	-

expenses				
TOTAL	**1,999,980**	**1,999,980**	**1,999,980**	-

II. Major Findings of the Study

The assessment of practices and performance of the reforestation projects in the country was based on the secondary information from publications, reports, literatures; and primary data gathering through experts' consultations, key informant interviews and ocular observation conducted by the Project. Among the major findings of the study based on the Project Completion Report (PCR) prepared by the Project are as follows:

A. Policy Issues Related to Major Reforestation Policies and Programs

Reforestation Program/ Policy	Policy Issues
Family Approach to Reforestation (FAR)	• Numerous numbers of contract to be monitored • Difficulty in doing business with the involved different agencies due to documentary requirements • The project's primary goal was to help people build capacity to meet the needs but was rather carried-out as a "national project"
Integrated Social Forestry Program (LOI 1982-1260)	• Unavailability of funds in some period of the project's implementation
National Forestation Program (Contract Reforestation)	• Lack of community organizing and participation especially in planning • Poor monitoring • M&E only serves as a basis for payment and does not look at the performance of the reforestation project • Lack of tenure rights in forestlands • lack of food security component • inclusion of patronage criteria in the selection of contractors • Weak administrative capacity of the government
Community-based Forest Management (CBFM) (EO 1995-263)	• Titled land within CBFM areas • Conflict between CADT and CBFM policies regarding CBFM • Implementation of the benefit-sharing scheme/system despite the issuance of related TB • DENR is more focused on the regulatory or enforcement side of tenured agreement rather than providing technical support • Numerous policies and guidelines issued on CBFM are difficult for stakeholders to fully

	understand and to follow • Frequent changes in CBFM rules and guidelines
National Greening Program (NGP/eNGP) (EO 2011-26 and EO 2015- 193)	• Short contract duration to sustain the maintenance and protection • Contracting out the project through public bidding (RA 9184) • Target-based which means that the program focused on planting targets, focus on quantity has also compromised the quality and diversity of planting materials and dictated by the top management • Limited technical support in the implementation of the project • Insufficient budget for maintenance and protection activities • Project's accomplishments vis-à-vis the attainment of NGP's objectives • Considerations in determining the survival rate • Inadequate social preparation and capacity building • Changes in leadership resulting to unstable policy environment • NGP's failure to apply CBFM's established practices lead to lack of support from the community (Kleist et al., 2021) • Guidelines for the maintenance of turned over/completed NGPs is provided in DMC 2013-06, which follows RA 9184, however, this is not implemented yet and whether there is already an appropriate legal instrument for the long-term sustainable management of the area • Compliance to FMB TB 23 regarding Third party monitoring • Strict policies on native species (restriction on the cutting) discourages the planting of such

B. Proposed Standards and Parameters for Measuring Success of Reforestation Projects

The review and assessment of the current standards and parameters revealed that there are still gaps, issues, and concerns particularly in the pre-implementation to the post-implementation phases that need to be addressed to ensure that reforestation initiatives are sustained and that the goals are achieved. The lists the recommendations to address the gaps, issues and concerns regarding the current standards and parameters for measuring reforestation performance are as follows:

Standards and Parameters by Component	Recommendations
1. INSTITUTIONAL COMPONENT	
Goals and objectives of reforestation	Should be site-specific with measurable criteria and indicators for short-, medium-, and long-term evaluation
Roles and responsibilities of agencies	Define sectoral/agency responsibilities that could be sustained in the short, medium, & long term
Program management, supervision, and monitoring	Provision of adequate support & resources for implementing field offices – manpower should be permanent items instead of contractual; provision of equipment, facilities, vehicles for field offices dedicated for reforestation projects
Identification of potential reforestation sites (target-driven)	Instead of piecemeal project sites, concentrate on priority areas and maintain/nurture them until the reforested areas are established; target new areas only as expansion of the previously established sites
Reforestation planning	Reforestation plans should be integral to the Master Plan for Forestry or Forest Land Use Plan of the region, province, or municipality. Hence, the reforestation plans should be formulated following the long-term Master Plan of FLUP which already indicate the areas for protection (e.g., critical watersheds or river basins, protected areas, mangroves, etc.), production (e.g., timber, fuelwood, agroforestry, water, carbon trading, ecotourism, etc.). Hence, in the SMP, ample time should be given to gather needed data and information on the potential sites before reforestation activities are implemented from seed collection, nursery seedling production, infrastructure development, site preparation & planting, maintenance & protection, and harvesting/utilization (for production areas), etc. Budgeting for these activities should be included in the plans, not only for contracted activities but also for long term overall operations.
Bidding of project sites	Enough time should be given for the bidding, processing and awarding of contracts and provide a workable schedule for implementation of contracted activities
Modes of implementation	The time gap between completion of contracted activities and bidding/provision of long-term tenure over the "graduated sites" should be addressed. A combination of Reforestation by Administration in partnership with local POs or communities can be considered
Capability building of DENR staff & POs	DENR field staff and POs need to be continuously trained not only on project implementation but also on community

	development and enterprise development. M&E staff should be hired and able to train local communities to do M&E activities.
Funding and payment scheme	Adequate funds should be allotted for DENR field offices to be able to hire permanent and qualified extension officers, procure and maintain equipment, facilities, and vehicles needed for the reforestation program.
Information, education and communication (IEC)	The required communication plans for IEC should be developed and implemented and the field staff trained to prepare materials and conduct training for the partners.
Reforestation program monitoring and assessment/evaluation (M&E)	Validation of accomplishments and program M&E should be done by third parties within the agency and not by the project field implementers themselves. Program evaluation should be funded and implemented by another agency or institution to achieve realistic (unbiased) program performance evaluation results. M&E tools should be developed at the start of the program so that performance C&I are properly measured during the short, medium and long term.
Sustainability of established reforestation projects	Factors that affect the sustainability of reforestation projects should be prioritized during the planning stage. Drivers such as poverty and other threats and vulnerabilities need to be addressed. Institutional factors such as capacity of existing field offices to maintain and protect the graduated reforestation sites have to be considered in target setting.
2. TECHNICAL AND BIOPHYSICAL COMPONENT	
Areas covered	The field offices should be given the responsibility to decide on priority areas (e.g., for protection, production, etc.) to be reforested based on the forest landscape rehabilitation approach as stipulated in the policies.
Identification of potential reforestation sites	Piecemeal reforestation sites should not be the norm but rather focus on areas that can be developed for a certain period and later on expanded once the plantations/forests are already established and growing.
Site assessment, survey and mapping	Ground validation of secondary data from existing maps and other information should be conducted properly with enough logistics and resources. Database should be maintained and updated as references for addressing issues and problems in field implementation.
Reforestation planning	The planning horizon should go beyond the 3 or 5 years required for reforestation projects. This requires visioning for the long term, whether the projects sites are to be developed for protection, production, or any other purposes (as determined in the Master Plans for Forestry or FLUPs

		or other plans in the locality). Thus, planning should include harvesting plans (i.e., infrastructure for processing, transport, marketing, etc.) or development of ecosystem services (i.e., ecotourism, water use, carbon trading, biodiversity conservation, etc.) and the requisite support services to implement these in the future. Thus, technical, environmental, financial and other aspects should be planned at the onset to prepare for future land uses of the reforestation sites to be established.
	Species selection and spacing	Depending on site conditions, species selection should be based on the future land uses of the reforestation site, whether it be for production (type of products and services) or protection (type of ecosystem services) or other uses.
	Development activities	Development activities should be geared towards achieving the end products of the reforestation project (i.e. production of timber, high value crops, or other ecosystem services). Silvicultural practices should be identified and implemented to achieve the desired end products. Infrastructure development should also be included in preparation for M&E and silvicultural practices (e.g. ANR, EP, replanting, pruning, thinning, etc.).
	M&E of reforestation projects	The M&E tool should be developed and aligned with the purpose of reforestation projects, be it for production or protection and the quality of the desired end products. The M&E results at different periods of time should be used to adopt improvements needed to achieve the desired end products of the reforestation projects.
	3. SOCIO-CULTURAL COMPONENT	
	Socio-economic profiling & stakeholder analysis	The DENR can partner with LGUs, academe, and local communities to conduct SE profiling and stakeholder analysis since the main reason for not doing these is lack of capability and resources
	IEC campaigns	The communication plans should be developed in consideration of the needs of local communities and partners. Hence, training programs and IEC materials should be focused on developing capacities for both the short and long term. Regular assessments of IEC campaigns need to be incorporated in the program M&E in order be responsive to the needs of local partners
	Capacity building of PO partners & participation in project activities	Capacity building of PO partners and local stakeholders should cater to their specific needs so that they are able to meaningfully participate in project activities as well as sustain them after the reforestation contracts are completed.

4. ECONOMIC COMPONENT	
Market scanning for species selection	Available and potential markets (demand trends) for the species to be planted should be identified and pre-feasibility studies done to determine the viability of establishing plantations of certain species for specific end products
Social enterprise	Improving the welfare of local communities and reducing poverty need to be translated through income generating projects that will allow them to be partners in maintaining and protecting the reforested areas even after their contracts end.
Planning for harvesting, utilization, & marketing of products	Pre-feasibility studies for production reforestation projects serve as basis for planning and implementing harvesting, utilization and marketing of products to be derived from the project sites
Incentives for partners	More innovative incentives need to be identified and implemented for the local partners to sustain and maintain the reforested projects (e.g., annual awards for best performers, provision of long-term tenure or certificates of "rights to planted trees", etc.)

C. Framework for Monitoring and Evaluation of Reforestation Projects

The existing DENR's reforestation monitoring and evaluation system were reviewed and analyzed to come up with the proposed framework for monitoring and evaluation of reforestation projects. **Figure 2** below presents the proposed DENRs framework for Monitoring and Evaluation of reforestation projects. The framework was based on the result of the analysis of the secondary data gathered from the different reports and studies, the expert's consultations and key informant interview. For reforestation projects monitoring and evaluation framework, the implementers will have to define the project goals (desired impacts on the environment and people's lives), objectives (desired outcomes or changes needed to achieve the desired impacts), and outcomes (immediate direct results of the activities that contribute to the objectives). Different agencies/sectors have different reforestation goals/objectives such as: The DENR-FMB have to conduct forest renewal activities in critical denuded areas and identify areas for reforestation, afforestation and agro-forestation, the type

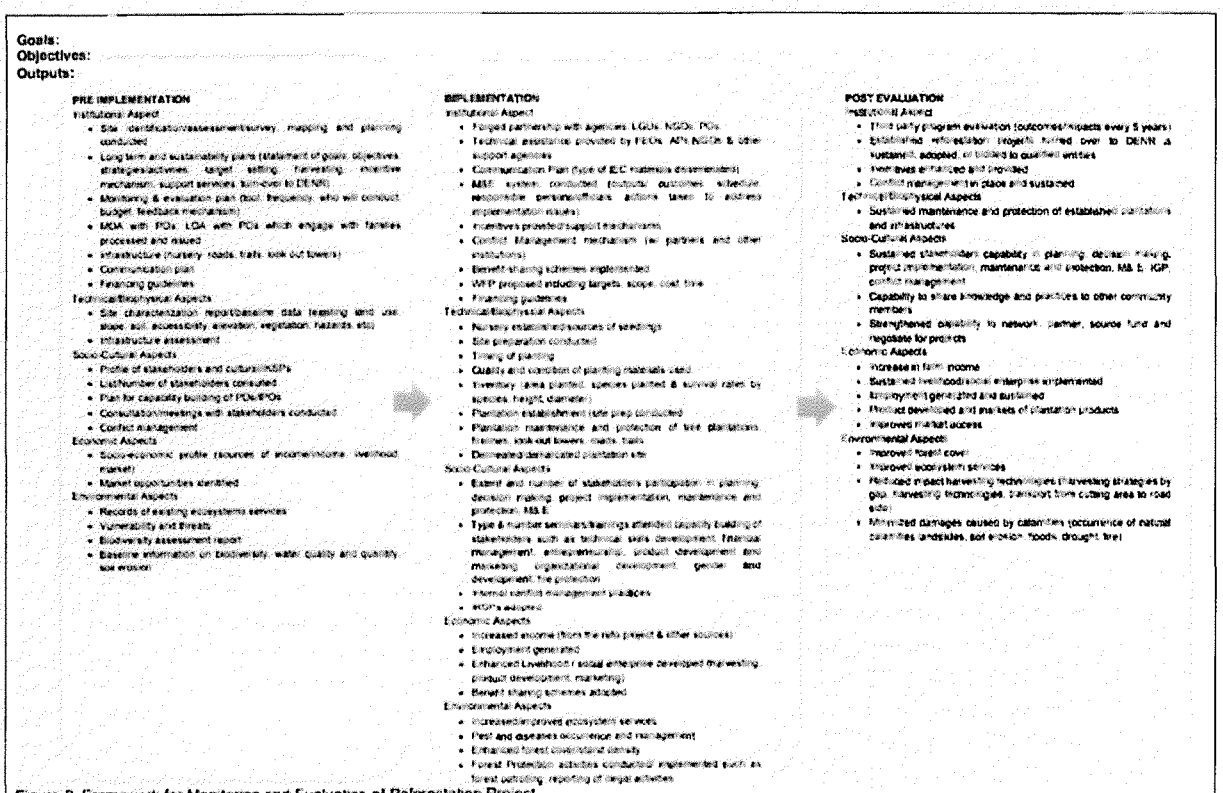

Figure 2. Framework for Monitoring and Evaluation of Reforestation Project

III. Recommendations

1. The study proposes that the parameters and indicators in the draft M&E framework be considered and/or incorporated in the enhancement of policies relating to reforestation programs and/ or project.
2. Reforestation projects should have realistic, attainable and clear objectives with measurable outputs and outcomes. Target area should be small and manageable in the long term, with gradual expansion once planted areas are already established.
3. Reforestation projects should be implemented by the DENR Field Offices in close collaboration with local stakeholders like LGUs, local communities, academe, NGOs, etc. that are trained and capacitated.
4. DENR budget to include investments in support systems to ensure the effective and efficient implementation of reforestation projects at the field level should be reprogrammed.
5. Enhance the awareness and capacity of field implementers on the existing and new policies and guidelines through appropriate communication plans and training programs for each phase of project implementation.
6. Gathering and analysis of baseline information (e.g., soil, water, carbon stocks, biodiversity, socio-economic profiling, market scanning for potential products, socio-economic profiling, etc.) are important and needed for planning, implementation and as basis for the medium- and long-term evaluation of outcomes and impacts of the NGP. Adequate resources should be provided for these activities to be properly conducted.
7. To avoid bias, third party evaluation of reforestation programs should be adequately funded and they must be conducted by agencies/institutions, other than the project

implementers and DENR.

8. Species suitability to the site rather than availability should be the dominant consideration in determining what species should be planted. Also, the species should be adaptable to the actual site conditions like climate, soil, and biotic environment.
9. The DENR needs to shift its focus from the targets to the welfare of the beneficiaries. Seedling production must be reserved to the POs and should benefit from this activity. POs should be given sufficient time to produce the seedlings as well as to learn proper way of cultivating them. This activity helps them earn extra income that give them the opportunity to invest on assets that could help them better manage the NGP sites.

IV. Key Issues for the Future

a. SMP activities were insufficient to cover all the information that would serve as baseline for midterm/long-term program assessment.
b. Site assessment and selection is target driven.
c. Site-species matching is often ignored in reforestation projects..
d. Planning horizon is based on short term physical target.
e. There is limited manpower to conduct various reforestation activities (e.g., forest protection, validation, M&E, technical assistance).
f. Budget of convergence partnerships on NGP/eNGP among OGAs was not sustained.
g. Bureaucratic set-up of the DENR in contracting and releasing of funds led to the delay of reforestation activities.
h. There is no effective implementation of monitoring and evaluation system of reforestation and other forest development activities.
i. Budget and manpower are limited to sustain and continue IEC and communication plan of the reforestation projects and programs.

V. Lessons Learned

The following are the lessons learned during the implementation of the study:

- Close coordination with the DENR facilitated the conduct of the study i.e., DENR Regional and Field Officials and staff helped identify and invite the key informants to be interviewed as well as arrange for the field visits of the study team.
- Data on past reforestation projects requested from the DENR and other Institutions were provided to the team but when verified most of them are no longer available at the field offices due to the transfer or retirement of the assigned staff or have been damaged due to natural calamities. We recommend DENR to create an electronic database at the field offices as a repository of all data and information on past and existing reforestation projects that can be updated regularly.
- There is a need for an orientation for field staff on recent policy issuances, available technologies from ERDB, academe and other research institutions so that they can use and apply these in the implementation of reforestation activities such as SMP, site development, and M&E.
- Consultation with stakeholders/POs by discussing with them what the project wants to achieve/gain is important to solicit their support. The involvement of the PO officers and members during the planning stage is also important to achieve participation and support for the project.
- Strong community and stakeholders' participation in planning, management, implementation, and continuous monitoring for the project reforestation projects ensure

the reforestation projects to succeed.

- Availability of existing markets should be considered during the planning process especially on the choice of species to be planted.
- Limited capacitation (skills and knowledge) of EOs and POs in implementing reforestation program. PO and EOs attendance of trainings activities capacitate them in terms of improving their skills and knowledge in technical, management, financial and other aspects.
- Only selected/limited SMP activities were conducted in the early implementation of reforestation/NGP projects. Some control maps provided for identified plantable areas did not match the actual area on the ground.
- The choice of species to be planted in NGP sites was initially dictated by DENR as stated in the National Reforestation Road Map and depended on DENR Secretary's priorities (e.g., bamboos, fast-growing species). Despite the policies issued in support of indigenous species, exotic species have continuously been the predominant species planted in NGP sites.
- Seedlings bought or purchased/sourced from far flung places resulted to low survival. This is due to stress during hauling, handling and transport. The establishment of a nursery on-site, or just near the planting site save the seedlings from stress during transport. Quality of planting materials ensure high survival of planted seedlings.
- Seeds collected from nearby areas or mother trees are best sources of seedling materials because they are already adapted to the area and have the desirable characteristics. Also, there is high potential of survival of the seedlings because of the same climatic type and edaphic conditions.
- Monitoring and evaluation of established reforestation projects have not been conducted by DENR and key stakeholders, rather more on reporting of accomplishments.
- To meet the 85% survival rate for billing/payment of plantation development, the contractors conduct replanting before the scheduled validation. After validation, the survival of planted seedlings is no longer monitored and maintained.
- Protection and maintenance of the reforested areas/ established plantations were not sustained after the NGP contracts ended. As soon as the NGP contract expires, untenured areas are left with minimal supervision and care.

VI. Conclusion

The sustainability of the reforestation projects/programs in the country needs to be analyzed/assessed. The result of the established reforestation projects assessment showed that important policies/regulations/guidelines, best practices, performances, standards and parameters as well as the monitoring and evaluation were not properly enforced or implemented in the field. It is important that reforestation activities such as survey, mapping, and planning, timing of budget releases, site preparation, quality of planting materials, protection and maintenance, monitoring and evaluation be effectively implemented in the field. Site-species suitability, preference of farmers, availability of market, and availability of product development technology should be considered in selecting high value crops to be planted.

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Noted by:

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Chief, FASPS-PMD

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
FOREIGN-ASSISTED AND SPECIAL PROJECTS SERVICES

PARAMETERS AND INDICATORS FOR MEASURING SUCCESS OF REFORESTATION PROJECTS IN LUZON, PHILIPPINES

COMPLETION REPORT

28 OCTOBER 2022

FORESTRY DEVELOPMENT CENTER
College of Forestry and Natural Resources
University of the Philippines Los Baños

UPLB FOUNDATION INC.

Parameters and Indicators for Measuring Success of Reforestation Projects in Luzon, Philippines

COMPLETION REPORT

OCTOBER 2022

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Implementing Agency:

FORESTRY DEVELOPMENT CENTER
College of Forestry and Natural Resources
University of the Philippines Los Baños

And

UPLB FOUNDATION INC.
College, Laguna

Funded by:

Department of Environment and Natural Resources
Foreign-Assisted and Special Projects Services

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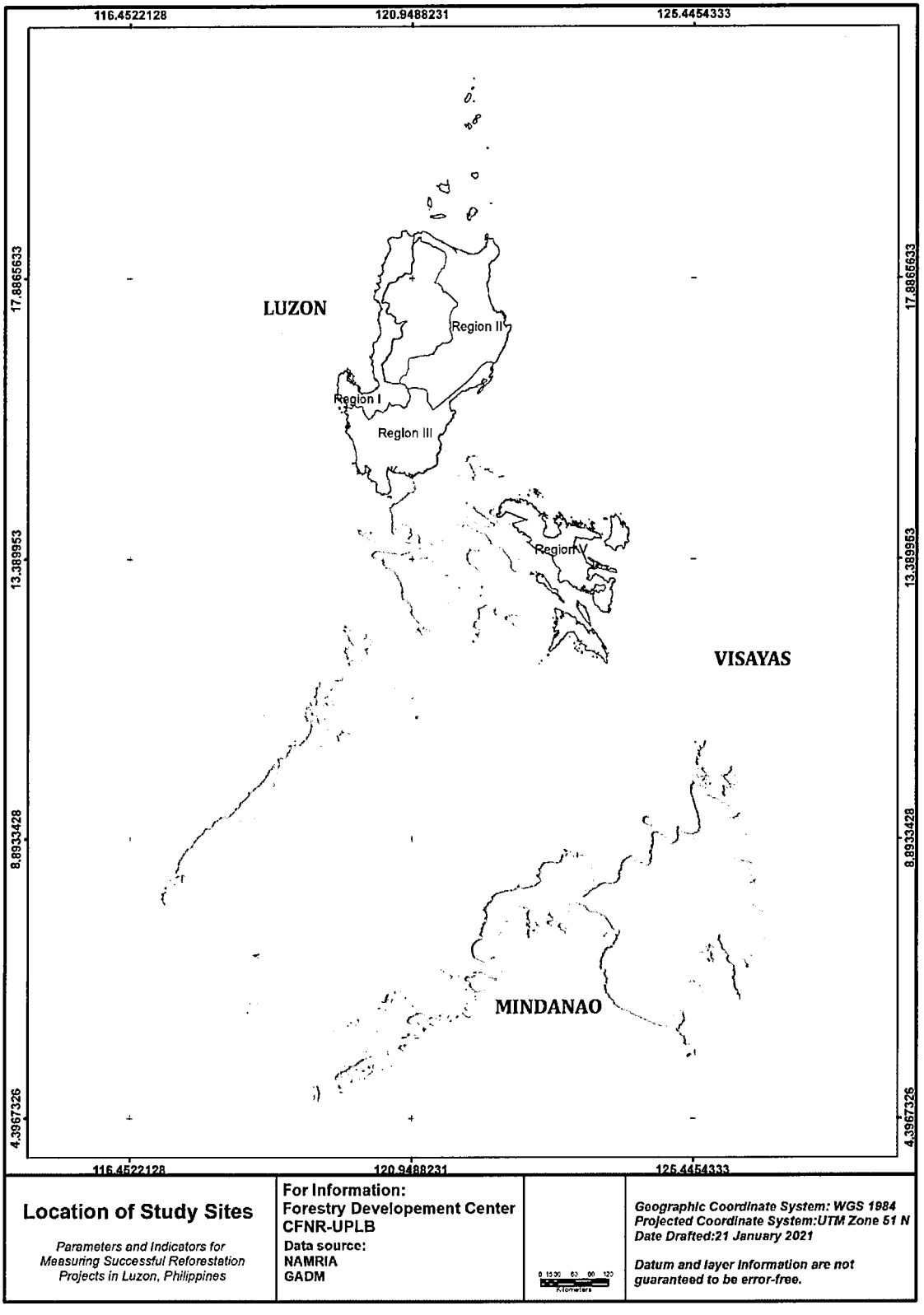

Figure 1. Location Map of the Study Sites

BASIC PROJECT PROFILE

Project Title	**PARAMETERS AND INDICATORS FOR MEASURING SUCCESSFUL REFORESTATION PROJECTS IN LUZON, PHILIPPINES**
Implementing Agencies	Forestry Development Center College of Forestry and Natural Resources UPLB College, Laguna UPLB Foundation Incorporated College, Laguna
Fund Source	Foreign Assisted and Special Projects Services- Department of Environment and Natural Resources
Project Duration	December 28, 2020 to October 28, 2022
Project Cost	Php1,999,800.00
Project Overall Objectives	The overall objective of the study is to develop standards and parameters for successful reforestation projects. Specifically, the study aims to: a) Determine the factors affecting the success or failure of reforestation projects; b) Develop an evaluation framework to measure the performance of reforestation projects; and c) Provide policy recommendations to guide in designing, implementing, monitoring and evaluation of reforestation projects.
Project General Description	The project is composed of the following components namely: Component 1 – Assessment of performance and practices employed in reforestation projects by mode of implementation Component 2 – Development of framework to measure the performance of reforestation projects Component 3 – Review and analysis of policies and recommend measures to address policy gaps related to reforestation and project management Component 4 – Finalization of technical reports Component 5 – Project Management

EXECUTIVE SUMMARY

The overall objective of the study is to develop standards and parameters for successful reforestation projects. Specifically, the study aims to: (a) determine the factors affecting the success or failure of reforestation projects, (b) develop an evaluation framework to measure the performance of reforestation projects, and (c) provide policy recommendations to guide in designing, implementing, monitoring and evaluation of reforestation projects. The study was conducted from 28 December 2020 to 28 October 2022.

The sites for the study include reforestation projects administered by the DENR (GOP, foreign funded, etc.), Local Government Units (LGUs), People's Organizations (POs), other government agencies, private sector, non-government organizations (NGOs), and academic institutions. The final sites for the study were selected in consultation with the DENR officials and staff (FMB, Regional offices, PENRO and CENRO) as well as other organizations implementing reforestation projects. The study sites were selected provinces of Regions 1 (Ilocos Sur and La Union), 2 (Quirino), 3 (Nueva Ecija and Zambales), 4A (Quezon Province for pre-testing of survey tools) and 5 (Camarines Sur).

Both primary and secondary data were gathered for the study. Secondary data includes reports, studies, and published articles and literature while primary data includes key informant interviews (KII), ocular observation, focus group discussions (FGD) and consultations with experts. Semi-structured questionnaires were pre-tested in Quezon province before finalization and used in the KIIs with various sectors. Content of major reforestation policies and programs were analyzed. Policy gaps, issues and concerns were consolidated from the review of secondary information and literature as well as from KIIs, FGDs, and consultations with the different sectors in the study sites. Descriptive statistics through frequency counts and ranking of the parameters and indicators were undertaken. Qualitative and quantitative analyses were used in the practices, performances, standards and parameters for measuring the success of reforestation programs/projects.

A national consultation was conducted to present and validate the results of the study particularly on the standards and parameters for measuring success of reforestation projects. Policy recommendations were drawn based on the results of the study and the issues, concerns and recommendations from the different sectors involved in reforestation activities.

Reforestation policies and programs were reviewed and analyzed. Related literature were reviewed to determine the effects or implications of the country's reforestation policies and programs, including issues and challenges in implementing them. Various laws, policies, and guidelines were also reviewed to determine the reforestation standards and how they evolved through time. The awareness of respondents on the reforestation policies and programs was determined and assessed through descriptive

statistics. The issues, challenges, and recommendations gleaned from the literature review were supported by the primary data obtained during the consultation with experts, FGDs, and interviews with representatives from the DENR Central and field offices, POs, NGOs, Local Government Units (LGUs) and the private sector.

Reforestation practices and performances of various projects by modality of implementation were documented during the KIIs and consultations with experts. The factors contributing to the success of reforestation projects were analyzed using descriptive statistics. Reforestation practices and performances are categorized into three, namely pre-implementation, implementation and post-implementation phases. The practices, performances, and standards and parameters were classified into five components: institutional, technical and biophysical, socio-cultural, economic, and environmental.

The current standards and parameters used in measuring the performance of reforestation projects by DENR, the LGUs, and other partners are contained in various laws, regulations, and policy issuances issued over the years. The review and assessment of the current standards and parameters reveal that there are still gaps, issues, and concerns particularly in the pre-implementation to the post-implementation phases that need to be addressed to ensure that reforestation initiatives are sustained and that the goals are achieved. Specific recommendations to address the gaps, issues and concerns regarding the current standards and parameters for measuring reforestation performance are provided.

The phases, components, and indicators in the proposed monitoring and evaluation (M&E) framework were developed as a result of the analysis of reforestation policies and programs, the standards and parameters for measuring project performance, and primary and secondary data gathered from various sources. The proposed M&E framework for reforestation projects covers the pre-implementation, implementation, and post-implementation phases and the institutional, technical and biophysical, socio-cultural, economic, and environmental components. For each component, qualitative or quantitative indicators are indicated as means for measurement and verification.

I. PROJECT DESCRIPTION

Rationale

In the Philippines, around 47,000 hectares (ha) of forest cover are being lost yearly. In 2003, the country's forests comprised 7.2 million hectares. But in 2010, forest cover went down by 4.6 percent or about 6.8 million hectares (FMB). The country has been battling the loss of forest cover since the early 60s due to the widespread practice of kaingin, logging, and forest conversion. Traditionally, government and private companies initiated and implemented rehabilitation activities, but since the mid-1970s international funding began to play a role and many sectors became involved (Pulhin 2006). Despite these efforts, reforestation targets remain low. The National Greening Program (NGP), launched in 2011, is the most recent reforestation program of the government. Its goal was to plant 1.5 billion trees in 1.5 M ha of open, degraded forestlands in 6 years. It was expanded in 2015 to cover 1.2 M ha of denuded forestlands and maintenance and protection of existing forests.

The common perception regarding reforestation is that these are largely a failure, with little to show on the ground and livelihood pressures continuing to degrade remaining forests (Chokkalingam et al. 2006). Although reforestation reports in the country showed that trees planted were approximately 1.7 M ha of forest between 1960 and 2002, only 50% was estimated to have survived (FMB 2002).

Several qualitative and quantitative indicators have been documented in literature for assessing the success of reforestation initiatives. Le et al. (2012) categorized these into the following: 1) indicators for measuring establishment success, e.g. survival and growth of planted trees, and area planted compared to target area; 2) indicators for measuring environmental success, e.g. vegetation structure, species diversity and ecosystem functions; and 3) indicators for measuring socio-economic success like increased local income, employment opportunities, livelihood opportunities, availability of food and fiber supplies, and local empowerment and capacity building. Each group of indicators is influenced by multiple success drivers grouped into technical/biophysical; socio-economic; institutional, policy and management; and reforestation project characteristics.

In the Philippines, survival rate of planted species is the major indicator of successful reforestation. A review of reforestation programs in the country shows different reports on survival rates of reforestation species. The Forestry Sector Project (FSP), Phase I reported a 42% and below survival rate (UNAC 1992, CIFOR 2006, cited in Balangue 2016). The FSP Phase II (OECF/JBIC) has reported weighted average survival rates of 80% (FSP Completion Report 2003) which is much higher than in FSP I. Unlike in FSP I where individuals and families were contracted for planting alone, FSP II extended the contract of POs to 3 years to include protection, maintenance and replanting, thus the high survival rate of planted seedlings. The EDC BINHI's Negros Island forest restoration program, which planted local indigenous tree species, has 60-

80% survival rates. For government-funded reforestation projects, survival rates of reforestation species are commonly pegged at 80%.

Site-species suitability matching is another critical factor affecting reforestation success (Carandang 1998; Chokkalingam 2006; Balangue 2016). Carandang (1998) pointed out the absence of a regional site classification scheme for selecting the most appropriate species to be planted considering the existing conditions in the planting area.

Ensuring the long-term success of reforestation projects is one of the challenges faced by the country. Le et al. (2012) stated that most evaluations of reforestation success have focused on attaining planting area targets and few evaluations on the environmental or socio-economic success of reforestation projects. Little is known about what influences the success of reforestation projects and in what situations reforestation projects succeed or fail.

This study intends to address this gap on what influences the success or failure of reforestation projects and come up with standards and parameters for measuring and determining reforestation success. This study hopes to contribute to the improvement of the country's reforestation activities and help fast track the greening of our forestlands.

Identification, Preparation and Appraisal

This two-year project titled "Parameters and Indicators for Measuring Successful Reforestation Projects in Luzon, Philippines" was approved for funding by the Foreign Assisted and Special Projects Services of the Department of Environment and Natural Resources (FASPS-DENR) on June 2020. However, due to the pandemic and delays in the processing and finalization of the Work and Financial Plan (WFP) and Memorandum of Agreement (MOA), it took some months before the project started. The project duration was from 28 December 2020 to 28 October 2022.

Objectives and Scope

The overall objective of the study was to develop standards and parameters for successful reforestation projects.

Specifically, the study aimed to:

(a) Determine the factors affecting the success or failure of reforestation projects;

(b) Develop an evaluation framework to measure the performance of reforestation projects; and

(c) Provide policy recommendations to guide in designing, implementing, monitoring and evaluation of reforestation projects.

This project focused on the parameters and indicators for measuring the success of reforestation project in Luzon, implemented by different sectors and modalities. The project covers four regions in Luzon, namely Regions 1, 2, 3, and 5.

Components

The project is composed of five components. Component 1 is on the assessment of performance and practices employed in reforestation projects by mode of implementation. This was done through review of literature and studies related to reforestation implementation in the country by different sectors or modalities. The results of the literature review were presented in a round table discussion with experts in the forestry sector. The reforestation practices and performances of the different sectors in the study sites were gathered through KIIs using semi-structured interview schedules and ocular observation of project sites. Component 2 is on the development of a framework to measure the performance of reforestation projects. The framework developed consist of the proposed standards and parameters for measuring success of reforestation projects and the M&E framework based on the results of the assessment of the reforestation practices and performances and the analysis of reforestation policies and programs. Component 3 is on the review and analysis of policies and recommendation of measures to address policy gaps related to reforestation and project management. This involved the gathering and analysis of all relevant reforestation policies and programs implemented by the DENR, other government agencies, private sector and academic institutions. The reforestation policies and programs were reviewed in terms of their status/accomplishment, mode of implementation, partners/institutional arrangements, issues, gaps, and other factors. The results of the assessment/analysis were validated through KIIs with the different sectors and ocular observation in the study sites. Component 4, finalization of technical reports, was done and submitted to FASPS-DENR. The reports include the following: (1) Assessment report on the practices of reforestation projects in the Philippines; (2) Assessment report on the performances of reforestation projects in the Philippines; (3) Report on the proposed standards and parameters for measuring success of reforestation projects; (4) Report on the proposed monitoring and evaluation framework for reforestation projects; and (5) Assessment of reforestation policies and programs. For Component 5, Project Management, the project team was able to submit the expected deliverables based on the approved terms of reference (TOR) for billing and release of project funds such as inception report, first and second progress reports, and the completion report.

Implementation Arrangement and Schedule

In the implementation of the project, selected FDC technical and administrative staff were designated as project staff composed of a project leader, co-project leader and researchers for the identified components and administrative staff for financial and logistical support. The project leader assumed the overall project operational management while the co-project leader and researchers assisted in the project implementation, specifically in achieving the expected outputs and deliverables of the project. The support and administrative staff were in charge of the administrative, financial and logistical management.

The project partners from FASPS-DENR provided technical and financial assistance in the implementation of the project. The Forest Management Bureau of the DENR provided the necessary data and information to the project team. Also, they helped in facilitating the field data gathering and coordination with the concerned stakeholders. The DENR field staff from the different regions helped the project team in inviting the respondents and in conducting interviews with key informants of the different sectors.

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III. IMPLEMENTATION ACHIEVEMENT

The project was able to achieve the targets despite some limitations (Table 1). *Component 1-* Assessment of performance and practices employed in reforestation projects by mode of implementation. The sites for the study include reforestation projects administered by the DENR (GOP, foreign funded, etc.), LGUs, private sector, NGOs, and academe. The final sites for the study were selected in consultation with the DENR officials and staff (FMB, Regional offices, PENRO and CENRO) as well as other organizations with reforestation projects. The selected study sites were Regions 1, 2, 3, 4A and 5. The primary and secondary data gathering activities in the selected sites were done by region and province to complete the study on time.

Both primary and secondary data gathering were conducted in the assessment of practices and performances of reforestation project, expert's consultations and ocular observations were conducted. Two sets of structured survey instruments were formulated for key informants interview. The draft survey instruments were pre-tested in Quezon province (Region 4A) before they are finalized. The pre-test of the survey instruments was conducted for two (2) days on July 2021 with POs, DENR, and LGUs in Infanta, Real, General Nakar, Tayabas and Lucena City in Quezon province.

Primary data gathering was conducted from November 2021 to June 2022 in Regions 1, 2, 3 and 5 using the structured survey instruments for key informants interview (Table 2).

Component 2- Development of framework to measure the performance of reforestation projects. Based on the result of the assessment of the practices and performances of reforestation projects and the analysis of the relevant reforestation policies and programs, the proposed framework on standards and parameters of measuring success of reforestation projects was crafted. This was presented in a national consultation with DENR officials, LGUs, academe, research institutions, private sectors and People's Organizations. The national consultation was conducted to present the formulated draft framework, solicit inputs and comments to further improve the draft standards and parameters; and finalize the draft framework.

Component 3 – Review and analysis of policies and recommend measures to address policy gaps related to reforestation and project management. Content and process analysis of the different reforestation programs and policy issuances were conducted. Reforestation policies and programs were gathered, reviewed and analyzed. Policy gaps, issues and concerns were collated from available literatures. Key informants interview was conducted to validate these issues, problems and concerns and gather other issues, problems and concerns related to the implementation of reforestation policies and programs. A policy brief was prepared highlighting the reforestation policies and programs, proposed framework to be used for the monitoring and evaluation of reforestation projects as well as the proposed standards and parameters for measuring success of reforestation projects.

Table 1. Project Activity Plan

Components and Activities Undertaken	**2021**				**2022**		
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**
Component 1. Assessment of reforestation performance (CBFM-POs, private entities, by the administration/DENR, and LGU-led reforestation) and practices employed in reforestation by mode of implementation.							
1.1 Review of related literatures	**Feb**		**Sep**				
1.2 Conduct of consultation/workshop with experts and implementation		**May**					
1.3 Formulation of survey instrument/questionnaires		**June**					
1.4 Pre-testing of survey instruments/questionnaires			**Jul**				
1.5 Coordination with DENR and other stakeholders on the conduct of survey and field visit for primary data gathering			**Aug**		**Jan**		
1.6 Conduct of Key Informant Interview, Focus Group Discussion and ocular inspection				**Nov-Dec**	**Mar**	**Jun**	
1.7 Processing, data analyses, and report writing						**Apr-Jun**	
Component 2. Development of framework to measure the performance of reforestation projects							
2.1 Conduct of workshop/writeshop					**Mar**	**Jun**	
2.2 Conduct of national consultation							**Sept**
2.3 Finalization of the framework, parameters and standards							**Oct**
Component 3. Review and analysis of policies and recommend measures to address policy gaps related to reforestation and project management.							
3.1 Gathering and review of policies	**Mar**					**Jun**	
3.2 Identification of issues and gaps and measures to address issues and gaps				**Oct/ Nov**	**Mar**		
3.3 Development of policy brief (write-up)						**April**	**Oct**
Component 4. Finalization of the Technical Reports							

Components and Activities Undertaken	**2021**				**2022**		
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**
4.1 Conduct of writeshops/workshops for the finalization of Technical Reports							**Sept**
4.2 Presentation of Technical Reports to the DENR							**Oct**
Component 5. Project Management							
5.1 Preparation of progress report	**Jan**	**Jun**				**June**	
5.2 Preparation and submission of Project Completion Report							**Oct**

Table 2. Primary data gathering sites, dates, and sectors interviewed.

Region/Province	Date of field work	Sector/Institution
1 – La Union, Ilocos Norte	March 21 – 25, 2022	CENRO, PENRO, RENRO, PGENRO, MLGU, POs, Private (SIFMA, CTPO), Academe (DMMSU, MMSU)
2 – Quirino	December 8-10, 2021 May 29- June 3, 2022	PENRO, CENRO, POs, PNREO, Private (SIFMA, CFFQI), QSU
3 – Nueva Ecija and Zambales	Nov 17-19, 2021 May 18-20, 2022	PENRO, CENRO, POs, NEUST, Private (Tan Yan Kee, First Gen)
5 – Camarines Norte	March 7-11, 2022	PENRO, CENRO, POs, Private, BU
4A- Quezon (Pre-test)		PENRO, CENRO, POs

Component 4- Finalization of technical reports. For each component, a technical report was prepared and finalized and submitted to FASPS-DNR. The technical reports are the following: 1. Regional reports of Regions 1, 2, 3, and 5; 2. Assessment report on the practices of reforestation projects in the Philippines; 2. Assessment report on the performances of reforestation projects in the Philippines; 3. Report on the proposed standards and parameters for measuring success of reforestation projects; 4. Report on the proposed monitoring and evaluation framework of reforestation projects; and 5. Assessment of reforestation policies and programs.

Component 5 – Project Management. During the project implementation, the project team complied and submitted the needed technical reports as well as the audited financial report based on the approved terms of reference and work and financial pan.

IV. IMPLEMENTATION PERFORMANCE

Design

The sites for the study include reforestation projects administered by the DENR (GOP, foreign funded, etc.), LGUs, private sector, NGOs, and academe. The final sites for the study were selected in consultation with the DENR officials and staff (FMB, Regional offices, PENRO and CENRO) as well as other organizations with reforestation projects. The selected study sites were Regions 1, 2, 3, 4A and 5. The primary and secondary data gathering activities in the selected sites were done by region and province to complete the study.

The first phase of the project was the identification of parameters, indicators, and drivers of success of reforestation projects. It involved review of policies and programs, existing literature, and secondary data and information on reforestation. Based on secondary information and literature, the success drivers include: technical/biophysical, socio-economic, institutional/policy/management factors, and reforestation project characteristics. Meanwhile, the parameters and indicators of reforestation success are grouped into: biophysical indicators, environmental indicators, and socio-economic indicators. The initial list of drivers, parameters, and indicators as well as a draft framework to measure the performance of reforestation projects was formulated based on the result of the review of available literatures and secondary data.

A round table discussion or experts' consultation was conducted via zoom platform last May 20, 2021. The objectives of the round table discussion were to: 1. Present the formulated draft framework, parameters and indicators; 2. Solicit inputs and comments to further improve the draft parameters and indicators; and 3. Recommend and finalize the draft framework, parameters and indicators. The identified parameters and indicators were grouped into pre-implementation, implementation and post-implementation phases that the project team drafted based on the review of literatures. After the presentation of the framework, parameters and indicators of measuring reforestation programs/projects, the experts/participants were grouped into three (3) for a workshop proper and their outputs were presented in a plenary session. The final framework, parameters and indicators were adopted for further review and analysis of the project team for primary data gathering.

Content and process analysis of the different reforestation programs and policy issuances were conducted. Reforestation policies and programs were gathered, reviewed and analyzed. Policy gaps, issues and concerns were collated from available literatures. Key informants interview was conducted to validate these issues, problems and concerns and gather other issues, problems and concerns related to the implementation of reforestation policies and programs.

The second phase was the evaluation of the performance of reforestation projects in the selected sites. Two sets of structured survey instruments were formulated for key informants interview. The draft survey instruments were pre-tested in Quezon province (Region 4A) before they are finalized. The pre-test was conducted on July 2021 with POs, DENR, and LGUs in Infanta, Real, General Nakar, Tayabas and Lucena City in Quezon province.

Primary data gathering was conducted from November 2021 to June 2022 in Regions 1, 2, 3 and 5 using the structured survey instruments for key informants interview. In the survey instruments, the respondents were asked to rate the parameters and indicators of reforestation success. They were also asked to identify specific drivers of success in relation to the parameters and indicators as well as proposed standards for measuring successful reforestation projects. The survey also elicited from the respondents policy issues and concerns as well as challenges in implementing reforestation projects and how these can be addressed to achieve success. Respondents were selected purposively based on their knowledge and involvement in policy making and implementation of reforestation projects. In addition, available reports, data and information including maps of the selected sites were gathered from the respective offices to provide context for the study. The results of the survey were analyzed using the descriptive and qualitative analysis.

The draft framework as well as the results of the study was presented to the DENR and in a national consultation with stakeholders for their information and validation. The participants' comments and suggestions were considered in finalizing the results of the study and the proposed framework for measuring success of reforestation projects.

A draft policy brief was prepared highlighting the proposed framework to be used for the monitoring and evaluation of reforestation projects as well as the proposed standards for measuring success of reforestation projects.

Organization and Management

Project planning, coordination, implementation and monitoring of project activities were done monthly based on the workplan to determine the accomplishments, issues and concerns encountered. Completion of inception, progress and financial reports were done based on the TOR and submitted to FASPS. Closed monitoring of the project staff to the project coordinator of FASPS was closely established for implementation and monitoring of the project.

Cost and Financing

The project cost amounting to PhP 1,999, 800.00 was granted to FDC- CFNR through UPLBFI under the DENR Special Project Fund in accordance with the approved contact (Appendix A). Budget release was based on the approved Work Financial Plan (WFP) The first release amounting to PhP 299, 970.00 was download on April 2021 and received last 5 May 2021. The second release was downloaded on 27 August

2021 amounting to PhP 599, 940.00 and received last 21 September 2021. The third release was downloaded last 10 August 2022 amounting to PhP 699,930.00 and received last 22 August 2022. The fourth release of the fund will be downloaded after the submission of completion report and other deliverables on 28 October 2022. The budget was released thru List of Due and Demandable Accounts Payable –Advice to Debit Account (LLDAP-ADA).

Out of the five (5) components of the project, the component one (1) on the assessment of performance and practices employed in reforestation projects by mode of implementation has the bulk of the expenses. It involved primary (key informant interview, focus group discussion and expert consultation) and secondary data gathering (review of existing literature, reports and information on reforestation practices and performances). The cost of expenses covers the van travel, food, venue, accommodation, transportation cost, supplies, communication, and photocopy for the project staff and respondents.

Procurement of Goods and Services

Goods and services were purchased based on the approved WFP and in accordance with the government procurement rules and regulations. Supplies and materials purchased include but not limited to ink, bond paper, parchment paper, ballpen, and other office and field supplies for the implementation of the project activities.

Disbursement

All expenses related to the project are managed, expended and utilized in accordance with the existing law and regulations of the government. Disbursements of government funds bear the approval of the authorized officials. All claims pertaining to the project funds were supported with complete documentation. UPLBFI keep and maintain financial records subject to usual accounting and auditing regulations, and other pertinent government policies as provided under the MOA.

Performance of Funding, Executing and Implementing Agencies

FASPS-DENR provided the funding for this project through DENR Special Project Fund. The released of project budget in accordance with the approved WFP. The FDC acted as the executing and implementing agency in collaboration with UPLBFI for the successful implementation of the project activities. The support and assistance of the UPLBFI includes the processing of all disbursement of expenses from processing of documents and preparing and submitting quarterly financial status report. FDC submitted the inception and progress reports on time as stipulated in MOA in terms of physical and financial status to FASPS-DENR. Funds were managed and expended according to its purpose ensuring accountability and transparency.

IV. PROJECT RESULTS

A. Assessment of the Practices and Performances for the Success of Reforestation Projects

This section presents the practices and performances of the reforestation projects in the country that was assessed based on the secondary information from publications, reports, literatures; and primary data gathering through experts' consultations, key informant interviews and ocular observation conducted by the team. Several practices and performances were documented on the implementations of reforestation in the country. Reforestation practices depends on the basic environmental and operational conditions while performances are the accomplishment and achievement of reforestation activities (Carandang and Lasco, 2011). Reforestation has become a very complex undertaking from planting nursery grown seedling to plantation establishment and maintenance.

A. 1 Assessment of the practices of a successful reforestation projects

The practices are the basic environmental and operational conditions necessary in reforestation projects. The purpose of assessing the practices is to give logical guidance in implementing best management practices that will help facilitate to achieve a successful reforestation. The practices of reforestation was assessed in terms of the following components: institutional, technical/biophysical, socio-cultural, economics and environmental.

Institutional Component

This refers to the planning, issuance of MOA/contract or tenurial instruments, provision of technical assistance, and conduct of monitoring and evaluation of the different sectors.

DENR conducted series of consultations, meetings, workshops with different stakeholders prior to the implementation of reforestation projects as part of its planning process. A strong collaboration with LGUs, POs, academe, NGOs, and local communities was practiced by DENR. PO and NGO participated and involved in the consultations, meetings and workshops in identifying the objective, target, activities, duration and budget of the project. For private sectors, conducted consultative meetings with DENR and local communities with APs/AOs for the development of their management plan and implementation of the reforestation project.

A legal contract through the issuance of MOA, contract or tenurial instruments was practiced by the DENR in any reforestation projects with corresponding objectives, target, duration and budget to any project implementor. DENR practiced this with PO, NGO, LGUs, OGAs, private sectors and other interested parties through this legal

entity before the implementation of reforestation project. For NGO and PO engaged in NGP/eNGP projects had MOA with DENR with its corresponding WFP for 3 years. Private sectors practiced getting contract with DENR for their reforestation projects based on their developed management plans.

The presence of the APs/AOs/NGOs/CBFM Coordinators was considered one of the best practiced done in the past reforestation projects. The provision of technical services from the APs/AOs/NGOs/DENR as able to conduct community organizing to the local community and capacitate through series of trainings and seminars on management, financial aspect of their organization as well as technical information on related forestry and reforestation activities from seed collection, seedling production, plantation establishment, maintenance and protection. The private sectors also practiced this by hiring APs/AOs to assist them in their management plans especially with the involvement of local community. The PO and NGO actively participated by attending from the trainings and seminars during the pre and implementation of reforestation projects conducted by APs/AOs.

In-house monitoring on the reforestation projects activities were practiced by PO, NGO and LGUs to assess their performance based on their management plan, MOA or contract. For some foreign-funded projects of ADB and JBIC, reforestation sited were turned over to CBFM POs while all other reforestation sites with completed contracts were turned over to the DENR. The DENR through its EO monitored the NGP/eNGP sites by conducting photo documentation and geotagged the seedlings that served as proof of their compliance in attaining eight-five percent (85%) survival of the planting materials. For the private sectors, they also practiced internal monitoring by conducting tree inventory and prepared stand stock table. First Gen was able to developed standards as basis for evaluating their reforestation activities.

Technical/Biophysical Component

The technical/biophysical components include practiced from the conduct of survey, mapping and planning (SMP), nursery operation, production of quality planting materials, site preparation, planting, maintenance, protection, and infrastructure.

DENR and PO practiced SMP through the conduct of site assessment in terms of site characterization and soil analysis, household survey, site species matching (choice of species suitable to the area, availability and preference), as well as identification and mapping of potential site and participatory approach in deciding what to plant with the assistance of APs/AOs from the reforestation projects funded by ADB loans 1 and 2. For LGUs, this was conducted with the assistance with DENR, academe and APs/AOs especially for the identification of potential reforestation site and used available secondary data. The private sectors and some tenure holders (SIFMA and IFMA) conducted SMP (e.g. site assessment) with the assistance from the APs/AOs before the implementation of their project with available budget allocation.

Nursery operation practices include activities on the production of seedlings through seed collection or procurement, storage, treatment, sowing and germination, potting, watering, hardening and outplanting. All sectors produced their seedlings in their nursery but also practiced today procurement of seeds/seedlings due to time constraints due to their WFP especially for NGP/ENGP. The DENR also provided technical assisted for seedling production and support to the PO identifying good planting materials from the accredited nurseries. DENR allotted 1 year for seedling production including the construction of temporary/satellite nursery based on the practiced from the ADB funded reforestation project. The PO used soil medium for seedling production consist of topsoil and compost, in a 1:1 proportion. One of their practiced also was to allocating 10 days of hardening of seedlings from nursery before planting it to the site for higher survival. The academe used indigenous and native species from clonal technology for mass production that can be used for reforestation projects. For private sectors, they produced their own seeds and seedlings from their nursery and practiced based on the guidelines of DENR on planting quality requirements.

The quality and condition of seedlings are based on the species and source of planting materials (wildlings, nursery raised, clonal), average height to be planted, kind of species (indigenous, fast growing or exotic) and others. All sectors practiced the use of seeds from nearby mother trees if available because they are already adapted to the area with potential high survival due to the same climatic type and edaphic condition. For the PO, the seedling from greenhouse nursery should be at least 1to 3 ft in height and 1 cm in diameter (pencil size) in size is already ready for outplanting and considered good quality seedlings without any presence of any pest and diseases. The wildlings seedlings upon reaching a height of 6 inches are ready for outplanted. The planting sized of seedlings according to LGU was 1 ft tall with 1 cm diameter and if came from wildlings should be at least 3 months old seedlings before outplanting. For the private organizations, the seedling planted should be at least 12 in or 1 ft in size to attain higher survival in the field.

Good preparation of planting sites was a big contributor to the success of reforestation. Site preparation involved activities such as contouring, strip brushing, hole digging, fertilization, staking and loosening of soil increases water percolation rate and enhance root penetration of seedlings. All sectors practiced all site preparation activities are conducted for any reforestation activity.

Another important for successful performance is maintenance and protection. Some of the factors affecting the maintenance and protection activities of the POs is inadequate budget. Another is the relatively distant sites of plantations which has constrained the POs from regularly conducting maintenance and protection particularly during the rainy season when conditions can be hazardous. The private companies, on the other hand, have allocated funds for reforestation activities and can

afford to hire workers as needed. The PO and NGO used kakauate as their staking and shade to increase higher survival of the planting materials. DENR practiced the size of 4in x 6 in while for PO its 5 in by 5 in and for LGU its 2m x 2m. For the LGU, good practice was the conduct of training and orientation in site preparation attended by personnel before planting for at least 1-2 days. Private sectors developed their own standard for site preparation to further increased survival of their planting materials.

All sectors practiced planting during the onset of rainy season based on the project's site climatic type. Hauling and transportation of seedlings from nursery was done early morning to avoid stress to the planting material to attained higher survival of the planting materials according to PO and NGO. For private sectors, they used crates/kolong-kolong (motorcycle with sidecar), LGU used tractor or carabao and PO used sack to hauled planting materials to the project site. Furthermore, LGU also transported the seedlings using sack by hired laborer. All sectors practiced different spacing based on the species used and depends on the terrain of the project area. TYKI practiced the use of pioneer species using alibangbang before planting premium species in their plantation establishment

All sectors agreed that they practiced maintenance activities by conducting cleaning, ring weeding, strip brushing, pruning, thinning, application of fertilizer, mulching, removal of grass/vines/trees and replanting of seedlings and cultural management practices. The PO practiced the application of organic (vermicompost) and inorganic fertilizer such as used of urea every quarterly and if there's available budget it applied organic fertilizer. Replanting of the seedlings was practiced by the PO, LGU, NGO and private sectors for M & E and validation purposes. For private sector, the First Gen developed standard for its maintenance activities. After turn-over of reforestation sites, DENR practices minimal maintenance activities based on budget availability while for private sectors, there was continuous maintenance activities because of the sufficient budget.

In CBFM areas, successful reforestations were commonly attributed to the forest protection activities of POs, including the creation of forest patrols, composed of deputized forest guards, and fire brigades. PO practiced different forest protection measures to protect the forest by establishing fire lines, fire breaks, organizing their members as Bantay Gubat, regularly conduct foot patrols. The establishment of firelines and firebreaks during dry season was practiced by DENR, PO and NGO to control forest fire. The DENR established fireline with the spacing of 3m x 5m wide on cogonal areas while the NGO spacing is also 3m every 10-20 meters depending on the project site. The NGO used banana and kakauate as fire breaks and natural boundary because of its fire-resistant characteristics. For the private sector, hired security personnel/plantation/forest guards to protect their areas from illegal activities and from fire occurrence. At present, one of it practiced was the used of drone and LAWIN application from DENR.

Infrastructure is defined as construction of roads, graded trails, foot path, bridges, culverts, log landings, quarries, impoundments, buildings (nursery, bunkhouse, office), look out towers, sign boards and other structures required in the course of implementing the project. All sectors practiced the establishments and maintenance of some infrastructures that contributed to the maintenance and protection of their reforestation project for a higher survival.

Socio-cultural Component

Socio-cultural involves stakeholder participation, trainings and seminars attended, and conduct of IEC campaign. Reforestation projects should ensure strong community and stakeholder participation in planning, management, implementation, and continuous monitoring for the project to succeed. The involvement of the community in the planning builds confidence and creates ownership of the work and outputs, thus it enhances participation.

DENR conducted assessment of the stakeholders, occupancy or household survey, capabilities and needs in coordination with LGUs and concerned barangays for planning and implementation of reforestation project. The PO continued to practice their involvement in stakeholder analysis in collaboration and assistance from DENR. Active participation from the PO officers/members through public consultation were practiced to gain technical skills related to reforestation activities. For the private sectors, consultation with local communities was conducted before the start of operation in the assigned project area and informed them about the development activities that will be conducted as well as the possible benefits they will receive with their participation. The academe in the conducted identification of stakeholders and its responsibilities from series of consultation and collaboration with DENR and LGUs.

The PO continued to participate in trainings and seminars conducted by DENR, NGOs, LGUs, academe on forestry and reforestation projects to empower them to protect the environment. The EOs applied what they learned from these trainings during the conduct of various NGP activities and re-echo it to the PO/NGP/contractors while LGU/MENRO training participants also re-echoed and applied what they learned during the trainings in performing their duties and responsibilities. For private sectors provided technical skills through CSR trainings and seminars particularly for the local community or PO was practiced to encouraged them developed entrepreneurship and product development.

One practice of the DENR was the conducted communication, education and public awareness (CEPA) during the pre-implementation reforestation project to educate the PO members and non-members in the community. Another practiced implemented by the DENR was the printing and dissemination of information education and communication (IEC) materials such as putting up of billboards, signage, and posters

during the past reforestation projects. This was done by the EOs for the NGP/eNGP reforestation projects.

Economic Component

It covers the employment generation for local community, livelihood/social enterprise opportunities and harvesting practices. The employment generation was identified based on the different activities and existing markets and product in the area. The availability of existing markets should be considered during the planning process especially on the choice of species to be planted. All sectors hired local community involvement as labor force (daily rate) conducting reforestation activities such as seedling production, site preparation, planting, maintenance and protection.

Livelihood opportunity was provided by the reforestation project such as livestock raising (carabao, swine, chicken, cow and others). This was also done by the DENR and AOs for the PO to supplement the basic need of its members. The APs also assisted the PO in marketing their developed products from the reforestation projects as practiced during the past reforestation. POs are engaged in non-timber forest products collection, livestock and fish farming aside from timber and agroforestry production. There was limited provision of livelihood during the NGP/eNGP because of limited budget. However, provision from other stakeholders were provided to the PO to assist them in their needs. For private sector, provision of livelihood /social enterprise was provided to local community due to availability of funds and their CSR to attain successful reforestation project.

Harvesting of trees planted in reforestation sites is prohibited in forest areas. The respondents from DENR, POs, and NGO mentioned that harvesting is only limited to cash crops, fruit trees and for fast-growing trees planted in production area. The project implementors especially the PO were allowed to harvest their agricultural crops, fruits trees and high-value crops (HVC) in the project area. Only mature trees ready for harvesting are cut and harvested in SIFMA or private areas.

Environmental Component

This covers the monitoring and forest protection aspect. For private sectors, monitor was conducted with the assessment of biodiversity and carbon stocks with APs that can determine the impact of their reforestation project. It practiced also the conduct of tree inventory and stand and stock report with the assistance with academe because of the availability of funds.

Forest protection in terms of the integrated pest management was done by NGO when there was presence of pest and diseases as part of their forest protection activity. The use of natural remedies to control the pest and diseases in planting materials were implemented and closed monitored by their staff in order to achieved higher survival rate. For private sector, pest and fire management plan were incorporated in the comprehensive site management plan with the assistance from APs.

Further details on the assessment of practices in implementing the reforestation projects can be found in ANNEX A.

A.2 Assessment on the Performance of Reforestation Projects

The performance of reforestation was assessed in terms of the following components: institutional, technical/biophysical, socio-economic and socio-cultural. These factors were shown to have contributed to the success or failure of reforestation projects.

Institutional Component

This refers to the presence of formal collaborative mechanisms, reforestation project characteristics and budget.

Presence of Formal Collaboration. The DENR has executed MOAs/contracts between POs, LGUs, other government agencies, academe and the private sector/individuals to undertake reforestation activities. All NGP projects were conducted through Memorandum of Agreement (MOA) between DENR and various institutions (LGUs, POs, academe, and other government agencies like NIA, DPWH, and NPC). These MOAs/contracts are essential in delineating the responsibilities of each party, determining the scope of work, modes of payment, deliverables, sanctions and incentives. In general, the contractees were able to abide with the terms and conditions specified in their contract which is also an indication of their performance. Project implementors are also guided by their management plans or work and financial plans to properly implement their activities and as such have served as monitoring and evaluation tool to assess their accomplishments.

Reforestation Project Characteristics. Reforestation project characteristics influence reforestation outcomes. These characteristics include goals and objectives, location of site and project implementers. The reforestation program and projects of the DENR have multiple objectives covering both physical and non-physical aspects such as environmental, socio-economic and institutional. Increasing forest cover and soil and water management remain the dominant objectives across sectors and regions as well as the goal of poverty reduction. In all the reforestation sites, both physical and non-physical objectives are being realized.

The location and accessibility of reforestation sites are important factors in reforestation success. In the regions, most of the remaining sites identified for reforestation are located in highly inaccessible areas. The distance of project sites affected the hauling and transport of seedlings (may result to damaged seedlings), the frequency of monitoring, and maintenance and protection. It was mentioned that maintenance and protection was not done on target especially during the rainy season when sites can become inaccessible.

The implementors of reforestation projects are also determinants of reforestation success such as (e.g. DENR, NIA, NPC, DPWH), LGUs, POs, private sector/NGO,

academe and private individuals. Interview results showed that the private sector can sustain the management of their reforestation sites from nursery, plantation to maintenance and protection due to availability of funds and as part of their CSR unlike government funded projects like NGP and CBFM. The DENR should therefore forge more partnerships between NGOs and private companies in their greening projects.

Budget. Availability of funds or budget and its timely release is an important factor that contributed to the performance of reforestation projects specially for POs who are dependent on the availability of funds to implement their reforestation activities. Since their activities are target driven, the timely release of funds is critical for site preparation, planting, maintenance and protection. Delay in budget release have resulted to adjustment of target schedules. As a result planting was conducted near the end of the wet season or beginning of the dry season.

Technical and Biophysical Component

The technical and biophysical components that affects the performance of reforestation projects include conduct of survey, mapping and planning (SMP), percent survival of seedlings, quality and condition of seedlings planted, site preparation and planting, timing of planting, maintenance and protection and infrastructure.

SMP/Planning. While survey, mapping and planning (SMP) is required for every reforestation project to ensure availability of areas for development, suitability of species to be planted, bio-physical and environmental characterization, as well as assessment of the social and institutional conditions in the area, not all of these activities were conducted during the early implementation of NGP projects. Reforestation activities were fast-tracked without adequate preparation and support from stakeholders, as supported by the 2019 Performance Audit conducted by the Commission on Audit of NGP projects. It concluded that fast-tracking the reforestation activities without adequate preparation and support of stakeholders increased waste of resources.

Percent Survival Rate. Survival rate is one of the basis for determining the performance of reforestation projects. The reforestation projects in most of the study areas reportedly met their target of 85% survival set by the DENR. The DENR and PO respondents attributed this to replanting with maintenance starting from Year 1 up to Year 3 to attain the 85% survival required of the POs, which is the basis for payment of the 10% retention fee and for billing purposes. However, it was observed that percent survival of seedlings decreased from Year 1 to Year 3 and that for the succeeding years after the contract, there was high mortality of replanted seedlings. This is because seedlings are sourced from around the vicinity where quality is not assured or where ever is available.

Actual Area Planted. Actual area planted compared to target area and growth performance are indicators for reforestation performance. The factors that greatly affect the actual planted area compared to targeted area include: site preparation,

number of seedlings planted, maintenance activities like frequency of cleaning and weeding, percentage of seedlings selected, number of seedlings replanted, and kind of planting stock used (cuttings, potted seedlings or bareroot seedlings). While growth performance is an indicator of performance, only a few of the implementors monitor this on especially among the government-initiated reforestation projects. In private plantations, growth performance is monitored and reported. It is important to monitor the growth performance of planted seedlings particularly if the purpose of reforestation is for timber production where timber quality is a valuable factor.

Quality of Seedlings. The quality of seedlings is another determinant of reforestation performance. The respondents produced their own seedlings but also buy from different sources to meet their targets. The quality of seedlings therefore cannot be assured. The respondents from the study sites observed that the quality of seedlings is also affected by proper handling and transporting which in turn may affect its survival. The manner of planting also contributed to the low survival wherein the prescribed guidelines contained in DENR Technical Bulletins were not followed like proper spacing for timber, fuelwood and agroforestry species, the proper silvicultural treatments required which has led to low survival rates of seedlings.

Maintenance and Protection. Another important for successful performance is maintenance and protection. Some of the factors affecting the maintenance and protection activities of the POs is inadequate budget. Another is the relatively distant sites of plantations which has constrained the POs from regularly conducting maintenance and protection particularly during the rainy season when conditions can be hazardous. The private companies, on the other hand, have allocated funds for reforestation activities and can afford to hire workers as needed. Proper care and maintenance of reforestation sites is needed until forests are self-maintaining (if planted for conservation purposes) or reach a harvestable age if trees are planted for commercial purposes.

Monitoring and Evaluation. Regular monitoring either by DENR or the implementors themselves helps increase the chance of reforestation to become successful. Internal monitoring and ocular inspection is regularly conducted by the project implementors. Some of the respondents (FGHP) have developed their own standards and protocols which serve as their monitoring tool for evaluating the accomplishments of their reforestation projects. One of the items monitored is to determine the actual area planted compared to the target area.

Infrastructure. The presence of infrastructure such as roads, watchtowers and SWIS are important features in reforestation areas that contribute to successful plantation establishment. Roads provide ease of hauling and transportation of seedlings and equipment to the plantation area. Access roads also provide accessibility to vehicles and reduces the time spent to reach the reforestation areas where timing of planting is essential. Watchtowers and SWIS are likewise important in protecting the plantations from fire and illegal activities.

Socio-economic Component

Socio-economic factors are one of the drivers of reforestation success. Some socio-economic requirements for a successful reforestation are increased income, employment opportunities and livelihood opportunities of the respondents. One of the impacts of reforestation projects is increased income through involvement in reforestation activities while at the same time harvesting of crops from agroforestry farms specially for PO members. Through their income from the reforestation projects, the PO members were able to improve their houses and helped in the educational expenses of their children. Involvement in reforestation projects have given the local communities/POs with livelihood opportunities such as livestock raising, selling of crops from agroforestry farms, and other alternative livelihood (basket and mat weaving, production of honey and processing of agricultural crops into chips).

Socio-Cultural Component

Capacity building and community empowerment are important factors contributing to the success of reforestation projects. These are done through skills training, seminars and dissemination of information provided by assisting professionals, extension officers or NGOs. The POs have received various skills training related to nursery and plantation management, pest and disease management, product development and marketing, agroforestry, among others. They have attended seminars and orientations to enhance their knowledge about NGP and on topics related to forest conservation

Factors in Measuring Successful Reforestation Projects

The respondents were further asked their perception on the appropriate indicators under the biophysical, technical, institutional, socio-economic and cultural parameters which they consider important measures of successful reforestation. The results show the yardstick or gauge by which the respondents determine performance of their reforestation projects. There are a total of 94 respondents across the regions

Among the biophysical parameters, percent of total area planted (actual vs target) was considered by 91% of the respondents as an important indicator, followed by biomass and litter production (87%), and site accessibility (84%). On the technical factors contributing to successful reforestation performance, the foremost answers were quality of planting materials (98%), frequency of maintenance activities and formulated management plans (97% each). Among the nine institutional factors relevant to reforestation success, presence of formal collaborative mechanisms and adequate manpower were mentioned by 98% each of the respondents, followed by prioritization of local communities (97%), security of tenure (96%), stable policies and financial assistance (95% each), timing of release of funds and presence of support agencies (93% each), and peace and order (89%). The socio-economic indicators mentioned

were, community participation, livelihood opportunities, continuous extension services (96% each). Details on the assessment of reforestation performance can be found in the separate report (ANNEX B.)

B. Review and Analysis of Policies and Recommend Measures to Address the Policy Gaps Related to Reforestation and Project Management

The Philippine Reforestation Policies and Programs

The deforestation in the country decreased rapidly from 1946 to present. According to FAO estimates, the Philippines lost a third of its forest cover between 1990 and 2005, but deforestation has decreased since its peak in the 1980s and 1990s. This started during the colonial period wherein forest became commercialized, and lumber was given economic value. During the 1900's, Philippines has become an important supplier in the world timber market in the 1900's (Maohong, 2012).

To address the problem of deforestation and its effects on the environment, the Philippine government has issued a number of regulations. In addition, the government's forest policy also intended to support the industrialization and modernization of the Philippines without taking into account the environmental costs as part of its overall national development agenda (Maohong, 2012).

Review of related literature was conducted to determine the different effects or implications of reforestation policies in the country, including issues and challenges. Different policies were also reviewed to determine reforestation standards and how they evolved thru time. Awareness of respondents on the reforestation policies and program was also determined and statistical analysis (simple counting) was employed to analyze results. With respect to issues and challenges, information gathered during the literature review were supported by the information gathered during the conduct of Expert's Consultation, and during the conduct of the Key Informant Interview (KII) at the different DENR field offices represented by DENR personnel, representatives from the Peoples' Organizations (POs), Non-government Organizations (NGOs), Local Government Units (LGUs) and the private sector. The detailed discussion of the review and analysis of reforestation policies is provided in ANNEX C.

Forest policies in the Philippines can be traced back to colonialism, first under Spain and then under the US due to the negative effects of deforestation in some areas of the country. As a response, subsequent reforestation policies and programs were implemented. In 1947, RA 115 was passed to provide funds for reforestation and afforestation, basically from charges collected from timber cut in public forest intended for commercial purposes. Republic Act 2706, on the other hand, was passed in 1960, establishing the Reforestation Administration with the mission of hastening reforestation. All reforestation funds collected pursuant to RA 115 are spend exclusively for reforestation.

The Forestry Reform Code of 1974 on the other hand, is an attempt to revise and update the country's forestry policy. It is also an attempt to shift from regulatory approaches to control slash-and-burn farming.

This was revised in 1975 under PD 705 adapting the concept of multiple-use forest management, advancement of forestry-related science and technology, rehabilitation of degraded ecosystems, encouraging wood processing, and gradual phase-out of log exports. Social forestry has become the new direction in forest policy. Through this law, the establishment, development and maintenance of industrial tree plantations were formalized. PD 705 still remains the legal basis of the country's policies, plans and programs.

In 1978, PD 1559 was issued to further strengthen the Code to be more responsive to existing conditions and to the government's thrust to further realize its objectives of forest development and conservation, and rationalization of the wood industry. The decree also states the provision of incentives to encourage and expand the participation of private sector in forest management, protection and development as well as in wood processing.

People-oriented forestry programs were developed and implemented during the 70's to encourage people and communities to participate in forest activities. The Forest Occupancy Management Program (1975), the Family Approach to Reforestation (FAR) Program (1978), and the Communal Tree Farming (CTF) Program were among them (1978). Following these is the Social Forestry Program, which is governed by LOI 1260 and consolidates the previous programs.

The Family Approach to Reforestation (FAR) Program (1978) is a a cost-effective means of accelerating reforestation on denuded areas by participation of local families. However, numerous contracts to be monitored has become an issue. In addition, there was a difficulty in doing business with the different agencies involved due to documentary requirements. While the project's primary goal was to help people build capacity to meet the needs, the program was rather carried-out as a "national project".

On the other hand, the Communal Tree Farming (CTF) Program encourages the establishment of tree farms or plantations and make upland farmers and communities' protectors of the forests.

EO 725 which is Facilitating the Establishment of Industrial Tree Plantations was passed in 1981, the establishment of ITPs is encouraged in support of the Forest Ecosystem Management. It also includes the identification and delineation of suitable areas within the concessions for reforestation and conversion into industrial tree plantation and encourages the planting of suitable dipterocarp, other premium species as well as fast-growing species.

In the late 1980s, the government's reforestation strategies shifted dramatically to contracting schemes. Decentralization, people's participation, and recognition of

socio-political dimensions were also considered in the formulation of forest policy. The participation of non-governmental organizations (NGOs) became critical.

The Integrated Social Forestry Program consolidates all the previous people-oriented programs. It provides for security of tenure for kaingineros and other forest occupants who are dependent to forest lands for livelihood. With the implementation of ISFP, several reforestation components were incorporated in the implementation such as information drive, identification and assessment of project areas, preparation of development plan, census of forest occupants, among others. With the recent devolution, responsibility for ISFP was transferred from the DENR to LGUs in 1994, except for one model site in each province. Responsibilities were transferred but there was no corresponding budget and manpower, thus, maintenance of established plantations has become a problem. During its implementation, unavailability of funds in some period of the project's implementation has become an issue; lack of capital, credit and other support services. Also, there is no significant outputs that would have improved the conditions of the forest resources, and the program somehow aggravates the upland occupancy problem. During the conduct of the study, most of the personnel involved in the program were no longer in service thus, there was a difficulty of locating the previous ISFP sites.

In 1987, EO 278 was executed to provide initial funding for contract reforestation for protection and maintenance of planted trees thru the signing of Forest Land Management Agreement (FLMA) between the government and the communities, NGOs and other qualified parties which is 25 years and renewable for another 25 years.

The National Forestation Program, launched in 1988, establishes a broad policy framework for the rehabilitation and conservation of the country's forest resources towards sustained and comprehensive efforts. One of its components is the contract reforestation. The program promotes social equity and rural development thru contracting with local upland families and organized communities. Components of contract refo include SMP, comprehensive site development, and monitoring and evaluation. The program's breakthrough is the recognition of new players in reforestation like the LGUs, NGOs, and the local communities.

Another people-oriented program is the Community Forestry Program. The program is designed to provide upland residents with alternative source of livelihood. This gives rise to the formation of People's Organization (POs) to be able to obtain a Community Forest Management Agreement (CFMA). The DENR is mandated to provide assistance in establishing community organizations, training in forest management planning and conservation, livelihood opportunities and developing other livelihood opportunities. Under the program, a A Manual of Operations was also developed which serves as guidelines for implementation of community forestry projects.

To further promote community-based participation in the rehabilitation, establishment, management, protection and sustainable utilization of forest resources, the Forest

Land Management Program takes effect in 1993 under DAO 23. The program includes the provisions of financial and technical assistance including the preparation of project development plan, forest management plan and forest protection plan, among others. However, according to some studies, prospective FLMA grantees contend that the economic incentives attached to the agreement are long-term and not attractive enough to induce those groups to enter into it.

The CBFM is the national strategy for the sustainable development of the country's forest resources and at the same time, achieving social justice. The CBFM program consolidates and unifies all of the government's current people-oriented forestry programs. The key participants of the program are the local communities represented by the POs. It requires the DENR, LGUs, NGOs and other government agencies or entities in the preparation of Community Resource Management Framework (CRMF). Different activities are presented for the various stages the program starting with the preparatory stage, planning stage, and implementation stage. Several Technical Bulletins were also issued to further strengthened the implementation of CBFM.

Based on the data from 2020 Phil. Forestry Statistics, there are 1,956 CBFMA issued covering an area of 1,659,857 ha, and implemented by 1,953 POs. While there are visible outcomes of community-based interventions in the uplands, there are still issues and challenges regarding the implementation of the program. Some of these are titled lands within CBFM areas; conflict between CADT and CBFM policies regarding CBFM; absence of benefit-sharing scheme/system and incentives; POs perceived CBFMP as source of income and employment; DENR is more focused on the regulatory or enforcement side of tenured agreement rather than providing technical support; numerous policies and guidelines issued on CBFM are difficult for stakeholders to fully understand and to follow; and frequent changes in CBFM rules and guidelines.

The government's most recent reforestation program is the National Greening Program (NGP) and the Enhanced National Greening Program (eNGP), embodied in EO 2011-26 and EO 2015-193. The NGP consolidates and harmonize of all greening efforts and adopting a convergence initiative that involves government-funded reforestation contracts with community organizations, private entities, LGUs, among others. It aims to reduce poverty, promote food security, environmental stability and biodiversity conservation, and enhance climate change mitigation and adaptation. The target is to plant 1.5 billion trees covering 1.5 million hectares for a period of six (6) years from 2011 to 2016.

Extended NGP on the other hand, accelerates the rehabilitation and reforestation of the remaining 7.1 million hectares of unproductive, denuded and degraded forestlands and extending its implementation from 2016 to 2028. It also enhances and encourage participation of private sector, LGUs, organized upland communities, and other stakeholders in the sustainable management of the plantations and protection of

existing forests. Program components and activities are further discussed to strengthen implementation as reflected in the issuance of related Technical Bulletins.

Based on 2011-2022 Philippine Forestry Statistics data, it shows that at least 2,049,262 hectares are covered by NGP with approximately 794,782,831 seedlings planted. However, despite the various policy issuances, like many reforestation programs, NGP still faces many issues and challenges. However, based on numerous studies, it shows that that there are still issues and challenges related to economic, social, environmental and institutional.

Awareness on Reforestation Policies

Among the policies, most of the respondents have awareness of CBFM and NGP followed by the ISFP (Table 3). This can be attributed to the profile of the respondents, especially with DENR, wherein only a few have experience in implementing the previous reforestation projects. Most of the DENR personnel involved in the earlier reforestation projects have already retired from the service. The current staffing of DENR is relatively inexperienced and do not have the adequate knowledge about the past reforestation programs.

Table 3. Awareness of the respondents on the reforestation policies and the related policy issues.

Reforestation Policy	Awareness (%)					
	DENR (n=39)	PO (n=32)	NGO (n=3)	LGU/ OGA (n=6)	PRIVATE (n=7)	ACADEME (n=7)
Family Approach to Reforestation	41	19	100	17	14	57
Integrated Social Forestry Program (LOI 1260)	38	41	33	50	29	57
National Forestation Program (Contract Reforestation) (ADB-DECF)	38	25	100	50	29	57
Adopting Community-based Forest Management (CBFM) as the National strategy to ensure the Sustainable Development of the Country's	56	47	67	50	14	57

Reforestation Policy	Awareness (%)					
	DENR (n=39)	PO (n=32)	NGO (n=3)	LGU/ OGA (n=6)	PRIVATE (n=7)	ACADEME (n=7)
Forestlands Resources (EO 263)						
National Greening Program (NGP-eNGP) (EO 26 and EO 193)	64	63	100	67	57	71

Policies Issues Related to Major Reforestation Policies and Programs

Most of the issues and concerns (Table 4) focused on the major reforestation programs in the country including 1) the Family Approach to Reforestation (FAR); 2) the Integrated Social Forestry Program (LOI 1982-1260); 3) the National Forestation Program (Contract Reforestation); 4) the Community-based Forest Management Program (EO 1995-263); and 5) the National Greening Program (EO 2011-26, EO 1995-193).

Table 4. Policy issues related to reforestation programs.

Reforestation Program/ Policy	Policy issues
Family Approach to Reforestation (FAR)	Numerous numbers of contract to be monitored
	Difficulty in doing business with the involved different agencies due to documentary requirements
	The project's primary goal was to help people build capacity to meet the needs but was rather carried-out as a "national project"
Integrated Social Forestry Program (LOI 1982-1260)	Unavailability of funds in some period of the project's implementation
National Forestation Program (Contract Reforestation)	Lack of community organizing and participation especially in planning
	Poor monitoring
	M&E only serves as a basis for payment and does not look at the performance of the reforestation project
	Lack of tenure rights in forestlands
	lack of food security component
	inclusion of patronage criteria in the selection of contractors

Reforestation Program/ Policy	Policy issues
Community-based Forest Management (CBFM) (EO 1995-263)	Weak administrative capacity of the government Titled land within CBFM areas Conflict between CADT and CBFM policies regarding CBFM Implementation of the benefit-sharing scheme/system despite the issuance of related TB DENR is more focused on the regulatory or enforcement side of tenured agreement rather than providing technical support Numerous policies and guidelines issued on CBFM are difficult for stakeholders to fully understand and to follow Frequent changes in CBFM rules and guidelines
National Greening Program (NGP/eNGP) (EO 2011-26 and EO 2015-193)	Short contract duration to sustain the maintenance and protection Contracting out the project through public bidding (RA 9184) Target-based which means that the program focused on planting targets, focus on quantity has also compromised the quality and diversity of planting materials (Kleist et al., 2021) and dictated by the top management Limited technical support in the implementation of the project Insufficient budget for maintenance and protection activities Project's accomplishments vis-à-vis the attainment of NGP's objectives Considerations in determining the survival rate Inadequate social preparation and capacity building Changes in leadership resulting to unstable policy environment NGP's failure to apply CBFM's established practices lead to lack of support from the community (Kleist *et al.*, 2021) Guidelines for the maintenance of turned over/completed NGPs is provided in DMC 2013-06, which follows RA 9184, however, this is not implemented yet and whether there is already an appropriate legal instrument for the long-term sustainable management of the area Compliance to FMB TB 23 regarding Third party monitoring Strict policies on native species (restriction on the cutting) discourages the planting of such

Some respondents from DENR and POs stated that the family approach is preferable because the implementation is more focused and more effective, and the families directly benefit from the project. This is supported by the study conducted by Dizon (1986) which revealed that the Family Approach did provide project participants with a temporary source of income. However, DENR faces the challenge of dealing with numerous families, resulting in several contracts to be monitored. While some respondents preferred this approach, there was mention of the family's difficulty doing business with the agencies involved. This is due to a lack of documentary requirements and the difficulty of conducting business given the distance between their home and DENR offices. As a result, they had to pay an "intermediary" to act on their behalf when dealing with the DENR, which is costly. While the families benefit from the project, the economic benefits received were not proportionate to the social cost borne by the participants. In addition, providing additional income without "building the capacity to meet the families' own needs" would be ineffective. Moreover, the project's primary goal was not to help people build their capacity to meet their own needs, but rather to carry out a "national project" (Dizon, 1986).

According to the respondents, the ISF project encourages people to participate more because they are familiar with the area. The project began with a smooth implementation, however, as with any other project, unavailability of funds was an issue. Because of this, the farmers were forced to sell their rights. Another issue is that the project is self-reliant, and the success of implementation is dependent on the farmers' capacity and knowledge, which is typically a problem.

The NFP's breakthrough is the recognition of new players in reforestation like the LGUs, NGOs, and the local communities. Despite the policies governing the implementation of reforestation, the program faced various issues. POs became reliant on dole-out funds as funds became available, which is also evident in current reforestation projects. While one of the main activities that promote active community involvement in forest development and protection is community organizing (Estoria et., 2014 as cited by Le et al., 2012), some respondents mentioned that community organizing is missing. This helps build the capacity of the community for the establishment of sustainable livelihood. Aside from these, there are also policy constraints like 1) lack of tenure rights in forested lands, 2) lack of food security component, 3) lack of community participation in planning, 4) inclusion of patronage criteria in the selection of contractors, and 5) weak administrative capacity of the government (Magno, 1994). With regards to land tenure, secure land tenure and land-user access are important to the achievement of reforestation (ITTO, 2002). In order to prevent further degradation and improper conversion to other land uses, a clear land tenure system must be in place to allow for the sustainable management and use of rehabilitated forests (Le et al., 2012). Proper monitoring is also missing in the program. The primary purpose of M&E, which only serves as a basis for payment for contractors and does not look at the performance of the trees planted, is also a problem.

With respect to CBFM, one of the issues is titled land within CBFM areas, which some POs are concerned about because CBFM areas are located within forestlands. There is also a conflict between CADT and DENR policies regarding CBFM, which impedes program implementation. There are no established benefit-sharing systems in any of the tenured lands at the moment, and the DENR pays individual workers. This is supported by the study of Agoncillo et al. (2011) where individual workers and project costs, such as nursery establishment, are paid directly by DENR. Thus, it is debatable whether the POs should only be compensated for their efforts, especially since the community should benefit from the reforestation project.

Due to staff, budget, and technical constraints, the DENR's role in some areas is more focused on the regulatory or enforcement side of tenured agreements rather than providing technical support to tenure holders on good natural resource management (Agoncillo et al., 2011). Moreover, despite the numerous policy releases now in existence, there isn't a single policy that establishes a strong legal framework to govern the efficient implementation of the CBFM program (Pulhin *et al.* 2005). This is evident, for example, in the DENR's ambivalence regarding the issuance of Resource Use Permits (RUPs) to participating communities, which has significantly impacted CBFM field operations, particularly the communities' primary source of livelihood. Bacalla (1995) cited the DENR-JICA field review of 40 CBFM sites and confirmed that the numerous policies and guidelines issued on CBFM are difficult for stakeholders to fully understand, let alone follow. This is compounded by the frequent changes in CBFM rules and guidelines that do not create a stable environment to work within.

Several studies show that there still issues and challenges in implementing the NGP/eNGP and these pertain to economic, social, environmental and institutional aspects as supported by the study conducted by Israel in 2016. Some of these include 1) target oriented in terms of hectares planted thus limiting the job to planting and less on the attainment of other targets; 2) short contract duration to sustain the maintenance and protection; 3) contracting out the project through public bidding (RA 9184) limits participation of POs; 4) target-based and dictated by the top management; 5) limited technical support; 6) insufficient budget for maintenance and protection; 7) project's accomplishments vis-à-vis the attainment of NGP's objectives; 8) determining the survival rate; 9) inadequate social preparation and capacity building; 10) problems with species-site-market suitability due to lack of preparation and feasibility studies before planting; 11) absence of guidelines for completed NGP projects; 12) absence of M&E tool; 13) compliance to FMB TB 23 for third-party evaluation; and 14) changes in leadership resulting to unstable policy environment.

It was acknowledged that changes in leadership (i.e. DENR Secretary) have an impact on project implementation. Taking the case of CBFM and NGP, these programs are constantly under review. However, changes may not be well communicated to LGUs and communities, resulting in inconsistent program implementation across the country. As a result, there are differences in how these programs are implemented on the ground across the country. The findings of Danilo (2015) confirm this, as frequent

changes in policy guidelines exacerbate the conflicts and inconsistencies in NGP implementation. The unstable policy environment has prevented many investors from participating in large-scale reforestation projects as they have no guarantee of future benefit.

Issues during the past reforestation initiatives which still remains with the implementation of NGP include: 1) overambitious planting targets; 2) poor scheduling which resulted in poor quality of seedlings; 3) unclear distinctions between production and protection areas on the ground especially for biodiversity conservation; 4) poor planning, management and implementation.

Recommendations

In light of the above issues, some key recommendations for reforestation policies are provided, as follows:

1. *Harmonization of related policies*. Reforestation policies from various agencies need to be harmonized, just like any other policy, to prevent conflicts and policy differences while also preventing project implementers from being confused.

2. *Development and approval of guidelines for graduated NGP and other completed reforestation projects*. Reforestation projects have been carried out in the Philippines for quite some time, however, only few has been sustained. Thus, guidelines must be developed in order to sustain the rehabilitation efforts.

3. *Development of a realistic and attainable reforestation plan with clear objectives and outputs*. The objectives of reforestation must be clearly defined. The general objectives of reforestation projects include both physical and non-physical. The physical objectives are generally to increase forest and land cover, increase timber production, protect watersheds, and conserve biodiversity. While the non-physical objectives are usually to increase community incomes, create livelihood opportunities, empower local communities, secure community access to land, raise environmental awareness and education, and protect watersheds and conserve biodiversity (Chokkalingam et al., 2006 as cited by Le et al., 2012).

4. *Approval and adoption of the proposed M&E framework*. Monitoring and evaluation help in ensuring that activities are carried out appropriately and that resources are being used effectively. It also provides decision-makers strategies for project sustainability as well as direction for future undertakings.

5. *Design, approval, and implementation of incentive mechanisms.* While the policies provide for incentives, this does not materialize because there are no mechanisms in place.

6. Increase social readiness through a various activity such as IEC, community organizing, participatory planning, and capacity building (technical, organizational, gender and development, and market).

C. Proposed Standards and Parameters for Measuring Success of Reforestation Projects

The standards and parameters to ensure success of reforestation projects have evolved through time as a result of the many lessons accumulated from operationalizing various projects in the past. Realizations of what works and what does not in field implementation have driven the need to continue revising, changing, and making innovations on how reforestation should be done – from a "standard and uniform" set of rules of engagement in past contract reforestation projects to a more "site-specific" decision making based on recent guidelines. The level of "details" in compliance with existing rules and regulations depends on what is being measured through the M&E system and tools developed for the reforestation program. The cycle of reviewing and revising policy according to the changing trends, issues and concerns as well as dictated by priorities of the current administration is and will be a continuing occurrence.

The project reviewed the basis for the current standards and parameters used in measuring the performance of reforestation projects, be it by DENR, the LGUs, or other partners. The standards and parameters are contained in various laws, regulations, and policy issuances emanating from the government over the years. The content of such laws and policy issuances were reviewed along with secondary information and literature. Some of the national laws and policy issuances as well as previous reforestation projects that serve as the backbone of recent reforestation guidelines are discussed along with the results of the key informant interviews conducted in this study (ANNEX D).

The review and assessment of the current standards and parameters reveal that there are still gaps, issues, and concerns particularly in the pre-implementation to the post-implementation phases that need to be addressed to ensure that reforestation initiatives are sustained and that the goals are achieved. Table 5 lists the recommendations to address the gaps, issues and concerns regarding the current standards and parameters for measuring reforestation performance.

Table 5. Recommendations to improve current standards and parameters for measuring the performance of reforestation projects.

Standards and Parameters by Component	Recommendations
Institutional component	

Standards and Parameters by Component	Recommendations
Goals and objectives of reforestation	Should be site-specific with measurable criteria and indicators for short, medium, & long term evaluation
Roles and responsibilities of agencies	Define sectoral/agency responsibilities that could be sustained in the short, medium, & long term
Program management, supervision, and monitoring	Provision of adequate support & resources for implementing field offices – manpower should be permanent items instead of contractual; provision of equipment, facilities, vehicles for field offices dedicated for reforestation projects
Identification of potential reforestation sites (target-driven)	Instead of piecemeal project sites, concentrate on priority areas and maintain/nurture them until the reforested areas are established; target new areas only as expansion of the previously established sites
Reforestation planning	Reforestation plans should be integral to the Master Plan for Forestry or Forest Land Use Plan of the region, province, or municipality. Hence, the reforestation plans should be formulated following the long term Master Plan of FLUP which already indicate the areas for protection (e.g. critical watersheds or river basins, protected areas, mangroves, etc.), production (e.g. timber, fuelwood, agroforestry, water, carbon trading, ecotourism, etc.). Hence, in the SMP, ample time should be given to gather needed data and information on the potential sites before reforestation activities are implemented from seed collection, nursery seedling production, infrastructure development, site preparation & planting, maintenance & protection, and harvesting/utilization (for production areas), etc. Budgeting for these activities should be included in the plans, not only for contracted activities but also for long term overall operations.
Bidding of project sites	Enough time should be given for the bidding, processing and awarding of contracts and

Standards and Parameters by Component	Recommendations
	provide a workable schedule for implementation of contracted activities
Modes of implementation	The time gap between completion of contracted activities and bidding/provision of long term tenure over the "graduated sites" should be addressed. A combination of Reforestation by Administration in partnership with local POs or communities can be considered.
Capability building of DENR staff & POs	DENR field staff (not just those involved with Reforestation by Administration) and POs need to be continuously trained not only on project implementation but also on community development and enterprise development. M&E staff should be hired and able to train local communities to do M&E activities.
Funding and payment scheme	Adequate funds should be allotted for DENR field offices to be able to hire permanent and qualified extension officers, procure and maintain equipment, facilities, and vehicles needed for the reforestation program.
Information, education and communication (IEC)	The required communication plans for IEC should be developed and implemented and the field staff trained to prepare materials and conduct training for the partners.
Reforestation program monitoring and assessment/evaluation (M&E)	Validation of accomplishments and program M&E should be done by third parties within the agency and not by the project field implementers themselves. Program evaluation should be funded and implemented by another agency or institution to achieve realistic (unbiased) program performance evaluation results. M&E tools should be developed at the start of the program so that performance C&I are properly measured during the short, medium and long term.
Sustainability of established reforestation projects	Factors that affect the sustainability of reforestation projects should be prioritized during the planning stage. Drivers such as poverty and other threats and vulnerabilities need to be addressed. Institutional factors such

Standards and Parameters by Component	Recommendations
	as capacity of existing field offices to maintain and protect the graduated reforestation sites have to be considered in target setting.
Technical and Biophysical component	
Areas covered	The field offices should be given the responsibility to decide on priority areas (e.g. for protection, production, etc.) to be reforested based on the forest landscape rehabilitation approach as stipulated in the policies.
Identification of potential reforestation sites	Piecemeal reforestation sites should not be the norm but rather focus on areas that can be developed for a certain period and later on expanded once the plantations/forests are already established and growing.
Site assessment, survey and mapping	Ground validation of secondary data from existing maps and other information should be conducted properly with enough logistics and resources. Database should be maintained and updated as references for addressing issues and problems in field implementation.
Reforestation planning	The planning horizon should go beyond the 3 or 5 years required for reforestation projects. This requires visioning for the long term, whether the projects sites are to be developed for protection, production, or any other purposes (as determined in the Master Plans for Forestry or FLUPs or other plans in the locality). Thus, planning should include harvesting plans (i.e. infrastructure for processing, transport, marketing, etc.) or development of ecosystem services (i.e. ecotourism, water use, carbon trading, biodiversity conservation, etc.) and the requisite support services to implement these in the future. Thus, technical, environmental, financial and other aspects should be planned at the onset to prepare for future land uses of the reforestation sites to be established.

Standards and Parameters by Component	Recommendations
Species selection and spacing	Depending on site conditions, species selection should be based on the future land uses of the reforestation site, whether it be for production (type of products and services) or protection (type of ecosystem services) or other uses.
Development activities	Development activities should be geared towards achieving the end products of the reforestation project (i.e. production of timber, high value crops, or other ecosystem services). Silvicultural practices should be identified and implemented to achieve the desired end products. Infrastructure development should also be included in preparation for M&E and silvicultural practices (e.g. ANR, EP, replanting, pruning, thinning, etc.).
M&E of reforestation projects	The M&E tool should be developed and aligned with the purpose of reforestation projects, be it for production or protection and the quality of the desired end products. The M&E results at different periods of time should be used to adopt improvements needed to achieve the desired end products of the reforestation projects.
Socio-cultural component	
Socio-economic profiling & stakeholder analysis	The DENR can partner with LGUs, academe, and local communities to conduct SE profiling and stakeholder analysis since the main reason for not doing these is lack of capability and resources.
IEC campaigns	The communication plans should be developed in consideration of the needs of local communities and partners. Hence, training programs and IEC materials should be focused on developing capacities for both the short and long term. Regular assessments of IEC campaigns need to be incorporated in the program M&E in order be responsive to the needs of local partners.
Capacity building of PO partners & participation in project activities	Capacity building of PO partners and local stakeholders should cater to their specific

Standards and Parameters by Component	Recommendations
	needs so that they are able to meaningfully participate in project activities as well as sustain them after the reforestation contracts are completed.
Economic component	
Market scanning for species selection	Available and potential markets (demand trends) for the species to be planted should be identified and pre-feasibility studies done to determine the viability of establishing plantations of certain species for specific end products.
Social enterprise	Improving the welfare of local communities and reducing poverty need to be translated through income generating projects that will allow them to be partners in maintaining and protecting the reforested areas even after their contracts end.
Planning for harvesting, utilization, & marketing of products	Pre-feasibility studies for production reforestation projects serve as basis for planning and implementing harvesting, utilization and marketing of products to be derived from the project sites.
Incentives for partners	More innovative incentives need to be identified and implemented for the local partners to sustain and maintain the reforested projects (e.g. annual awards for best performers, provision of long term tenure or certificates of "rights to planted trees", etc.)
Environmental component	
Baseline information gathering & monitoring	Ecosystem services derived from reforestation project sites should be identified from the pre-implementation phase. This means gathering baseline information as basis for monitoring to achieve the desired end products (e.g. ecosystems services such as water, carbon, biodiversity, ecotourism, etc.)

D. Framework for Monitoring and Evaluation of Reforestation Projects

A Monitoring and Evaluation (M&E) Framework describes the M&E system developed for the project. It includes criteria and indicators that are well defined, simple,

measurable, reliable, relevant, and timely (Vallauri et al. 2005). Each indicator should have a direct association with the output, outcome, or goal of the project. The indicator is measured against a baseline and set target, using qualitative or quantitative methods, and available resources. The criteria and indicators will be used to monitor the progress of the accomplishments of the reforestation projects activities implemented. The M&E framework also identifies the responsible entity for measuring each indicator, the frequency of measurement, and where the results will be reported.

Monitoring is the systematic and regular collection of information from projects which aims to generate lessons from experiences to improve practices and activities; have internal and external accountability of resources used and results obtained; make informed decisions about the future of the projects; and promote empowerment of beneficiaries of the projects. Monitoring checks the progress against plans. It measures the project outputs in terms of quantity and quality of activities implemented; the project outcomes or effects or changes that occurred as a result of the processes inherent in the project; and the impacts external to the project which are broader and long-term effects arising from the activities implemented as well as other environmental factors (sprtanddev.org).

Evaluation is the systematic and objective assessment of a completed project or a phase of an on-going project that has been completed. It appraises data and information to improve the implementation of the project or similar initiatives in the future in terms of its relevance, effectiveness, impact and sustainability. Evaluation draws from the data acquired from the monitoring activities (sportanddev.org). Evaluation may be done internally or externally by independent third parties (geog.ox.ac.uk).

The existing DENR's reforestation monitoring and evaluation system were reviewed and analyzed to come up with the proposed framework for monitoring and evaluation of reforestation projects (ANNEX E). Figure 2 presents the proposed DENRs framework for Monitoring and Evaluation of reforestation projects. The framework was based on the result of the analysis of the secondary data gathered from the different reports and studies, the expert's consultations.and key informants interview. For reforestation projects monitoring and evaluation framework, the implementers will have to define the project goals (desired impacts on the environment and people's lives), objectives (desired outcomes or changes needed to achieve the desired impacts), and outcomes (immediate direct results of the activities that contribute to the objectives). Different agencies/sectors have different reforestation goals/objectives such as: The DENR-FMB have to conduct forest renewal activities in critical denuded areas and identify areas for reforestation, afforestation and agro-forestation, the type

Goals:
Objectives:
Outputs:

PRE IMPLEMENTATION

Institutional Aspect
- Site identification/assessment/survey, mapping and planning conducted
- Long term and sustainability plans (statement of goals, objectives, strategies/activities, target setting, harvesting, incentive mechanism, support services, turn-over to DENR)
- Monitoring & evaluation plan (tool, frequency, who will conduct, budget, feedback mechanism)
- MOA with POs, LOA with POs which engage with families processed and issued
- Infrastructure (nursery, roads, trails, look out towers)
- Communication plan
- Financing guidelines

Technical/Biophysical Aspects
- Site characterization report/baseline data (existing land use, slope, soil, accessibility, elevation, vegetation, hazards, etc)
- Infrastructure assessment

Socio-Cultural Aspects
- Profile of stakeholders and cultural/IKSPs
- List/Number of stakeholders consulted
- Plan for capability building of POs/IPOs
- Consultation/meetings with stakeholders conducted
- Conflict management

Economic Aspects
- Socio-economic profile (sources of income/income, livelihood, market)
- Market opportunities identified

Environmental Aspects
- Records of existing ecosystems services
- Vulnerability and threats
- Biodiversity assessment report
- Baseline information on biodiversity, water quality and quantity, soil erosion

IMPLEMENTATION

Institutional Aspect
- Forged partnership with agencies, LGUs, NGOs, POs
- Technical assistance provided by FEOs, APs NGOs & other support agencies
- Communication Plan (type of IEC materials disseminated)
- M&E system conducted (outputs/ outcomes, schedule, responsible persons/officials, actions taken to address implementation issues)
- Incentives provided/support mechanisms
- Conflict Management mechanism (w/ partners and other institutions)
- Benefit-sharing schemes implemented
- WFP proposed including targets, scope, cost, time
- Financing guidelines

Technical/Biophysical Aspects
- Nursery established/sources of seedlings
- Site preparation conducted
- Timing of planting
- Quality and condition of planting materials used
- Inventory (area planted, species planted & survival rates by species, height, diameter)
- Plantation establishment (site prep conducted
- Plantation maintenance and protection of tree plantations, firelines, look-out towers, roads, trails
- Delineated/demarcated plantation site

Socio-Cultural Aspects
- Extent and number of stakeholders participation in planning, decision making, project implementation, maintenance and protection, M& E
- Type & number seminars/trainings attended capacity building of stakeholders such as technical skills development, financial management, entrepreneurship, product development and marketing organizational development, gender and development, fire protection
- Internal conflict management practices
- IKSPs adopted

Economic Aspects
- Increased income (from the refo project & other sources)
- Employment generated
- Enhanced Livelihood / social enterprise developed (harvesting, product development, marketing)
- Benefit sharing schemes adopted

Environmental Aspects
- Increased/improved ecosystem services
- Pest and diseases occurrence and management
- Enhanced forest cover/stand density
- Forest Protection activities conducted/ implemented such as forest patrolling, reporting of illegal activities

POST EVALUATION

Institutional Aspect
- Third party program evaluation (outcomes/impacts every 5 years)
- Established reforestation projects turned over to DENR is sustained, adopted, or bidded to qualified entities
- Incentives enhanced and provided
- Conflict management in place and sustained

Technical/Biophysical Aspects
- Sustained maintenance and protection of established plantations and infrastructures

Socio-Cultural Aspects
- Sustained stakeholders capability in planning, decision making, project implementation, maintenance and protection, M& E, IGP, conflict management
- Capability to share knowledge and practices to other community members
- Strengthened capability to network, partner, source fund and negotiate for projects

Economic Aspects
- Increase in farm income
- Sustained livelihood/social enterprise implemented
- Employment generated and sustained
- Product developed and markets of plantation products
- Improved market access

Environmental Aspects
- Improved forest cover
- Improved ecosystem services
- Reduced impact harvesting technologies (harvesting strategies by gap, harvesting technologies, transport from cutting area to road side)
- Minimized damages caused by calamities (occurrence of natural calamities landslides, soil erosion, floods, drought, fire)

Figure 2. Framework for Monitoring and Evaluation of Reforestation Project

of trees to be planted, and suitable period for planting; the National Irrigation Administration (NIA) and National Power Corporation (NPC) have to reforest the immediate vicinity of reservoirs under their jurisdiction and plant trees on watersheds; the LGUs of the Department of Interior Local Government have establish and maintain communal forest, agro-forest, parks, family and/or communal orchards within their jurisdiction, among others.

The specific criteria and indicators to measure the project outputs, outcomes, and impacts of the set objectives and goals are provided in the M & E framework as well as how these indicators will be measured, analyzed (qualitative and quantitative methods), and reported (report template). The frequency of measurement (e.g. annual outputs, mid-term outcomes, end-of-project impacts) and the responsible entity to be involved in the M&E is specified.

The Monitoring and Evaluation Framework is divided into three phases: 1. Pre-Implementation; 2. Implementation and 3. Post-Implementation. Under each phase the criteria and indicators were identified and ensuring that it is well defined, measurable, applicable and relevant based on the stated goals, objectives and outcomes. The components under these three phases are: 1. Institutional; 2. Technical/biophysical; 3. Socio-cultural; 4. Economic; and 5. Environmental components.

In the pre-implementation phase of the proposed monitoring & evaluation framework, the identified indicators for each component are the following: 1. Institutional component- site assessment/identification/survey, mapping, planning conducted, MOA/MOU/LOA issued, long term sustainability plan, monitoring and evaluation plan prepared, communication plan prepared/social mobilization plan, financing guidelines crafted; 2. Bio-physical/technical component- site assessment/characterization reports/baseline data, affirmed/approved management/development/operation plan, infrastructure assessment report; 3. Socio-cultural component- stakeholder analysis/assessment report, capability building/communication plan, consultation meetings conducted; 4. Economic criterion- livelihood data/reports, records on sources of income, market opportunities identified; and 5. Environmental criterion-environmental assessment data/reports i.e. ecosystem services, vulnerabilities and threats, biodiversity.

One of the most important activities in the pre- implementation phase is the survey, mapping and planning (SMP). Site assessment of potential reforestation sites is part of the survey, mapping and planning. The SMP will provide the baseline data for the determination/measurement of the key indicators identified based on the project objectives. The baseline data that will be generated would require survey both qualitative and quantitative data unless existing data source are adequate. The data collection may be continuous or periodic depending on the objectives of the program/project. SMP may also involve the conduct of pre-feasibility studies on the proposed project sites. It includes perimeter survey; sectioning and blocking; monuments and marking of corner posts; contour mapping/slope classification; proposed control and operations maps; benchmark information and demographic and socio-economic data gathering; estimates of financial/economic rate of return; initial

environmental examination; proposed project development plan, schedule and cost estimates, depending on the objectives if it is for production purposes.

Like in the case of reforestation projects with land-use changes or land cover changes, the use of maps, GIS, surveying, inventory should be considered in establishing baseline data. Identification of potential areas through map analysis of maps provided by NAMRIA and other secondary data from other agencies and LGUs. For reforestation programs the priority areas are open/barren, denuded and areas under tenure such as CBFMAs. The POs can identify in their areas that they have not yet been developed, he inaccessible (by distance, elevation, slope) areas that could qualify for The DENR may held consultations with local stakeholders, particularly PO and LGU partners who are knowledgeable about the local situation and environment to validate the areas identified from the maps. Consultations with locals and LGUs could reveal which areas are still not planted and which of those previously planted through past projects have either been burned or already cut and harvested but not replanted.

In terms of planning, it is necessary to plan the organizational structure for M&E specific to the project. The project should be discussed with partners and other stakeholders to understand their responsibilities and information needed from them. Planning should cover the following: staffing levels and types, responsibilities, incentives, training needs, physical resources needed, budget, the relationships with partners and stakeholders. The planning should consider the local community's knowledge in terms of species selection, site selection among others. It is to ensure that choices and decisions are made based on solid analysis and consolidation of experience in several scales.

Social mobilization is an important indicator in the socio-cultural component. The community's goals, needs, aspirations and capacities should be considered and not only the DENR's objectives.

The MOA/MOU/LOA/contract should be prepared stipulating all the roles, responsibilities, accountabilities, targets, financing and other relevant information for both parties. A 5-year reforestation/ rehabilitation/ restoration management plan and annual operations should be prepared which serve as guide for the preparation of individual PO operations plans. The said plans indicate the program goals, objectives, development activities, and targets. LGUs and other government entities also prepare indicative reforestation plans based on their medium or long term goals and objectives and realistic targets are guided by their budget allocations.

In the implementation phase the identified components and indicators are: 1. Institutional components – forged partnerships with agencies/groups, presence of assisting Professionals/NGOs partners/support group agencies; type or kind of technical assistance provided, IEC conducted/disseminated; feedback mechanisms conducted; incentives provided; internal conflict management mechanism implemented; 2. Technical/biophysical component – nursery established/sources of seedlings specified, site preparation activities conducted; timing of planting; quality

and condition of planting materials used; survival rates by species recorded; maintenance and protection activities conducted; records of actual area planted; status of stand density and infrastructure established; 3. socio- cultural component - extent and number of stakeholders participation in planning, decision making, project implementation, maintenance and protection and monitoring and evaluation; and type and number seminars/trainings attended, IKSPs adopted, internal conflict management practiced; 4. Economic component - increased on farm income, employment/jobs generated, enhanced livelihood/social enterprise developed, benefit sharing schemes adopted and identified market availability; and 5. Environmental component – soil fertility improved, forest protection activities implemented such as patrolling, reporting of illegal activities, fire brigade, recorded pest and diseases occurrence

The quality of the seedling/planting material is a very important indicator on the implementation which influence the survival rate and quality of the stand. The survival rate is one of the indicators and it is based on the number of seedlings that survived at the time of inventory/measurement. The survival rate may be as high as 100% and it will decline through time. After planting, the maintenance may include replanting, fertilization, weeding, watering etc. for the socio-economic component, the marginal increase of income is an indicator not for the short-term period only which is while there is reforestation project. The direct benefits to the communities in terms of income, employment and implementing the reforestation project. Incentives provided can take the form of provision of sustainable livelihood, harvesting rights for planted fruit trees and trees, employment generation, and mechanisms for long-term financing. Another indicator is the generation of employment and sustained during the reforestation project implementation, employment was generated during the nursery and plantation establishment such as seedling production, site preparation, transport/handling, actual planting, and maintenance. After these activities, forest protection activities can be sustained. The CBFM reforestation projects have incorporated livelihood components to provide additional income to members. Agroforestry strategy ensures that POs will have something to harvest for the succeeding years.

The conduct of forest protection activities such to prevent fire, grazing, settlement, illegal activities must be visible, timely and effective to protect the planted trees from illegal cutting and destruction in the future.

For site preparation and plantation establishment, including construction of fire lines, firebreaks are important indicators in the biophysical component. The maintenance and protection activities are set during the reforestation project implementation for the first 3 years.

The conduct of site assessment is important to determine the sustainability of the areas intended for restoration and rehabilitation. Site assessment will cover the bio-physical, socio-cultural and environmental components.

Capacity building like training, education, information or awareness campaign is critical and important in skills enhancement of the partners, local communities and

stakeholders. The POs involved in the reforestation projects have received various skills training related to nursery and plantation management, product development and marketing, agroforestry, among others. They have attended seminars and orientations to enhance their knowledge about forest restoration/rehabilitation and forest conservation. These activities are important in building their capacities and help them to become active partners in forest development.

Infrastructure established and developed like roads are important to success, particularly where reforestation are too far/not accessible in terms of plantation maintenance, handling of seedlings and even in harvesting or transporting to markets. Accessibility of project sites is an essential indicator in the M & E and success of reforestation projects. Some of the identified problems in reforestation accessibility the following: steeply sloping areas are often highly eroded and difficult to reforest; distant areas in higher elevations with poor accessibility pose a challenge to local POs as well as DENR monitoring teams; and overall costs of developing these marginal areas in higher elevations with steep slopes along the way naturally increase with every km as it takes more time (hours and person-days) to haul planting materials and conduct maintenance and protection activities as well as validation and monitoring activities.

Technical support/assistance provided is one of the indicators for monitoring and evaluation. There is a need to specify the type of technical assistance provided by DENR and other sector to determine reforestation success. Technical assistance maybe in the form of reforestation techniques, community organizing, conflict resolution and other management schemes.

In the post implementation phase the identified indicators for each component are the following: 1. Institutional component – third party program implementation conducted every 5 years; report/record of established reforestation areas turnover to DENR, list and status incentives provided, tenurial instrument issued; conflict management in placed/sustained; 2. Technical/biophysical component - increased area planted; enhanced stand density; improved tree growth performance; forest protection activities implemented; enhanced productivity of the area; established infrastructure maintained; 3. Socio-cultural component – sustained stakeholders capability stakeholders participation in planning, decision making, project implementation, maintenance and protection and monitoring and evaluation; capacitation to share knowledge to other stakeholders/community members, trainings and seminars attended/sustained, strengthened capability to network, source funds and negotiate for projects; 4. Economic component - increased on farm income, sustained livelihood/social enterprise, number of employment generated and sustained; and 5. Environmental component –improved/enhanced forest over, improved ecosystem services in terms of soil fertility, water quality and quantity, carbon sequestration, climate amelioration, reduced impact harvesting technologies, minimized damages caused by calamities such as landslides, soil erosion, floods, drought, fire and forest protection activities implemented such as patrolling, bantay gubat, etc.

In the post implementation, the quantitative and qualitative environmental impacts can be monitored and evaluated. The following environmental indicators are air quality, water quality, tree health, soils and the understory and wildlife habitats and

populations, biodiversity and carbon mitigation. It can include other impacts such as landslide, soil erosion, or preservation of timber reserves.

The density of trees that will provide water infiltration in the soil will result to increase streamflow in the watersheds. The planted trees will provide a cooler environment, recharging water to creeks, minimizing soil erosion, recharging soil fertility and in bringing back wildlife to the reforested areas.

Harvesting is one of the indicators in the bio-physical component. The planted trees may be harvested to meet the demand for wood and as an alternative source of income.

Forest protection of established plantations should be implemented/enhances to ensure its sustainability and intended long-term outcomes. This indicator suggests that fire, weed control and grazing management must be dealt with and recorded for the reforestation project to succeed.

The community's capability is sustained/improved which makes them participate in project planning, decision making and implementation.

The short- and long-term livelihoods needs to be installed and considered to motivate the local communities in protecting the reforestation projects.

The proposed M&E system of DENR for the short, medium and long term are designed in such a way that it does not only measure physical accomplishments of their partners but also to assess the field offices' capacity to implement the Program over the pre-implementation, implementation and post-implementation phases. The short- and medium-term evaluation should have addressed the issues, problems, concerns and recommendations raised by the stakeholders/ key informants about the implementation activities of the reforestation projects/programs.

Monitoring and Evaluation could be done by DENR field personnel to conduct field measurements and validate the reports submitted by reforestation project partners (i.e. specific tenure holders or contractors) to the CENR offices. The monitoring reports are then consolidated at various field offices and submitted to higher levels such as PENRO, RED, and DENR central office for processing, analysis, and inputting into a reforestation database. The regular monitoring reports will be analyzed to generate issues, problems, lessons, and best practices to improve or enhance project implementation activities and processes. The data and information from monitoring activities will then be used in internal or external project evaluation, which may be done during (mid-term) or at the end of project implementation.

The users of the M&E tool should keep in mind that this document which will provide a guide in determining the progress of the reforestation program accomplishments through time. In addition, M&E framework may be revised/changed depending on the goal or objectives of the program/project.

Issues and Concerns

Monitoring of reforestation projects continues to be conducted on the reforestation sites according to CBFM- POs. The DENR validates the accomplishments reported by the POs. For NGP, monitoring and evaluation is conducted at the end of the contract period to determine if the POs and other contractors have accomplished and attained its targets. The indicators monitored are survival rate, number of seedlings planted, and actual area planted. There is no comprehensive M & E tool developed and used in the reforestation projects.

According to the key informants, reforestation projects have improved the ecosystem services as observed by the respondents in terms of water quality and quantity, climate amelioration, biodiversity. and carbon stocks assessment but they don't have any basis due to lack of baseline data or information.

In the conduct of M & E, capacity building activities of the stakeholders should be undertaken.

E. Policy Brief

As part of the efforts towards linking science and policy and knowledge transfer to influence reforestation implementation and decision making, the team crafted the policy brief based on the results of the study conducted (Annex F). The title of the draft policy brief is "Realities of Reforestation: Parameters and Indicators for Measuring Success of Greening Philippine Forestlands" and this contains the highlights of the results of the study through policy analysis, stakeholders' consultations and key informant interviews in La Union, Ilocos Norte, Quirino, Nueva Ecija, Zambales and Camarines Norte. The policy brief centers on the status of forests and forestlands, the reforestation accomplishments by different sectors/modalities, development of reforestation policies and programs, practices, performances, standards and parameters of measuring success of reforestation, as well as the operational issues and challenges and the recommended framework for monitoring and evaluation of reforestation projects. The Monitoring and Evaluation framework is based on the result of the project activities conducted by the project team. The M and E framework has three (3) phases: 1. The pre-implementation phase; 2. The implementation phase; and 3. The post implementation phase.

V. KEY ISSUES FOR THE FUTURE

The project team gathered and analyzed the issues and challenges listed below.

SMP activities were insufficient to cover all the information that would serve as baseline for midterm/long-term program assessment

It was found that many activities required to be undertaken as stipulated in the SMP guidelines were not conducted in the field. Baseline information (socioeconomic, biophysical, environmental, institutional) to be used in measuring the performance of NGP projects were inadequate and could not be used to monitor changes over time. Likewise, most information used in site assessment as well as socio-economic profiling were not extensively done and were based on secondary data only. Worse, they could not be validated on the ground due to inadequate resources such as manpower, budget, time, technical, logistics, among others. Consequently, issues on overlapping of tenure instruments were also overlooked. Except for soil sampling, activities like identification of existing vegetation and species, biodiversity assessment, identification of potential threats, and vulnerability assessment were not done in site assessment. Information from these activities could have provided the baseline information needed post project implementation.

Site assessment and selection is target driven

According to some DENR respondents, some control maps used for identifying plantable areas for NGP which were provided by the DENR Central Office, did not match the actual area on the ground. However, to meet their targets, these DENR field offices had no choice but to look for nearby areas outside the control areas to offset the areas not plantable within the contract area. However, it was learned that some of these selected nearby areas are not suitable for planting like those areas with steep terrain or slope, areas which are marginal, and areas which are rocky among others. The respondents stated that the survival rate in these areas was very low.

Site-species matching is often ignored in reforestation projects

The availability of species for propagation and planting, limits the choice of species used in reforestation projects. Site-species matching is often ignored in reforestation projects, with available rather than suitable species being planted. Site-species mismatch in NGP sites registered low survival rate since each site has different site characteristics and conditions (climate, soil, and biotic environment) that affect the growth and performance of planted seedlings.

Planning horizon is based on short term physical target

Planning horizon of NGP is too short covering only the contract period hence reforestation planning is still done on a piecemeal basis with physical targets instead of a holistic approach. Planning is focused on physical targets such as area and number of seedlings to be planted. Respondents of the study commented that three-year duration of NGP contract is not enough to ensure the survival of planted seedlings. It is considered short duration to sustain the maintenance and protection of tree plantations as well as AF plantations.

As soon as the NGP contract expires, for untenured NGP sites, these are turned over to the jurisdiction of the DENR until the site management contract gets bidded out to qualified bidders. However, it was found that increasing number of untenured areas are left with no caretakers and with minimal supervision and care. Considering the current forest ranger per area ratio of 1:3000 whereby one forest ranger monitors 3,000 hectares of forestlands, there is a high possibility that some of those untenured NGP sites will not be visited or monitored by the forest rangers. With absence of maintenance and forest protection, the grass will grow taller than the planted seedlings and also susceptible to occurrence of fires thereby decreasing the chance of their survival.

Also, no long-term plan is prepared for sustainable livelihood/social enterprise based on market survey and capacity of the local community to manage. Choice of species is primarily based on availability of planting materials and not on market demand since planning does not cover the harvesting phase of trees planted. Hence, long-term management planning has been a relatively neglected aspect of reforestation activities, especially after funding for a reforestation project has ended.

There is limited manpower to conduct various reforestation activities (e.g. forest protection, validation, M&E, technical assistance)

Respondents pointed out that available DENR field personnel (forest guards, forest extension officers, etc.) assigned in reforestation projects are not enough in providing technical assistance to POs in forest protection, validation and monitoring the implementation of various reforestation activities.

Budget of convergence partnerships on NGP/eNGP among OGAs was not sustained

In relation to convergence initiatives on NGP among government agencies and other institutions, two Executive Orders were issued. These are EO 23, s. 2011 and EO 26, s.2011. Specifically, convergence is a requirement under EO No.26. The participating agencies and institutions are expected to share their roles and responsibilities in the implementation of NGP activities with corresponding budget allocation. However, it was learned that budget allocation for NGP implementation to these agencies was not sustained. Also, based on 2019 COA report, DENR was not able to implement this on a national scale. The pockets of successes were caused by the individual ingenuity at the local level.

Bureaucratic set-up of the DENR in contracting and releasing of funds led to the delay of reforestation activities

This issue was raised by the participants from people's organizations. It was learned that POs engaged in NGP contracts experienced difficulty in preparing and securing the numerous documents for procurement and billing required by Commission on Audit (COA), Security and Exchange Commission, Bureau of Internal Revenue, among others. The POs considered these requirements as time consuming and required additional costs on their part. These requirements resulted to delays in procurement process including processing of contracts, payments and implementation of activities such as nursery establishment and seedling propagation, planting, maintenance and protection, infrastructure development, among others. These delays eventually affected the timing or schedule of implementation of various reforestation activities resulting to poor survival of planted seedlings.

There is no effective implementation of monitoring and evaluation system of reforestation and other forest development activities

As stated in the policy, M&E of reforestation projects have to be conducted on the ground but in reality, they were not done. M&E is simply undertaken by using the targets outlined in the WFP serve as the indicators for monitoring the project. Further simplification included validation of accomplishments of contracted partners based only on the physical targets stipulated in the work and financial plan, which is a requirement for payment of billing. The 85% survival rate is only used as a basis for the release of payment.

Budget and manpower are limited to sustain and continue IEC and communication plan of the reforestation projects and programs

Education, information or awareness building campaigns that included technical assistance and training are key to reforestation success, particularly those projects involving community-based forest management (Borlagdan *et al.* 2001 cited by Le et al. 2013). DENR through its field offices is in-charge of the conduct of IEC activities such as consultation, meetings and training-workshop to various stakeholders from the planning, implementing, up to the monitoring and evaluation stages of the NGP/reforestation projects. Training was conducted to provide the participants with knowledge and skills in planning and producing communication plan. The IEC materials like posters, leaflets/brochures and billboards were used to convey or inform the public or concerned communities on the existence of the reforestation project in the area and solicit their support and participation on various reforestation activities. These IEC materials helped to inform the communities of the presence of the project and its objectives.

For NGP projects, DENR hired Forest Extension Officer (FEO) to assist the POs/NGP implementers in conducting various reforestation activities such as conduct of IEC

activities to various stakeholders and inform them on the importance forest protection in the project site. However, it was found that the conduct of IEC activities was limited due to limited budget and manpower.

Recommendations

Based on the result of the assessment of issues

1. Based on the result of the analysis, the team proposes that the parameters and indicators in the draft M&E framework for reforestation program and project be considered in crafting the policy to ensure effective implementation.
2. Reforestation projects should have realistic, attainable and clear objectives with measurable outputs and outcomes. Target area should be small and manageable in the long term, with gradual expansion once planted areas are already established.
3. Reforestation projects should be implemented by the DENR Field Offices in close collaboration with local stakeholders like LGUs, local communities, academe, NGOs, etc. that are trained and capacitated.
4. DENR budget to include investments in support systems to ensure the effective and efficient implementation of reforestation projects at the field level should be reprogrammed.
5. Enhance the awareness and capacity of field implementers on the existing and new policies and guidelines through appropriate communication plans and training programs for each phase of project implementation.
6. Gathering and analysis of baseline information (e.g., soil, water, carbon stocks, biodiversity, socio-economic profiling, market scanning for potential products, socio-economic profiling, etc.) are important and needed for planning, implementation and as basis for the medium- and long-term evaluation of outcomes and impacts of the NGP. Adequate resources should be provided for these activities to be properly conducted.
7. To avoid bias, third party evaluation of reforestation programs should be adequately funded and they must be conducted by agencies/institutions, other than the project implementers and DENR.
8. Species suitability to the site rather than availability should be the dominant consideration in determining what species should be planted. Also, the species should be adaptable to the actual site conditions like climate, soil, and biotic environment.
9. The DENR needs to shift its focus from the targets to the welfare of the beneficiaries. Seedling production must be reserved to the POs and should benefit from this activity. POs should be given sufficient time to produce the seedlings as

well as to learn proper way of cultivating them. This activity helps them earn extra income that give them the opportunity to invest on assets that could help them better manage the NGP sites.

VI. LESSONS LEARNED

The following are the lessons learned during the implementation of the study:

- Close coordination with the DENR facilitated the conduct of the study i.e., DENR Regional and Field Officials and staff helped identify and invite the key informants to be interviewed as well as arrange for the field visits of the study team.

- Data on past reforestation projects requested from the DENR and other Institutions were provided to the team but when the team verified the status of the reported reforested areas, most of them are no longer available at the field offices due to the transfer or retirement of the assigned staff or have been damaged due to natural calamities. We recommend DENR to create an electronic database at the field offices as a repository of all data and information on past and existing reforestation projects that can be updated regularly.

- There is a need for an orientation for field staff on recent policy issuances, available technologies from ERDB, academe and other research institutions so that they can use and apply these in the implementation of reforestation activities such as SMP, site development, and M&E. Examples are "site index" that could serve as basis for site-species matching; soil map; geo-hazard maps; updated policies related to reforestation. Poor site-species matching is the main technical problem leading to poor survival and growth of seedlings.

- Consultation with stakeholders/POs by discussing with them what the project wants to achieve/gain is important to solicit their support. The involvement of the PO officers and members during the planning stage is also important to achieve participation and support for the project.

- Strong community and stakeholders' participation in planning, management, implementation, and continuous monitoring for the project reforestation projects ensure the reforestation projects to succeed. The involvement of the community in the planning of activities builds confidence and creates ownership of the work and outputs, thus enhances their participation.

- Availability of existing markets should be considered during the planning process especially on the choice of species to be planted.

- Limited capacitation (skills and knowledge) of EOs and POs in implementing reforestation program. PO and EOs attendance of trainings activities capacitate them in terms of improving their skills and knowledge in technical,

management, financial and other aspects. However, some hired Forest Extension Officers were lacking experience and were not technically prepared.

- Only selected/limited SMP activities were conducted in the early implementation of reforestation/NGP projects. Some control maps provided for identified plantable areas did not match the actual area on the ground. Site assessments were not extensively done and based only on secondary data which may not be validated on the ground. Also, site assessments did not include identification of existing vegetation and species, biodiversity assessment, identification of potential threats, and vulnerability assessment to provide baseline information for project implementation. Issues on overlapping of tenure instruments were also overlooked during site assessments.

- The choice of species to be planted in NGP sites was initially dictated by DENR as stated in the National Reforestation Road Map and depended on DENR Secretary's priorities (e.g., bamboos, fast-growing species). Despite the policies issued in support of indigenous species, exotic species have continuously been the predominant species planted in NGP sites.

- Seedlings bought or purchased/sourced from far flung places resulted to low survival. This is due to stress during hauling, handling and transport. The establishment of a nursery on-site, or just near the planting site save the seedlings from stress during transport. Quality of planting materials ensure high survival of planted seedlings.

- Seeds collected from nearby areas or mother trees are best sources of seedling materials because they are already adapted to the area and have the desirable characteristics. Also, there is high potential of survival of the seedlings because of the same climatic type and edaphic conditions.

- Monitoring and evaluation of established reforestation projects have not been conducted by DENR and key stakeholders, rather more on reporting of accomplishments.

- To meet the 85% survival rate for billing/payment of plantation development, the contractors conduct replanting before the scheduled validation. After validation, the survival of planted seedlings is no longer monitored and maintained.

- Protection and maintenance of the reforested areas/ established plantations were not sustained after the NGP contracts ended. As soon as the NGP contract expires, untenured areas are left with minimal supervision and care.

VII. CONCLUSION

Overall Assessment

The sustainability of the reforestation projects/programs in the country needs to be analyzed/assessed. The result of the established reforestation projects assessment showed that important policies/regulations/guidelines, best practices, performances, standards and parameters as well as the monitoring and evaluation were not properly enforced or implemented in the field. It is important that reforestation activities such as survey, mapping, and planning, timing of budget releases, site preparation, quality of planting materials, protection and maintenance, monitoring and evaluation be effectively implemented in the field. Site-species suitability, preference of farmers, availability of market, and availability of product development technology should be considered in selecting high value crops to be planted.

Follow up Actions Needed

There is a need to revisit, review and analyze the 85% survival rates of reforestation projects as basis for contract compliance and payments.

There is a need to conduct monitoring and evaluation of the established reforestation projects. Capacity building activities in the implementation of monitoring and evaluation framework should be conducted.

APPENDICES

Appendix A. Approved Contract

Republic of the Philippines
Department of Environment and Natural Resources
Visayas Avenue, Diliman, Quezon City
Tel Nos. (632)929-66-26 to 29 | (632)929-62-52
929-66-20 | 929-66-33 to 35
929-70-41 to 43

CONTRACT

KNOW ALL MEN BY THESE PRESENTS:

This CONTRACT entered into on DEC 16 2020 in Quezon City, Philippines, by and between:

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, a national government agency created under Executive Order (EO) No. 192 dated 10 June 1987, with office address in Visayas Avenue, Diliman, Quezon City, represented herein by its Director for Administrative Service, **ROLANDO R. CASTRO**, hereinafter referred to as **"DENR"**

- and -

UNIVERSITY OF THE PHILIPPINES LOS BAÑOS FOUNDATION, INC. (UPLBFI) a non-government organization (NGO), duly organized and existing by under the laws of the Republic of the Philippines, with principal office address at UPLBFI Bldg., A. Aglibut Ave., UPLB, College, Laguna, represented herein by its Executive Director, **ENRICO P. SUPANGCO**, hereinafter referred to as **"UPLBFI"**

WITNESSETH: That

WHEREAS, the **DENR** is the primary government agency responsible for the conservation, management, development and proper use of the country's environment and natural resources, specifically forest and grazing lands, minerals resources, including those in reservation and water shed areas, and lands of the public domain, as well as the licensing and regulation of all natural resources as may be provided for by the law in order to ensure equitable sharing of benefits derive therefrom for the welfare of the present and future generations of Filipinos;

WHEREAS, the **UPLBFI** was established in order to provide assistance to the UPLB in pursuing its teaching, research and extension program. The **UPLBFI** is willing to support the project of the Forestry Development Center (FDC) as contained in its project proposal.

WHEREAS, the **DENR** approved the ***"Parameters and Indicators for Measuring Successful Reforestation Projects in Luzon, Philippines"*** under the Special Project Fund pursuant to the DENR Memorandum Circular No. 2016-02 dated 16 May 2016, entitled "Revised Guidelines and Procedures on the Appraisal, Selection, and Approval of Project Proposals submitted to Central Office for Funding as Special Project". A Memorandum dated 23 September 2019 singed by the DENR Secretary was issued, approving projects to be undertaken in CY 2020

WHEREAS, the Projects aims to develop standards and parameters for successful reforestation projects.

WHEREAS, the **DENR**, through Omnibus BAC Resolution No. MP-2020-005 dated 19 February 2020 with control No. 2020-311 recommended negotiated mode of procurement specifically Scientific, Scholarly or Artistic Work, Exclusive Technology and Media Services, pursuant to Sec. 53.6 Rule XVI of the Revised IRR of RA 9184 for the Project.

WHEREAS, the **DENR** allocated funds for the project in the amount of **One Million Nine Hundred Ninety Nine Thousand Eight Hundred Pesos (PhP1,999,800.00)** as Approved Budget for the Contract (ABC).

NOW, THEREFORE, for and in consideration of the foregoing premises, the parties have agreed on the following terms and conditions:

1. The UPLBFI shall provide the services and performed its obligation in conformity with Terms of Reference (TOR) in the Service Requirement for the ***Parameters and Indicators for Measuring Successful Reforestation Projects in Luzon, Philippines***, hereby attached as Annex-A and shall form part of the Contract.

2. The **DENR** shall pay **UPLBFI** the amount of **One Million Nine Hundred Ninety Nine Thousand Eight Hundred Pesos (PhP1,999,800.00)** inclusive of Value added tax, in accordance with the schedule of payment as indicated in the TOR and subject to acceptability of deliverables.

3. Payment of service fees per progress billing (scheduled deliverables) as stated in the TOR shall be "All or Nothing Basis". As such, there shall be no partial payment.

4. The **UPLBFI** shall provide and supply all materials, equipment, and competent manpower to perform the aforementioned project, and shall abide by the existing health and safety, environment and quality procedures to ensure that wastes generated in the conduct of Project are properly disposed.

5. The **UPLBFI** shall submit regular reports to FASPS in accordance to the approved TOR including the financial Statement and Disbursement Report of Funds released.

6. The **DENR** and **UPLBFI** shall have joint ownership of all results and outputs arising from the project. They may mutually authorize other agencies to use said reports and data for research, education, and for public purposes only. Any benefit derived from the use of these reports and data shall be jointly shared by the parties.

   All major reports or articles for publication based on the project output or result shall be jointly in the name of **DENR** and **UPLBFI** together with the name of the researcher involved.

7. No part of the project including the rights thereto may be transferred of assigned by **UPLBFI** nor shall any part of the project be contracted without the written consent of both parties.

8. If the **UPLBFI**, through its own default, fails to deliver any or all services within the period/s specified in this Contract, then the **DENR** shall, without prejudice to other remedies under this Contract and Applicable Laws, impose a penalty by way of deduction from the Contract price, as liquidated damages, a sum equivalent to one-tenth (1/10) of one percent (1%) of the price of the unperformed portion of the services for each day of delay based on the approved contract schedule up to the maximum deduction of ten (10%) of the contract price. Once, the maximum of 10% deduction is reached, the **DENR** may consider termination of this Contract.

9. Request for extension of submission of deliverables maybe granted upon approval of the request with valid justification and shall be made one (1) month prior to the agreed timeline for submission. Likewise, the request for no-cost time extension shall be made two (2) months before end of the project and should not more than six (6) months.

10. Any modification or amendments to the terms and conditions of this Contract shall be in full force and effect upon execution of a Supplemental Agreement by both parties which shall be made an integral part thereof for all intent and purpose.

11. In the event of a dispute under this Contract, both the **DENR** and **UPLBFI** shall agree to work together to find prompt and mutually acceptable solution. In case of failure by the parties to reach an amicable settlement, such dispute shall be submitted to arbitration according to the provision of RA No. 9184 otherwise known as the Alternative Dispute Resolution (ADR) Act of 2004.

12. The Parties to this Contract hereby agree to the full performance of the covenants contained therein.

13. This Contract shall take effect upon receipt by the **UPLBFI** of the Notice to Proceed (NTP) with the implementation of the project.

IN WITNESS WHEREOF, the Parties have hereunto affixed their signatures on the date and at the place first above written.

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

By:

ROLANDO R. CASTRO
Director, Administrative Service

UNIVERSITY OF THE PHILIPPINE LOS BAÑOS FOUNDATION, INC.

By:

ENRICO P. SUPANGCO
Executive Director

SIGNED IN THE PRESENCE OF:

EDDIE ABUGAN, JR.
Chief, PMD-FASPS

DR. PRISCIA C. DOLOM
Project Leader, UPLB-CFNR

MS. MARILOU C. ATANANTE
Accounting Supervisor, UPLBFI

FUNDS AVAILABLE

ACKNOWLEDGEMENT

REPUBLIC OF THE PHILIPPINES) S.S.
_________________, Metro Manila)
Los Baños Laguna

BEFORE ME, a Notary Public for and in __________, Metro Manila, Philippines, this ___ day of __________, personally appeared:

DEC 16 2020

NAME	GOVERNMENT ISSUED IDENTIFICATION CARD OR PASSPORT & NO.	DATE/PLACE ISSUED
ROLANDO R. CASTRO	OSEC-DENRB-DIR4-532014	2014 / Q.CITY
ENRICO P. SUPANGCO	[illegible]	[illegible]

Known to me and to me known to be the same persons who executed the foregoing instrument and they acknowledged to me that the same is their free and voluntary act and deed and that of the entities they respectively represent.

This instrument, consisting of four (4) pages, has been signed by the parties and their respective witness on the spaces provided therein.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this __________ day of __________.

DEC 16 2020

Doc. No. 342
Page No. 70
Book No. 332
Series of 2020

ATTY. ELENO D. PERALTA
Notary Public Until December 31, 2020
Calamba City, Los Baños, Bay, Cabuyao, Laguna
PTR No. [illegible]
IBP No. [illegible] Not. Com. No. [illegible]

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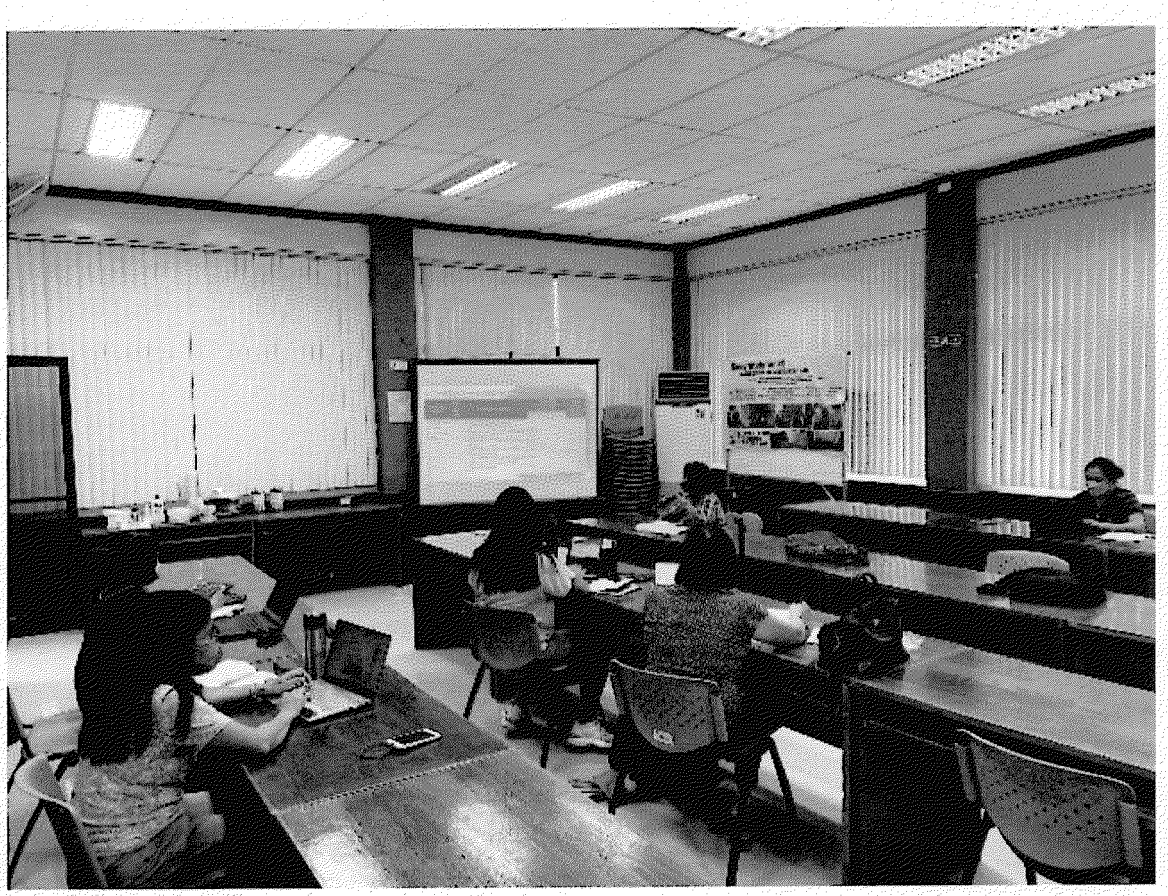
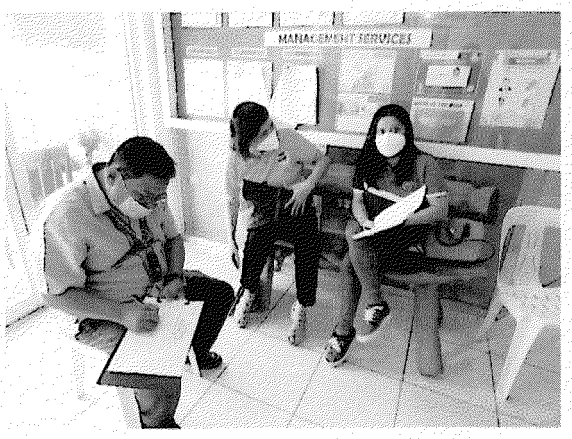
Appendix B. Photo Documentation

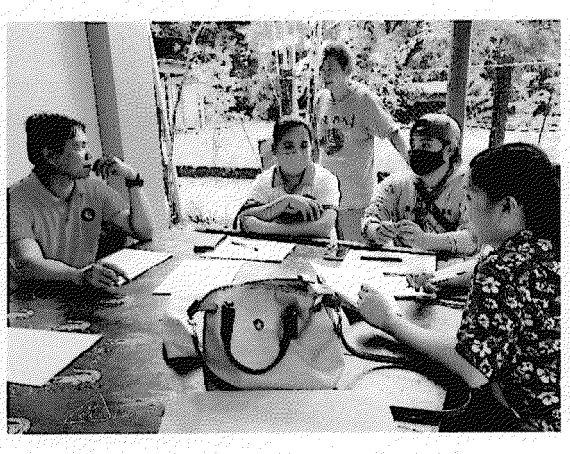
Team Meetings/Workshop/Writeshops



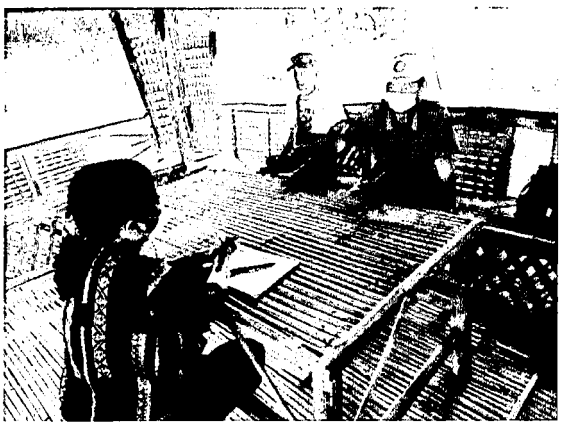
Courtesy call, coordination, and interview with DENR regional and provincial officials

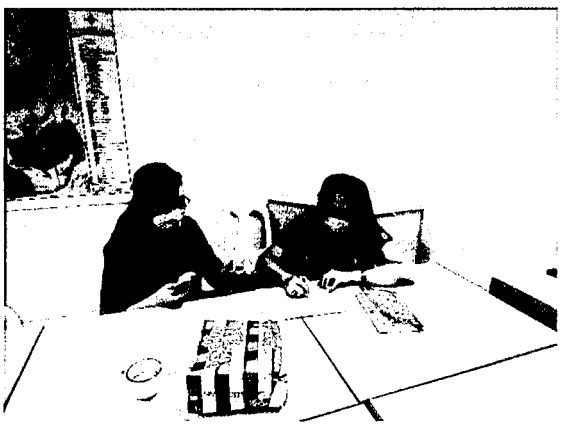
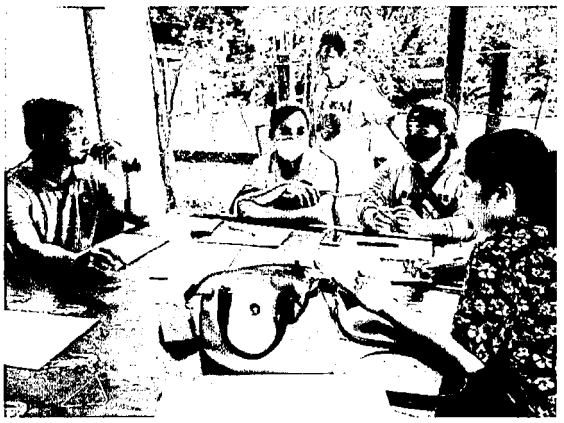
Key Informant Interviews (DENR Officials)





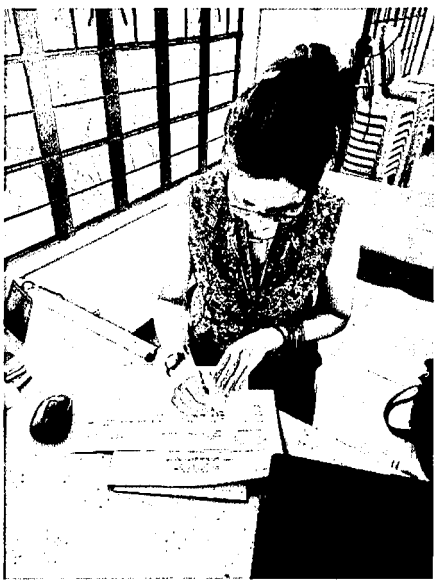
Key Informant Interviews (Peoples Organization)



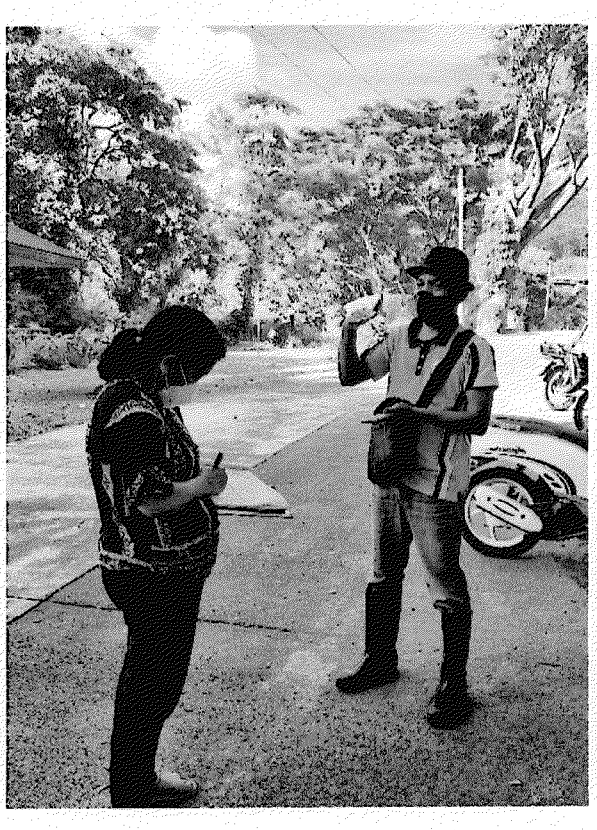




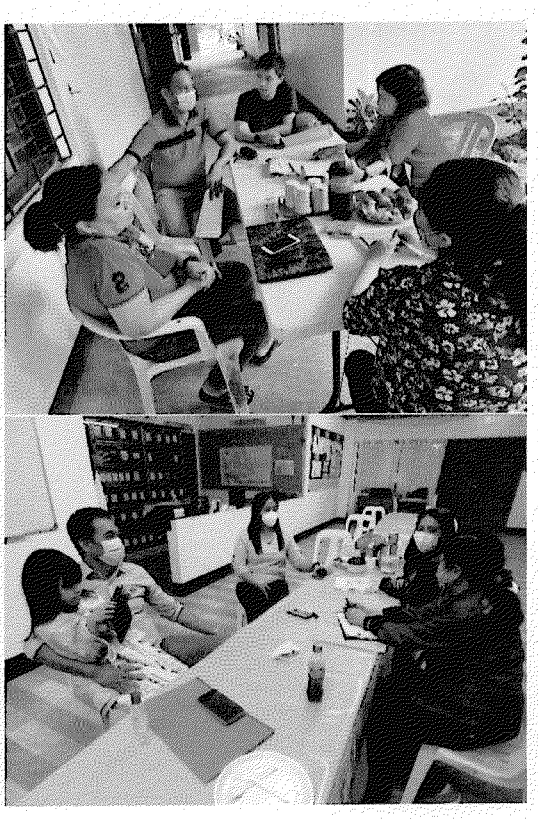

Key Informant Interviews (Local Government units)

Key Informant Interviews (Private)



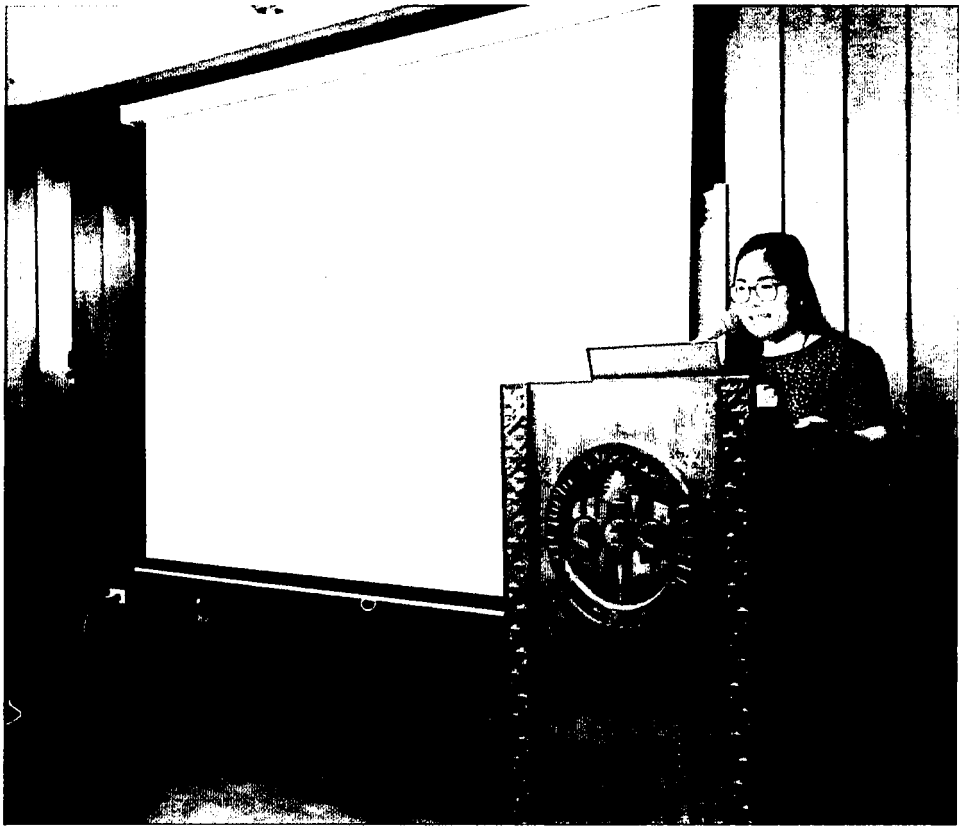
Key Informant Interviews (Academe)

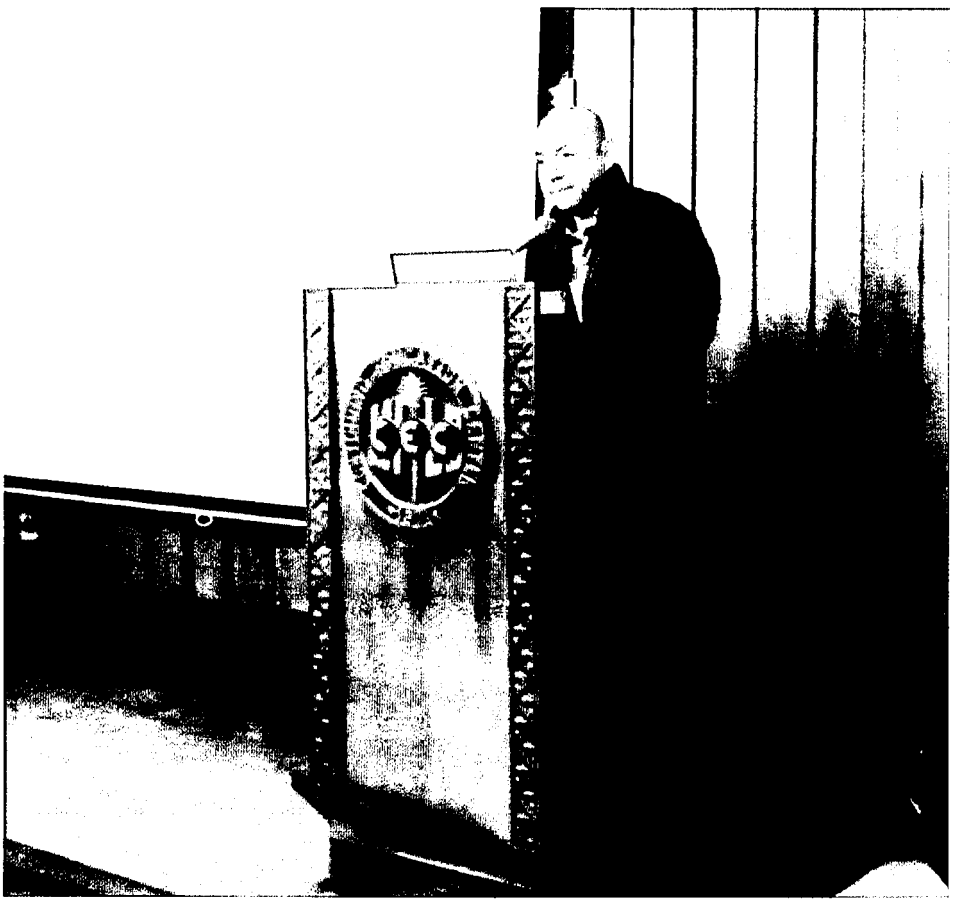




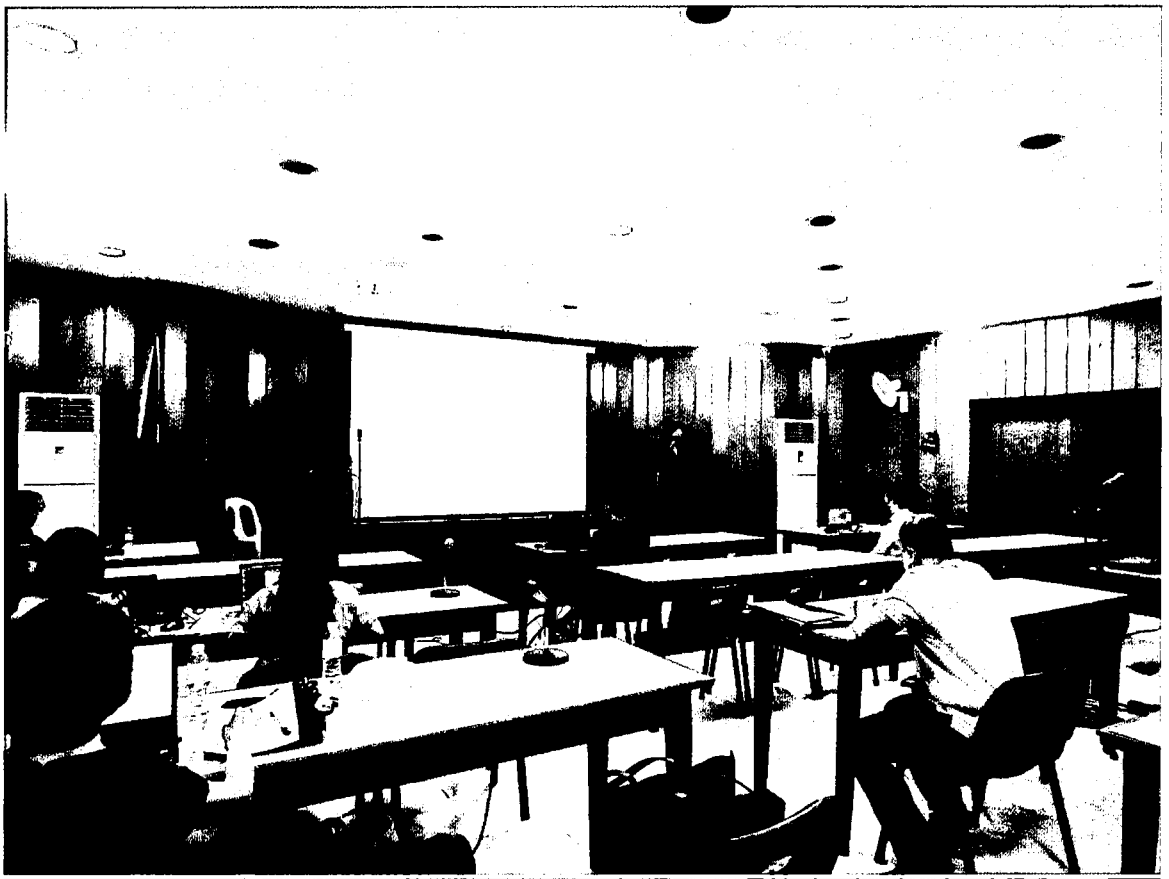
Site Visits

National Consultation






House Rules



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