Republic of the Philippines
Department of Environment and Natural Resources
PROVINCIAL ENVIRONMENT NATURAL RESOURCES
MIMAROPA Region

JAN 27 2023

MEMORANDUM

FOR : The Regional Executive Director
MIMAROPA Region
1515 DENR By the Bay Building
Roxas Boulevard,
Barangay 668, Ermita, Manila

ATTN : The ARD for Technical Services

FROM : The OIC, PENR Officer
Mamburao, Occidental Mindoro

SUBJECT : SUBMISSION OF ANNUAL ACCOMPLISHMENT REPORT ON THE MAINTENANCE AND PROTECTION OF INDIVIDUAL PLUS TREES (IPTs) NARRA SEED PRODUCTION AREA(SPA) FOR CY 2022 UNDER CENRO SABLAYAN, OCCIDENTAL MINDORO JURISDICTION.

Respectfully forwarded is the memorandum dated December 20, 2022 from CENRO Sablayan, Occidental Mindoro together with pertinent documents relative to the above mentioned-subject.

For information and record.

ERNESTO E. TAÑADA

So. Pag-asa, Brgy. Payompon,
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Republic of the Philippines
Department of Environment and Natural Resources
MIMAROPA Region
COMMUNITY ENVIRONMENT AND NATURAL RESOURCES OFFICE

December 20, 2022

MEMORANDUM

FOR	:	The OIC, PENR Officer Mamburao, Occidental Mindoro
THRU	:	The Chief, Technical Services Division
FROM	:	The CENR Officer
SUBJECT	:	**SUBMISSION OF ANNUAL ACCOMPLISHMENT REPORT ON THE MAINTENANCE AND POTECTION OF INDIVIDUAL PLUS TREES (IPT's)/SEED PRODUCTION AREA (SPA)**

Forwarded is the Annual Accomplishment Report on the Maintenance and Protection of Individual Plus Trees (IPT's)/Seed Production Area (SPA) for CY 2022 located at Sitio Igsuso, Brgy. Tubili, Paluan Occidental Mindoro.

For information and record.

For. ANASTACIO A. SANTOS, MPA

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National Road, Brgy.Sto. Niño, Sablayan, Occidental Mindoro
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SEED PRODUCTION AREA ANNUAL ACCOMPLISHMENT REPORT FOR CY 2022

EXECUTIVE SUMMARY

In the Philippines, seeds are still considered as the basic unit in terms of reproduction. While there have been significant developments in asexual propagation, there are as yet few tree species whose vegetative propagation protocols have been perfected already. Thus, forest tree seeds still play a very critical role in the entire artificial forest regeneration system.

Since seed is considered (as the basic unit of reproduction) the need of establishment of seed sources arises. Establishment of quality seed sources is the heart of any seed certification program. Seed sources from the foundation with which all aspects of seed certification resolve. It is generally recognized that quality seeds can only come from stands (natural or artificial) which are regarded to be genotypically superior. Any seed certification scheme, therefore, should recognize the necessity of establishing and/or delineating stands whose individual trees have undergone or are being considered for genetic testing, to establish their superiority over all others.

One of the best seed source considered in the Philippines is the seed production area or SPA. Seed production areas are natural (stands) and artificial stands of proven genetic quality which are rouged and managed for the immediate supply of quality seeds.

The government through the initiative of the Department of Environment and Natural Resources launched the National Greening Program (NGP) wherein the agency put a serious investment that will intensify its self-reliance on seed production and reforestation.

With the existing policy to use only seeds from identified seed sources, selection of Individual "PLUS" Trees (IPTs) from the identified seed stands (natural or plantation stands) and conversion/ establishment to a Seed Production Areas (SPA) was implemented for the NGP and for other future rehabilitation and restoration programs of the government.

Generally, it aims to ensure continuous production of adequate supply of phenotypically and genetically-improved planting materials to meet the requirements for high quality seeds and seedlings by the government and private sectors in the establishment and development of tree plantations, forest gardens, forestation, agroforestation projects and rehabilitation of watershed and coastal areas.

Due to the need to conserve forest genetic resources, seed source production area has been identified, classified and characterized in terms of physical properties (dbh, height, straightness, age, capability of producing quality seeds) at Barangay Tubili, Paluan, Occidental Mindoro. It was established on the year 2014 which covers an area of 50 hectares of Narra plantation and approximately 28 kilo meters from the municipality of Mamburao. It is accessible by any means of land transportation. The SPA is geographically lies at 120°30'38.28'' easting and 13°17'49.40'' northing.

In order to manage and maintain the established seed production areas, silvicultural activities such as weeding, pruning, thinning, removal of debris, patrolling, retagging, repainting, phenological observation and other related activities were done in the area.

Weeding, pruning and removal of debris were conducted all throughout the year in order for the IPTs to avoid from suffering to competition from nutrients. Patrolling and phonological observations were done regularly and phonological reports were submitted every month. Retagging and repainting of IPTs were conducted simultaneously. Fences an information boards were secured and maintained by the team.

Fortunately, all throughout the year, there were no illegal activities were noticed and as reported in the area. However, the termites attacks which was observed during patrolling poses a huge threat to the IPTs in which it is recommended to eliminate all the affected IPTs in order to sustain the area. Another issue which was encountered was the competition from nutrients in the presence of climbing herbs such as nami of the Narra trees within the SPA.

DETAILED ACCOMPLISHMENT

I. MAINTENANCE AND PROTECTION ACTIVITIES

1. WEEDING

The growth of weeds and grasses in newly established forest plantations and in seed production area can be rapid. One of the serious problem in newly established forest plantation in the country is the rapid growth and infestation by climbers, vines, that envelopes the small seedling ultimately strangling or deforming them. Climber cutting is done simultaneously with weeding operations in the forest plantation. Weeding operations were done regularly in the area to avoid competitions and damages.

Figure 1. Weeding operations done within the Seed Production Area (SPA

2.PRUNING/ THINNING

Pruning is referred to as the removal of branches at the lower portion of the trunk. It is well known that Narra species has a great tendency to fork and is incapable of self or natural pruning. Thus, this activity is done in the area in order to improve the quality of the wood produced and to remove forks in trees.

Thinning involves the reduction of stand density of an existing plantation. Thinning is done in the Seed Production Area in order for the best trees to prevent from suffering from marginal conditions (competition). As of this month the pruning and thinning operations were postponed due to strong winds for safety purposes.

Before the activity was conducted, the ladder which will be needed to reach the upper crown of IPTs to facilitate pruning operations was made by the bamboo and build by the labourer to the Seed Production Area.

Figure 2. Actual pruning operations done in the Seed Production Area (SPA

3. PATROLLING

Patrolling the area is done regularly by the SPA team particularly to avoid illegal activities and to assess the condition of the Individual Plus Trees (IPTs). Fortunately during the month of August to December, there were no illegal incidents reported in the area. However, the presence of climbing herbs such as nami and termites in some of the the IPTs were observed.

Figure 3. Patrolling activities done within the Seed Production Area (SPA)

PHOTO DOCUMENTATION

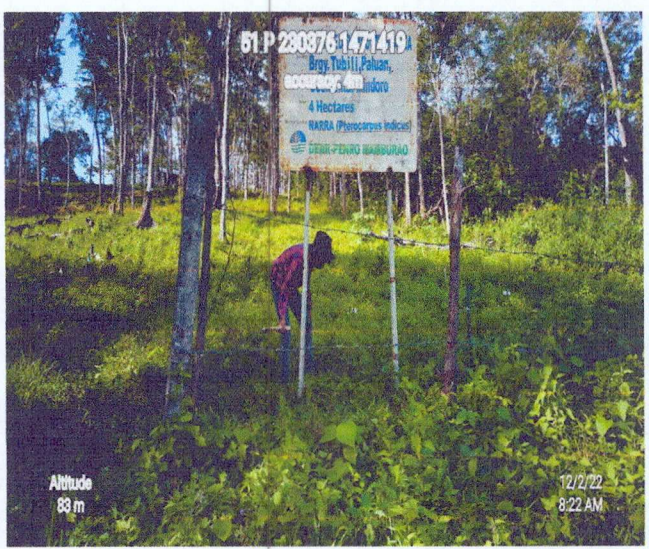
Figure 4. Presence of climbing herb such as nami and termites observed on some IPTs

4. RETAGGING AND REPAINTING OF IPTS

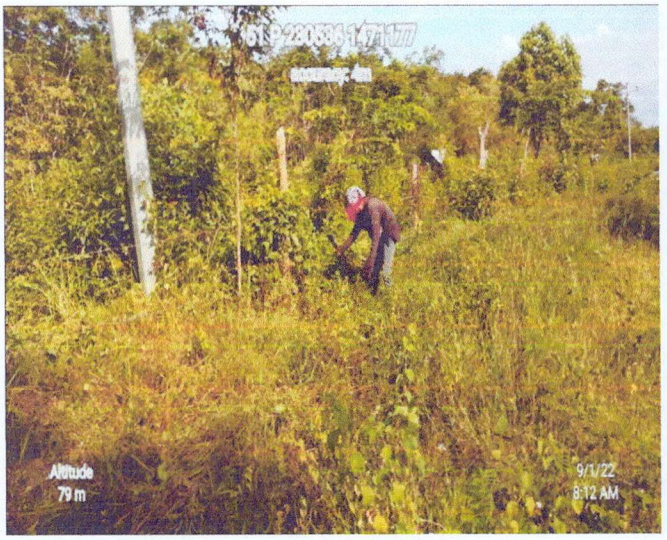
Retagging and repainting of the Individual Plus Trees (IPTs) in the area is plays a significant role in the Seed Production Area for the proper identification and monitoring of IPTs. The tags of each IPTs facilitate the conduct of observations in the area particularly the phenological observation and patrolling activities in which the team uses observation table with the IPT numbers included in it and records every detail observed in the area.

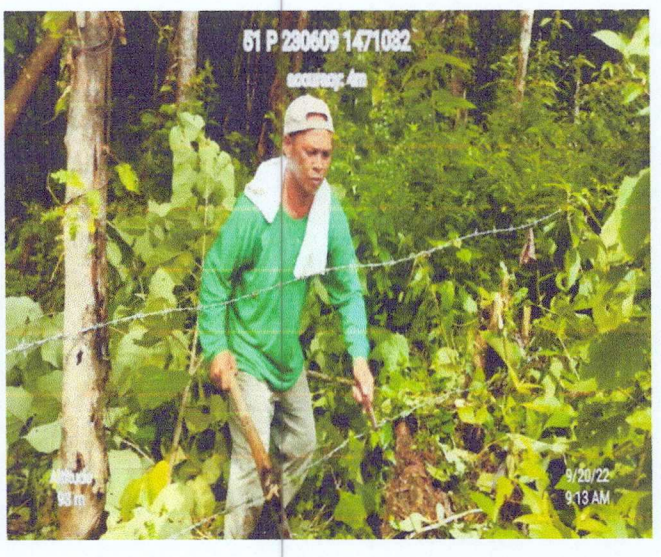
Figure 5. Re-tagging, Re-painting activities done within the Seed Production Area (SPA)

5. MAINTENANCE OF INFORMATION BOARDS AND SIGNAGES



6. MAINTENANCE OF FENCES





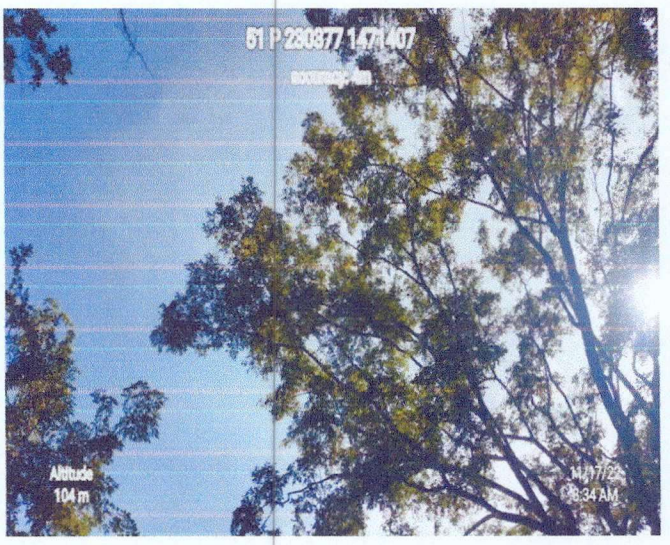
II. PHENOLOGICAL OBSERVATIONS

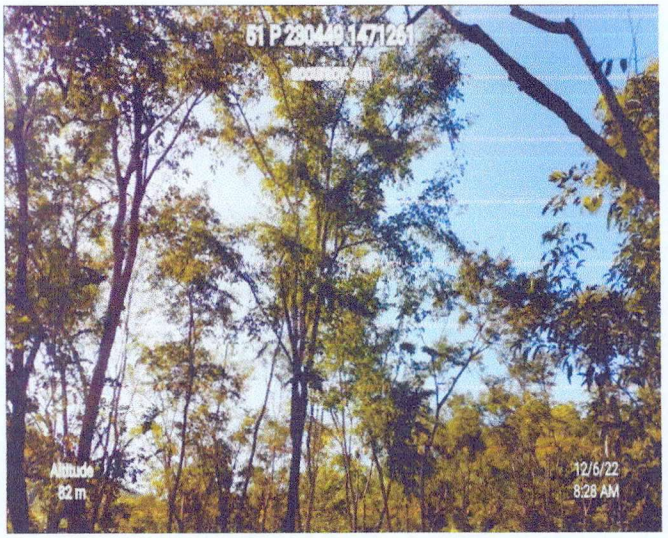
Phenological data of Individual Plus Trees (IPT's) play a significant role in the Seed Production Area in able to manage and be a basis for decision making. Since the flowering stage of forest trees varies from species to species and depends upon the climate and topography of a particular place. From the phonological data and observations, the best season or month of when to collect seeds will be analysed.

Phenological observation of the Individual Plus Trees (IPTs) were conducted throughout the whole year in the Seed Production Area. Based from the initial observations conducted from the month of August to September is the fruiting stage of narra tree . (Figure 7). Since the inner portion of the area is protected from pollutants such as dust and vehicle emissions.The presence of climbing herb such as nami and termites and other environmental effect observed on some IPTs that causes damage were also noted during the patrolling and observation conducted on that month.

Furthermore, based from the month of October, November and December observations, all of the Individual Plus Trees (IPTs) are accomplished to re-tagging, re-painting, brushing, pruning and ringweeding. We replace the 1 IPTs number (153) that was damaged due to climbing herb such as nami and attack from termites. The fruits of narra started to develop from the month of August to October since the rainy season started in which frequent rains occur. From the month of November to December, some IPTs have a matured fruit and start to fall.

After a series of systematic procedure undertaken in terms of seed collection, selection, seedbed preparation, sowing and watering, it is observed as well, the Philippines is a tropical country with two types of climate, dry and wet season for necessary intended for reforestation program.





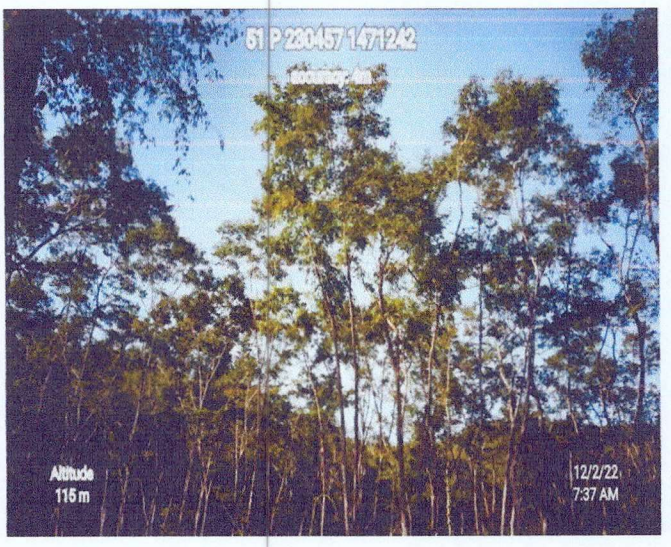


Figure 7. leaves of some IPTs

III. SEED COLLECTION

Table 1. Total number of seeds in each IPT's

IPT No.	Location		No. of pods/samara collected	REMARKS
	Easting	Northing		
508	230327	1471336	2300	Fully matured
509	230322	1471344	1500	Fully matured
515	230303	1471376	2500	Fully matured
493	230383	1471331	1000	Fully matured
537	230386	1471399	3000	Fully matured

Based from the table above, there were five (5) IPTs from which the Narra pods/samara was collected this year November to December 2022. After the collection the number of pods, average number of seeds per pod and the total number of seeds were recorded. Based from the results, IPT no. 537 and IPT no. 515 have larger size of pods than IPT no. 493,509, 508 and IPT no. 515, thus IPT no. 537 contains more seeds per pod. In addition, since IPT no. 493 have fewer number of pods collected, the seeds extracted were also fewer as compared to IPT no. 409, 509, 508 and 515, IPT no. 537 have the highest number of pods collected but the total of seeds extracted is lower than IPT no. 515.

Figure 8. Narra seed extraction and storage process

The figure above shows the extraction process of land preparation, land preparation is to provide the necessary soil conditions which enhance the successful establishment of the young offshoots or the tissue culture plants received from the nursery and also the Narra seeds from its fruit called Samara. After the collection process the pods were dried for several days and stored in a dry place. With the use of scissor, the seeds were manually extracted inside the pods. After the seed extraction process, the seeds that were collected in each IPT were noted. The seeds were place within the SPA area.

IV. VIABILITY TEST

Viability testing is very important for determining the quality of seedlings that will be stored for a long period of time. The main purpose of the test is to determine the capacity of the seeds to germinate and develop into plants when sown in the field. As shown in the figure below, the seeds direct within the soil were prepared and covered by brown mulch, brown mulch is adding nutrients, maintaining moisture content and also to avoid the soil erosion. Brown mulch also prevent water from being evaporated from your soil by the sun. The viability test consists of 5 replicates with 100 seeds each. After sowing the 100 seeds in each replicate, seeds were watered and observed daily as shown in (Figure 9).

Figure 9. Regular watering of sowed Narra seeds.

Species: Narra (Pterocarpus indicus)
Date of Collection: November, 2022
Origin of Seeds: Brgy. Tubili, Paluan
Mode of Collection: Ground Collection
Number of Seeds per Replicate: 100

Table 2. Viability Test Result

Replicate No	IPT No.	Number of seed germinated	% Germination (Total number of germinants/Total number of seeds per replicate)*100
1	508	39	39%
2	509	45	45%
3	515	85	85%
4	493	65	65%
5	537	56	56%

Based from the table above, IPT No. 515 or Replicate No. 3 and IPT No. 493 has the highest germination rate or capacity thus, can be a best seed source among all other replicate. IPT No. 508,509 and IPT No. 537 (Replicates 1, 2 and 5) have lower germination rate which means that the IPTs were not recommended to be a seed source. In addition, there could be environmental factors that affect the seeds during collection, processing, and storage.

VI. ISSUES AND CONCERNS

- Termite attacks recorded on some IPTS.

As compared to natural forests which includes large population of mixed species and uneven-aged trees , forest plantations only include few species and relatively evenaged trees thus, plantations are more susceptible to pest and disease outbreaks. This is due to the environmental factor that favour to the termites to increased their population.

VII. RECOMMENDATIONS

- Sanitation cutting of damaged trees.

Since plantations are highly susceptible to pests and diseases outbreaks, the damaged trees affected by the fungi, termites and climbing herb such as nami as manifested by the fruiting bodies and competence of narra tree to the soil nutrients that were observed on the field should be removed to eliminate the disease. After cutting the affected trees, supervised burning should be done in order to avoid the transfer of the spores to other IPTs and to totally eliminate the fruiting bodies.

- Using of organic sprayer

Also use borate wood preservative sprayer, it is organic sprayer for wood defend against termite attack and other wood-decomposing organism. The preservatives absorbed into a wood and acts as a barrier that termites cannot cross, eliminating wood as a food source.

- Establishment of Seed Production Area (SPA)

Brings a great contribution in terms of supply and demand of seedlings intended for a forestation projects and re-forestation projects of the government and even private entities who have the same purpose. With this, establishment of SPA is very necessary and highly recommended.

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