

## **DENR Administrative Order**

**No. 96-21**

**June 21, 1996**

**SUBJECT : Guidelines for the Establishment of Pilot Dipterocarp Plantations.**

In line with the policy of the DENR to promote species biodiversity in forest plantations through the establishment of dipterocarp plantations in every province whenever feasible and to support the intensified reforestation efforts under the National Forestation Program, the following guidelines are hereby issued and adopted for the guidance of all concerned.

### **Sec. 1 Site Identification of Pilot Plantation**

- 1.1 Each PENRO shall identify, survey and map an area of at least ten (10) hectares for the establishment of dipterocarp pilot plantations in coordination with the Ecosystems Research and Development Service (ERDS) and the Forest Management Service (FMS), taking into consideration the climate, soil, vegetation and other site factors. A sample Plantation Record Form appears as Annex A.
- 1.2 Preferably, the pilot plantations shall be sited in forestland areas which possess the following criteria:
  - 1.2.1 readily accessible through existing roads or by access trails;
  - 1.2.2 free from squatters/adverse claims;
  - 1.2.3 not too degraded, with historical traces or indicating that the area was once vegetated with dipterocarp species; and

1.2.4 adjoining or adjacent to natural dipterocarp stands where seeds and wildlings can be made readily available.

1.3 Subject to the foregoing criteria, the following areas may also be considered in the selection of pilot dipterocarp plantations:

1.3.1 existing experimental forests maintained by the ERDS (former FORI experimental forests);

1.3.2 Assisted Natural Regeneration (ANR) areas or brushlands where there is sufficient cover to provide shade to the dipterocarp seedlings/wildlings;

1.3.3 areas inside abandoned or cancelled timber license agreement and permits where the site conditions are still favorable for dipterocarp plantation establishment.

In no case shall the dipterocarp plantation be established in areas covered by existing Timber License Agreement (TLA) or Industrial Forest Management Agreement (IFMA). In addition, no cutting of standing trees shall be allowed for purposes of dipterocarp plantation establishment.

1.4 Areas identified consistent with the above criteria and consideration shall be surveyed for purposes of delineating on the ground the metes and bounds thereof as well as the gathering of the necessary biophysical data and information essential in the preparation of the comprehensive area development and management plan. For purposes hereof, the

area shall be divided into ten (10) hectare blocks and further subdivided into one (1) hectare compartments.

**Sec. 2 Comprehensive Development Plan.** A comprehensive development plan shall be prepared jointly by the Regional Technical Directors (RTDs) for ERDS and FMS. The plan shall take into consideration economic, social, ecological and environmental implications of the project, together with the details on the technical requirements and component activities on plantation establishment, management and maintenance, protection, monitoring and evaluation, and research. A copy of the plan approved by the Regional Executive Director (RED) shall be furnished the Ecosystems Research and Development Bureau (ERDB) and Forest Management Bureau (FMB) Directors.

**Sec. 3 Mode of Implementation.** Plantation establishment shall be by activity specific contracts. The procedure as regards bidding and awarding of contracts shall be governed by existing rules and regulations most specifically DAO 39, S.88; MC 11, S.88; and DAO 31, S.91.

The total budget allotted for plantation establishment shall not exceed P 12,500.00 per hectare. A separate allocation of P 2,500.00 per hectare shall be provided the Ecosystems Research and Development Service (ERDS) to cover the conduct of built-in researches and joint monitoring. The amounts of P 1,400.00 and P 3,500.00 shall be provided on the first and succeeding two (2) years (second and third), respectively, after plantation establishment for maintenance activities. A reasonable amount for monitoring shall be incorporated in the annual budget of the Regional Office.

The Forest Management Service (FMS) shall be responsible for the processing of the necessary documents. The Regional Executive

Director (RED) shall sign the contract for the DENR upon the joint recommendation of the Regional Technical Directors for Forestry and Research.

The Regional Technical Director for Research shall see to it that the terms and conditions of the contracts are strictly followed.

**Sec. 4 Conduct of Built-in Researches.** Built-in researches shall be undertaken by the Regional Ecosystems Research and Development Service (ERDS). The types of researches to be undertaken shall be approved by the Regional Executive Director (RED) upon the recommendation of the RTDs for Research and Forestry. A reasonable amount for the conduct of researches shall also be incorporated in the annual budget of the Regional Office.

**Sec. 5 Monitoring and Evaluation.** On the first year of implementation, a team composed of FMS and ERDS technical personnel shall undertake quarterly monitoring and evaluation on the progress of activity implementation. The said team shall be created and supervised by the RED. From the second year and onwards, however, semestral monitoring and evaluation shall be made by said team. Quarterly and semestral monitoring reports shall be submitted to the RED through the RTDs for Forestry and Research copy furnished the Planning and Policy Service Office (PPSO) of the Central Office, Forestry Management Bureau (FMB) and ERDB.

PPSO, FMB and ERDB shall monitor and evaluate the sites annually.

**Sec. 6 Seed Collection, Handling and Seedling Production**

**Seed Collection and Handling**

- 6.1 The contractor shall coordinate with the RED/PENRO/CENRO in order that trained/qualified and authorized DENR personnel shall be dispatched to collect seeds from designated seed production areas in natural stands, established government tree plantations, established industrial tree plantations, private forest tree plantations, or seed orchards established by DENR in accordance with the regulation on forest tree seed production, collection and disposition.
- 6.2 Seeds as source of planting stocks shall be duly certified by the Regional Forest Tree Seed Committee (RFTSC) with respect to its origin and quality.
- 6.3 Dipterocarp seeds shall be placed/packed in air-tight plastic containers (bags/sacks) to maintain high moisture content of the seeds as the seeds have a short viability period of 3-7 days depending on the species.

### **Seedling Production**

- 6.4 To ensure viability, the seeds shall be sown immediately in prepared soil-filled pots with compost, decayed sawdust or rich forest top soil. Potting is to be done in temporary nurseries in the forest where rich forest soil is readily available. The earth-filled containers may be arranged under partial shade of trees.
- 6.5 The most appropriate method of sowing is to sow fresh and dewinged seeds in soil-filled plastic bags (direct potting). Select only the big seeds in potting to ensure high survival and good quality seedlings. Insert larger end first, so that the radicle emerges and grows directly downward and deeper into the soil.

However, a horizontal position may also be suitable. The depth of sowing should be about the average diameter of the seed.

- 6.6 Nursery grown stocks are ready for outplanting one year after germination. Hardening shall be done by gradual removal of shade. Fifty percent (50%) shade should be initially provided and gradually reduced to 25% to simulate conditions in the forest.

**Sec. 7 Wildling Collection and Production.** If seed collection is not certain, dipterocarp wildlings may be used. The wildlings should be collected when the forest soil is moist/wet to minimize damage to the roots. They should be hardened in the nursery for at least two (2) months up to six (6) months. Suggestions/recommendations on the care of wildlings and potting medium appears as Annex B.

**Sec. 8 Vegetative and Other Methods of Propagation.** Planting stock production may also be done through vegetative propagation or other methods (macro/micro propagation) which may be found suitable through research.

The procedure in the vegetative propagation by cuttings using the non-mist system is attached as a reference (Annex C).

**Sec. 9 Spacing.** Considering the silvicultural characteristics and requirements of the Dipterocarp species, together with the relatively high cost of producing quality dipterocarp planting stocks to assure a high degree of success, the regular spacing distance and planting in rows normally prescribed in forest plantation establishment may be dispensed with; Provided, that the density of planted Dipterocarps shall not be less than 280 stems per hectare following the clusted method of planting in combination with nurse trees;

Provided, Further, that the total density to include the nurse trees shall not be less than 1,800 stems per hectare.

**Sec. 10 Protection and Maintenance of the Plantation.** The plantation and maintenance of the plantation shall be contracted. As stated in item 2, maintenance costs shall be P1,400.00 and P3,500.00 per hectare for the first and succeeding two (2) years, respectively, after plantation establishment shall be provided.

#### 10.1 Forest Fires

The pilot plantation shall be protected from wildfires through the construction of firebreaks/fuelbreaks and the constant presence of laborers who are trained in forest fire control with the necessary firefighting tools and equipment shall be assured.

#### 10.2 Pests and Diseases Control

The plantation should be protected against serious pest/insect infestation and disease infection. Remedial measure should be immediately applied once imminent signs of such danger occurs.

#### 10.3 Weeding

Conduct periodic weeding in the plantations. Strip weeding shall be done three (3) times during the first to the third year and two (2) times during the fourth and fifth year and once a year thereafter or whenever necessary.

#### 10.4 Application of Fertilizers

10.4.1 Apply about five (5) grams of complete fertilizer at the base of each seedling/wildling three (3) months after outplanting. Subsequent application of the same amount shall be done every six (6) months until the fifth year. Future application and dosage determination shall be done only after conducting soil-fertility test. Other soil amendments may be done through the application of animal manure/organic fertilizer.

10.4.2 Should the soil be proven to be infertile, Mycorrhizae, if available, may be applied to enhance growth. Other bio-fertilizers may likewise be applied when and where appropriate.

**Sec. 11 Dipterocarp Plantation Establishment in Private Lands.** The field offices shall encourage owners of rubber, coconut and fast growing species plantations to venture into Dipterocarp plantation development. As a part of the Department's IEC Program, appropriate technical personnel shall provide the necessary technical assistance.

**Sec. 12 Responsibilities of Contracting Parties.** The responsibilities of the contracting parties shall be spelled out in the contract to be signed between the contractor and the DENR.

**Sec. 13 Effectivity.** This Administrative Order shall take effect immediately.

**VICTOR O. RAMOS**  
Secretary