

Memorandum Circular
No. 16
August 7, 1990

SUBJECT: Clarifying the Guidelines on Timber Stand Improvement (TSI) Activities in Dipterocarp Forests

For effective implementation of TSI activities under the ADB-OECF program, certain provisions of Memorandum Circular No. 19, dated September 26, 1989, are hereby clarified.

1. The contractual activities prescribed in carrying out TSI operations shall mean as described hereunder:
 - a. **Improvement of accessibility.**

The operational phase of improving the accessibility pertains to opening of trails and promoting the existing road condition. **Trail opening** refers to establishment and brushing of foot trails by cutting and clearing the vegetation traversed by them. The foot trails shall have a width of 1 to 1.5 meters and must follow ridges or bottom lines of depressions and ravines inside every TSI compartment having an average area of 40 hectares. On flat or gentle areas, the foot trails should lead directly into otherwise inaccessible parts of the TSI area. The aggregate or combined total distance of foot trails shall not be less than 1.0 kilometer long.

Road improvement shall include: (i) clearing the road track grasses, ferns, vines, climbing bamboos and other plant growth; (ii) excavating, leveling and compacting the ground; and, (iii) shaping the road crown and digging side ditches. At an average road density of 25 meters per hectare, the logging road that may be found inside a TSI compartment runs a kilometer long. The cost of this defined road improvement work shall be determined proportionate to the actual extent of the road span found therein, using as basis an assumed rate of P20,000 per kilometer of road, subject, however to flexibility/adjustment that may be warranted in conformity with Paragraph 3 hereof. As a rule, improvement shall be made only if the road so situated inside the TSI area forms a part or segment of an existing road. Otherwise, trail brushing shall be done along abandoned road and it shall belong to the activity of **Trail opening**.

The trail opening and road improvement activities, as used herein, shall be confined to the TSI area only, and in no case shall they include those falling outside the said area.

b. Preliminary work prior to TSI treatment

Diagnostic sampling is a survey conducted at a sampling intensity of 10 percent with the primary purpose of getting an estimate of the stocking of Potential Crop Trees (PCTs) and the kind of competition from which the PCTs have to be liberated. The data set to be gathered is shown in the format prescribed under Memorandum Circular No, 19, Series of 1989. The Preparatory work before making diagnostic sampling shall consist of surveying the access routes (foot trails and roads) and brushing the TSI operation lines. The results of the accessibility survey shall be appropriately plotted and accurately drawn on the TSI operation map at the scale of 1.0 meter. The operation line shall be established 50 meters apart in a perpendicular direction from the base line.

c. TSI treatment

The TSI treatment of **girdling** refers to the removal of a strip of bark (including the cambium and a few millimeters of the sap wood) 10-20 centimeters wide at breast height around the circumference of a competitor tree. **Climber cutting** refers to the elimination of vegetative climbers and vines strangling the PCT by cutting their ropes and strands dangling from the crown or twisted around the stem of the PCT. Utmost care must be exercised in the process of severing the climbers so as not to cause damage or injury to the PCT.

To serve as a guide of the TSI crew in applying the treatment, it is necessary that selection and marking of PCTs and competitor trees shall first be conducted. The PCTs shall thus be marked by painting a bright red band at least 1 1/2 inches wide around the stem circumference at about eye level. The competitor trees shall be marked with 2 yellow painted spots on opposite sides of the bole.

d. **Enrichment planting**

The portions of the TSI area where **enrichment planting** shall be made include all open areas which were previously the allowable clearings (log landings, cableways and skidways) that have not been planted and found at their present state still without adequate natural regeneration of Dipterocarp and/or premium species. Likewise to be planted are inadequately stocked areas containing PCTs that are less than the minimum level of stocking required under Memorandum Circular No. 19, Series of 1989. The species for enrichment planting shall preferably be dipterocarp. Premium species may also be used with the exception of the fast-growing or introduced species. Nursery-raised seedlings or wildlings may be utilized as planting materials, provided that if wildlings shall be planted, the necessary hardening process or other more appropriate techniques shall be applied at the preparatory stage to develop their vigor and adaptability to the environmental conditions to which they shall be exposed.

The average areal coverage of enrichment planting is estimated at 10 percent of the TSI area. For contractual TSI activity evaluation purposes, the survival rate required in every planted site/portion shall not be lower than EIGHTY (80) PERCENT after a period of 3 months or longer reckoned from the date of planting, replanting, if need be.

2. In case no road improvement shall be done inside a TSI area and/or enrichment planting is not necessary, the amount equivalent to their respective costs per hectare shall be used for TSI activities in additional areas that meet the existing criteria for treatment.
3. The unit cost of every TSI activity indicated in Memorandum Circular No. 19, Series of 1989, may be decreased or increased by a maximum of TWENTY-FIVE (25) PERCENT provided that the total cost of the activities shall not exceed P 3,500 per hectare. For any such TSI activities as are mentioned in Paragraph 2 hereinabove that may be inaccessibility and site-specific condition, their respective unit costs as indicated in the aforecited Circular, shall be correspondingly deducted from the total cost.

4. All other provisions of Memorandum Circular No. 19, Series of 1989, that are not inconsistent herewith shall remain in force.
5. All DENR field officials and others concerned must see to it that the provisions of this Circular and other regulations governing the proper conduct and implementation of TSI are complied with.
6. This Circular shall take effect immediately.

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Secretary

RECOMMENDED BY:

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