

MEMORANDUM CIRCULAR
No. 17

**TO : ALL REGIONAL EXECUTIVE DIRECTORS/PENROS/
CENROS**

**SUBJECT: Prioritizing Application of Assisted Natural
Regeneration Method in the Development of
Watersheds, Protection and Production Forests.**

SECTION 1. BASIC POLICY In the rehabilitation and development of watersheds, protection and production forests, the Department of Environment and Natural Resources (DENR) shall (a) apply the most economical and cost-effective methods that are feasible in any given situation and (b) accelerate the re-establishment of vegetative cover that approximates a natural forest in terms of species diversity and composition. In pursuit of these objectives, it shall be the policy of the DENR to prioritize the implementation of Assisted Natural Regeneration (ANR) methods for the rehabilitation and development of watersheds, protection and production forests.

SECTION 2. IMPLEMENTATION GUIDELINES

a) Effective immediately, all DENR offices involved in planning and implementation of watershed and reforestation programs and projects are instructed to incorporate ANR methods in all such projects, wherever applicable regardless of whether these are carried out by administration, by contract or by combination thereof.

b) ANR shall be the preferred method to apply in any of the following situations:

i) in open/denuded forest lands containing vigorous wildlings 15 cm. to 200 cm. tall of pioneer trees, brush and other woody species with a density of approximately 600-700 per hectare relatively well spread on the project sites regardless of slope;

ii) areas that are being developed as protection forests or primarily to improve the vegetative cover of watersheds meeting criterion in (1);

iii) protected areas such as national parks, game refuge and nature reserves and similar reservations;

iv) portions of areas being developed as production forests where (in comparison with other methods) ANR is the most economical or expeditious method to apply for the establishment of nurse trees and/or production forest themselves;

v) near or adjacent ecotone areas; and

vi) regions considered relatively wet throughout the year where sites are not prone to grassfires.

SECTION 3. TECHNICAL FEATURES ANR methods shall incorporate.

i. ringweeding, ring cultivation, soil loosening and related treatments such as fertilization, mulching and the like for wildlings/seedlings/saplings of pioneer trees, brush and other woody perennial species;

ii. removal and/or suppression of cogon, talahib, runo and other grass species that are fire hazards and competing with the favored pioneer species in reforestation and watersheds development projects;

iii. establishment and diligent maintenance of firebreak for effective and sustained fire prevention;

iv. augmentation/enrichment planting in situations where the population of pioneer wildlings/seedlings/saplings is less than seven hundred (700) per hectare and therefore not sufficient to achieve crown closure in a period of three to five years (3-5 yrs.); the planting shall be conducted using wildlings or nursery grown seedlings in open areas/meadows or where existing natural regenerations are sparse and wanting, using a 2m x 3m as standard spacing.

v. where there is portion of ANR site dominated by stands above two (2) meters in height relatively well spread in the area, appropriate TSI technique, sanitation or liberation cutting shall be applied with the ultimate objective of eliminating suppression effects of weed species.

vi. use of wildlings gathered from ecotone areas where the open sites for ANR is adjacent to them;

vii. combination of (i) to (iv) above and other site-specific treatments which achieve the same objectives at comparable costs.

SECTION 4. WORK AND FINANCIAL PLAN. In the formulation of work and financial plans, and/or in the assessment and modification of plans submitted either by administration or contractors and contract proponents, all DENR offices shall refer to the attached annexes A, B, C, and D for guidance. In no case, however, shall the cost in a three-year period exceed the established cost ranges from P12,000.00 to P15,000.00 per

hectare inclusive of all treatments/activities applied. Same cost shall apply to ANR variations or combination hereof employed in other areas. Provided that the number of living trees including those of augmentation planting conducted in these areas shall have a minimum of 1,600 trees per hectare more or less evenly distributed throughout the area after a three-year period. Similarly, where a situation exists that less cost is obtaining as a result of implementation field offices are encouraged to expand area coverages for the system using the funds still available for the purpose.

SECTION 5. ORGANIZATION OF ANR REGIONAL TASK FORCE To immediately and effectively implement the project, Regional Executive Directors are hereby instructed to organize Task Forces consisting of two (2) technical personnel in every Region whose sole functions is to speed up and coordinate the establishment of ANR areas at the field level.

SECTION 6. TARGET AREA FOR ANR. Six months after receipt of this Circular, each Region shall have an established ANR either by contract under ADB/OECF funding or by administration not exceeding 500 hectares and in no cases less than 300 hectares following the guidelines and technical features embodied herein. ANR shall be used to supplement other reforestation contract areas. However, areas targetted whenever possible shall be separate and distinct from other systems of contract reforestation.

SECTION 7. PREPARATION AND SUBMISSION OF ANR DEVELOPMENT/WORK PLAN. The Task Force shall also be responsible for the preparation of ANR Development/Work Plan in accordance with Section 4 and 3 specifications and Section 6, with respect to target area. The plan shall be approved by the REDs concerned copy furnished Office of the Assistant Director, Special Concerns Office. The document called for shall reach the SCO fifteen (15) days after receipt of this Circular.

SECTION 8. REPEALING CLAUSE. Any provisions of Department Administrative Orders, Memorandum Circulars or other DENR documents inconsistent with this Circular are hereby amended or repealed accordingly.

SECTION 9. EFFECTIVITY. This Circular takes effect immediately.

FULGENCIO S. FACTORAN, JR.
Secretary

RECOMMENDING APPROVAL:

CIRILO B. SERNA
Forest Management Bureau

Signed on September 13, 1989

ASSISTED NATURAL REGENERATION
A Strategy for Cheap, Fast, and Effective Regeneration
of Denuded Forest Lands
By: Marcelino V. Dalmacio¹

I. THE CONCEPT

The dominant vegetation of a typical reforestation project is grass, principally, cogon (*Imperata, sp.*). This plant community is considered as a fire disclimax which developed as the original vegetation was destroyed and the agents of destruction were repeatedly applied (Sajise et al, 1976).² Oftentimes, a few scattered trees are found; remnants of the original vegetation, or those hardy species belonging to a Savannah community such as *Pileostigma, malabaricum*, and, *Anti-desma* species.

A close look at the thick grass biomass reveals, however, that there are a number of broad-leaved species growing amidst the grasses. If this plant community of broad-leaved species is not burned or destroyed, its natural regeneration will eventually take over the grasses. In fact, the study by Sajise et al, enumerated 46 broad-leaved species out of 75 that were found in grassland communities. It was further determined that the kind and number of regeneration would depend on the availability of propagules (i.e. seeds, etc.) and the length of time the grasslands were not burned/disturbed.

II. ADVANTAGES/LIMITATIONS

The ANR strategy takes advantage of the natural regeneration (of broad-leaved species). The objective of the ANR strategy is to liberate these species from competing vegetation, encourage faster growth, and facilitate their domination over the site. Being already well-established and adapted to the site, the problem of species-site incompatibility is therefore eliminated. Moreover, unlike conventional tree planting methods, ANR will not be constrained by rainfall, and can be done the whole year round.

ANR will result in a multi-storey, multi-species forest stand, which is more effective for watershed protection and wildlife habitat than a traditional plantation.

By itself, the ANR strategy will often have limited application insofar as timber production is concerned. However, the desired timber

^{1/} DENR Regional Executive Director, Region 8, Tacloban City

^{2/} Sajise, P., et al 1976. Phil. Agriculture 59, 317 -- 314

species can be inter-planted to supplement the naturally-growing tree species. The naturally-growing species will serve as nurse trees for the interplanted timber species. Depending on the density and distribution of natural regeneration, the extent of additional planting will be greatly reduced (usually to less than 400 trees/ha.), thus dramatically cutting costs for seedling production, transport and planting. Furthermore, ANR is expected to significantly improve the micro-environment of the site, thereby promoting a more favorable growth of the planted/desired timber species.

III. PROCEDURE

Well-documented experience in the application of ANR is still very limited, and the techniques are not yet perfected. However, the following procedures are suggested as guides for implementing ANR in reforestation, agroforestry and watershed management projects.

A. Locating and Releasing the Natural Regeneration

Deploy laborers over the area and systematically locate all broad-leaved species that are growing on the site, regardless of size. This should be done whether the area will be regenerated thru ANR, conventional planting (of seedlings) or combinations thereof.

To clearly mark the location of existing broad-leaved species, depress the grasses away from the seedlings/natural regeneration. Make sure that the stems of the grasses are broken, not cut. This may be done by pressing down the grasses and then trampling on them. Do this in a circle reaching 1 meter radius in all directions measured from the seedling, which should be at the mid-point of the circle.

Another way of clearly marking the location of seedlings/natural regeneration is to cut the grasses close to the ground, as in spot weeding. Alternatively, the area may be completely clear-brushed, making sure that the natural regeneration are not cut.

B. Maintenance

Repeat the above operations at 2-3 months interval (depending on growth of the grasses) especially within the 1st year, or until such time that the trees have already overtopped the grasses.

C. Augmentation Planting

Where there are wide gaps between naturally growing seedlings, plant potted or bare-root nursery-grown seedlings (or direct-seed as the case may be) with a spacing of approximately 2-3

meters. Prepare the site and maintain it in the same manner as described in paragraph B above.

D. Protect the area from fire and other forms of destruction at all times.

IV. PILOT TESTING

A. To validate the applicability of this technique in forest stand development, all managers of reforestation, agroforestry and watershed management projects should test ANR on at least 20 hectares within their respective projects.

B. Documentation

Document the activity to provide a basis for evaluation/ improvement. Among the important data needed are the following:

1. Description of the area to ANR, i.e., brushland, grassland, etc. Identify the major vegetative cover.
2. Determine the number of broad-leaved trees and shrubs growing per unit area, as a result of natural regeneration after each treatment (e.g. -- seedlings per hectare). Include a list of species, if practical:
3. Describe the methods used i.e., ring-weeding, complete weeding, depressing, etc.
4. Quantity the extent of augmentation and frequency of maintenance treatments.

Attached herewith is a suggested form for monitoring and evaluation.

C. Planning and Budgeting

In order to launch ANR activities in an organized manner, it is important to estimate costs and labor requirements. Attached hereto are two (2) tables that describe the specific activities to be implemented, probable sequencing, average costs and labor requirements (Tables I and I A). These can be modified to suit different climatic and locational variables. Meanwhile. They provide a guideline for planning and budgeting.

D. Reporting

ANR activities should be included in official, accomplishment reports, as a separate item under reforestation.

1*(Tables I and IA Omitted)