Assisted Natural Regeneration (ANR)

Philippines

A process of rehabilitating degraded forest lands by taking advantage of trees already growing in the area.

Aim/objectives: The objectives of the Assisted Natural Regeneration (ANR) approach includes reduction of cost, speeding-up of forest restoration and enhancing plant diversity.It accelerates the succession process by removing or reducing barriers to natural regeneration such as competition with weedy species, soil degradation and recurring disturbances.

Methods: ANR is a method for enhancing the establishment of secondary forest from degraded grassland and shrub vegetation by protecting and nurturing mother trees and their wildlings inherently present in the area.

Stages of implementation: (a)Site identification wherein ideal sites for ANR implementation are those with 600-700 vigorous wildlings per hectare with 15-200 cm height of pioneer species, brush and other woody species relatively well spread on the area; (b) Survey, Mapping and Planning (SMP); (c) Locating and marking of wildlings which include tagging,measuring and identification for monitoring of growth and survival rates; (d) Liberation and tending of regenerants through ring weeding and placing of the cut grasses into the base of the wildlings to serve as mulch and protect them from direct exposure to sunlight and to serve as fertilizer overtime; (e) Suppressing the grass ; and (f) Maintenance and protection of established ANR site.

Role of stakeholders: The project of ANR in Barangay San Miguel, Danao, Bohol was iniated 2006 until 2009. Stakeholders involved are the Department of Environment and Natural Resources (DENR) including field counterparts in Region 7, Non-Government Organization, Local Government Unit and the People's Organization (PO) in Danao, Bohol.

One of the important foci of the project is botanical inventory and vegetation study of site which deals only on the study of trees and other plant species in the site rather than biodiversity study of site which encompasses the study of both plant and animals in the site.

left: Marked wildlings in the ANR site (Photo: Forester Emma N.Castillo)

right: Wildling protected in the ANR site (Photo: Engr. Djolly Ma. P. Dinamling)

Location: Danao, Bohol
Approach area: 0.25 km^2
Type of Approach: project/programme based
Focus: mainly on conservation with other activities
WOCAT database reference: A_PHI010en
Related technology(ies):
Firebreak/Greenbreak (T_PHI056en), Pressing of Cogon (T_PHI055en)
Compiled by: Philippine Overview of Conservation Approaches and Technologies, Bureau of Soils and Water Management
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Problem, objectives and constraints

Problems

Forest degradation, high cost of forest restoration, loss of biodiversity, vulnerability of the site for the occurence of fire, insufficient income of the community, spread of invasive alien species (i.e Lanatana camara and Chromolaena odorata).

Aims/Objectives

The main objective of the approach is to effectively convert deforested lands or degraded vegetation to a more productive forest.

Constraints addressed

	Constraint	Treatment
technical	Lack of knowledge and skills on ANR methodology and no concrete evidence/study to support that ANR is low-cost, cost-effective strategy.	Research, training, seminars were conducted
institutional	Not known and popular to the community and land users were resistant to change the strategy of restoring forests.	The unpopularity of the ANR approach was resolved through media mileage. Further, the adoption of LGU as well as its Declaration of Bohol as the country's first-ever ANR Municipality through Municipal Ordinance No. 2008-08-11 adopted by the Sangguniang Bayan on August 26, 2008 gained nationwide recognition of the approach.

Participation and decision making

Stakeholders / target groups

land users, individual   SLM specialists / agricultural advisors   land users, groups

Approach costs met by:

government (DENR-FMB (in kind contributions))	70%
international (Food and Agriculture Organization of the United Nations (FAO-UN))	30%
Total	**100%**

Annual budget for SLM component: US$ 10,000-100,000

Decisions on choice of the Technology(ies) mainly by SLM specialists with consultation of land users

Decisions on method of implementing the Technology(ies): mainly by SLM specialists with consultation of land users

Approach designed by: national specialists

Implementing bodies: government (Department of Environment and Natural Resources-Forest Management Bureau), national non-government (Bagong Pag-asa Foundation), local government (district, county, municipality, village etc) (Local Government Unit of Danao, Bohol), local community / land users (People's Organization (PO))

Land user involvement

Phase	Involvement	Activities
Initiation/motivation	Passive	DENR
Planning	Passive	DENR
Implementation	Interactive	DENR, Bagong Pag-asa Foundation, People's Organization
Monitoring/evaluation	Passive	DENR and the POs were involved in the establishment of firelines or firebreaks/greenbreaks, conduct of patrol works, conduct ring weeding and augmentation planting.
Research	Passive	

Differences between participation of men and women: No

Involvement of disadvantaged groups: Yes, moderate
The program created jobs for land users in the area.
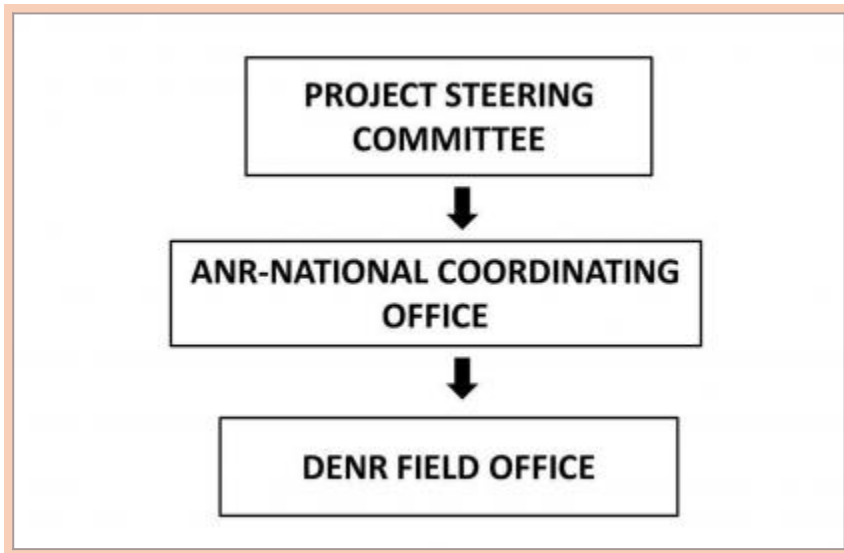
Organogram: Functional Structure of ANR project (Forester Emma N. Castillo)

Technical support

Training / awareness raising:
Training provided for land user, field staff/agricultural advisor
Transfer of the technologies of ANR to forest officers, LGUs, NGOs, POs, community members and academe, research institutions, and civil society.
Training was on-the-job, demonstration areas, site visits / farmer to farmer
Training focused on Management of site through the ANR technology

Advisory service:

The extension system is quite adequate to ensure continuation of activities. Government officials were capacitated through trainings to ensure the continuation of the project.

Research:
Yes, moderate research. Topics covered include ecology
Mostly on station and on-farm research.
Biodiversity study through documentation of the vegetation status and notable changes in the biodiversity of the site with the application of the ANR techniques.

External material support / subsidies

Contribution per area (state/private sector): Yes. Activities undertaken under this approach was financed through the FAO-UN contribution.

Labour: Voluntary, paid in cash.

Inputs:
 - Equipment (machinery, tools, etc): tools, wooden board. Fully financed

Credit: Credit was not available

Support to local institutions: Yes, moderate support with financial, training

Monitoring and evaluation

Monitored aspects	Methods and indicators
bio-physical	Regular observations by government
technical	Regular observations by government
economic / production	Regular observations by government
management of Approach	Regular observations by government
socio-cultural	observations by government

Changes as result of monitoring and evaluation:
There were several changes in the approach. Through monitoring and evaluation, it was found out that forest and grassland species diversity was highest. The presence of several species classified in the list of threatened species as critically endangered and vulnerable was observed in the site. Notable changes in the biodiversity was also observed within a span of 17-18 months and regenerants are already visible to create a forest.

There were several changes in the technology. Planting of additional species such as rattan, bamboos and Baas to sustain the raw materials in the production of bags, hats, mats and others.

Impacts of the Approach

Improved sustainable land management: Yes, great; Natural regeneration of the vegetation from grassland to forest is more apparent with the emergence of several reforestation species, natural secondary forest species and other indicator species. The growth of herbs and shrubs strongly indicates that the site is in early stage of development to a secondary forest.

Adoption by other land users / projects: Yes, few; The town of Danao, Bohol was proclaimed as ANR municipality thus gaining the full support of the local government in terms of funding and other activities related to ANR.

Improved livelihoods / human well-being: No; not aimed by technology

Improved situation of disadvantaged groups: No; not aimed by technology

Poverty alleviation: No; Not aimed by technology

Training, advisory service and research:

- Training effectiveness

  Politicians / decision makers: good
  Land users*: good
  SLM specialists: good
- Research contributing to the approach`s effectiveness: Moderately

Land/water use rights:

Long-term impact of subsidies:
Positive long-term impact: Moderately

Concluding statements

Main motivation of land users to implement SLM:

 Environmental consciousness, moral, health: improved biodiversity and restoration of the forest

Sustainability of activities:

 Yes the land users can sustain the approach activities without support.
 The technology was transferred to various stakeholders that enabled them to continue the program.

Strengths and → how to sustain/improve	Weaknesses and → how to overcome
Strong support from various stakeholders including the LGU, DENR, international agencies and others.	The approach is underutilized due to lack of awareness and research results demonstrating its effectiveness → Research that could be used in determining potentials of a site for ANR techniques using soil and vegetation factors.
Philippines was awarded and cited for forestry restoration and UN forestry award. → Preserve the true value of ANR by replicating the approach in other areas.	
DENR issued a national policy wherein ANR is one of the major activities in forest restoration of tenurial instrument holder. ANR is also included as one of the major restoration technologies in several projects.	
The techniques of ANR are simple which include the integration of economic and social values and forest reforestation. → Planting of agroforestry crops to provide additional income for the landusers.	

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