

SUSTAINABLE COASTAL MANGROVE REHABILITATION THROUGH COMMUNITY AND SCIENCE-BASED APPROACHES: LESSONS LEARNED FROM THE PHILIPPINES

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RATIONALE

- Survival rate of planted mangroves among mangrove rehabilitation initiatives was generally low at 10-30% due to the use of inappropriate species and poor site selection, despite of the heavy budgets allocated for massive rehabilitation projects.
- In order to distil the best rehabilitation practices and approaches, a collaborative research study among Asian countries, namely: Philippines, Myanmar, Japan, China and India, was pursued through the funding provided by the Asia Pacific Network for Global Change Research (APN).
- As part of the project, this study focused on the Philippines' community-based mangrove management practices presenting a comprehensive and integrated framework in pursuing sustainable coastal rehabilitation.

OBJECTIVES

- identify key bio-physical and socio-institutional factors contributing to mangrove rehabilitation challenges;
- describe the sufficient conditions towards sustainable mangrove rehabilitation; and
- recommend community-based mangrove rehabilitation strategies

METHODOLOGY

I. FIELD DATA COLLECTION ACTIVITIES:

... efforts: Failures ...
... activities ...

Philippines has very rich biodiversity in terms of number of species. It has a high biodiversity due to its high geographical location. The country has a high biodiversity due to its high geographical location. The country has a high biodiversity due to its high geographical location.

SECONDARY DATA COLLECTION

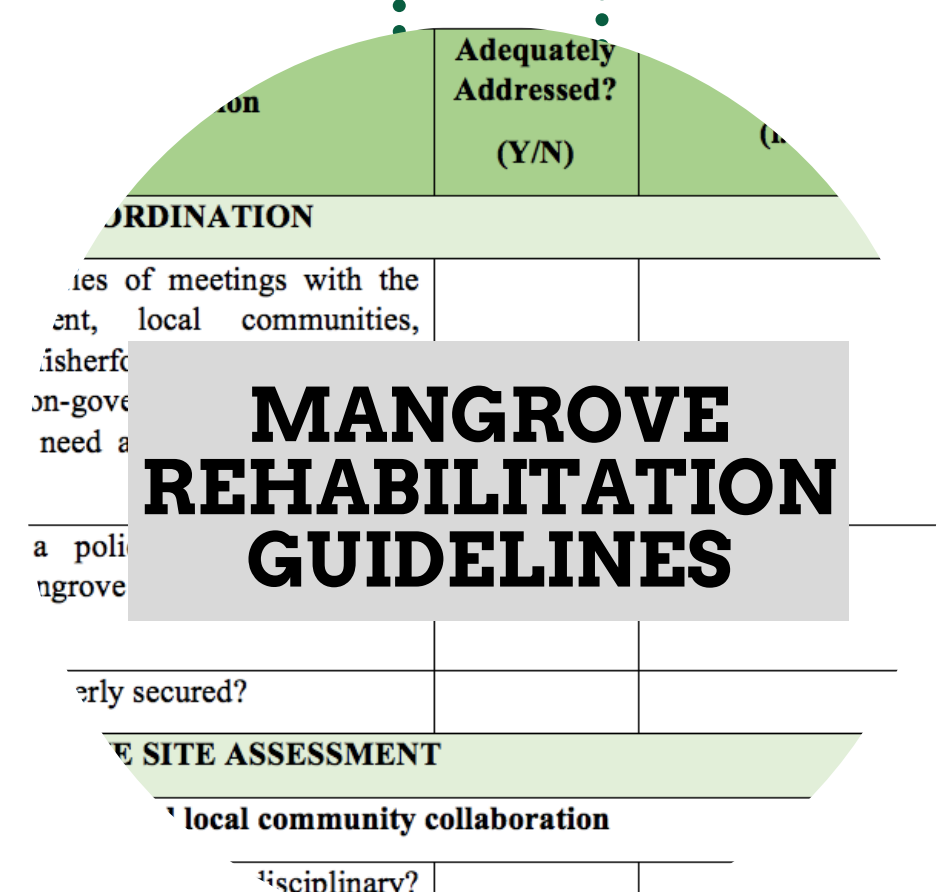
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KEY INFORMANT INTERVIEWS



FOCUS GROUP DISCUSSIONS



II. STUDY SITES:

A. Taklong Island National Marine Reserve (TINMAR), Guimaras, Philippines



- management scheme:** 2 POs (San Roque Coastal Environment Program Association - SARCEPA and Lapaz Fisherfolk Aquatic Resources Mangrove Management Association, Inc. - LAFARMA) + Government (DENR-PENRO)
- key features:** emphasis on community-based ecotourism

B. Katunggan Ecopark, Leganes, Iloilo, Philippines



- management scheme:** PO (Community Based Mangrove Seedlings Growers Association - CMSGA) + LGU + NGO (Zoological Society of London - ZSL)
- key features:** innovation using the t-fence for protection; voluntary planting

C. Jalaud, Barotac Nuevo, Iloilo Province



- management scheme:** PO (Jalaud Fisherfolks Association - JFA) + government (Bureau of Fisheries and Aquatic Resources - BFAR) + LGU + academe (Iloilo State College of Fisheries - ISCOF)
- key features:** strong involvement of students in mangrove rehabilitation; interplay of planting and research

KEY FINDINGS

I. Bio-physical and socio-institutional factors contributing to mangrove rehabilitation challenges

A. Bio-physical:

- No scientific basis for species selection, site selection, planting protocol, nursery, timing
- Planting of exotic species
- Often polluted coastal areas
- Illegal mangrove cutting

B. Socio-institutional:

- target-driven projects (any location; any species; indicator is number of species planted)
- planting guidelines are not usually followed; only followed when field technicians are present
- delayed release of funds
- networks of different organizations and implementation of guidelines were not sustained due to change in administration
- conflict of goals and interests between the government (and its agencies), developers, community, and conservationist groups
- lack of an institutional model for mangrove rehabilitation, particularly in reclaimed areas

II. Sufficient conditions or best practices towards sustainable mangrove rehabilitation

A. Taklong Island National Marine Reserve (TINMAR)

- Practice of *bayanihan* system or volunteerism
- Regular monitoring system and meetings
- Strong support from LGU and government like DENR
- Addressing the local needs through livelihood support
- Increasing awareness on the importance of caring the mangroves and environment
- Inculcating a sense of ownership



Figure 1. DENR office near Taklong Island.

B. Katunggan Ecopark

- Establishment of t-fence as wave breaker
- Species selection
- PO formation and capacity building
- Planning before planting
- LGU as champion in mangrove rehabilitation
- Strong policy and program support from LGU
- Science-based rehabilitation training by an NGO
- Long-term survival instead of 'just survival'



Figure 2. Before and after rehabilitation in Katunggan Park, Leganes.

C. Jalaud, Barotac Nuevo

- Technical/science-based planting
- Planting methods are open for innovation from the community (1.5 m distance shortened to 1 m)
- Active local participation from planning to project implementation
- Venue for learning mangrove rehabilitation among college students



Figure 3. T-fence in Katunggan Park, Leganes.

CONCLUSIONS AND RECOMMENDATIONS

- Current policies underscore that mangrove protection and rehabilitation are of paramount interest as far as coastal resource management is concerned.
- There are many factors that need to be taken into account in mangrove rehabilitation. These include: (a) slow, expensive, uncertain, urgent, extensive conversion/degradation, (b) synergizing multiple and diverse interests of stakeholders, (c) harmonizing technical, socio-cultural and institutional factors, and (d) adaptive long-term, responsible, accountable co-management.
- Developing integrated rehabilitation guidelines that capture both bio-physical and socio-institutional considerations is vital to sustainable mangrove conservation.

ACKNOWLEDGEMENT

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