

Mangroves Utilization, Dependency and Management: The Case of Carmen, Cebu, Philippines

Rachel Luz P. Vivas-Rica¹, Gloria G. Delan², Alfonso S. Piquero¹,
Christine M. Corrales¹, Tony L. Lapag² and Ador R. Pepito²

¹ICRM Center, Cebu Technological University- Main Campus

²Cebu Technological University-Carmen Campus

ABSTRACT

A survey on mangrove dependency, awareness, utilization and management was conducted in the coastal barangays of Carmen, Cebu. Results revealed that gleaning and fishing are major activities in the mangrove areas. Coastal communities are dependent on mangroves for subsistence where most of their catch are for home consumption. Locals perceived the importance of mangroves because of their knowledge that it serves as breeding, feeding and nursery grounds for many estuarine and marine organisms as well as protect the coast against erosion and big waves. Coastal communities are very much satisfied with the strict implementation of policies in the conservation and protection of their mangrove resources.

Keywords: Mangroves, dependency, breeding ground, gleaning, fishing

INTRODUCTION

The Philippines has about 18,000 km of shorelines and vast areas of mangroves with a total of about 500,000 hectares in the early 1900's (Brown and Fisher, 1920). Due to over exploitation, conversion of areas to various uses, and simultaneous logging of watersheds in the uplands, the Philippines remaining mangrove was only about 117,700 hectares in 1995 (DENR 1998). In 1980's, Carmen, Cebu had a growing population in its coastal areas with less job opportunities. People then resorted in unsound practices like illegal cutting of mangroves and rampant illegal fishing that served as a major problem faced by its local government (MPA Management Plan, Carmen, Cebu 2011). At present, the Municipality of Carmen, Cebu strongly enforced policies that govern the utilization and conservation towards sustainable management of their mangrove resources. However, no data is available as to what extent these mangrove resources has been utilized. This study aimed to assess the extent of utilization and dependency of mangroves among the communities of the coastal barangays of Carmen, Cebu. This study would also like to find out the management approach by the implementers towards a better understanding on sustainable mangrove resources.

MATERIALS AND METHODS

Survey was conducted on the six coastal barangays of Carmen, Cebu namely Luyang, Puente, Poblacion, Dawis Norte, Dawis Sur and Cogon East. A total of 194 respondents were interviewed using a pre-tested questionnaire.

RESULTS AND DISCUSSION

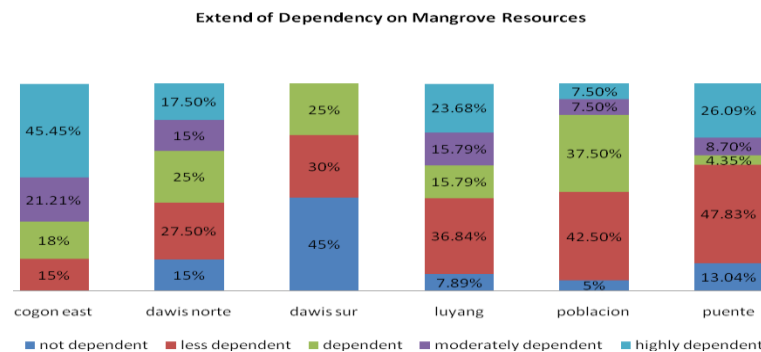


Figure 1. Mangrove Dependency

High percentage of the respondents in barangays Cogon East, Dawis Norte, Luyang and Poblacion says they depend on their mangroves for subsistence in terms of fish and shellfish collection. These barangays have more number of full time and part time fishers and gleaners wherein most of their catch is solely for human consumption. Respondents in barangays Dawis Sur and Puente are less or not dependent on their mangrove areas since they have other sources of income other than fishing or gleaning.

Awareness and Utilization

About 92% of the respondents engaged in gleaning and fishing in their mangrove area while 8% of the respondents collect products from their mangroves such as firewood and nipa as housing materials.

Locals perceived mangroves as extremely important in the environment wherein 100% of the respondents have knowledge on mangroves and can identify at least 12 species. They understand that besides livelihood, mangrove gives fresh air to breathe and serves as breeding, feeding and nursery grounds for many estuarine and marine organisms. For them, the presence of mangroves is a disadvantage since it makes the surrounding environment muddy and could be a breeding ground for mosquitoes and other insects. It could also be home for dangerous animals. Common wildlife observed in these mangrove areas were king fishers, herons and snakes.

Despite their knowledge of the benefits of mangroves in the environment there are still people who threw their garbage in the mangrove areas. Evidences like plastics wrappers, used diapers and other wastes entangled in the roots in most mangrove sites were found.

Mangrove Management

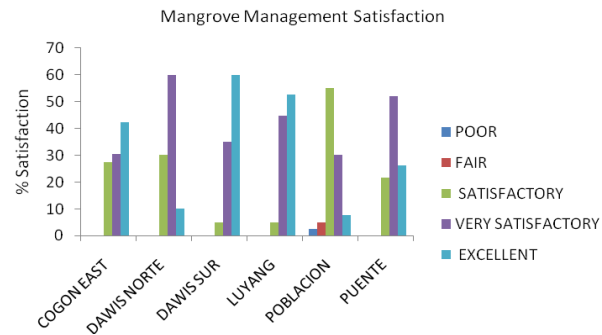


Figure 2. Mangrove Management

The municipality of Carmen strictly enforced policies in protecting mangroves for more than a decade. An average of 15 individuals for each coastal barangays were penalized due to cutting of mangroves. To ensure conservation and protection of mangroves, the local government of Carmen initiates a bi-annual mangrove planting. Despite the LGU's rehabilitation and reforestation efforts, residents still observed decreased in the volume of fish species caught particularly rabbit fish, emperor bream, blood clam and *Katelysia hiantina*, a kind of mussel bivalve. Perceived reason for the decrease of catch was due to the increasing number of fishermen and gleaners. Most of coastal communities are very much satisfied with the support of their local government unit in the management of their mangrove resources.

CONCLUSION

Serious and strict implementation of policies was the key for the Local Government to manage their mangrove resources well. The government was able to inculcate to the coastal settlers the importance of mangroves in their community. Observations of the decreased number and volume of species caught indicated that the mangrove ecosystem of Carmen, Cebu has not fully recovered from previous damages caused by violators, environmental factors and the increasing number of fishers and gleaners. Nevertheless, sightings of snakes as bio indicator of a healthy mangrove ecosystem is a sign that the mangrove ecosystem in Carmen is on its way to recovery.

ACKNOWLEDGMENT

Asian Development Bank (ADB) thru the Department of Environment and Natural Resources (DENR-7) for funding this research; For the assistance and counterpart logistics of the Local Government Unit of Carmen, Cebu and CTU-Carmen faculty and staff; And to the Cebu Technological University Main Campus for the administrative and financial management support.

LITERATURE CITED

Department of Agriculture, Municipality of Carmen, 2011, *Pandong Bato Marine Sanctuary Management Plan 2011-2015*.

Melana D., Ill Atchue J, Yao C E, Edward R, Melana E., Gonzales H., 2000, *Mangrove Management Handbook*, Department of Environment and Natural Resources , Manila Philippines through Coastal Managemet Project, Cebu City, Philippines. 96p.

Melana D., Melana E., Mapalo E. 2000, *Mangrove Management and Development in the Philippines*, A meeting on Mangrove and Aquaculture Management, Bangkok, Thailand.

Primavera J. Esteban M, 2008, *A review of Mangrove Rehabilitation in the Philippines: Successes, Failurers and Future Prospects*, Wetland Ecology Management, Manila Philippines.

Walters B. 2004, *Local Management of Mangrove Forest in the Philippines: Successful conservation and Efficient Resource Exploitation*, Human Ecology, Vol 32, Prenum Publishing Corporation. Canada.