

Best Participatory Practices in Mangrove Conservation Management: The Case in the Mangrove Rehabilitation Program in the Fishing Villages in the Philippines

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Abstract

The mangrove conservation program is one of the measures to address climate change at the village or community level and is the most effective and sustainable. For it entails a community participatory approach and is anchored on the participation of the private sector, and people's organizations. Bayabas, a coastal municipality of Surigao del Sur, in the Philippines with the communities Cabugo, Magobawok, Belete, and La Paz, the sites of the study, has a robust mangrove conservation program. The study used survey and observation/case study methods which capture the organizational culture of the sites. The findings of the study include that the Mangrove Conservation sites were established in response to the significant provisions of the Local Government Code of 1991 bearing on Environmental Conservation duly supported by an Ordinance of the LGU of Bayabas. The operation of the Mangrove Conservation sites was being assisted by the People's Organization (PO) which is also a quasi-cooperative for fishers. The POs were established by a joint effort of the PFAR/BFAR and the LGU of Bayabas. Sagip Wakatan, the Mangrove Conservation Program of the LGU of Bayabas was anchored on food security, sustainable development, people's empowerment, eco-tourism, and the response to climate change initiatives at the grassroots levels. Livelihood integration is one of the most important features of the Mangrove Conservation Program and was directly channeled into the four People's Organizations (POs). The fishers across four sites are active enough in their participation in the Mangrove Conservation. The LGU of Bayabas further, vigorously implemented the Mangrove Conservation program in partnership, with other government agencies and the private sector.

Keywords: Sagip Wakatan, Mangrove Conservation, Participatory Approach, coastal conservation management.

Introduction:

The surging climate change brought about by global warming made the local government units in the Philippines responsible for climate change initiatives and programs. Environmental governance program implementation is becoming part of local governments' mandate across the provinces in the country (Tomaquin & Senoc, 2008; Tomaquin, 2005). Moreover, coastal areas such as Surigao del Sur had been doing for quite some time coastal management programs in close cooperation with the private sector and various stakeholders, and the national government. Part of the coastal management is the mangrove conservation program (Austin, 2003). Further, Surigao del Sur, a coastal province endowed with rich fishing grounds, seagrasses; mangroves, and coral

covers. It is in this view coastal resource development and climate change initiatives had been enacted by its municipalities. One of which is the “Sagip Wakatan” the mangrove conservation program of the LGU of Bayabas the locale of the study (Sajot et. al., 2008; Ringor, 1992; Mojica, 1996). The program is not only anchored on food security, and eco-tourism but for its aesthetic and cultural value as a fishing area/village (Mojica, 1996). It is a community-based program centered on the philosophy of partnership between and among the LGUs, POs, NGOs, NGAs, and other stakeholders. The program was anchored on the empowerment of the People’s Organization, PO with the end view of developing self-sustaining communities with a passion for sustainable use of mangrove resources (Bosold, 2012; Israel, 2001).

The strong point of the mangrove conservation program of LGU Bayabas was due to the adoption of a participatory approach (PA) in its aim and execution. The program is anchored on the sustainable use of resources, an anti-poverty initiative at the grassroots level. Further, the program was anchored on building self-sustaining community/communities, and empowerment at the village level (Ordinance No.2, 2009; Philippine Fishery Code, 1991). The integration of livelihood initiatives has tremendously helped in eradicating poverty conditions in the sites of the study. The study would like to discuss the implementation of “*Sagip Wakatan*” the mangrove conservation program of Bayabas in Surigao del Sur.

Objectives of the Study:

The objectives of the study are as follows:

- i. To determine the extent of implementation of the mangrove conservation program.
- ii. To determine the agencies that collaborated/assisted in the mangrove conservation program;
- iii. To find out the effectiveness of the participatory approach in the mangrove conservation program;
- iv. To determine the success indicators of the mangrove conservation program;
- v. To determine the challenges encountered in the mangrove conservation program.
- vi. To determine the attitudes of the fishers in the mangrove conservation program.

The Research Design:

The study used survey and case study methods. The said methods are intended to be complimentary. The survey method will be used aided by a focus on group discussion. The data were subjected to the following: for the socio-demographic profile, the frequency distribution with a simple percentage was used. The total weighted mean will be used in the problems encountered; analysis of variance was used in delivering the significant difference in the problems across sites. Other approaches used to cross-check the effectiveness of the method viz: Observation method, Interview method, non-participative observation, and fieldwork. This method mainly relies on the questionnaire/perception. The questionnaire uses both open-ended questions and fixed alternative questions. In open-ended questions, the respondents were free to reply to open-ended questions in their own words rather than being limited to choosing from a set of alternatives. In fixed alternative questions the respondent is asked to choose the alternatives that mostly correspond to his position on the topic/subject. The primary data of the study were taken from the self-constructed questionnaire/perception, focus group interview, and participative observation.

The Research Environment and Time Limitation:

Bayabas is a coastal municipality facing the Pacific seaboard. It has the following Barangays: Amag, Balite, Cabugo, Cagbaoto, La Paz, Magobawok, and Panawsawon. The sites of the study are *Balete, Magobawok, Cabogo, and La Paz*. The town possesses diverse coastal and marine features, including extensive intertidal mudflats, wide fringing coral reefs, lush seagrass beds, and dense mangrove forests that serve as habitats, feeding grounds, and spawning areas to many fish and marine invertebrate species. In addition, its dense seagrass beds have traditionally harbored sea turtles and dugongs while the extensive mangrove areas and wetland provide life support to nearshore fishes and organisms associated with the wetland ecosystem. Bayabas is blessed with diverse marine biodiversity. These supplied fish in the neighboring towns and a major source of employment in the town. The reef formations are strategically stretched across the major fishing grounds namely *Magobawok, Balete, Cabogo, Cagbaoto, and La Paz*. The study was conducted from November 12, 2012, to September 2013. This study does not cover any improvement of the sites mentioned beyond September 2013. Thus the study was conducted from November 12, 2012, to September 2013 only. This study does not cover any improvement of the sites mentioned beyond September 2013.

Presentation and Analysis of Data:

Table 1: Distribution of the Training attended by the Fishers

Names of Training	Sponsoring Agency
Mangrove Conservation	LGU, DENR
Marine Protected Area Management	LGU, DENR
Fishers Cooperative Management	LGU
Mud Crab Fattening	BFAR
Fish pens/cage Operation training	BFAR

Table 2: Extent of Implementation of Mangrove Conservation

Area of Implementation	Range	Descriptive Rating
Planning	4.19	Very Good
Maintenance	3.36	Very Good
Facilities	3.38	Fair
Promotion	3.40	Very Good
General Mean	3.56	
General Description Rating		Very Good

Table 3: Distribution of the Participatory Approach used in the Mangrove Conservation Program, Agencies Involved, and status of Implementation

The Participatory Approaches Utilized in Mangrove Conservation	Agencies Involved	Status of Implementation
Non-Government Organization Involvement	BLGU, MLGU, NGO's	Active
Organization of Peoples Organization	BLGU, MLGU	Active
Community-based enforcement of mangrove ordinance	BLGU, MLGU ,PO's	Active
Participation in the Planning of the mangrove conservation	NGP of DENR, MLGU, BLGU	Active
Adequate assistance from BFAR for Technical and Livelihood assistance	BFAR, MLGU, BLGU	Active
Involvement of the community in the decision-making of the mangrove conservation site	MLGU, BLGU, DENR	Active
Community-based mangrove tree planting	BLGU, MLGU, DENR , NA's (National Agencies)	Active
Environmental Promotion and Education	BLGU, MLGU , DENR , PLGU	Active
Use of Bill Boards and Tri-Media in the promotion of the mangrove conservation program	BLGU, MLGU , DENR	Active
Volunteer work in mangrove conservation	BLGU, MLGU	Active
Linkages with other National Agencies	BLGU, MLGU , NA's (National Agencies)	Active

Table 4: Distribution of the Success Indicator of the Mangrove Conservation Program.

Success Indicator	Status
Identification of species of the Mangrove	Implemented
Penalized the cutting of mangroves	Implemented
The Community Piously attending the meeting called for about improving the management of mangrove conservation	Implemented
Highly cooperative workers who provided voluntary work in the management of the mangrove conservation site.	Implemented
Supportive BLGU, MLGU	Implemented
Assistance from BFAR	Implemented
Assistance from NGP of DENR	Implemented
Collaboration of various sectors	Implemented
The fish warden deputized in guarding the sites	Implemented
Robust mangrove tree planting	Implemented
Active NGO collaboration	Implemented
Robust use of billboards and social media in the promotion of the mangrove conservation program	Implemented

Table 5: Summary of ANOVAs test of Difference in the Problems Encountered across Sites¹

Source of variation	Sum of Squares	Mean Square	Degree of Freedom	F-ratio Computed	F-ratio Critical value	Decision
Treatment in between	0.45	0.15	3	0.26	2.76	Not Significant
Error within	29.54	0.57	52			

¹ No difference noted across sites

Findings:

Based on data analysis, the following are the findings:

- i. The majority of the fishers are males since fishing is a male-dominated occupation.
- ii. Most of the respondents are married and engaged in some other occupation/source of income besides fishing.
- iii. All the respondents attended fishery-related training.
- iv. The respondents are active members of the POs (People Organizations)
- v. The maintenance of the conservation sites is perceived as moderately effective.
- vi. The governance of the Mangrove forest is rated as moderately effective.
- vii. The components/features of the Mangrove Conservation Program are perceived as Well Implemented.
- viii. The support of the different government sectors such, as BLGU, PFAR, and BFAR, DENR is rated as very much participating.
- ix. The Implementation of the different modes of participatory approach (PA) in Mangrove Conservation is rated as much implemented.
- x. The determinant factors in the success of the Mangrove Conservation Program are perceived as effective.
- xi. The challenges in the management of the Mangrove Program across sites are rated as prevailing.
- xii. The attitude of the fishers in Mangrove Conservation has an overall description of positive.
- xiii. There is no difference in the challenges encountered across sites. They are more or less the same.

Conclusion:

Based on the findings, the following is concluded:

- i. The Mangrove Conservation sites were established in response to the significant provisions of the Local Government Code of 1991 bearing on Environmental Conservation duly supported by the Ordinance of the LGU of Bayabas.
- ii. The operation of the Mangrove Conservation sites was funded by MLGU Bayabas in cooperation with the People's Organization (PO) which is also a quasi-cooperative for fishers. The POs (Peoples organizations) was established by a joint effort of the PFAR, BFAR, and DENR for NGP and the LGU of Bayabas.
- iii. Sagip Wakatan, the Mangrove Conservation Program of the LGU of Bayabas was anchored on food security, sustainable development, people's empowerment, eco-tourism, and response to climate change initiatives at the grassroots levels.
- iv. Despite the challenges encountered the sites continuously managed the mangrove reserve with the robust leadership of LGU Bayabas.
- v. Livelihood integration is one of the most important features of the *Sagip Wakatan* Program.

- vi. The fishers across four (4) sites are active enough in their participation in the Mangrove Conservation.
- vii. The LGU of Bayabas vigorously implemented the Mangrove Conservation in tandem with other government agencies and the private sector.
- viii. Assessment/evaluation/monitoring of the sites was properly undertaken
- ix. The success story of Bayabas Mangrove Conservation is a result of effective Bio-Physical management and varied livelihood assistance to the fishers.
- x. Success indicators/Determinant factors in the success of Mangrove Conservation include survey mapping, identification of species of mangroves, no cutting of Mangroves, attendance in meeting supportive LGU, and less conflict among the members of the mangrove conservation people's organization. And the cooperation of the various stakeholder and the national line agencies like DENR and BFAR.
- xi. The fishers have a positive attitude toward the Mangrove conservation program.
- xii. Mangrove Conservation Program as perceived by the fishers was satisfactorily implemented.
- xiii. The Mangrove conservation program successfully harnessed fishers' empowerment.
- xiv. Monitoring of the Mangrove Conservation was properly instituted.
- xv. The challenges encountered in the four sites namely *Cabugo, Magobawok, Belete, and La Paz*, are more or less the same.

Recommendations:

Based on the conclusions, the following is recommended:

- i. More NGOs are needed for more collaboration in Mangrove Conservation.
- ii. Intensify *Fish Warden Program*. This also includes the Para-legal training of the *Bantay Dagat* which will be essential in the training of the fish warden.
- iii. Linkages with foreign funding institutions are recommended, for possible linkages with foreign development agencies.

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