

Comparative Participation in Biodiversity Management Activities by the Village Conservation Group Members of St. Martin's Island

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Abstract

The study was undertaken to determine the extent of comparative participation in different biodiversity components. It was conducted in St. Martin's Island under Teknaf Upazila of Cox's Bazar district. Comparative participation in coastal biodiversity components by the people was the major focus of the study. A 4-point rating scale was used to measure the extent of comparative participation by the people. Data were collected by using structured interview schedule during April 2008 from randomly selected 92 members from a total of 365 members from six Village Conservation Groups (VCG). Regarding component-wise the highest proportion (59.78%) of the respondents had medium participation while 32.61 percent had low and 7.61 percent had high participation in wildlife conservation. In fisheries resources the highest proportion (51.09%) of the respondents had medium participation while 40.20 percent had high and 8.70 percent had low participation. In agro-horticultural activities the highest proportion (52.17%) of the respondents had medium participation while 23.91 percent had high and low participation. In community development affairs the highest proportion (70.65%) of the respondents had medium participation while 18.41 percent had low and 10.87 percent had high participation. In awaring ecotourism the highest proportion (55.43%) of the respondents had medium participation while 39.13 percent had low and 5.43 percent had high participation. In protection the risk of island the highest proportion (68.49%) of the respondents had medium participation while 21.74 percent had low and 9.78 percent had high participation. In social awareness activities the highest proportion (51.09%) of the respondents had medium participation while 40.22 percent had low and 8.70 percent had high participation. In waste management activities the highest proportion (58.70%) of the respondents had medium participation while 29.35 percent had high and 11.96 percent had low participation. Category-wise the highest proportion (80.43%) of the respondent had medium participation in biodiversity management activities while only 11.96 percent had high and 7.61 percent had low participation. The village conservation group member's level of education, farm size, social participation, extension media contact, organizational participation, experience in biodiversity management activities and knowledge on biodiversity management activities showed significant positive relationship, with their extent of participation in biodiversity management activities. However, their age, family size and annual family income did not show any significant relationships with the same.

Keywords: Participation, biodiversity management, problem, St. Martin's Island

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Introduction

Due to unique geo-physical location Bangladesh is exceptionally characterized by a rich biological diversity (Nishat *et al.* 2002; Hossain, 2001; Barua *et al.* 2001; Chowdhury, 2001). An estimated 5,700 species of angiosperms alone, including 68 woody legumes, 130 fiber yielding plants, 500 medicinal plants, 29 orchids, three species of gymnosperms and 1700 pteridophytes. (Firoz *et al.* 2004; Khan, 1977; Troup, 1975). Loss of biodiversity has immediate and long term effects on human survival. The majority of the world population still depends on wild plants and animal for their daily food, medicine, housing and household material, agriculture, fodder, fuel wood, spiritual sustenance and intellectual stimulation. The loss is even more direct in the case of domesticated biodiversity (Agrawal, 1999). St. Martin's residents and visitors share a special passion for the Island's natural beauty and feel about protection its natural resources. It is a small offshore island in the Bay of Bengal, some 10 km south of the tip of the Teknaf Peninsula and about 8 km west of the northwest coast at the mouth of the river Naf. The local people call it Narikel Jinjira. It is long, narrow and flat; almost 7 km long and 500 m wide at its

widest point and 3.6 m above the mean sea level. St. Martin's Island is very much resource rich and one of the most biologically diverse area and only coral bearing island of Bangladesh. Various living organisms with diversified coral are found here due to congenial natural habitat. The island is very important for its rich plants and wildlife biodiversity (Anonymous, 2006). Government of Bangladesh has strategic plan and programs for getting people involved in different biodiversity management activities. For this reason, both government organization and non-government organization have been working for participation in the management of biodiversity. It is of utmost important to document different aspect of participation in biodiversity management activities by the people. Information on which issue is not available from a reliable source. In order to fulfill the present information gap, the proposed study was undertaken by the researchers. The major objectives of the study were to determine the level of comparative participation in various biodiversity components by the VCG members and the relationship between selected characteristics of the habitants their extent of participation.

Methodology

The study was conducted in St. Martin's Island under Cox's Bazar district. The Island which is 590 ha in area, has been declared an Ecologically Critical Area (ECA) in its entirety (Anonymous, 2006). The Village Conservation Group (VCG), members of which involved with different biodiversity management activities. There were 365 members in six VCGs in the inland that constituted the population of the

study. Among them, 92 members (i.e., 25% of the population) were randomly selected as the sample of the study. A structured interview schedule was used to elicit the data of the study. Data were collected from their selected respondents during 1 to 22 April, 2008 by the first author himself. The extent of comparative participation in the biodiversity components was the main focus of the study. Eight components of

comparative biodiversity activities such as wildlife conservation, agro-horticultural activities, community development activities, awaring eco-tourism, protection of risk of island, social awareness activities and waste management were considered for the study. The extent of comparative participation was classified separately into eight components each of which included five specific activities of biodiversity. A 4-point rating scale was used for the measurement of the variable. Questions

were asked to know the respondents level of participation in five biodiversity management activities under a component, and the scores were given as 0 for 'never' 1 for 'rarely' 2 for 'often' and 3 for 'very often'. Thus, the score of the participants in comparative participation in biodiversity components activities could range from 0 to 120, where '0' indicated no participation and '120' indicated the highest level of participation.

Findings and Discussion

Component-wise comparative participation of respondents in biodiversity management activities

Participation of respondents in biodiversity management activities was consisting of eight broad activities. These activities includes: wildlife conservation, fisheries resources, agro-horticultural activities, community development affairs, awaring ecotourism, protection the risk of islands, social awareness activities and waste management. Component-wise comparative participation of respondents in biodiversity management activities was classified into three categories such as high, medium and low and salient feature of this participation are stated in the subsequent sub section. Comparative participation of respondent in different biodiversity activities have been shown in Table 1.

Data presented that the highest proportion (59.78%) of the respondents had medium participation in wildlife conservation while 32.61 percent had low and 7.61 percent had high participation. The findings indicate that that most of the participants had medium to low participation in wildlife conservation related aspect. In fisheries

resources the highest proportion (51.09%) of the respondents had medium participation while 40.20 percent had high and 8.70 percent had low participation. It can be easily seen that from the findings that most of the respondent had medium to high participation in fisheries resources related aspect. In agro-horticultural activities the highest proportion (52.17%) of the respondents had medium participation while 23.91 percent had high and low participation. It can be easily seen that from the findings that more or less half of the respondents had medium participation in agro-horticulture related aspect because a great portion of the participants spend time in agro-horticulture activities for livelihood. In community development affairs the highest proportion (70.65%) of the respondents had medium participation while 18.41 percent had low and 10.87 percent had high participation. It can be easily said from the findings that most of the respondents had medium to high participation in community development affairs related aspect because they willingly join in different community development activities in the study area.

Table 1 Component-wise comparative participation of the respondents (N=92)

Components (Measuring units)	Range		Respondents			Mean	Std. Dev.
	Possible	Observed	Categories	No.	%		
Wildlife conservation (Score)	0-15	1-14	Low (up to 5)	30	32.61	6.76	2.85
			Medium (6-10)	55	59.78		
			High (>10)	7	7.61		
Fisheries resources (Score)	0-15	0-15	Low (up to 5)	8	8.70	9.40	2.96
			Medium (6-10)	47	51.09		
			High (>10)	37	40.22		
Agro- horticultural activities (Score)	0-15	0-15	Low (up to 5)	22	23.91	7.87	3.47
			Medium (6-10)	48	52.17		
			High (>10)	22	23.91		
Community development affairs (Score)	0-15	2-13	Low (up to 5)	17	18.41	7.53	2.41
			Medium (6-10)	65	70.65		
			High (>10)	10	10.87		
Awaring eco- tourism (Score)	0-15	0-12	Low (up to 5)	36	39.13	6.20	2.86
			Medium (6-10)	51	55.43		
			High (>10)	5	5.43		
Protection the risk of islands (Score)	0-15	3-12	Low (up to 5)	20	21.74	7.16	2.31
			Medium (6-10)	63	68.49		
			High (>10)	9	9.78		
Social awareness activities (Score)	0-15	1-15	Low (up to 5)	37	40.22	6.32	2.72
			Medium (6-10)	47	51.09		
			High (>10)	8	8.70		
Waste management (Score)	0-15	2-13	Low (up to 5)	11	11.96	9.10	2.77
			Medium (6-10)	54	58.70		
			High (>10)	27	29.35		

In awaring ecotourism the highest proportion (55.43%) of the respondents had medium participation while 39.13 percent had low and 5.43 percent had high participation. It can be easily said from the findings that half of the respondents had medium participation in awaring ecotourism related aspect because they play a responsible role in creating awareness to the tourism in the St. Martin Islands. In protection the risk of island the highest proportion (68.49%) of the respondents had medium participation while 21.74 percent had low and 9.78 percent had high participation. The findings reveal that most

of the respondents had medium to high participation in protection the risk of island related activities because they have great responsibility to save the island against various manmade and natural disaster. In social awareness activities the highest proportion (51.09%) of the respondents had medium participation while 40.22 percent had low and 8.70 percent had high participation. It demonstrates from the findings that more than half of the respondents had medium participation in social awareness activities related activities because they willingly create social awareness to the people. In waste

management activities the highest proportion (58.70%) of the respondents had medium participation while 29.35 percent had high and 11.96 percent had low participation. It is evident from the findings that most of the respondents had medium to high participation in waste management activities related activities, it means that, they actively play a vital role for cleanliness of their locality in St. Martin's Island.

Category-wise comparative participation of respondents in biodiversity management activities

The category-wise comparative participation in biodiversity management activities of the respondents could range from 0 to 120, while the observed scores ranged from 26-95. The average was 60.34 with a standard deviation of 14.66 (Table 2). On the basis of biodiversity management activities participation scores of the respondents were categorized into three such as low, medium and high participation as shown in Table 2.

Table 2 Category-wise comparative participation of respondents in biodiversity management activities

Respondents			Mean	Std. Dev.
Categories	No.	%		
Low (≥ 40)	7	7.61	60.34	14.66
Medium (41-80)	74	80.43		
High (>80)	11	11.96		

Table 2 shows that the highest proportion (80.43%) of the respondent had medium participation in biodiversity management activities while only 11.96 percent had high and 7.61 percent had low participation. The findings indicate overwhelming majority of the respondents had medium to high participation in biodiversity management activities because biodiversity management

and conservation are responsible for sound and sustainable environment.

Relationship between dependent and independent variables

Relationship between the ten selected characteristics of the respondents independent variables) and their extent of participation in biodiversity conservation activities (dependent variable) were determined through Pearson's coefficient of correlation (r), results of which have been presented in Table 3.

Table 3 Relationship between coastal people's participation in biodiversity conservation and their selected characteristics

Selected characteristics	'r' values with participation
Age	-0.131
Level of education	0.494**
Family size	0.093
Farm size	0.317**
Annual family income	0.187
Social participation	0.551**
Extension media contact	0.662**
Organizational participation	0.438**
Experience in biodiversity management activities	0.317**
Knowledge on biodiversity management activities	0.698**

*= $P < 0.05$ and **= $P < 0.01$ with 92 df

Data presented in Table 3 depict that among ten characteristics of the respondents seven showed significant positive relationships with their participation in biodiversity management activities. However, the rest three characteristics (age, family size and annual family income) did not show any significant relationships with the same. Age of the respondents was not an important indicator concerning the participation in biodiversity management activities, but the level of education and participation in

biodiversity management activities were significantly and positively correlated. Hasan (2006), Rahman *et al.* (2007) and Haque (2008) found similar results in their respective studies. Family size of the respondents was not significantly related to the participation in biodiversity management activities. The findings were supported by Akteruzzaman (2006), Amin (2004) and Khan (2004). Farm size of the respondent had significant positive relationship with their extent of participation in biodiversity management activities. The findings support the observations of Haque (2008), Hasan (2006), Yeasmin (2002) and Akter (2000). Annual family income of respondents had no significant relationship with their extent

of participation in biodiversity management activities but social participation had a significant positive relationship with the same. Akteruzzaman (2006) found similar results in his study. Similarly, organizational participation and knowledge on coastal biodiversity of the respondents had significant positive relationships with their extent of participation in biodiversity management activities. Alam (2004) and Khan (2004) observed similar findings in their respective studies. Finally, the respondents' experience in biodiversity management activities showed a significant positive relationship with their extent of participation, which is quite plausible and well supported by the works of Amin (2004) and Haque (2008).

Conclusion

The majority of the members of VCGs of the St. Martin's Island had medium level comparative participation in biodiversity component activities. The average participation score of respondents was 60.34. The highest proportion 70.65% of the respondents had medium participation in community development affairs. So, there remains further scope to increase participation in different biodiversity activities. Participation in different components of biodiversity activities, it could be concluded that appropriate

measures are needed to increase coastal people's involvement in different activities. The village conservation group members are needed increasing level of education, farm size, social participation, extension media contact, organizational participation, experience in biodiversity management activities and knowledge on biodiversity management activities. Thus, special care may be taken by concerned NGOs and GOs to motivate and train the people towards better performance in biodiversity management.

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