



An Evaluation of Functionality of the Co-management  
Organization of the Ratargul Special Biodiversity Protected Area  
in Sylhet, Bangladesh.

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Appendices 01

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## Abstract

Co-management in biodiverse forests and wetlands was introduced in Bangladesh through four successive USAID-funded initiatives. The impacts of this innovative community-based management approach on natural resources and livelihoods reveal positive influences on biodiversity conservation in the Protected Areas (PAs). “The Protected Area Management Rules, 2017” was promulgated as the legal instrument for co-management of forest PAs. This report summarizes the findings of the organizational assessment of the functionality of the Co-management Organization (CMO) of the Ratargul Special Biodiversity Conservation Area (RSBCA) towards its sustenance. It also represents the analysis and feedback gained from a review of internal and external stakeholder survey responses, focus groups, and interviews. Results from these studies may provide insight into assisting in embarking on a culture of operational excellence, data-driven decision-making, innovation, and stakeholder-centric focus. Six broad areas such as 5 (Five) tiers of CMO and its budget and fund management activities were analyzed to evaluate the present status. The levels of functionality were observed as Co-management General Council (CMGC) = 24.70%; Co-management Executive Committee (CMEC) = 79.09%; People’s Forum (PF) = 70%; Village Conservation Forum (VCF) = 52.50%; Community Patrol Group (CPG) = 0.00%; Budget and fund management = 40.90%. The overall functionality of the studied CMO was examined as moderately functional (56.35%). The results suggested that the CMO of the RSBCA was functional having some disparities and challenges in the office administration and coordination across all tiers. Stakeholder workshops and pieces of training on PA management issues such as Annual Development Plan (ADP) preparation, revenue sharing, conflict management, gender, and social inclusion could be conducive to overcoming these limitations. Although the present CMO appeared moderately functional nevertheless, it did not achieve the expected level of functionality. Therefore, early intervention on the issues needs to be adopted to ensure its viability and long-term sustainability.

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Language: English

**Keywords:** Biodiversity, Co-management, CMC, CMO, CPG, Functionality, Ratargul Swamp Forest.

## Table of Contents

Abstract.....	2
List of Tables.....	4
List of Figures .....	4
ACRONYMS.....	5
1. Introduction and background.....	6
1.1 Objectives of the study.....	8
2. Materials and Methods .....	9
3. Results .....	18
A. Basic Information of the Ratargul Special Biodiversity Protected Area Co-management Committee (RSBCACMC):.....	18
B. Functionality Status of Co-management General Committee (CMGC).....	19
C. Functionality Status of Co-management Executive Committee (CMEC).....	23
D. Functionality Status of People’s Forum (PF) .....	26
E. Functionality Status of Village Conservation Forum (VCF).....	29
F. Functionality Status of Community Patrolling Group (CPG).....	31
G. Present management capacity of Budgets and Funds of the CMO .....	32
H. Overall Functionality Status of the RSBCA CMO .....	35
4. Discussions .....	36
4. Conclusion.....	39
6. Recommendations.....	40
7. References.....	41
8. Annex-I .....	43

## LIST OF TABLES

Table 1. Benefit sharing of forest products from the PAs.....	14
Table 2: Five (5)-Point Likert Scale .....	17
Table 3: CMO Functionality Identification Matrix (FIM) .....	17
Table 4: Basic facts of the Ratargul Special Biodiversity Conservation Area Co-management Committee.....	18
Table 5: The present status of CMGC.....	19
Table 6: Score of the CMEC that indicates the present status of functionality. ....	23
Table 7: Score of the Peoples Forum (PF) .....	27
Table 8: Score of the Village Conservation Forum (VCF) .....	30
Table 9: Score of the Community Patrolling Group (CPG) .....	32
Table 10: Score of the CMO on the Budget and Fund .....	32
Table 11: CMO Functionality Identification Matrix (FIM) .....	35
Table 12: Functionality assessment score of different tiers of CMO of the RSBCA .....	36

## LIST OF FIGURES

Figure 1. Timeline of forest policy, acts, rules and PA establishment (Ullah et al., 2022).....	7
Figure 2. Location of RSBPA (Humayun-Bin-Akram & Masum, 2020). ....	10
Figure 3. An overview of the Ratargul swamp forests with the predominant trees: Hijol and Koroch. .	11
Figure 4. Most threatened faunal diversities are at the Ratargul swamp forest (Mondal, 2023) .....	12
Figure 5. Structure of forest PA co-management governance in Bangladesh (Islam et al., 2021) .....	14
Figure 6. Three spheres of sustainability within a co-management model (Khan et al., 2022). ....	15
Figure 7. Levels of functionality of CMO of the RSBCA (Moderately Functional) .....	36

## ACRONYMS

ADP	Annual Development Plan
BFD	Bangladesh Forest Department
CMC	Co-management Committee
CMEC	Co-management Executive Committee
CMGC	Co-management General Committee
CMO	Co-management Organization
CPG	Community Patrol Group
CREL	Climate-Resilient Ecosystems and Livelihoods
DFO	Divisional Forest Officer
FGD	Focus Group Discussion
FDC	Forest Dependent Community
IPAC	Integrated Protected Area Co-Management
RSBCACMC	Ratargul Special Biodiversity Conservation Area Co-management Committee
RSBCA	Ratargul Special Biodiversity Conservation Area
RSBPA	Ratargul Special Biodiversity Protected Area
NRMBC	Natural Resource Management and Biodiversity Conservation
NSP	Nishorgo Supported Project
MACH	Management of Aquatic Ecosystems Through Community Husbandry
PF	People's Forum
SUFAL	Sustainable Forests and Livelihoods
UNO	Upazila Nirbahi Officer
VCF	Village Conservation Forum

## 1. Introduction and background

The conventional fortress-style management system of forest resources in Bangladesh has been recognized as being unsuitable for the resource base and socio-economic situation. Because of the inability to prevent widespread overexploitation of forest resources, many state-owned forests have open access and have been rapidly degraded under population pressure and increasing demand of forest products (Biswas & Choudhury, 2007). The Bangladesh Forest Department (BFD) having limited manpower and traditional top-down management approach ignoring livelihood of the forest dependent community were unable to protect natural resources from the organized crime syndicate. In this context, Co-management has been proposed as means of developing partnerships among various stakeholders to unite them in efforts to stop illegal extraction of forest resources in 2004 (Roy & DeCosse, 2006).

‘Co-management’ is a forest management concept implemented in the protected forests of Bangladesh for the enhancement of the biodiversity conservation as well as community wellbeing. Here, forest dependent people get involved in the conservation and protection efforts facilitated by the BFD. Co-management thus refers to ensuring active participation of all concerned parties in the management or maintenance of natural resources based on consensus among all stakeholders involved in the management of natural resources of an area as per the Wildlife (Protection and Security) Act 2012. More precisely, Forest PA Co-management involves community people in forest protection, conserves biodiversity, enhance forest coverage or afforestation or reduces deforestation. Co-management practices in PA improve the overall ecosystem by habitat creation of wildlife, maintaining viable population of species. It thus helps in maintaining ecological and evolutionary processes that enhance and sustain biodiversity (NSP, 2018). The creation of PAs, which encompass nearly 15% of the Earth’s surface, is a crucial approach in the conservation of forests (Watson et al., 2014a). Local communities are now being involved in the administration of forests as a result of the recent global development of PAs, a strategy known as “Co-management”. PAs under co-management are expected to conserve biodiversity while providing support to the local communities. Co-management of forest PA, an arrangement to share power between the Forest Department and the forest-dependent community (FDC) for forest management (Berkes, 2010; Carlsson & Berkes, 2005) has been viewed as the best probable solution to the problem. Co-management is the process whereby communities work in concert with the government, sharing both power and responsibilities to conserve natural resources

and protect the ecosystem. A co-management organization is a community group that supports co-management efforts (Thompson, et al., 2018). In Bangladesh, PAs are declared, governed, and managed by different legislative tools such as forest policies, acts, and rules. The Wildlife (Conservation and Security) Acts 2012 was enacted with especial focus on governing the PAs. The Protected Area Management Rules of 2017 was also enacted in November 2017 under the umbrella of this act related to wildlife conservation. This act included important provisions regarding the declaration of PAs, their management plans, prohibited activities in the PAs and co-management approaches (Ullah et al., 2022). In the PA management rules of 2017, it has been clearly defined how to manage the PAs and co-management committees, and also specified who should be the main beneficiaries and included detailed about the distribution of forest resources (BFD, 2017) . Till to date 60 PAs have been established in Bangladesh following the wildlife acts and PA rules (Figure 1).

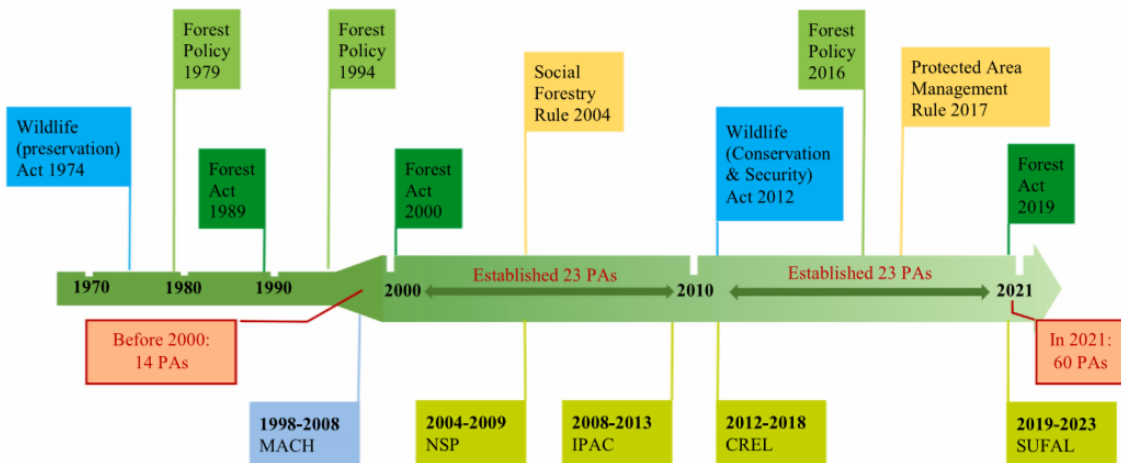


Figure 1. Timeline of forest policy, acts, rules and PA establishment (Ullah et al., 2022).

In Bangladesh, ‘The Ratargul Special Biodiversity Protected Areas’ (RSBPA) is the only freshwater swamp forest, which has been declared as PA because of its unique biological significance. This PA is highly prone to degradation due to the heavy pressure of anthropogenic disturbance (Humayun-Bin-Akram & Masum, 2020). This distinct swamp forest is rich in biodiversity and provides several ecosystem services. The forest has been designated as a ‘Special Biodiversity Protected Area’ because of the presence of Hijol (*Barringtonia acutangula*) and Koroch (*Pongamia pinnata*) trees, a variety of local fish, snakes, monkeys, lizards, insects, and birds (Choudhury et al., 2004). The adverse impact of the non-sustainable extraction of forest resources is exacerbated by weak law enforcement. Biotic pressures are

intensified by the impact of climate change and disrupt the food chain of a sustainable ecosystem. A significant response has been observed to mitigate such threats through the establishment of co-management for PA conservation (Rahaman & Dey, 2021).

The government of Bangladesh introduced 'Co-management' in biodiverse forests and wetlands through four successive USAID-funded initiatives such as MACH (1998-2008), NSP (2004-2009), IPAC (2008-2013), CREL (2012-2018) (Figure 1). This innovative community-based management approach had a positive effect on biodiversity conservation in the PAs and has impacted livelihoods (Uddin et al., 200; Khan et al., 2022). Co-management practices in Bangladesh with respect to natural resources are done by both the Government organizations and NGOs. The primary objectives of this management method were to incorporate forest dependent communities into the governance system for sustainable forest resource management and to arrest greater loss of biodiversity (NSP, 2006). Nevertheless, the co-management approach also brought about several challenges. The government of Bangladesh took the initiative (NSP 2004-2009) to form the first co-management organization (CMO) in 2004 and updated it in 2009. Unfortunately, CMOs faced several obstacles in their regular operations due to intermittent meetings and disagreements among stakeholders. The government further took significant steps by introducing the 'Protected Area Management Rules of 2017 in November 2017, serving as a legal framework for co-managing forest PAs (BFD, 2017). Presently the government of Bangladesh is attempting to amend the PA Management rules of 2017. Therefore, it is important to assess the functionality status of the existing CMOs of the forest PAs in the country. In this context, assessment of the functionality of the CMO of the Ratargul Special Biodiversity Protected Area (RSBPA) could be a choice for further decision making in the amendment of the PA Management Rules of 2017.

### 1.1 Objectives of the study

The prime objectives of the assessment of the CMO of the RSBPA include:

- To explore the reasons for the non-functionalities of this co-management entity and its structure (*gaps and challenges*).

- To identify the areas of intervention that would be required to strengthen the CMO in a sustainable way (*support needed*).
- To assess and evaluate good governance and gender inclusiveness including a major focus within the CMO of the RSBPA (*governance and inclusiveness*).
- To provide guidelines for improving the organizational and operational functionality of this CMO at the different tiers (*suggestive guidelines*).

## 2. Materials and Methods

### Study site

The present study area was included in the ongoing project entitled 'Protibesh Activity / USAID Ecosystems' funded by the US Agency of International Development (USAID). One of the components of this project is to assess the status of co-management organizations to identify gaps and challenges and support needed. The Ratargul Special Biodiversity Protected area is one of the proposed study sites to assess status of co-management implementation among the proposed 8 key bio-diverse PAs in the project.

### Geographic locations

The Ratargul Special Biodiversity Protected Area (RSBPA) is a freshwater swamp forest located 26 Km northwest of Sylhet City on the banks of the river Goyain. It is under the administrative control of the Ratargul Beat of the Shari Range, Sylhet Forest Division. The Ministry of Environment and Forests of Bangladesh designated this nation's swamp forest as a "Special Biodiversity Protected Area" on May 31, 2015, vide gazette notification No. MoEF/ (F:S-2) Forest-2/02/Wildlife Sanctuary/12/113 dated 31.5.2015. This area belongs to the Gowainghat Upazila in Sylhet. The special biodiversity conservation area lies between latitudes 25°0'44"N and 91°55'29"E (Figure-2).

### Ecosystem

The Ratargul is the only swamp forest located in Bangladesh and one of the few freshwater swamp forests in the world. Freshwater swamp forests or flooded forests are forests that are inundated with fresh water, either permanently or seasonally. The water comes into the forest from the adjacent Goyain River. This evergreen forest remains submerged under 20 to 30 feet of water during the rainy season.

Ratargul is a historically important site for the collection of the Murta (*Schumannianthus dichotomus*) plant. The swamp forest is rich in biodiversity and provides several ecosystem services (Choudhury et al., 2004). The map shows the land use of landscape areas under each category (Figure 2) (Humayun-Bin-Akram & Masum, 2020). The ecosystem of this area consists of a few different habitats such as rivers, low land with vegetation, and water bodies. During monsoon, the river flows full to the berm and floods the bank. The water flow is reduced to a minimum during the dry period.

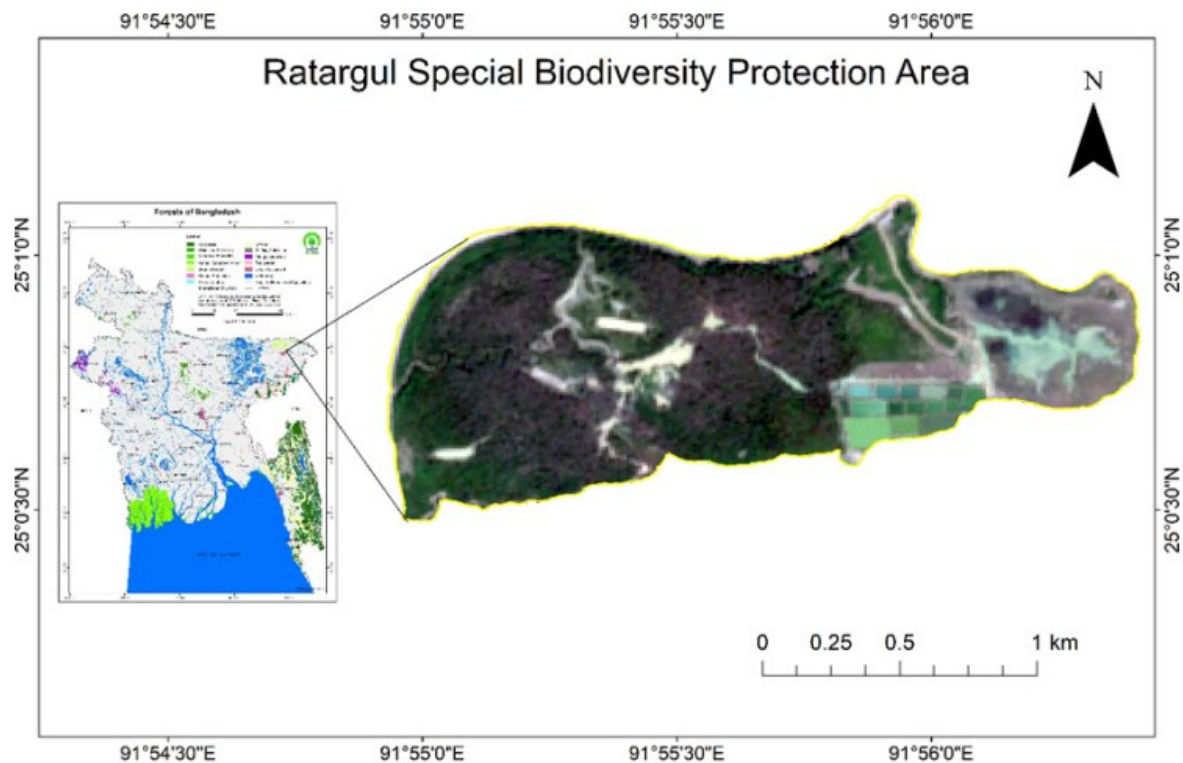


Figure 2. Location of RSBPA (Humayun-Bin-Akram & Masum, 2020).

**Area:** The area of the RSBPA is 204.25 ha. It is comprised of three Mouza such as Ratargul 135.96 ha, Easohesher 53.11 ha, and Bogabari 15.18 ha. The total landscape area of the PA is about 2068.39 ha comprising a 204.25 ha core zone, 1142.14 ha buffer zone, and 722 ha impact zone. The land uses include forest, and degraded forest which includes herbs, shrubs-bushes, murta, and cane forests, settlement, aquaculture, wetlands, river canals, and encroached land. Buffer zones are mostly degraded and encroached.

**Flora:** The forest has two stories. The top story consists of trees mostly with Koroj, Hijol, *Ficus religiosa*, and *Syzigium fruticosum*. The second story consists of Murta. The forest is categorized as a ‘Wet evergreen forest’. The canopy height is 80% and forest health is quite good. There were 106 floral species have been recorded. Among the plants, 4 species were vulnerable (VU) such as *Cleome hassleriana*, *Terminalia arjuna*, *Cissampelos pareira* L, and *Calamus guruba*, one was conservation-dependent, one was near threatened and two were not evaluated. An overview of the Ratargul swamp forest with two dominant trees is displayed in Figure 3.

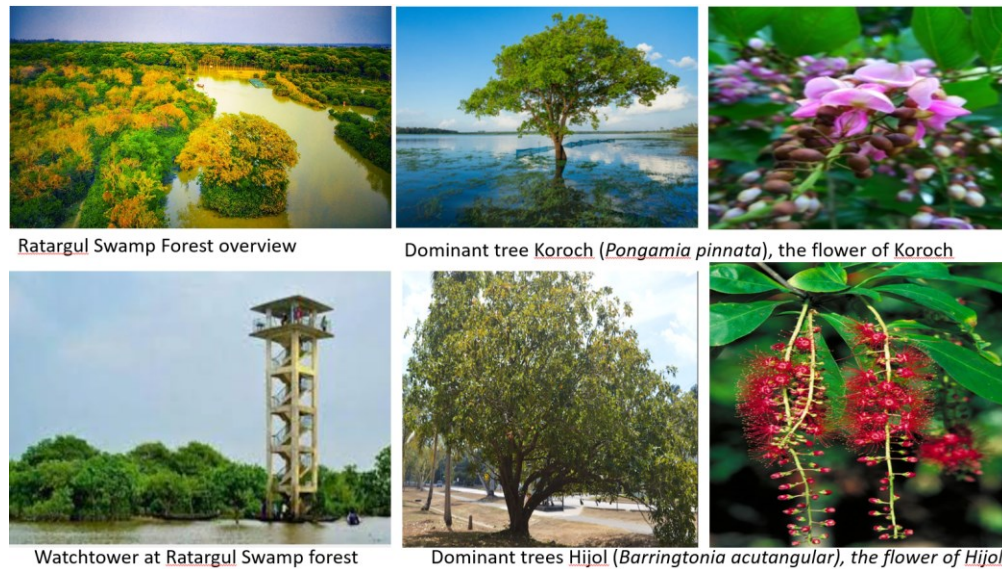


Figure 3. An overview of the Ratargul swamp forests with the predominant trees: Hijol and Koroch.

[www.territorynativeplants.com.au/barringtonia-acutangula-freshwater-mangrove](http://www.territorynativeplants.com.au/barringtonia-acutangula-freshwater-mangrove)  
[www.shutterstock.com/image-photo/1millettia-pinnata-species-tree-pea-family-1949995645](http://www.shutterstock.com/image-photo/1millettia-pinnata-species-tree-pea-family-1949995645)

**Fauna:** The Ratargul swamp forest is also rich in faunal diversity. A total of 9 amphibians containing 1 Bufonoid, 2 Microphylid, 4 Rainid and 2 Racophorid have been recorded in this wetland forest. Of these, *Microphyla ornate*, *M. rubra*, and *Ranaalticola* are locally vulnerable. Twenty reptiles have been recorded, which represent Bataguridae, Gekkonidae, Agamidae, Scinidae, Varanidae, Typhlodae, Colubridae, Elapidae. Four species of snakes (*Bungarus caeruleus*, *B. fasciatus*, *Naja koouthia*, *Naja naja*) represent the family Elapidae. 175 species of birds, 26 species of mammalian species, 46 species of migratory, and 128 species of birds are resident in this swamp forest. Some bird species are globally vulnerable. Of the mammals, the common palm civet, large Indian civet, and small Indian civet are

treated as endangered species. The most common threatened faunal diversities in this swamp forest are displayed in Figure 4.



Figure 4. Most threatened faunal diversities are at the Ratargul swamp forest (Mondal, 2023)

### **Structure and function of the Co-management organization (CMO)**

The structure of the CMO in the forest PAs includes a. **Co-management General Council (CMGC)**, b. **Co-management Executive Committee (CMEC)**, c. **People's Forum (PF)**, d. **Village Conservation Forum (VCF)**, and e. **Community Patrol Group (CPG)**. The structure and functions of the CMO are described in the Protected Area Management Rules of 2017 (BFD, 2017). The co-management participants are the forest-dependent community (FDC) involved in different tiers of co-management governance (Figure 5) (Islam et al., 2021). Co-management governance structure in Bangladesh follows bottom-up approach and their functions include:

a. **Co-management General Council (CMGC)**: It is the formal committee of the CMO is a merely an advisory committee comprised of 38 members from various stakeholders such as representatives from local communities, the BFD, local government administration and civil society. The CMGC approves the CMEC's yearly work plan for managing PAs. The CMGC meets every six months. The tenure of the CMGC is 4 (four) years.

b. **Co-management Executive Committee (CMEC)**. The executive body of the CMGC is the Co-management Executive Committee (CMEC), also with representation from all stakeholder groups. The CMEC is considered as the most important element of co-management governance structure due to its

role and responsibilities. The CMEC updates the VCF roster and conducts patrolling of CPG. The CMEC can create as many CPGs as needed. The CMEC also prepare Annual Development Pan (ADP) and necessary expenditure statement of the PA. The CMEC meets once within two months. The detail functions of the CMEC are stated in PA Management Rules of 2017 (BFD, 2017).

c. **People's Forum (PF)**: The PF is the apex body of the VCFs, formed at the Forest Range level, comprising all VCFs from the PA landscape. The PF should have an executive committee and tenure will be two years. The executive committee of the PF meets once in a month and the PF once in three months, respectively. The prime functions of the PF are to create awareness about the conservation of biodiversity of the PA and its surroundings and also to assist the function of the CMEC.

d. **Village Conservation Forum (VCF)**: The VCF is the lowest level institutions comprised enlisted households that are dependent on forests within five kilometres from the boundary of the PA. The functions of the PF include supporting the BFD and the CMEC in safeguarding forest resources, fostering awareness among the local people regarding compliance with current environmental conservation laws and regulations. Additionally, the forum plays a crucial role in raising awareness about climate change and encouraging local communities to take proactive measures.

e. **Community Patrol Group (CPG)**: The CMEC forms the required number of CPG from the members of the VCF in consultation with the Divisional Forest Officer. The primary responsibilities of the CPG include conducting patrols jointly with the local staffs of the BFD in the PA area and to assist all relevant activities related to forest offenses. The member of the CPG is entitled to receive remuneration as determined by the DFO.

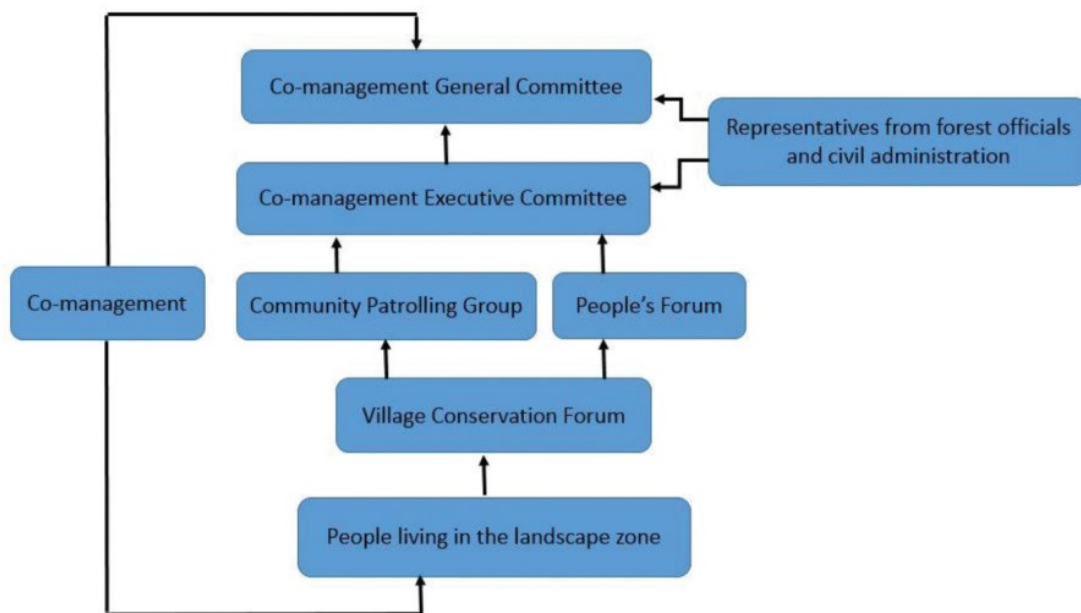


Figure 5. Structure of forest PA co-management governance in Bangladesh (Islam et al., 2021)

### Benefit sharing of forest products from the PAs.

As per the regulations outlined in the PA Management Rules of 2017, the revenue generated from the forest products within the Protected Area (PA) will be allocated between the BFD and Co-management Executive Committee (CMEC). The distribution will be determined on the source of income, as specified in Table 1, percentage ranging from 50% to 100% (BFD, 2017).

Table 1. Benefit sharing of forest products from the PAs.

Serial No.	Source of income	Parties	Share of revenue
1	Service from nature tourism	Bangladesh Forest Department (BFD)	50%
		Co-management Executive Committee (CMEC)	50%
2	Secondary or non-timber products from Silvicultural operations such as pruning, thinning, and fishing etc.)	Bangladesh Forest Department (BFD)	0%
		Co-management Executive Committee (CMEC)	100%
3	Environment friendly tourism, secondary or nontimber forest products such as fish, honey etc.	Bangladesh Forest Department (BFD)	50%
		Co-management Executive Committee (CMEC)	50%

## Sustainability concept within the Co-management model

Sustainable forest management offers a holistic approach to ensure forest activities deliver **social, environmental, and economic benefits** (three pillars of sustainability), balance competing needs, and maintain and enhance forest functions now and in the future (PEFC, 2023). The research has demonstrated a connecting link with poverty, inequality and environmental degradation among these three pillars of sustainability in the co-management practices (Figure 6). The study by Khan et al., (2022) reveals that key factors of sustainable development – the *environment*, development (particularly *economic issues*), *society* (including social services, freedoms, and more), and significant links between these -have been related to poverty, inequality, and environmental degradation.

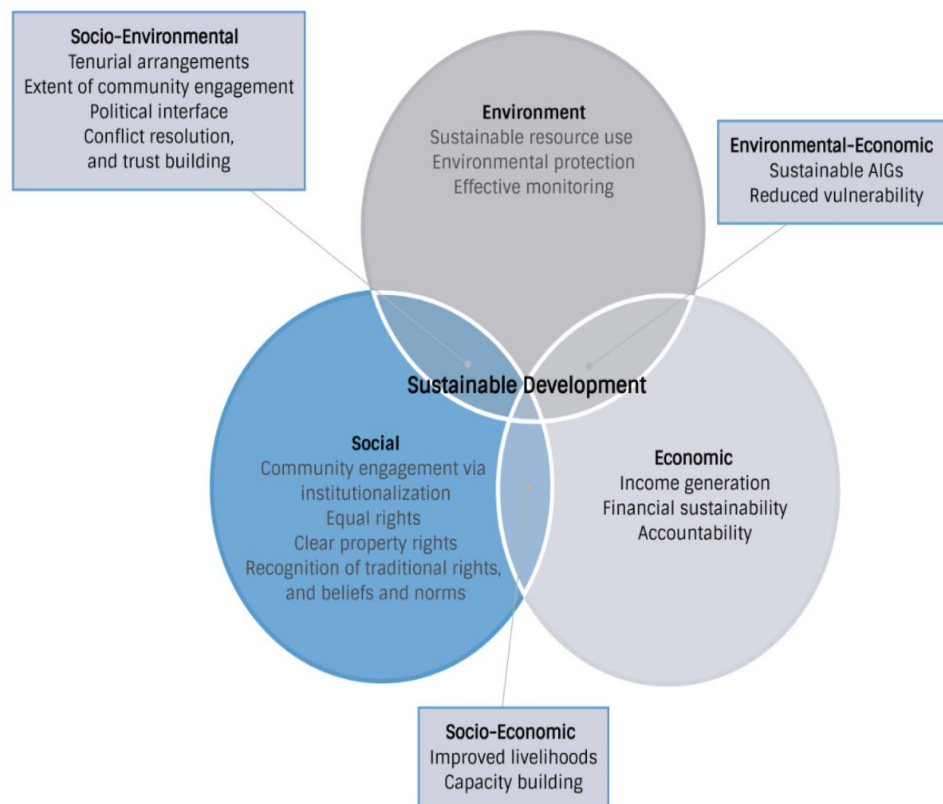


Figure 6. Three spheres of sustainability within a co-management model (Khan et al., 2022).

## **Field survey**

The assessment of the CMO was based on a toolkit known as the “Functionality Assessment Toolkit of the Co-management Organization”. The criteria for developing the toolkit were chosen from the PA Rules of 2017. As a Forest Management Specialist of the USAID Ecosystem project, a toolkit was developed by me and tested in the field at the office of the Co-management Committee (CMC) of Lawchara National Park, Sreemongal and updated accordingly. The updated toolkit was then supplied to the project field staffs in 8 different Key Biodiversity study sites. The field staffs from the Ratargul Special Biodiversity Conservation Area were trained at the office of the CMC of the Lawachara National Park at Sreemongal. They were also taught how to collect data using the toolkit during stakeholder’s interviews. The site officer Shadat Hossain invited the key informants and members to be present at the CMC office on the schedule dates. Four field officers such as Shadat Hossain, Mostafa Haider, Shyamol Kanti Baidya and Ratna Rani Das were conducted interviews of all the committee members and key informants of the CMC of the RSBCA on 19.07.2022, 20.07.2022 and 21.07.2022, respectively at the office of the CMC of RSBCA. The list of participants present during focus group discussion (FGD) of the CMO assessment at the RSBCA is appended as **Annex-1**.

### **a. Data Collection and Assessment**

Six different categories of information were collected for the functionality assessment of the CMO. These are A. **Basic information about the CMC**; B. **Information of about the CMGC**; C. **Information about the CMEC**; D. **Information about the budget and fund management of the CMEC**; E. **Information about PF**; F. **Information about VCF**, and G. **Information about the CPG**.

Focus Group Discussion (FGD) method was used to collect data for the assessment of the CMO of the RSBCA according to questionnaires and guidelines of the toolkits. The participants were briefed on the importance of the CMO assessment. An exercise was conducted on how to respond to the questions before beginning the FGD. During the FGD each of the questions was placed before the participants, after having a consensus among the participants, the exact answers were recorded and set into the Likert scale (Tanujaya et al., 2022). The information provided by the participants was also verified with the official documents kept in the office of CMC.

**b. Evaluation methods**

The Likert scale is a popular scale that is used in social research which provides qualitative information (Tanujaya et al., 2022). In the exercise, each of the criteria was fitted into a 5-point Likert scale to understand the present status of the criteria in the field. The scores were given against each criterion and finally, the total scores were counted. The percentages were determined and eventually, the functionality level was assessed. The 5-point Likert scale is presented in Table 2. Steps were also taken to identify the causes of the non-functionality (if any) of the CMO so that the government can intervene to make the CMO functional. The evaluation of the functionality of the CMO was based on the Functionality Identification Matrix (FIM) (Table 3).

**Table 2: Five (5)-Point Likert Scale**

Most frequent	Frequent	Moderately frequent	Less Frequent	Not Frequent
5	4	3	2	1
When an event is happened for more than 80% for the last 5 years	When an event is happened for 60-80% for the last 5 years	When an event is happened for 40-59% for the last 5 years	When an event is happened for 20-39% of the last 5 years	When an event is happened for less than 20% of the last 5 years

**Table 3: CMO Functionality Identification Matrix (FIM)**

Grading	Score
Very Functional	>80%
Functional	60-80%
Moderate Functional	40-59%
Poorly functional	20-39%
Not functional	<20%

### c. Data Analysis

The data were recorded during FGD and stakeholder interviews. The scores were made according to the Likert scale and then tabulated in an Excel sheet and analyzed. The qualitative data were also recorded in separate sheet and summarized according to the parameters assessed.

## 3. Results

Results are framed on the basic information such as present status of different tires of the CMO (CMGC, CMEC, PF, VCF, CPG) and management capacity of budget and fund of the CMC of RSBCA. Furthermore, functionality identification matrix (FIM), functionality assessment score of different tires of CMO and levels of functionality of CMO of the RSBCA are also summarized in this section. The obtained scores and existing scenario of salient information collected from the questions of each tire of the CMO of RSBCA are briefly outlined right after the results in the respective tables.

### A. Basic Information of the Ratargul Special Biodiversity Protected Area Co-management Committee (RSBCACMC):

The Ministry of Environment and Forests issued an order establishing the Ratargul Special Biodiversity Conservation Area Co-management Committee in November 2006. Meanwhile, a new rule named “Protected Area Management Rules, 2017” came into effect where elements of the structure and functions of a CMO are clearly stated. The basic facts on the RSBCACMC are presented in Table 4.

Table 4: **Basic facts of the Ratargul Special Biodiversity Conservation Area Co-management Committee**

Serial No	Information Title	Information
1	Name of the CMO	Ratargul Special Biodiversity Conservation Area Co-management Committee
2	Name of the Forest Division	Sylhet Forest Division, Headquarters Sylhet
3	Name of the Forest Range	Sari Range
4	Name of the PA	Ratargul Special Biodiversity Conservation Area
5	Name of Union(s)	Fatepur, Khadimnagar & Nandirgaon
6	Name of the Upazilla(s)	Gowainghat

Serial No	Information Title	Information
7	Name of the District(s)	Sylhet
8	Date of the present CMO formation	20.12.2016
9	Legal Status of the CMC	MoEF: No. Pabama/porisha 4/Nishorgo/105/sting/2006/396 date 23 Nov 2009
10	Number of VCFs under this PA	11
11	Number of Members of CMGC	53
12	Number of Members of CMEC	21
13	Number of Members of PF	22
14	Number of Members of VCF	485
15	Number of Members of CPG	0
16	Number of women in the CMGC	0

#### B. Functionality Status of Co-management General Committee (CMGC).

17 (seventeen) criteria were used to assess the Co-management General Committee's (CMGC) current operational state, with the majority of the criteria drawn from the CMGC's functions and responsibilities as outlined in the Protected Area Management Rules, 2017. The scores of all these criteria are presented in Table 5.

**Table 5: The present status of CMGC**

Serial No of Questions (Q)	Criteria to determine the status	Obtained Score (Out of 5)
1	CMGC approves the ADP of the CMEC	1
2	CMGC sends recommendations to the DFO for approval and fund allocation	1
3	CMGC monitors and evaluates the works taken for the conservation of PA and its surrounding area	3
4	CMGC collaborates and assists CMEC in natural resource and biodiversity conservation activities	1
5	When formulating a plan for dividing the products and services gained from the PA among the stakeholders, the CMGC makes recommendations to the relevant government agencies	1

Serial No of Questions (Q)	Criteria to determine the status	Obtained Score (Out of 5)
6	CMGC plays a role in conflict resolution within the CMEC	3
7	CMGC instructs CMEC to perform auditing of the account of the CMEC	1
8	CMGC meetings are held regularly according to the PA Management Rules, 2017	1
9	CMGC prepares the meeting minutes regularly	1
10	The member secretary himself usually drafts the meeting minutes	1
11	CMGC Meeting minutes are regularly approved in the next meeting	1
12	Decisions taken in the CMGC are implemented within the stipulated time frame	1
13	More than 70% of members remain present in the CMGC meetings	1
14	More than 70% of women members of the CMGC attend the meeting regularly	1
15	Decisions in the CMGC meeting are inclusive of gender and vulnerability consideration	1
16	All the government members (other than the forest department) participate in the CMGC meetings	1
17	Minutes are sent to all the members including the government departments	1
<b>Total Score</b>		<b>21(24.70%)</b>

### 1) Q1 and Q2: Approval of Annual Development Plan (ADP)

Approval of the Annual Development Plan (ADP) is one of the major tasks of the CMGC which is defined in section 6(1) (Ka) of the PA Management Rules, 2017 (Anon 2017). This section of the rules states that “the CMGC shall approve the ADP, which is prepared by the CMEC and shall send it to the Divisional Forest Officer (DFO) with recommendations for final approval and fund allocation.” The ADP of CMEC is essentially approved by the DFO, but after drafting the ADP, it is sent to the president of the CMGC (respective UNO) for verbal approval, which does not fit the guidelines of the PA Management Rules, 2017. In most cases, it was also found that the CMGC does not send any recommendation to the DFO for approval and fund allocation.

As per PA Rules, the plan must be submitted to the DFO with recommendations and the signature of the Chairman of the CMGC after being presented in the CMGC meeting. In the case of the RSBCA, the Co-Management Committee prepared the draft ADP for the financial year 2022-2023 and submitted it to the DFO with the signature of the Chairman and Member Secretary of the Co-Management Committee. The DFO sent it back again to the CMEC with some amendments. The co-management

committee finalized the ADP and submitted it to the DFO office. As per PA Rules, the plan must be submitted to the DFO with the signature of the Chairman of the CMGC after being presented in the CMGC meeting. Therefore, the practice of this approval procedure ought to be aligned with the PA rules.

## **2) Q3 and Q4: Monitoring and Evaluation**

In section 6(1) (Kha), the PA Management Rules, 2017 states that the CMGC shall monitor and evaluate the activities undertaken for the conservation of PA and its surrounding areas. In such cases, this has been revealed that the president of the CMGC occasionally learns verbally about the progress of the activities from the president of the CMEC. On the other hand, one of the main responsibilities of the CMGC is to collaborate and assist the CMEC in natural resource management and biodiversity conservation (NRMBC) as mentioned in section 6(1) (Ga) of PA Management Rules, 2017.

In the case of RSBCA, there was no approved action plan, and thereby *no formal monitoring was done through the CMGC*. The RSBCA undertook various activities for forest conservation and forest development in the CMEC meetings, which were monitored by the president and member secretary of the CMGC.

## **3) Q5: Strategy for Distributing the Goods and Services**

The results reveal that the CMGC had never conducted any meeting with the concerned government entities (BFD) to prepare a strategy for the distribution of the goods and services among the stakeholders that are accrued from the PA. There is a *ban on collecting any kind of forest products for all the PAs* of the country. Therefore, there is no legal arena open for collecting or distributing goods (forest products) services from the PA.

## **4) Q6: CMGC's Role in the Conflict Resolution (within CMEC)**

This was found that the *CMGC played a positive role in mitigating the conflict*. The scenario was such a condition that if any representative of the CMGC could not be able to present personally, the resolution was usually suggested by the CMGC over phone communication. This was rather an informal way of conflict resolution. In this case, there were no significant conflicts noticed during the last five years. The UNO of Gowainghat took the initiative to resolve some conflicts among the local people. Normally, the CMEC plays an active role in mitigating any conflicts between the BFD and other stakeholders in the PA and its surrounding areas.

### **5) Q7: Auditing**

The auditing of the account of the CMEC is a very important task for improving the performance of the CMEC. Section 6(1) (Cha) of the PA Management Rules, 2017 clearly states that the *CMGC should instruct the CMEC to audit the account of the CMEC.*

In the case of the CMEC of the RSBCA, *auditing was not performed by the CMEC during the last five years.* There was no government revenue received by the CMEC since the beginning of the revenue collection. Therefore, no instruction was given to the CMEC by the CMGC. An audit was performed by the project authority after receiving the grant from the CREL project.

*The auditing process is the prime concern of the respective DFO of the Forest Department.* The results showed that the functionality of the CMO was found to be obstructed due to a lack of proper attention to the execution of 'public audit'.

### **6) Q8, Q9, Q10, Q11: CMGC Meetings and Meeting minutes**

The results reveal that the CMGC of the RSBCA was not organized as per section 7 (1) of the PA Management Rules, 2017. The rules state that the meeting of the committee should be held bi-annually. Here, one committee meeting was held on 23.04.2018 during the last five years. As a matter of fact, most of the CMC members of the RSBCA were not aware of the PA Management Rules, 2017. The CMGC was formed on 20.12.2016 and the tenure of the CMGC was found to be expired.

The Assistant Conservator of Forests or the concerned Range Officer (as an ex-officio) acts as a Member-Secretary (MS). The responsibility of MS is to write down the meeting minutes on his own which reflects the buy-in of the CMO by the BFD and which also develops a sense of ownership of the CMO. Nevertheless, in most cases, meeting notes were usually taken by MS and afterward one of the CMO members wrote the minutes. The meeting minutes were usually sent to the members who remained present in the meeting. In the case of RSBCA, *only one meeting of the committee was held during the last five years* and the records of meeting minutes were finalized by the MS and approved by the president of the CMGC.

### **7) Q12: Timely Implementation of the Decisions**

It was observed that the *decisions taken in the meetings were not always implemented within the stipulated time.* Although the CMEC tried to act within the stipulated time, in most cases, due to

financial crises or other problems, not all decisions were implemented on time. During the CREL projects, successful implementation of the activities used to happen timely according to the plan.

For sending of meeting minutes to all the members, normally those who attend the meetings receive the last meeting minutes. Thus, the functionality of the CMGC was of concern regarding the implementation of decisions of the meetings. In the case of RSBCA, three general committee meetings have been held between 20.12.2016 and 23.04.2018. The meeting minutes of these meetings show that some decisions have been implemented.

**8) Q13, Q14, Q16 and Q17: Presence of the Members in the CMGC Meetings**

In the case of the RSBCA, the FGD results reveal that the last meeting was held on 23.04.2018 and more than 65% of the total members and 85% of the female members were present in the meetings. According to section 7 (5), the PA Management Rules, 2017 states that there should be the presence of a one-third number of the members of the committee to fulfill the quorum. Normally this has been found that representatives from the Social Welfare Department used to participate regularly in the CMGC meetings but representatives from the Agriculture, Fisheries, Livestock, and Police Departments did not appear before the meetings. Here, only two government officials were present in the last CMGC meeting.

**9) Q15: Gender and Social Inclusion**

The participants of the FGD informed that the *CMGC usually considered gender and social inclusion in every activity*. Nevertheless, in this case, there were fewer considerations on gender and social inclusion in the CMGC meetings of the RSBCA.

**C. Functionality Status of Co-management Executive Committee (CMEC)**

The Co-Management Executive Committee (CMEC) was evaluated using 22 (Twenty-two) criteria, the majority of which were carefully selected from the CMEC's functions and responsibilities as outlined in the PA Management Rules, 2017. Table 6 shows the results for each of these criteria.

**Table 6: Score of the CMEC that indicates the present status of functionality.**

Serial No of Questions (Q)	Criteria to determine the status	Obtained Score (Out of 5)
1	CMEC works for preparing ADP and budgeting for the organization	3
2	CMEC meetings are held regularly	5

Serial No of Questions (Q)	Criteria to determine the status	Obtained Score (Out of 5)
3	The notice of the CMEC meetings is served well before the committee members	5
4	Meeting minutes are drafted regularly by the member secretary of the CMEC	5
5	Chair signs the minutes promptly	5
6	Decisions taken in the CMEC are implemented within the stipulated time frame (as mentioned in the meeting minutes)	5
7	The minutes of the CMEC are approved in the next meeting	5
8	More than 70% of members remain present in the CMEC meetings	5
9	More than 70% of women members of the CMEC join the meeting regularly	5
10	Decisions in the CMEC meeting are inclusive of gender and vulnerability consideration	3
11	All the government members (other than forest) participate in the CMEC meetings	1
12	Minutes are sent to all the members including the government departments	3
13	The issues of PF are discussed and resolved in the meeting	4
14	The issues of VCF are discussed and resolved in the meeting	4
15	Representatives of the CMEC take part in the PF meetings	2
16	Representatives of the CMEC take part in the VCF meetings	1
17	Discussions of the CMEC meetings are reflected in the minutes	4
18	CMEC takes decision in favor of biodiversity conservation of the PA	5
19	CMEC can make its decision without any influence	5
20	CMEC has a good relationship with the local media and circulates the news in the media	3
21	CMEC was proactive in mitigating conflict between BFD and other stakeholders	5
22	CMEC works to mitigate conflict among CMC members	4
	Total	87 (79.09%)

### 1) Q1: ADP Preparation

The PA Management Rules, 2017 in its section 10 (Ka) endows CMEC to develop the Annual Development Plan for respective Protected Areas along with income-expenditure status. The CMEC of the RSBCA developed 2 ADPs (2018-2019 & 2022-2023) during the last 5 years (2017-2018) and accordingly shared it with the Divisional Forest Officer, Sylhet (HQ in Sylhet).

## **2) Q2-Q5: CMEC Meetings**

The CMEC of the RSBCA conducted regular bi-monthly CMEC meetings, with the exception during the COVID-19 period, as per the guidelines of section 11 (1) of the PA Rules. Since the formation of the CMEC, 26 meetings were held in the last 5 years by the CMEC of the RSBCA. Meeting notices were used to serve all the members prior to the meeting time. Member Secretary of the CMEC drafted the meeting minutes and the Chairperson of the Committee reviewed and signed it accordingly. The interviewee expressed that during the meeting, the Member Secretary took notes on all the discussions and prepared a draft resolution prior to the next meeting. Nevertheless, it was noticed that though the MS usually took notes of the meeting, the draft was being prepared by one of the assigned members of the CMEC. The minutes of the previous meetings were presented by the MS in the next meetings and unanimously signed by the president. The meeting minutes were shared with the members who attended those meetings but not with all members/representatives of the CMEC.

## **3) Q6 and Q7: Implementation of the Activities**

Normally, the decisions were taken in the meeting for implementation. Here, FGD reveals that the activities that were noted down as minutes were not implemented within the stipulated time frame due to the financial crisis of the CMO. In most cases, decisions were implemented partially within the stipulated time. In some cases, decisions that were noted in the meetings were not implemented due to a lack of authorization from the BFD.

## **4) Q8, Q11 and Q12: Presence of the Members in the CMEC Meetings**

This was a common practice to take attendance of all the members of the committee who were present at the meeting. During the epidemic of Covid-19, the attendance of female members was relatively low in the meetings held. But it was also noted that more than 70% of women members used to attend the meeting regularly during normal periods. Other government representatives did not attend as they were not properly communicated about the meeting. In most cases, representatives from the Department of Agriculture, Fisheries, Livestock, and Police did not show up at the meetings.

## **5) Q9 and Q10: Gender and Social Inclusion**

The participants of FGD opined that gender and social inclusion issues were taken into consideration while the CMEC took their decision in the meeting.

## **6) Q13 and Q14: Peoples' Forum (PF) and Village Conservation Forum (VCF) issues**

Required members of PF used to present in the CMEC meeting. Even though most of the members of the CMEC were members of one or the other VCF, including the Chairperson, therefore, significant issues related to the VCF were also discussed.

#### **7) Q15 and Q16: CMEC's Representation in VCF and PF Meetings**

For developing a good nexus between the CMEC, the VCF, and the PF, it is essential for CMEC members to be present in the meetings of the VCF and PF on a periodic basis. The MS of the CMEC attended 4 times in the PF meetings held. It also was noted that the CMEC representatives attended in few VCF meetings when it was essential.

#### **8) Q18 and Q19: Discussions of the CMEC Meetings**

The results revealed that all the issues that discussed in the meeting were usually noted as meeting minutes. The CMEC had a set of discussions on biodiversity conservation and decisions were taken accordingly. The interviewees pointed out that the CMEC was always able to make decisions independently but was *often influenced by political people during implementation*.

#### **9) Q 20: Relationship with the Local Media**

The CMEC maintained good relationships with the local media for the conservation of biodiversity or focusing on forest crimes.

#### **10) Q21 and Q22: Conflict Mitigation**

This was apparent that there might be some conflicts evolving among the members of the CMEC in various aspects of the fields and conflict resolution was one of the key tasks of the CMEC. The participants of FGD informed that the CMEC played a significant role in conflict resolution between the BFD and other stakeholders. The FGD results revealed that the CMEC of the RSBCA was proactive and helped the BFD recover 181 acres of encroached land from illegal occupants.

### **D. Functionality Status of People's Forum (PF)**

Ten (10) criteria were utilized to interpret the People's Forum's current functional status, the majority of which were derived from the forum's functions and obligations as outlined in the PA Management Rules, 2017. Table 7 displays the results for each of these ten criteria.

**Table 7: Score of the Peoples Forum (PF)**

Serial No of Questions (Q)	Criteria to determine the status of the PF	Score (Out of 5)
1	The PF works (meetings, seminars, rallies) to raise awareness among mass people about natural resources and biodiversity conservation, climate change including the Forest Act, Wildlife Act, and environment-related acts	3
2	The PF helps in the management plan formulation and ensures people's participation in the management plan implementation	1
3	The PF assists VCF to develop the quality of life of the forest-dependent people and helps VCF to implement AIG activities	4
4	The PF helps CMEC to implement the activities	4
5	Assist the Forest Department in executing the acts in the field.	4
6	The PF cooperates with CMEC and VCF in implementing social forestry activities including participant selection	3
7	The PF assists in the environment-friendly agroforestry activities and tree plantation activity implementation in fallow land in the PA adjacent landscape	4
8	The PF assists and cooperates with CMEC in the formation and maintenance of the Community Patrol Group (CPG)	5
9	The PF helps CMEC in the monitoring of participant selection for the plantation in landscape and buffer zone and helps in distributing the benefits among the participants according to the rules and regulations	4
10	The PF helps FD in controlling forest offenses (work as an informer)	3
	<b>Total</b>	<b>35 (70.00%)</b>

**1) Q1: Awareness Program and Others**

The creation of mass awareness is considered one of the most important tools for biodiversity conservation. The FGD provided the perception that the PF cooperated with the CMEC in assembling awareness programs among mass people and helped the CMEC by participating in different important day observations organized by the BFD. During the co-management period, the members of the PF helped to conduct more than two awareness meetings on controlling grazing, poison baiting and poaching in the PA.

## **2) Q2: Formulation of PA Management Plan**

In section 17 (1) (Kha) of the PA Management Rules 2017, it is clearly stated that the PF shall help in the formulation and implementation of a management plan ensuring the participation of forest resource-dependent people. In this case, members of the PF were present during the development of the management plan and expressed their views. They played an active role both in the preparation and implementation of the management plan.

## **3) Q3: AIG Activities**

It is stated in section 17 (1), (Ga) of the PA Management Rules, 2017 that the PF shall help the overall improvement of the livelihood of the forest-dependent people of the respective PA. In practice, the PF had no fund of its own, therefore, it was unable to contribute to the development of alternative livelihoods of the VCF members except for raising their various issues in meetings of the CMEC. They also participated in meetings of the VCF at various times and advised the forest-dependent beneficiaries to engage in alternative livelihood. Here, representatives of the PF assisted the VCF in implementing AIGA for resource-dependent people at the VCF level. During 2021-2022, the CMEC developed an ADP with some IGA activities, which is yet to be implemented due to lack of funds.

## **4) Q4: Activity Implementation**

It is stated in section 17 (1) (Gha) of the PA Management Rules, 2017 that the PF shall help the CMEC to implement its activities. The interviewees informed that the PF always helped the CMEC to organize different types of assembling, day observation, and awareness-building programs at the VCF level. The PF provided support to the CMEC in various activities for the conservation of biodiversity including deforestation and other illegal activities.

## **5) Q5: Law Enforcement**

Section 17 (1) (G) of the PA Management Rules, 2017 states that PF shall assist the Forest Department in executing the acts in the field. The VCF and the PF discussed the forest offense and wildlife crime in meetings of the CMEC and made the members aware to comply with the relevant laws. Here, it has been noted that the members of the PF assisted the BFD in executing the existing acts against illicit felling in the PA.

## **6) Q6 and Q7: Social Forestry and Agroforestry Activities**

In section 17(1) (Cha) of the PA Management Rules, 2017, it is declared that the PF shall assist the CMEC and the VCF in implementing social forestry programs in the PA. Furthermore, in section 17 (1) (Chha) of the same rule, it has been indicated that the PF shall assist in the implementation of environment-

friendly agroforestry activities and tree plantation activity in fallow land in the PA adjacent landscape. The FGD provided the impression that the PF always used to assist the CMEC and the VCF in the selection of beneficiaries for homestead plantations and the suitable sites for institutional plantations through attending meetings of the VCF.

#### **7) Q8: Community Patrol Group (CPG) formation**

Section 17(1) (Ja) of PA Management Rules, 2017 states that the PF shall assist and cooperate with the CMEC in the formation and guidance of the Community Patrol Group (CPG). In the case of the RSBCA, the members of the PF helped the BFD in the formation of CPG. Recently the BFD formed 6 CPG groups through the SUFAL Project. Each group consisted of 18 members. The CMEC has included the activities of CPGs in the ADP for 2022-2023.

#### **8) Q9: Participant Selection**

The PA Management Rules, 2017 [section 17 (1) (Jha)] state that the PF shall help the CMEC in the monitoring of the participant selection for the plantation in the landscape and buffer zone and help in distributing the benefits among the participants according to the existing rules and regulations. In this connection, the FGD reveals that the issue of the selection of beneficiaries was discussed in the PF meeting, which was also discussed later in the VCF meeting. Finally, the list of participants was prepared. Here, the PF also helped to distribute saplings among the beneficiaries and plant seedlings along the roadside plantation in the PA landscape area.

#### **9) Q10: Forest and Wildlife Crime Control**

Section 17(1) (g) of PA Management Rules, 2017 reveals that the PF shall help the BFD in controlling forest and wildlife crimes. The FGD indicates that the PF acted not only as an informant but also as an active group to assist the BFD in controlling illegal activities such as illegal fishing in the RSBCA area.

### **E. Functionality Status of Village Conservation Forum (VCF)**

To evaluate the present functionality status of the Village Conservation Forum, 8 (Eight) criteria were used and most of them were taken from the roles and responsibilities of the forum as mentioned in the PA Management Rules, 2017 (Anon 2017). The scores of all these eight criteria are described in Table 8.

**Table 8: Score of the Village Conservation Forum (VCF)**

<b>Serial No of Questions (Q)</b>	<b>Criteria to determine the status of the VCF</b>	<b>Score (Out of 5)</b>
1	The VCF assist in formulating management plan and implementation	1
2	The VCF works to raise awareness of forest and wildlife conservation, and climate change including forest and wildlife acts	3
3	The VCF helps in implementing social forestry activities	2
4	The VCF assists and cooperates CMEC in the formation of the Community Patrol Group (CPG) and helps in CPG functioning	1
5	The VCF assists the CMEC and BFD in controlling deforestation, theft, forest land encroachment wetland degradation, etc.	5
6	The VCF helps CMEC in the formulation of the Annual Development Plan (ADP) and in the implementation of ADP	1
7	The VCF helps BFD in controlling forest offenses (assists as an informer)	5
8	The VCF maintains a good linkage with other VCFs	3
	<b>Total</b>	<b>21(52.5%)</b>

**1) Q1: Management Plan Formulation**

The respondents of FGD opined the VCF was not involved in assisting in the formulation of the management plan by the BFD. In this case, one management plan was developed for the period of 2016-2026 for the RSBCA but the VCF members had no opportunity to contribute to it. Most of the VCF members were not aware of the management plan except a few VCF members who are members of the CMEC and used to help in implementing the activities.

**2) Q2: Awareness Raising**

The members of the VCF conducted regular meetings in every month with its members and other villagers to discuss the issues related to forest, wildlife, and biodiversity conservation. Along with the conservation laws, acts, and ethics, they also talked about climate change adaptation techniques. Apart

from this, the VCF members actively participated in various day celebrations and cleaning programs such as the removal of wastes and polyethylene from the protected area.

### **3) Q3: Social Forestry Activities**

If the BFD took any initiatives to conduct social forestry activities in the jurisdiction of the VCF, the VCF members helped the department to identify appropriate beneficiaries, site selection, plantation supervision, etc. They also helped the BFD in monitoring, protection, and maintenance along with the social forestry beneficiaries. The VCF also helped the BFD in raising the 'Murta' plantation in a suitable area of the PA.

### **4) Q4: Community Patrol Group (CPG) Formation**

It was noticed that in most cases the members of the VCF helped in the formation of the CPG group in the Ratargul Special Biodiversity Conservation Area. The FGD results suggested that the newly formed CPG group is not yet started functioning in this PA. Therefore, the impact of CPG was not noticeable for the protection of biodiversity of the SNP.

### **5) Q5 and Q7: Assistance in Controlling Forest and Wildlife Crimes**

The informants of the FGD opined that the VCF assisted the BFD not only in controlling deforestation, forest theft, encroachment, and wetland degradation but also helped to rescue wildlife by providing necessary information and active involvement. Here, the VCF was proactive and helped the BFD to recover 181 acres of land from encroachers.

### **6) Q6: Annual Development Plan (ADP)**

This was found that the few representatives of the VCF participated in the meeting in preparing ADP each year and recommended necessary activities in favor of VCFs for inclusion in the ADP.

### **7) Q8: Linkage with other VCFs**

Due to the remoteness and significant distances between the VCFs, it was not always possible to maintain regular communication with other VCFs. Nevertheless, a certain level of linkages existed only between the adjacent VCFs.

## **F. Functionality Status of Community Patrolling Group (CPG)**

Five criteria were applied to explain the present functionality status of the Community Patrolling Group (CPG), where most of them were chosen from the roles and responsibilities of the group as mentioned in the PA Management Rules, 2017. The scores of all these eight criteria are expressed in Table 9.

**Table 9: Score of the Community Patrolling Group (CPG)**

Serial No of Questions (Q)	Criteria to determine the status of the PF	Obtained Score (Out of 5)
1	CPG members take part in joint Patrol with the BFD staff	N/A
2	CPG helps BFD in recovering encroached PA land or helps in preventing harmful activities (like grazing, poison baiting, etc.)	N/A
3	The CPG performs as per instruction of the concerned DFO/ACF/Range Officer/SO	N/A
4	The CPG member helps FD in controlling forest offenses (assists as an informer)	N/A
5	The CPG members rescue wildlife and release it to the forest	N/A
	<b>Total</b>	<b>0%</b>

**1) Q1: Joint Patrolling**

The newly formed CPG group is not yet functional. The CMEC has included the CPG patrol duty in their ADP for the financial year 2022-2023. The functionality will depend on the availability of funds.

**2) Q2: Recovering Encroached PA Land**

The newly formed CPG group was not yet functional.

**G. Present management capacity of Budgets and Funds of the CMO**

Twenty-two criteria were utilized to comprehend the current functional status of the management ability of the CMO's budgets and funds, with the majority of them being carefully preferred from the relevant parts of the PA Management Rules, 2017, and elements connected to the CMO's function. Table 10 displays the results for each of these criteria.

**Table 10: Score of the CMO on the Budget and Fund**

Serial No. of Questions (Q)	Criteria to determine the status of the CMO on Budget and Fund	Score (Out of 1) (Yes=1; No=0)
1	CMEC has a bank account	1

Serial No. of Questions (Q)	Criteria to determine the status of the CMO on Budget and Fund	Score (Out of 1) (Yes=1; No=0)
2	Is there any female signatory?	0
3	CMEC maintains a voucher register	0
4	CMEC maintains a cheque register	1
5	CMEC maintains a cash book	1
6	CMEC maintains a ledger book	0
7	The CMO has an active cashier	1
8	Is the Cashier Female?	0
9	The CMEC bank account has enough funds to run daily activities	0
10	The CMEC spent funds for biodiversity conservation of the PA in the previous years	0
11	Auditing of the CMEC account is done regularly	0
12	Auditing is done by the third party	0
13	Observations/objections in the auditing are resolved by the CMEC	0
14	CMEC received approval of their budget in the CMGC meeting	0
15	The CMEC budget is displayed on the CMEC noticeboard	0
16	Community development works are implemented by the CMEC	
17	CMEC has scope to raise fund	1
18	CMEC strives to raise funds for the CMC	1
19	CMEC has the provision of credit or loan function	1
20	CMEC recovers credit/loan installment regularly	0
21	CMEC takes steps to recover the credit/loan from the defaulters	0
22	Financial records are open to any members of the committee	1
	Total	9(40.90%)

### 1) Q 14 and Q15: Budget

It is essential to approve an ADP by the DFO towards the allocation of the annual budget. For this, the draft ADP is sent to the President of the CMGC (respective UNO) for perusal and verbal approval. Normally, the budget of the CMEC is supposed to be displayed on the office noticeboard. Here, these attempts were not performed by the office of the CMEC. The CMEC did not consider the need to display the budget on its notice board. This was one of the weaknesses of the CMEC office.

### 2) Q1 and Q2: Bank account

The investigation showed that a current account was maintained in the Sonali Bank, Khadim Nagar Branch, Sylhet, in the name of the Ratargul Co-Management Committee whose bank signatories are the president, Member Secretary and Treasurer. Among the signatories, a female signatory was absent from the account.

### **3) Q3-Q9, Q17-Q22: Record Keeping**

Bookkeeping is an important task for any organization and the same is true for the CMO of the RSBCA. The status of Bookkeeping for the CMEC of RSBCA included:

- The accountant (recruited by the CMEC) did not update the Voucher Register.
- The Member Secretary of the CMEC irregularly verified the register.
- The cheque register was used during the CREL project and has not been updated after the end of the project.
- Cash Book was maintained by the CMEC during the CREL project. The accountant of the CMEC did not regularly update the expenditure in the Cashbook because there are funds in the account.
- The CMEC did not maintain the Ledger book because of the non-availability of funds. The CMEC has an active accountant, but he performs other tasks such as collecting entry fees and selling and checking entry tickets.

### **Fund Expenditure and Management**

An accountant was appointed by the CMEC (also approved by the CMGC) who played the role of the cashier and used to manage funds. Respondents of FGD stated that the Bank Account of the CMEC did not have enough funds to run the activities on biodiversity conservation. The revenue income of the RSBCA was very low due to a smaller number of tourists. According to the PA Rules, 2017, 50% (Fifty percent) of the revenue income was not deposited in the co-management bank account. Nevertheless, the CMEC was able to undertake a few activities such as social forestry and AIGA for bio-diversity conservation with the previous limited funds.

**Scope to raise funds:** The information from FGD indicates that there are ample opportunities to increase funds for the CMEC by creating tourist facilities in the PA such as by constructing eco-cottages, watch towers, tourist shops, and shooting spots. Deployment of tour guides and investment in some attractive rides may also promote tourism through various campaigns to attract tourists to the RSBCA.

**Provision of credit and recovery rates:** The CMEC had the provision of a credit program, and it was found ineffective. The CMEC distributed some loans and cows to the members of the CPG but could not

be able to recover those outstanding loans. Even though the CMEC took steps for recovery of the credits mostly it was unsuccessful.

**4) Q11, Q12, Q13: Auditing**

Investigation reveals that a single audit was performed by a project authority during the last five years of co-management operation. The CMEC/GC or the BFD did not take any effective initiatives to conduct a third-party audit. Because the Ratargul Special Biodiversity Conservation Area Co-Management Committee was not registered by any competent authorities.

**H. Overall Functionality Status of the RSBCA CMO**

In the above discussions, six broad areas (5 tires, and budget and fund management of CMO) have been identified and reviewed to assess the functionality of the CMO of the RSBCA. The results of the present study reveal that the CMO of RSBCA was moderately functional **56.35%** (Tables 11 and 12). The levels of functionality chart (graphical representation) of the CMO of the RSBCA are illustrated in Figure 7.

**Table 11: CMO Functionality Identification Matrix (FIM)**

Grading	Obtained Score
Very Functional	
Functional	
Moderate Functional	<b>56.35%</b>
Poorly functional	
Not functional	

**Table 12: Functionality assessment score of different tires of CMO of the RSBCA**

Area of assessment	Level of Functionality in Percentage
Co-management General Committee (CMGC)	24.70
Co-management Executive Committee (CMEC)	79.09
Peoples Forum (PF)	70.00
Village Conservation Forum (VCF)	52.50
Community Patrolling Group (CPG)	00.00
Budget and Fund Management	40.90
The overall level of functionality of RSBCA CMO	56.35

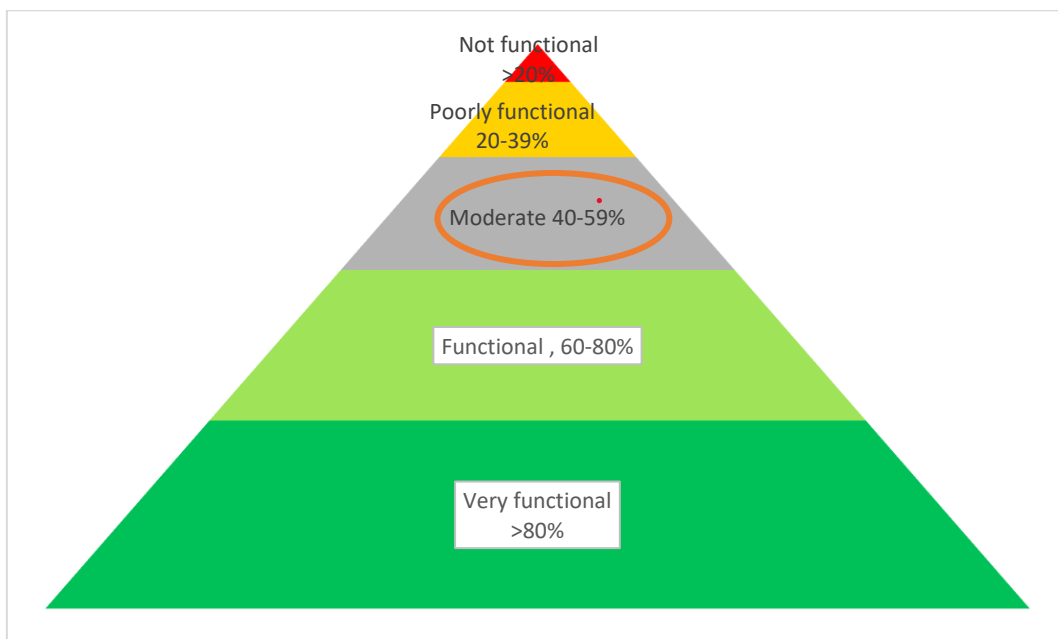


Figure 7. Levels of functionality of CMO of the RSBCA (Moderately Functional)

#### 4. Discussions

The CMO of the RSBCA assumed office on December 20, 2016, overseeing eleven VCFs. The membership distribution in each tire was as follows: CMGC=53, CMEC=21, PF=22, VCF= 485, CPG=0. During the study period there were no formation of CPG. Therefore, impact of CPG on PA management was not possible to evaluate (Table 9 and 12).

The present study assessed degree of functionality of the CMO of RSBCA as moderately functional (56.35%). PA co-management was initiated in Bangladesh in 2004. Since then, CMOs of the co-managed PA faced several challenges in their regular operations due to intermittent meetings and disagreements among stakeholders. Essentially, the support from foreign donor agency projects played crucial role in enhancing the functionality of CMOs, potentially leading to the realization of sustainable outcomes in PA management (Rahman et al., 2016b). The findings of the present study state that overall gain of the CMO of RSBCA did not meet the objectives in full. The criteria of CMGC, VCF, and Budget and Fund management of the CMO showed poor performances (Table 11). However, the criteria of CMEC and PF of the CMO of RSBCA showed relatively higher performance in favor of better functionality. Nevertheless, the results indicate that CMO of the RSBCA has not been able to meet its targeted goals. The present mixed results observed probably due to intermittent meetings, absence of trained office bearers and lack of coordination among the stakeholders. The studies (Khan et al., 2022 and Ullah et al., 2022) conducted so far in Bangladesh regarding biodiversity status of co-management PAs also reported similar results.

One of the major tasks of the CMGC is the approval of ADP prepared by the CMEC. As per PA Management Rules of 2017, the plan must be submitted to the DFO with the signature of the Chairman of the CMGC after being presented in the CMGC meeting. The official procedure of ADP approval was not followed probably due to lack of coordination among the stakeholders. Therefore, the practice of this approval procedure ought to be aligned with the PA rules.

The prime responsibility of the CMGC is to collaborate and assist the CMEC in natural resource management and biodiversity conservation (NRMBC) as mentioned in section 6(1) (Ga) of PA Management Rules, 2017. The present results showed there were no formal monitoring and evaluation performed by the chairman or member of the CMGC although the CMEC took decisions for conserving biodiversity. Therefore, trend of depletion of biodiversity and encroachment in the PA were prominent (Rahman & Dey, 2021; Humayun-Bin-Akram and Masum, 2020). The absence of biodiversity monitoring by the CMGC in the RSBCA stemmed from a lack of motivation among co-management participants. The findings indicate that raising awareness among local communities could enhance the environmental, economic and social importance of the area.

The CMGC did not play any significant roles for the distribution of forest products or services among the stakeholders that are accrued from the PA. The people living adjacent to the forests are dependent on fuel wood, fodder, fishing, food and construction materials. Neighboring people are moderately dependent on this national forest to fulfill their demand and thus forest is being disrupted on a regular basis, and this is contradictory to sustainable management (Rahman and Dey, 2021). Therefore, it is necessary to arrest such dependency on forest to let it grow. Although there is a government ban on collecting any kind of forest products from all the PAs of the country. The studies conducted by Ullah et al. (2022) and Raman and Dey (2021) conform with present findings. Motivation and offering Alternative Income Generation Activities (AIGA) to the forest dependent communities could be a viable option to reduce anthropogenic pressure on the biodiversity of the RSBCA.

The auditing was not performed by the CMEC during last five years and no instructions for conducting audits were given by the CMGC. The auditing process is the major and vital concern of the CMEC. The results showed that the functionality of the CMO was found to be impeded due to a lack of proper attention to the execution of 'public auditing'. The effectiveness of PA determines the extent of biodiversity conservation and financial sustainability which emphasizes the importance of PA financial administration and management effectiveness (Emerton et al., 2006). The CMO of RSBCA received fund from development projects and from other sources. The auditing of the office of CMEC was not performed probably due to lack of proper co-ordination between the stakeholders of the CMEC including the DFO of the Forest Department. Several studies have addressed challenges regarding the functionality of CMOs, including power devolution, the dominance of government officials in decision making, conflict with local elites, biased selection of beneficiaries, and financial misappropriation (Belal, 2013; Ulla et al., 2022; Islam et al., 2019 a, Uddin et al., 2019).

Intermittent meetings and shortcomings in the implementation of activities of the CMO were also found to be the other grounds of non-functionality of the CMO of RSBCA. The members of the CMO need to be trained for efficient office management and related tasks. Thus, capacity development of local community could be possible by reducing forest dependence and ensuring effective participation in the management process (Devkota, 2020; Manzoor Rashid et al., 2013). Empowering and benefitting the local community with secure forest property rights and implementing capacity building initiatives may be the critical steps in success of co-management approach and conserving the remaining forests and their biodiversity.

The findings from the present study highlight the potential to generate funds for the CMEC through the establishment of tourist facilities. This could involve the construction of Eco-cottages, watchtowers, and shooting spots. However, on the contrary, studies (Rahman and Dey, 2021; Siddika et al., 2019) have indicated that the RSBCA has been overwhelmed by excessive tourists, leading to significant negative effects on the forest ecosystem and notable decline of migratory birds in recent years. In the context of adaptive co-management, it is vital to explore strategies for managing PA and implementing sustainable tourism that avoids damage and minimizes harm to nature.

## 5. Conclusion

The CMO of the Ratargul Special Biodiversity Conservation Area is a relatively older CMO in the country, where the co-management started more than 13 years ago. After this long time, it has been explored by this present investigation that the CMO was *moderately functional* (56.35%). Even now, there are ample opportunities for its improvement in various areas. The study provides the impression that the coordination and engagement of the CMGC need to be reinforced significantly as currently, it is poorly functional. The CMEC was functional having some disparities and limitations in the office administration and coordination across all tiers. *Stakeholder workshops and pieces of training on PA management issues such as ADP preparation, revenue collection, conflict management, gender, and social inclusion could be conducive to overcoming these shortcomings.* The capacity of the office bearers of the CMEC on budget and fund management needs to be strengthened through financial training. There are ample opportunities to increase funds for the CMEC by creating tourist facilities in the PA. Moreover, coordination between the PF and the VCFs could be increased so that they are able to raise their interests in any conservation issues and play a key role in forest management. In this PA, the BFD formed the CPG recently as a support patrol team assisted by the SUFAL project, and yet to function properly. Nevertheless, the capacity of the CPG needs to be strengthened by providing necessary training, uniforms and incentives to its members on a sustainable basis. Overall, the CMO of the Ratargul Special Biodiversity Conservation Area was not able to achieve the expected level of functionality. Connecting links among the elements of the pillars of sustainability such as Socio-Economic, Socio-Environmental, and Environmental-Economic could lead to the sustainable development of co-management practices

in RSBPA. Therefore, some issues (mentioned above) need to be addressed to ensure its viability and long-term sustainability.

## 6. Recommendations

The following recommendations to intervene for scaling up the functionality of the CMO include:

- a. Proper implementation of revenue sharing and auditing of the office of the CMEC.
- b. Orientation workshop for all the members of the CMO on PA Management Rules, 2017 to establish a *common understanding and mitigate the gaps*.
- c. Provide training for the office bearers of the CMEC on *Office administration, financial management, and ADP preparation* to ensure smooth implementation of their activities.
- d. Orientation workshop for the CMGC and CMEC office bearers on *conflict resolution* to strengthen the collaboration and coordination among the members through formally resolving the issues with proper documentation.
- e. Provide *exchange/exposure visits* for the office bearers of the CMEC with the other PAs to learn from the *good practices*.
- f. Provide training to the VCF's members to *strengthen their capacity to increase incomes from the alternate livelihoods* and to reduce pressure from the natural resources.
- g. Provide leadership training for the office bearers of the CMEC for their *better understanding of the Forest (Amendment) Act 2000 and Wildlife (Protection and Security) Act, 2012 for implementing* management plans and effective communication.
- h. Provide training for all the members of the CMO on Gender and Social Inclusion to address *gender discrimination, gender equality, and inclusion of ethnic minorities*.
- i. Provide training for the *CPG members on advanced patrolling; rescue and release of wildlife; documentation and reporting*.
- j. Provide tourist facilities in the PA such as by constructing eco-cottages, watch towers, tourist shops, and developing tree activities and zipline adventures towards increment of revenue income.

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## 8. Annex-I

### List of participants present during CMO assessment at the RSBCA.

**Name OF CMC: Co-Management Committee, Ratargul Special Biodiversity Conservation Area (RSBCA)**

**DATE OF CMO ASSESSMENT 19.07.2022**

#### Focus Group Discussion

	Date	Venue	Remarks
1 <sup>st</sup> FGD	19.07.2022	Co-Management Committee office, Ratargul	One FGD was conducted
2 <sup>nd</sup> FGD			

**Note:** If you conducted only one FGD, then write this in “1<sup>st</sup> FGD” row.

#### Key Informant Interviews (KIIs)

	Date	Name, Designation and contact address (including mobile number)
KII-01	20.07.2022	Member Secretary-CMEC, Range officer
KII-02	20.07.2020	Mahabub Alam, President-CMEC
KII-03	20.07.2020	Fokor Uddin, Treasurer
KII-04	21.07.2020	Abdur Rahim, Member
KII-05	21.07.2020	Sufia Monjur, Member

Note: Use the rows as much as you conducted KII.

#### LIST OF PARTICIPANTS WHO ATTENDED IN FGD

SL#	Name	Designation	Name of CMO/Organization	Mobile Number	Remarks
1	Mahabub Alam	President-CMEC	Co-Management Committee-RSBCA	01712297320	
2	Md. Sad Uddin	Member Secretary-CMEC	Co-Management Committee-RSBCA	01714730052	
3	Md. Abdul Wadud	Member	Co-Management Committee-RSBCA	01712112511	
4	Yahiya	Member	Co-Management Committee-RSBCA	01735529910	CMC Accountant
5	Sufia Monjur	Member	Co-Management Committee-RSBCA	01732723768	

6	Arob Ali	Member	Co-Management Committee-RSBCA	01739476503	
7	Abdur Rahim	Member	Co-Management Committee-RSBCA	01714769047	PF President
8	Fokor Uddin	Treasurer	Co-Management Committee-RSBCA	01730909515	
9	Abdul Karim		Ramnagor VCF		VCF President
10	Ashraful Islam	NRM&PAMO		01842477460	Protibesh Activity
11	Shahadat Hossain	GO		01712102382	Protibesh Activity
12	Mostafa Haider	Site Officer		01712906326	Protibesh Activity
13	Shyamol Kanti Baidya	FF		01743626256	Protibesh Activity
14	Ratna Rani Roy	FO		01764755123	Protibesh Activity

**Note:** Please write in the remark's column- if anyone from VCF, PF, or from ethnic minority

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