

Tanguar Haor

A Decade-long Conservation Journey

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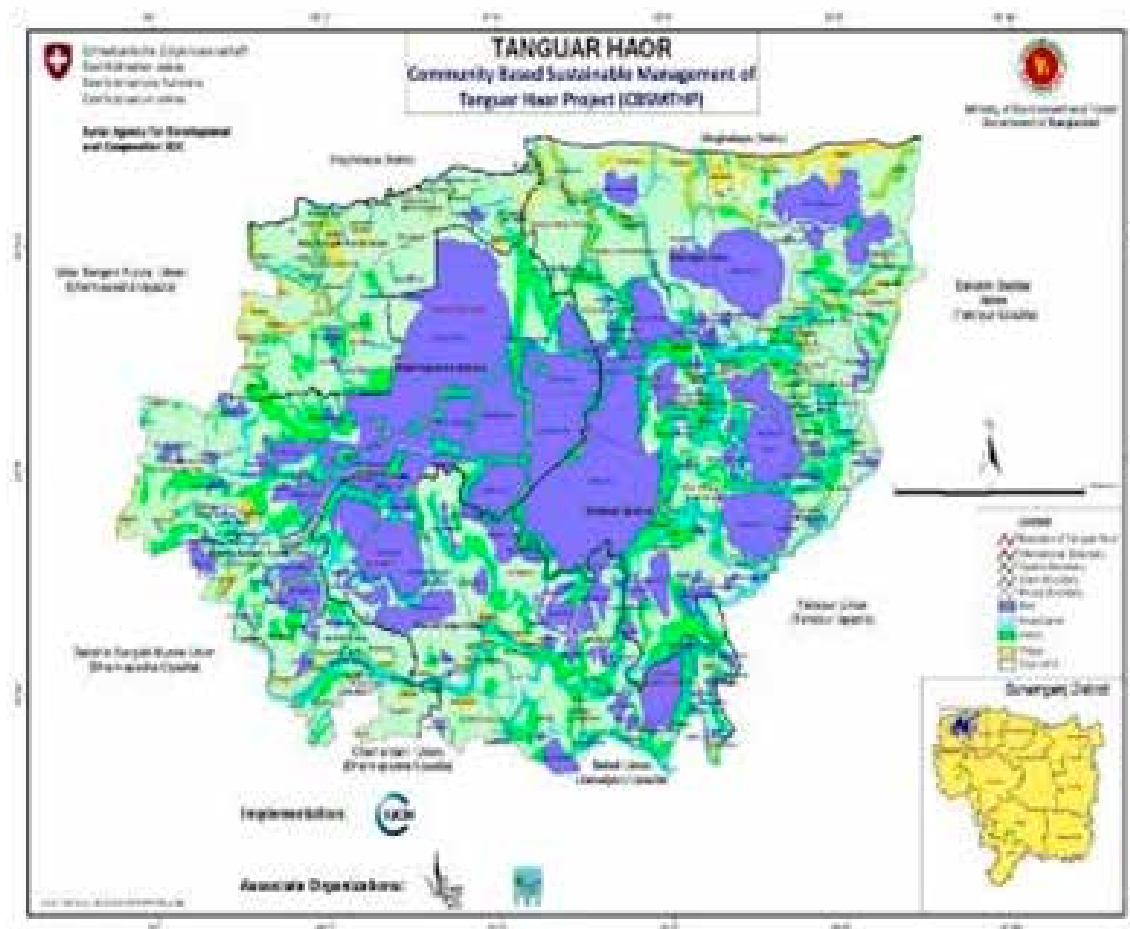
Preface

The diversity in ecosystems has given Bangladesh a unique character as it harbours a wide spectrum of flora and fauna. Wetland ecosystems are playing a vital role for survival of human by providing clean water for drinking, water for agriculture, cooling water for the energy sector, safeguarding biodiversity and regulating flood through facilitating water flow.

One of the important freshwater wetland ecosystems of Bangladesh is the Haor Basin occurring in the low lying plains of eastern Mymensingh and western Sylhet Divisions. These freshwater ecosystems are under threat of multiple anthropogenic causes like over-exploitation, rapid urbanization and climate change.

Tanguar Haor is one of the largest wetland ecosystems in northeast region of Bangladesh. It is located in the district of Sunamganj ($25^{\circ}06' - 25^{\circ}11' \text{ N}$ and $91^{\circ}01' - 91^{\circ}06' \text{ E}$) at the foothill of the Khasia Hills. Tanguar Haor is part of a complex wetland system of the Meghna-Surma river basin.

Administratively, within the total area of Tanguar Haor, there are two Upazilas (sub-districts) of Sunamganj district, namely Tahirpur and Dharmapasha and four unions, namely Uttar Bangshikunda, Dakshin Bangshikunada, Uttar Sreepur, and Dakshin Sreepur.



Tanguar Haor is an ecosystem that harbours 150 wetland plant species; 134 freshwater fish species; 11 amphibians; 34 reptiles including 6 turtles, 7 lizards and 21 snake species; 208 bird species; and 19 mammal species. For uniqueness and being habitat of some globally threatened wildlife, this wetland has been declared as the 2nd

Ramsar site of Bangladesh in 2000. Earlier, in 1999, the Government of Bangladesh declared the Tanguar Haor as an Ecologically Critical Area (ECA).

The Government of Bangladesh already shown its commitment to conserve biodiversity and strengthen peoples livelihoods through wise use of natural resources. Ministry of Environment and Forests, in association with IUCN Bangladesh, launched a co-management project entitled 'Community Based Sustainable Management of Tanguar Haor (CBSMTH)' with the financial assistance from the Swiss Agency for Development and Cooperation (SDC).

The CBSMTH project has given its effort to establish a co-management system involving the communities and the Government under an umbrella of formal institutions. Emphasis has been given on livelihoods development of the communities to reduce dependency on *haor* resources that ultimately helped for conserving biodiversity and maintaining integrity of the ecosystem.

The production and publication of this book is intended to grasp the successes and lessons generated by the CBSMTH project at local and national levels. The book also captured impacts engendered, challenges faced, and future guidelines for wise use management of Tanguar Haor. The book will be useful to policy-makers, practitioners and researchers for taking any further initiative in future.



Stormy day in Tanguar Haor. © Sakib Ahmed

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We would like to thank all respected members of Tanguar Haor Management Committee (THMC), Central Co-management Committee (CCC), Union Co-management Committees (UCCs) and Village Co-management Committees (VCCs) for their support towards implementation of the aforesaid project.

Our sincere thanks goes to the National Project Director Dr. Md. Mohiuddin, Deputy Secretary, Ministry of Environment and Forests and all former Project Directors of this project for their cordial support and guidance.

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We humbly acknowledge the effort of district administration and local communities for successful implementation and establishment of co-management model for Tanguar Haor resource management.

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Abbreviations, Acronyms and Local Terms

AIGA	Alternative Income Generating Activity
ASEAN	Association of Southeast Asian Nations
<i>Baor</i>	Oxbow lake
<i>Beel</i>	More or less permanent waterbodies within haors that hold water all year round
BELA	Bangladesh Environmental Lawyers Association
BDT	Bangladeshi Taka
CBEM	Community-Based Environmental Management
CBO	Community-Based Organisation
CBSMTH	Community Based Sustainable Management of Tanguar Haor Project
CCC	Central Co-management Committee
CNRS	Center for Natural Resource Studies
CPG	Community Patrolling Group
DC	Deputy Commissioner; executive head of a district
DSPEC	Departmental Special Project Evaluation Committee
EC	Executive Committee
ECA	Ecologically Critical Area
EEF	Economic Efficiency Focused
GoB	Government of Bangladesh
GUS	Gono Unnayan Sangstha
GB	General Body
<i>Haor</i>	A back-swamp or bowl-shaped depression between the natural levees of rivers and may consist of a number of <i>beels</i>
HHBP	Household Business Plan
IUCN	International Union for Conservation of Nature
LIP	Livelihood Improvement Plan
MoEF	Ministry of Environment and Forests
MDG	Millennium Development Goal
NCSIP	National Conservation Strategy Implementation Project
NGO	Non-Government Organisation
PRMP	Participatory Resource Management Planning
PSC	Project Steering Committee
SCM	Social Capital Management
SDC	Swiss Agency for Development and Cooperation
SDG	Sustainable Development Goal
THMPF	Tanguar Haor Management Plan Framework and Guidelines
THMC	Tanguar Haor Management Committee
UCC	Union Co-management Committee
UNO	Upazila Nirbahi Officer; chief executive of an upazila (sub-district)
VCC	Village Co-management Committee
VGF	Vulnerable Group Feeding

Contents

Chapter 1:

Background: Wetland and Natural Resource Management 1-15

Perspectives of Wetland Governance and Resource Management
Wetland Governance and Co-management in Bangladesh
Co-management of Tanguar Haor – A Model of Collaborative Wetland Management

Chapter 2:

People and Ecosystem: Community Awareness, Aspiration, and Women Engagement 17-22

Introduction
People's organisations
Women Engagement and Awareness in Tanguar Haor
Community Perception and Conservation Awareness
Aspiration

Chapter 3:

Governance: Institutional and Legal Framework of Tanguar Haor Co-management 23-32

Institutional Development of Co-management in Tanguar Haor
Legal Arrangement of Co-management Organisations
Institutional Capacity Building of Co-management Organisations and Community Leaders
Community Patrolling and Resource Protection

Chapter 4:

Resources: Community People and Well-being 33-43

Financial Resource Management
Livelihood and Market Development
Ecotourism in Tanguar Haor

Chapter 5:

Conservation: Approaches, Strategies and Monitoring 45-56

Biophysical Feature of Tanguar Haor
Conservation Value of Tanguar Haor
Policies and Strategies for Conservation and Sustainable Management of Tanguar Haor
Sensitised Stakeholders for Tanguar Haor Resource Management
Role of Tanguar Haor Management Committee (THMC) in Resource Conservation
Community Awareness of and Responsiveness to Natural Resources
Social Watch Group for Conservation Programme
Engagement of Law Enforcement Body for Protection of Natural Resources
Upazila level Monitoring Committee for Tanguar Haor Resources Management
Community-driven Conservation Initiatives
Community Patrolling System for Protection of Natural Resources
Swamp and Reed Plantation and Protection
Fish Sanctuaries
Sustainable Fish Harvesting Practice
Reduction of Community Dependence on Natural Resources
Conservation Efforts for Water Birds in Tanguar Haor

Chapter 6: The Way Forward

57-62

Community Management of Natural Resources
Financial Resource Management
Livelihood and Market Development
Ecotourism in Tanguar Haor
Promotion of Climate-resilient Livelihood
Biodiversity Monitoring
Motivation, Awareness and Capacity Building
Swamp Plantation
Promotion of Climate Smart Stove and Plantation of Fast-growing Plants
Sustainability Potentials and Conclusions



Chapter 1

BACKGROUND:

Wetland and Natural Resource
Management



Perspectives of Wetland Governance and Resource Management

From the Niles to the Ganges to the Amazon – rivers and the wetlands they harness have always been the cradle of civilizations. Although freshwater wetlands occupy about 0.3% of the earth surface, they support some of the most diverse, but often fragile, vulnerable ecosystems. Biologically, these are one of the most productive ecological systems of the world. They support varieties of plant and animal life – some of these life-forms we can see, but most remain out of our bare eyes creating the aquatic web of life.¹

Wetlands are unique features of our environment that play an essential role in the stability and biodiversity of ecosystems as well as in the functioning of the hydrological cycle. These natural ecosystems are therefore of national and regional importance due to the varied functions they perform. Many rural communities deeply depend upon wetland resources for their livelihoods and subsistence. The potential of wetlands to contribute to livelihoods is closely related to their ability to maintain ecosystem services. This underscores the need to ensure a balance between conservation and productive use of the wetlands.²



A splendid view of Tanguar Haor during monsoon. © IUCN/ A.B.M. Sarowar Alam

Although people have long been aware of the importance of wetlands, these ecosystems have become prime examples of ecological systems that, despite their provision of beneficial services, functions and products, have suffered from negative impacts of human activities. The increasing growth of population coupled with the advancement of modern technology has necessitated human intervention on these natural ecosystems. This has resulted into the gradual loss of wetland resources. Such damages could specifically be linked to some uncontrolled developments activities, including extensive drainage and conversion of wetlands for agriculture, dams, mining, infrastructure and urban development. Poor management of resources has also caused invasion of alien plants and animals and the occurrence of genetic erosion. Thus, scientists have strongly warned that the rapid loss of wetlands may lead to environmental and ecological problems. This would consequently have a direct impact on the socio-economic benefits of the associated societies. A clear challenge therefore has emerged in respect to the link between sustainable development and wetland conservation.³

¹ C.P.R. Environmental Education Centre. <<http://www.cpreec.org/pubbook-conservation.htm>>

² Edward, C. (2008). Guideline for sustainable wetland management and utilization: Key cornerstones. Research Report. 55 pp.

³ Department of Environmental Affairs. (2013). Republic of South Africa. State of the Environment: Theme Articles. 7pp.



Tanguar Haor is an outstanding example of migratory birds. © IUCN/ A.B.M. Sarwar Alam

The concept of governance has gradually evolved to control the discourse on wetland management while considering the need to balance sustainable resources use with livelihood needs of people using the wetlands. The traditional hierarchical model of governance has, in many locations, been replaced by other models of governance. In those instances, the market, network, or community are dominant, without substituting the role of the state. However, it is critical to understand what type of institutional framework would be required to establish wetland resource governance which aims at sharing power between the state and the stakeholders for long-term sustainability in resource management.

Wetlands, as a distinct and identifiable form of water body, have been incorporated into the legal structures underpinning management of its resources. The international arrangements that have impact on wetlands reflect the broad principles indicating how nature should be conserved, informing potentially enforceable legal arrangements. The multilateral international agreements have somewhat focused on one or more of the relevant and interdependent values of the wetlands. However, the ‘Ramsar Convention’ adopted in 1971 appears to be the only international agreement which focuses directly upon wetlands. Actually, the Convention is the first of the modern global nature conservation effort with the mission that “the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world”.⁴

The evolution of later international arrangements under the Ramsar Convention has eventually helped to address several issues by incorporating an ecosystem approach and an integrated approach to the management of wetlands more generally. The ‘Convention on Biological Diversity’ (CBD) of 1992 is a relatively recent and vitally important instrument. The CBD in particular, significantly extends what was included in the Ramsar Convention, and strengthens international legislation relating to wetland protection.

In addition to the direct mechanism of wetlands management provided by the conventions noted above, other legal instruments at national, regional and international levels, such as the ‘World Cultural and Natural Heritage’ of 1972 and the ‘ASEAN Agreement on the Conservation of Nature and Natural Resources’ of 1985 have also continued to govern the management of wetlands.⁵ More importantly, wetlands governance allying the theme of ‘Sustainable Development’ in recent years has found practical expression in the form of Millennium Development Goals (MDGs) in the first decade of this century. More recently, the global leaders set target under the Sustainable Development Goal (SDG) to protect and restore water-based ecosystems by 2020.⁶

4 The Ramsar Convention and its mission. <<http://www.ramsar.org/about/the-ramsar-convention-and-its-mission>>

5 Sullivan, C.A. and Fisher, D.E. (2011). Managing wetlands: integrating natural and human processes according to law. *Hydrological Sciences Journal*, 56 (8):1640-1655, DOI: 10.1080/02626667.2011.630318

6 Sustainable Development Goals: <http://www.un.org/sustainabledevelopment/water-and-sanitation/>

Wetland Governance and Co-management in Bangladesh

Bangladesh is a land of fertile alluvial plains, water and wetlands that drains into a vast and complex network of river basins. During the monsoon, almost half of the country turns into wetland consisting of rivers, streams, creeks, floodplains, marshes, *haors*, *beels* and *baors*. These diverse and highly productive aquatic ecosystems support millions of poor people in rural areas of the country.



Fishermen with local fishing gear in Tanguar Haor. © Mohsin Kabir Miron

Over the last two centuries, the management of wetlands has focused principally on revenue earning. Prior to the British rule in Indian sub-continent, the fishermen of Bangladesh enjoyed customary rights to fish in rivers, *haors*, *baors* and *beels*. The local communities had access to fish, swamp forests, reeds, wildlife, and other aquatic resources to support their livelihoods.

The post-colonial management regime has been basically structured by scientific and technology-based, top-down, centralized, production and efficiency-oriented approaches. In the formal management system, the poor local communities have been regarded as a threat to natural resources and accused of being polluters and/or degraders of commons. Access to resources and the customary rights of the resource users have thus been gradually eroded by the policy changes. The top-down, command-and-control, and centralized management system, which is based only on the economic return of natural resources, ignores the significance of other dimensions, such as social, ecological and cultural aspects of resource management, and has no or only a limited role for local resource users in resource management.⁷

Bearing the legacy of the British colonial period, the formal management system of natural resources in Bangladesh is based on the Economic Efficiency Focused (EEF) approaches for the immediate exploitation of resources for economic purpose. The EEF approach is ideally based on the objective of providing well-being, such as, education, health, security, etc., to the society. But the intensity for maximization of revenue collection from the natural resources enhances the rate of exploitation while deviating the well-being of society. However, from the British period up till now, there has been very limited indication of improved well-being of the population in the haor region of the country, although the underlying intention of the EEF approach was to do so. Rather in practice, the science and technology-based, EEF policy regime has created conditions that facilitate exploitation, conflicts and chaos in the wetlands resource management.

7

Khan, S.M.M.H. (2011). Participatory Wetland Resource Governance in Bangladesh: An Analysis of Community-Based Experiments in Hakaluki Haor. Thesis paper. University of Manitoba, Canada. pp. 1-3.

Such purposive exploitation of wetland resources became a serious governance issue in the resource management system of Bangladesh, as local communities were being marginalized from access to and control over resources to ensure their well-being. Therefore, sustainable development based on the maintenance of the functional diversity provided by wetland ecosystems requires careful management and evaluation of the different functions in terms of the welfare benefits they provide. In view of their complex, dynamic and co-evolving multi-functionality, a management approach was needed that addresses the pressures exerted on wetland ecosystems in Bangladesh. Appropriate policies and management tools could be used to ensure that natural services were used efficiently and to compensate for the externalities.

Table 1.1: Laws, policies and legislations on sustainable haor resource management in Bangladesh.

Year	Sectoral Laws, Policies and Legislations	Specification of the Laws
1977	The Haor Development Board Ordinance	It requires the Board to prepare projects and schemes to develop the <i>haors</i> and other depressed low-lying areas.
1982	Protection and Conservation of Fish (Amendment) Ordinance.	Prohibits unsustainable fishing techniques, and calls for conservation of fish resources.
1985	Land Management Manual.	Guidelines for leaseholders, for sustainable exploitation of fisheries resources.
1992	National Conservation Strategy (NCS).	Recommendations for achieving sustainable development in all sectors. NCSIP -1 is implementation mechanism.
1995	National Environmental Management Action Plan (NEMAP).	Halt degradation: promote sustainable use, conservation of biodiversity.
1999	Notification of Ecologically Critical Areas (ECA).	Enactment of the ECA clause in the Environmental Conservation Act (1995) and Rules (1997).
2000	Tanguar Haor Management Plan (revised).	Emphasis on implementation of wise use principle prescribed in Ramsar guidelines and community based <i>haor</i> management.
2015	Tanguar Haor Management Plan Framework and Guidelines.	Provides a broad-based overview of the resource management and planning context of Tanguar Haor and also serves as a guiding point of reference for further context-specific, locally grounded planning.

Sources: Huq (1993); Giesen and Rashid (1997); Kabir and Amin (2007); IUCN Bangladesh (2015)

Co-management or collaborative management in Bangladesh has emerged as an issue in development sector in the 1980s. However, co-management in wetlands started from the mid-1990s. It has evolved mainly from the experience of fisheries management in common property resources through different programmes and projects initiated by the government, NGOs and community. Some of the significant projects are the Forth Fisheries project (from 2000 to 2006), the Community Based Fisheries Management (CBFM-1) during 1994-1999 and CBFM-2 during 2001-2007, the Management of Aquatic Resources through Community Husbandry (MACH) during 1998-2007, the Sustainable Environment Management Programme (SEMP) during 1998-2005, the Empowerment of Coastal Fishing Communities (ECFC) during 2000-2006, the Integrated Protected Area Co-management during 2009-2012, the Coastal and Wetland Biodiversity Management Project (CWBMP) during 2003-2011, and the Community-Based Ecosystem Conservation and Adaptation in Ecologically Critical Areas (CBA-ECA) during 2010-2015 (Table 1.2).

In all cases, NGOs, communities and the Government of Bangladesh (GoB) attempted to try out different mechanisms to develop co-management to utilize government properties, for example, natural resources through introducing

some rules, regulations, and norms. These projects got immense popularity that encouraged community people to integrate also private floodplains into the project area. Different agencies of the Government of Bangladesh, like Department of Fisheries, Department of Environment, and Bangladesh Forest Department have played a key role on behalf of the GoB in these projects. Although, nature conservation, biodiversity, and sustainability of nature are considered as the major focuses, establishing access rights of the fishers and poor has also been prioritized in these projects.⁸



Large number of domestic duck enter Tanguar Haor, which poses a threat to the ecosystem. © IUCN/ A.B.M. Sarowar Alam

Table 1.2: Significant projects on sustainable wetland management in Bangladesh.

Project Name	Duration	Responsible Agency	Implementation Area
Management of Aquatic Resources through Community Husbandry (MACH)	1998-2007	DoF-USAID	Hail Haor, Turag-Bangshi floodplain, Kangsha-Malijhee basin
Community Based Haor and Floodplain Resource Management (SEMP Programme)	1998-2005	MoEF-IUCN-UNDP	Pagnar and Sanuar-Dakuar haors, Hakaluki Haor, and Jamuna-Padma, Madhumati, and Brahmaputra floodplains
Community Based Fisheries Management (CBFM-I & II)	1994-1999	DOF-Ford Foundation	116 water bodies, including Hakaluki Haor in 22 districts
Coastal and Wetland Biodiversity Management Project (CWBMP)	2001-2007	DOF-DFID-World Fish Center	Cox's Bazar, Hakaluki Haor, Sonadia Island, St. Martin's Island
Wetland Biodiversity Rehabilitation	2003-2013	DoE	3 districts (Pabna, Natore, Sirajganj)
Community-Based Adaptation in the Ecologically Critical Areas through Biodiversity Conservation and	2009-2015	BWDB/GIZ	Hakaluki Haor, Cox's Bazaar-Teknaf Peninsula, Sonadia Island
Social Protection (CBA-ECA)	2010-2015	DoE-UNDP-EKN-IUCN	Hakaluki Haor
Community Based Sustainable Management of Tanguar Haor	2006-2016	MoEF-IUCN-SDC	Provides a broad-based overview of the resource management and planning context of Tanguar Haor and also serves as a guiding point of reference for further context-specific, locally grounded planning.

⁸ Karim, A.F.M. (2007). Co-management Model for Tanguar Haor. Final Draft. Community Based Sustainable Management of Tanguar Haor Project - Phase I (Preparatory). IUCN Bangladesh Country Office, Dhaka. p.8.

Co-management of Tanguar Haor – A Model of Collaborative Wetland Management

Tanguar Haor is a unique wetland eco-system covering 12,655 hectares of area located at the north-eastern Sunamganj district of Bangladesh close to the Indian border in Meghalaya hill region. This complex ecosystem, known for its numerous species of fish and as a staging area of as high as half a million migratory birds, supports lives of about 70,000 inhabitants in 88 villages around its periphery.

The environmental importance of Tanguar Haor was first promoted by International Union for Conservation of Nature (IUCN), Bangladesh Country Office in the 1990s. The Government took keen interest in taking initiative for protecting Tanguar Haor. The first-ever conservation project undertaken by the Government in Tanguar Haor was the National Conservation Strategy Implementation Project (NCSIP) in the early 1990s, where IUCN Bangladesh worked as the technical partner. Later on, IUCN Bangladesh kept on policy advocacy for conservation of Tanguar Haor. Considering the national significance of Tanguar Haor and threats of depletion of its natural resources, the *haor* was declared as one of the Ecologically Critical Areas (ECAs) of Bangladesh in 1999. Subsequently, on 10 July 2000, it became the second Ramsar site of Bangladesh due to its global importance, especially for the migratory birds.



Thousands of migratory waterfowl characterise Tanguar Haor in winter. © IUCN/ A.B.M. Sarowar Alam

A historic milestone was achieved in the management and conservation of Tanguar Haor and its rich biodiversity after the traditional leasing of Tanguar Haor was stopped and its management was transferred to the Ministry of Environment and Forests (MoEF) from the Ministry of Land in 2001. Under the National Conservation Strategy Implementation Project -1 (NCSIP-1), the MoEF initiated a pilot project in Tanguar Haor. A management plan was developed with technical assistance from IUCN Bangladesh in 2000, introducing the concept of ‘wise-use’ of wetland resources based on the wise-use principles of the Ramsar Convention.

Against this backdrop, a project entitled ‘Community Based Sustainable Management of Tanguar Haor’ (CBSMTH) was formulated. It is being implemented by IUCN Bangladesh, on behalf of the Ministry of Environment and Forests (MoEF), with financial assistance of the Swiss Agency for Development and Cooperation (SDC). The project has already gone through a preparatory phase (2006-2009), a development phase (2009-2012), and consolidation phase (2012-2016).



Paddy fields are a common feature in Tanguar Haor in winter. © IUCN/ Md. Mehedi Hasan

The preparatory phase (December 2006 to April 2009) was geared towards confirming the interest of the government and the communities to collaborate in managing the biodiversity of Tanguar Haor, while ensuring well-being of communities. During this phase, a co-management system was developed in order to fetch benefits for the poor.

Based on the experiences of the preparatory phase, the development phase (May 2009 to June 2012) included 88 villages within a single management unit. This phase focused on capacity building of communities for promoting alternative livelihoods amongst the extreme/ultra poor, raising awareness for conservation, practicing conservation and protection for conservation of resources involving community and the government, management of social capital for enhancing livelihoods, and commercial fish harvesting. After successful implementation of the development phase; the consolidation phase of the project was implemented from July 2012 to August 2016.

The SDC-funded CBSMTH project is the first-ever intervention of the Government of Bangladesh towards wetland management through establishing a co-management



Community-led afforestation protection are helping to green Tanguar Haor. © IUCN/ Md. Mehedi Hasan

model that allows the sustainable use of natural resources. A paradigm shift in collaborative management with community leadership is being strengthened in Tanguar Haor through this flagship project of IUCN Bangladesh.

During the project period, the three-phase cycle has had a significant role in setting a co-management governance arrangement in Tanguar Haor. A three-tier co-management organisation has already been established covering 76 (out of 88) villages and 7,089 members (28% women-headed HH) in the project area.⁹ The co-management system is in practice now and also has been conceptualized by the key actors particularly, the Government of Bangladesh and the community people of Tanguar Haor.

One of the notable progresses under the CBSMTH project has been made in the event of ensuring right of poor fishers' fishing access in Tanguar Haor. Most importantly, the introduction of permit-based fishing modality has successfully alternated the tendering process, which previously benefited the influential groups at large.

During the project intervention, ecological protection and habitat restoration process of Tanguar Haor also gained a serious momentum. The ecosystem of Tanguar Haor has been restored and biodiversity has been improved through community participation in the resource management and protection. The improvement of bio-physical conditions has been mainly caused by a number of project interventions, i.e. afforestation, homestead seedlings/saplings distribution, habitat restoration, sanctuary establishment, fingerlings releasing, regular joint patrolling of law enforcing agencies and community guards, and awareness meetings on nature conservation.

Besides, initiative for alternative livelihoods under the CBSMTH project has greatly helped to enhance income of Tanguar Haor people as well as encouraged them to involve in sustainable natural resource management. By the Social Capital Management (SCM), the poor community of Tanguar Haor have own savings, get access to financial support from their accumulated fund and also enjoy benefit as accrued from fish harvesting programmes.

The purposes, results and achievements of the CBSMTH project are summed up in Table 1.3.



Rows of Hizal-Koroch tree in Tanguar Haor. © IUCN/ Md. Mehedi Hasan

⁹ CBSMTHP (Community Based Sustainable Management of Tanguar Haor Project). (2016). Bi-annual Operational Report (September 2015-February 2016). Submitted to the SDC by IUCN Bangladesh, Dhaka. p. 42.

Table 1.3: Achievements of the 'Community Based Sustainable Management of Tanguar Haor' (CBSMTH) project at a glance.

Phase	Expected Outputs	Achievements
Preparatory Phase (December 2006 - April 2009)	<p>Objective-1: Selected communities of Tanguar Haor (TH) have capacity and organisation to participate in pilot co-management activities</p> <p>Output 1.1: Selected Communities are mobilised towards participating in pilot co-management of TH resources</p> <p>Output 1.2: Selected communities trained for different livelihood options and IGAs initiated</p>	<ul style="list-style-type: none"> Community mobilisation was completed, and several awareness campaigns were carried out.
		<ul style="list-style-type: none"> 'Participatory Resource Management Planning' (PRMP) was completed in 30 villages using a manual developed by PSMU to guide the project staff to conduct PRPM at village level. PRMP methodology was composed of two components namely Community Plan (CP) and Household Business Plan (HHBP). A savings scheme was established and a newly-established community groups were encouraged by the existing Self-Help Credit scheme in the area, conducted by Inter-Cooperation.
	<p>Objective-2: Institutional system is negotiated and piloted to support towards development of a fully operational co-management system for Tanguar Haor</p>	<p>to support towards development of a fully operational co-management</p>
	<p>Output 2.1: Modalities for accessing and harvesting of natural resources developed and tested</p>	<ul style="list-style-type: none"> Co-Management Model: A co-management model was developed for accessing Tanguar Haor natural resources. A Resource Harvest and Benefit Sharing mechanism were developed in close consultation with the stakeholders.
	<p>Output 2.2: National and regional platforms established to support Co-management of TH</p>	<ul style="list-style-type: none"> The Ministry of Environment and Forests (MoEF) formalised the Project Steering Committee (PSC) at the national level. Regional level Structures: The Tanguar Haor Management Committee (THMC) at the Sunamganj level was in operation since 2007.
	<p>Output 2.3: Basic understanding of and consensus on the principles of Co-management of TH developed by primary and secondary stakeholders at regional and national level</p>	<ul style="list-style-type: none"> The Project continued to undertake awareness programmes at all levels to develop a common understanding and build consensus on basic principles of co-management.
	<p>Objective-3: Knowledge on Tanguar Haor is organised to provide necessary input for the development phase</p>	<p>to provide necessary input for the development phase</p>
	<p>Output 3.1: Knowledge management system developed</p> <p>Output 3.2: Knowledge on resource system of TH improved</p>	<ul style="list-style-type: none"> The Project developed a database (on Self-Help Credit & HHBP), publication archive, and an information center for knowledge management. The Project, during its Inception Phase generated a series of reports (Resource inventory and mapping Sep '07, Co-management Model for Tanguar Haor Sep '07, Regulatory Aspects of Co-management Aug '07, Interactive DVD on TH birds Aug '07, Socio-economic survey report Mar '08 etc.) which helped to enhance knowledge on Tanguar Haor.

Phase	Expected Outputs	Achievements
	<p>Output 3.3: Comprehensive long-term plan (development phase) based on lessons learnt during the preparatory phase produced</p>	<ul style="list-style-type: none"> A proposal for Phase II was developed and granted.
	<p>Objective-4: Cost recovery mechanism developed</p>	
	<p>Output 4.1: Consensus developed on cost recovery system</p>	<ul style="list-style-type: none"> MoEF endorsed the “resource sharing modality” (Harvesters = 40% of the income, Community organisation = 36% of the income, Government = 24% of the income) through a gazette notification in April 2008.
Development Phase (May 2009-June 2012)	<p>Outcome-1: Communities have capacity to negotiate, manage and use the natural resources for better livelihood</p>	
	<p>Output 1.1: Communities in all villages are mobilised, organised and are willing towards participating in co-management of TH resources</p>	<ul style="list-style-type: none"> Organisational activities expanded into 76 villages under 73 Village Co-Management Committees (VCCs). Membership reached a total of 6,040 when up to October 2011 the total members were 5,688. Increase rate is 6.19%. 55% of the households (HHs) were covered so far under the organisational platform by June 2012, with a total of 4,518. Accumulation of social capital (Fee + Subscription + Savings + Service Charge) per VCC was BDT 147,145.
	<p>Output 1.2: Selected communities are involved with different livelihood options and IGAs</p>	<ul style="list-style-type: none"> Total SCM accumulation was BDT 10,741,607, by June 2012. Total amount of financial assistance provided to the members reached BDT 27,200,000, of which 19% received by female members amounting BDT 6,325,000. CCC leaders selected 12 new special IGAs in addition to existing 27 small business sub-domains. 67% (4,055) ultra-poor/vulnerable members received financial assistance.
	<p>Outcome-2: A well-functioning co-management body composed of the state, local government and communities manages the Tanguar Haor following the wise use principle of Ramsar</p>	
	<p>Output 2.1: An interim governance mechanism for co-management of TH agreed and formed</p>	<ul style="list-style-type: none"> Local level coordination committee including all relevant stakeholders chaired by the learned magistrates on duty in TH was formed by the THMC to coordinate all project activities more effectively with a focus on protection of TH resources at weekly and even at day to day basis. District administration allocated government khas lands at 4 unions of TH to construct union offices. Construction of office structures for all four UCCs was completed and made functional with operation of office works there in. THMC endorsed a forest resource harvest modality with a benefit sharing proportion of 60% for the members, 25% for CCC and the rest 15% as government revenue.

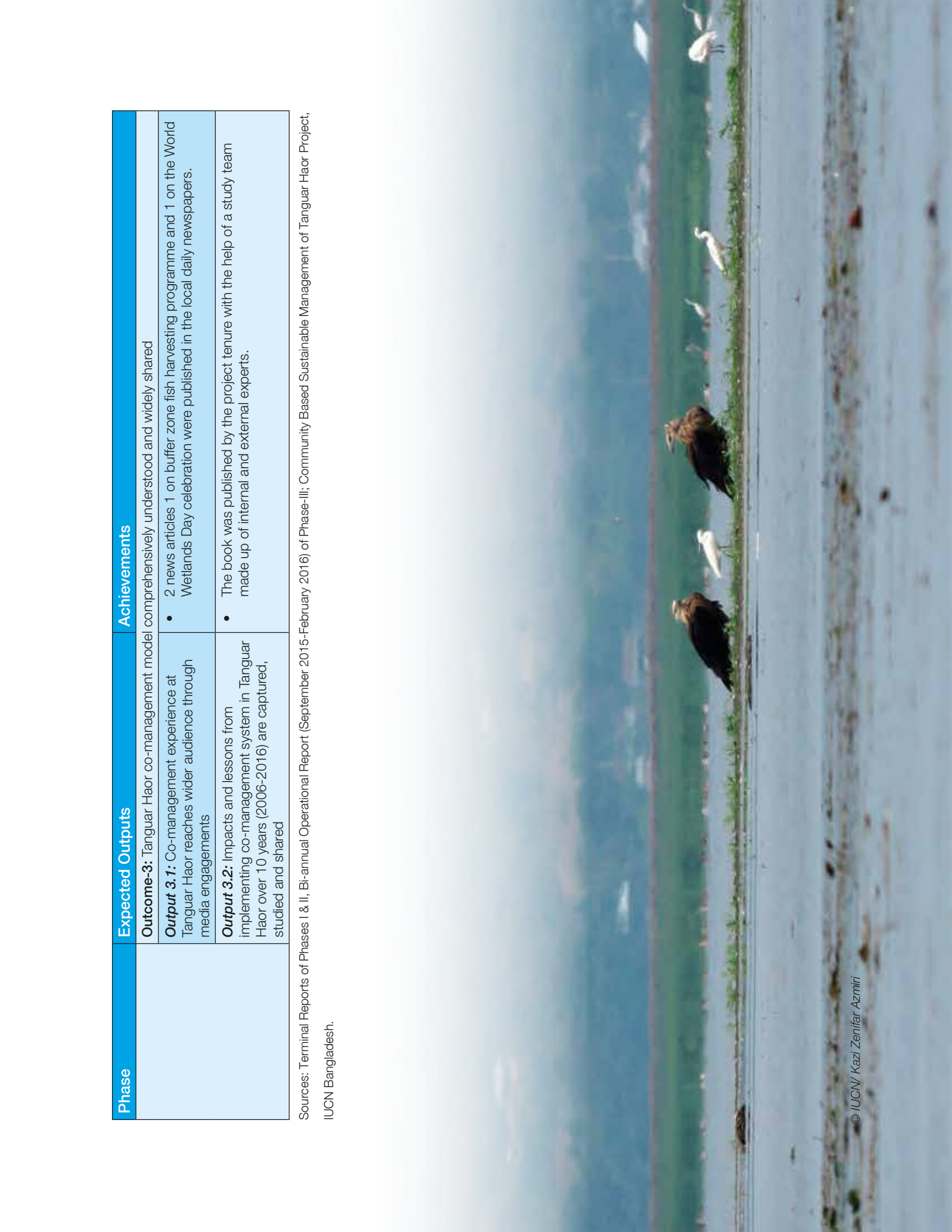
Phase	Expected Outputs	Achievements
	<p>Output 2.2: Tanguar Haor ecosystem integrity improved</p>	<ul style="list-style-type: none"> Community leaders were engaged in the overall management of Commercial Fish Harvest (CFH) in lieu of project staff. A traditional group of fishermen went for the first time for commercial 'Katha' fishing by bamboo pilings in Hatirgatha beel. Fish habitat restoration work was done in 14 beels/fish pass including 5 sanctuaries by piling of bamboos and Hijal branch (<i>katha</i>) this year. A total of 15,000 pieces of Katol, 15,000 pieces of Mirgel, and 50,000 pieces of Rui fingerlings were released in the nursery beel, Rangamatia and sanctuaries of Tanguar Haor. Studies on the hydrological status have been done by Bureau of Research Testing and Consultancy (BRTC)-Bangladesh University of Engineering and Technology (BUET).
	<p>Output 2.3: Community based participatory monitoring and evaluation system developed</p>	<ul style="list-style-type: none"> A protocol for community-based monitoring and evaluation was developed and shared with the community. Final assessment report on market extension and value chain analysis was submitted. HSI was completed report on capacity assessment on conducting PRMP and HHBP by the community themselves. TH biodiversity study was carried out by the experts in different groups.
	<p>Outcome-3: Political and policy support continued at the national, regional and local level for up-scaling and ensuring long-term sustainability of the management system for Tanguar Haor</p> <p>Output 3.1: Knowledge Management System is working</p>	<p>SCM database was further upgraded by amalgamating all segmented databases into a common platform.</p> <ul style="list-style-type: none"> Modality of 'Model Village' was drafted and tested accordingly in two villages. All union offices were equipped with computers, solar electricity and internet modems. Official accounting system was established for CCC by giving training on account management and facilitating required logistics. Pocket books for leaders were published and disseminated among all elected leaders.
	<p>Output 3.2: National and regional platforms established to support Co-management of TH</p>	<ul style="list-style-type: none"> A video documentary on the project activities was developed and disseminated widely on the YouTube. Communication with Ramsar Convention Secretariat was established. Tanguar Haor Information centre in Sunamganj was strengthened by collection of displayable items and required accessories and made operational as well. The National Ramsar Wetland Network was developed in participation of scientists and experts. Honorable Member of parliament and MoEF were in the process of formation of the network.

Phase	Expected Outputs	Achievements
Consolidation Phase (July 2012-June 2015)	<p>Outcome-1: The co-management system in TH is consolidated and effective</p> <p>Output 1.1: Institutional co-management structures are strengthened</p> <p>Output 1.2: A monitoring system for environmental and economic parameters is established and applied</p> <p>Output 1.3: The TH Management Committee is capable to take decisions, and the updated Management Plan is endorsed</p> <p>Output 1.4: Ecological protection and restoration is strengthened</p>	<ul style="list-style-type: none"> • 49.41% of households (4,941 HHs, including 126 women-headed out of targeted 10,000 HHs) participated in the co-management of TH and 63% of targeted 55,000 people brought under the project activities. • CCC (as an apex body of community organisation) was registered as “Tanguar Haor Somaj Bhittik Soho-Bebostapona Society” from the Registrar of “Joint Stock Companies and Firms” having registration No. S11534. • Total 6,066 VCC leaders, including 2,080 (34.28%) women leaders, were trained for leadership development in organisation and co-management system. • 29 community guards have been assigned to protect TH resources. Community guards have been protecting TH resources through effective patrolling in the haor. • Total 24 community members were trained on M&E system for monitoring of the beel ecosystem. • A training to develop skill of selected 19 participants on fish catch monitoring and data collection was facilitated. • Hydrological gauges were established and monitored the inflow and outflow of water from TH ecosystem, and a report submitted by the consultant. • 2 assessment reports on sustainable yield level for fish, and reeds and forest were prepared by the assigned consultants. • A National Scientific Body (NSB) comprising 8 members was formed by a gazette notification. • Four civil society platforms were formed in TH areas. • The ‘Tanguar Haor Management Plan Framework’ was developed and endorsed by the Government. • 5 fish sanctuaries were redesigned and extended to the nearest bank of the relevant water bodies (beels) and 2 bird sanctuaries were declared. • 7,618 bamboo/katha were pilled up in 5 beels/fish sanctuaries. • 4.6 hectares land of 8 kandas (ridges) were restored and 28,759 saplings of swamp tree species were planted. • 29 community guards along with 24 ANSARs under guidance of the Executive Magistrates were on site for 365 days a year.

Phase	Expected Outputs	Achievements
	<p>Outcome-2: The communities of the TH improved livelihoods and increased incomes</p> <p>Output 2.1: The communities have improved knowledge and skills to develop and diversify their livelihoods.</p> <p>Output 2.2: The communities have increased incomes.</p> <p>Output 2.3: The savings and loan scheme are transferred to a competent microfinance agent.</p>	<ul style="list-style-type: none"> 4,999 community members, including 44.46% (2,223) female members, were trained on various livelihood categories. Trained 1,273 (100%) members of women-headed and under-privileged households received financial support from SCM (946) fund and project fund (LIP 327). 700 (100%) beneficiaries had Livelihood Improvement Plan (LIP). Selected 100 HHBP holders (100%) have been shifted to LIP. Value chain analysis and its report on 'Fish' and 'Vegetables' were accomplished. A training manual on 'eco-tourism' developed and a total of 82 local eco-tour guides were trained, where 20% were women. Palli Karmo Shahayak Foundation (PKSF) was engaged to develop a modality to transfer SCM operation to a competent MFI. Any registered MFI did not express interest to take over SCM operation in this hard-to-reach area, due to high operating cost and risk of credit transaction there.
1 year extension phase (September 2015-August 2016)	<p>Outcome-1: Tanguar Haor co-management committees independently implement their mandates effectively, accountably, transparently and in an inclusive manner.</p> <p>Output 1.1: The co-management committees are capable to take the co-management responsibilities and functions independently.</p> <p>Output 1.2: The co-management instruments supported sustainability.</p> <p>Outcome-2: Poor communities make use of natural resources of Tanguar Haor and get benefits from their own financial institutions.</p> <p>Output 2.1: Core-zone and buffer-zone fisheries and other Tanguar Haor resources are protected and poor communities harvest the resources sustainably</p> <p>Output 2.2: Community's support to co-management is improved and incentivized</p> <p>Output 2.3: Social Capital Management (SCM) is effectively managed by an appropriate institution supporting Tanguar Haor co-management</p>	<p>committees independently implement their mandates effectively, accountably, transparently and in an inclusive manner.</p> <ul style="list-style-type: none"> 1,955 meetings of Tanguar Haor Co-management Committee were held. A consultative workshop was held on Tanguar Haor boundary demarcation. A Tanguar Haor boundary demarcation workshop was arranged by district administration. Resource mobilization was in place for boundary demarcation. 25 community guards were engaged as per the policy guideline. They participated in 50 joint actions with the government law enforcement agencies. 42 beels in buffer zone and 9 beels in core zone came under protection. 6,093 out of 6,587 (95%) decisions were taken in CCC, UCC and VCC levels meetings that had contributed to getting benefits of the poor people. A participatory M&E Protocol for Tanguar Haor ecosystem was developed. 100% member-wise Social Capital Management (SCM) data were updated till the period of December, 2015. Loan collection BDT 26,96,588 (29% recovery) out of BDT 92,66,095, as of 29 February 2016.

Phase	Expected Outputs	Achievements
	<p>Outcome-3: Tanguar Haor co-management model comprehensively understood and widely shared</p> <p>Output 3.1: Co-management experience at Tanguar Haor reaches wider audience through media engagements</p> <p>Output 3.2: Impacts and lessons from implementing co-management system in Tanguar Haor over 10 years (2006-2016) are captured, studied and shared</p>	<ul style="list-style-type: none"> • 2 news articles 1 on buffer zone fish harvesting programme and 1 on the World Wetlands Day celebration were published in the local daily newspapers. • The book was published by the project tenure with the help of a study team made up of internal and external experts.

Sources: Terminal Reports of Phases I & II, Bi-annual Operational Report (September 2015-February 2016) of Phase-III; Community Based Sustainable Management of Tanguar Haor Project, IUCN Bangladesh.





Chapter 2

PEOPLE AND ECOSYSTEM: Community Awareness, Aspiration, and Women Engagement



Introduction

People living within and around the Tanguar Haor are the eyes of Community-Based Sustainable Management of Tanguar Haor project. Biodiversity conservation through reduction of dependency of poor and ultra poor people over *haor* resources and building awareness on conservation were the philosophy of this project. For achieving objectives, the project engaged communities with all aspects of project intervention.

Engagement of community for successful management of natural resources needs a number of actions. The extent of community's dependency and status of natural resources need to be known for better management of natural resources. The socio-economic condition of people also an important aspect that need to be known for taking proper steps. Resource users need to be aware about importance of natural resources and status of degradation. The consequences of declination over the lives and livelihoods of people in future and associated reasons for declination need to be transmitted for having better understanding with respect to conservation. People have to be organised to take initiatives for better management of resources.

People's organisations

For organising people and strengthening the unity, a three tire organisation is formed by engaging local community. A total of 74 VCCs, 4 UCCs, and a CCC were formed in two upazilas (sub-districts) for wise management of Tanguar Haor resources. The VCCs are spread over 76 villages out of 88 villages of Tanguar Haor. The THMC was formed at the central level involving community, local government, local administration, and elites to guide root level organisations of Tanguar Haor for resource management. Members of each VCC deposited fund and those funds were being used for providing loan to the members for getting involved in income generating activities for betterment of their livelihoods. The VCCs, UCCs, CCC, and THMC have inter-linkage which is discussed in chapter 3. Inclusion of women within committees was strongly considered by the project.



Community leaders are participating in a Union Co-management Committee (UCC) meeting. ©IUCN/Md. Mehedi Hasan

Women Engagement and Awareness in Tanguar Haor

Community participation in NRM has proliferated during the recent past and is increasingly recognised as a better option to various environmental management initiatives. In the governance of protected areas, community participation is increasingly been formalised through legal and policy frameworks in the name of community-based environmental management (CBEM), joint management, and collaborative management or co-management.

A gender baseline study was carried out under the purview of the CBSMTH with a view to assess the status of the women to identify their problems and needs work nature, rights and control over resources, participation in decision-making process were among the key issues revealed through the baseline.¹⁰ The study raised some observations that believed to aid women engagement in the process of sustainable management of Tanguar Haor. These observations are:

- Needs of both male and female are vital in order to ensure participation that is free from discrimination.
- Poverty, illiteracy and absence of income source are the driving force of discrimination.
- Women engagement in the institutional process need to be enhanced along with the provision of education.
- And finally, capacity building of women deemed necessary for their effective participation in the CBSMTH.



Women are participating in a Village Co-management Committee (VCC) meeting.

© IUCN/ Md. Mehedi Hasan



The findings of the baseline study emphasized to include women in project activities and provided a guideline on capacity needed. The project strongly considered inclusion of women in all aspects of project initiative having constrains with regards to norms of the society. The project included 28% women-headed families in committees. In addition, 2,080 women got leadership training along with the men, which was 34.28% of total trained personnel.

10

IUCN Bangladesh. (2010). A Primer on the Gender Baseline Situation in Tanguar Haor. IUCN, International Union for Conservation of Nature, Bangladesh Country Office, Dhaka. 63 pp.

The study team conducted intensive survey, interviews, and group discussion apart from gathering views from other stakeholders in regards to women engagement and their awareness. The study revealed that the project strongly considered women in inclusion of income generating activities that ultimately given the scope to women to contribute in household income. The women with income found to be more powerful in decision making. Women performed relatively better in terms of institutional activities (i.e. in VCCs, UCCs, and CCC), loan management, saving and utilizing the loan in productive purpose. At the same time the rate of loan repayment in due time was higher compared to male members as observed during the field study. The critical role of women, as resource managers, as community activists, as



environmental advocates, must be recognized when strategies for the protection of the environment are being developed.

Women were found to be active in participating in the meetings at different organisational levels. During the 3rd phase of the CBSMTH project, participation of women in taking decision at the CCC meetings found to be encouraging. Overall 30% women participated in taking 589 decisions in both the executive body and general body meetings of the CCC.

The understanding of women was found to be better on livelihood improvement than conservation issues. Therefore, awareness of women with regard to conservation of haor resources still needed some improvement.

Box 2.1: Women engagement and perception on sustainability of the initiative

The sun was in the horizon when study team began their conversation with the member of VCC handicrafts group, Deb Rani (a pseudonym) in Batta village of South Bangshikunda Union. Deb Rani started her story with a smile as she was asked about her family. She had five members in her family: her husband, two daughters and a son. Her life and living entirely revolved round Tanguar Haor. She informed that her husband was a seasonal farmer. He did whatever job he could manage to maintain the family. When there was no agricultural activity, he went to fishing.

After the start of the project, Deb Rani extended additional support to her family by making bamboo products that are of local demand – fishing traps, baskets for carrying soil, and rice containers. She often produced these locally demanded goods by taking loan from community SCM savings.

She repaid her loan regularly. She appreciated the SCM initiative that helped her to contribute to household income. However, scarcity of raw materials found to be a limitation of this profession despite of having potential market. She mentioned that the availability of raw material could be solved by planting *murta* within the locality with capacity building of local people on cultivation of *murta*.

She knew that fish harvesting was illegal in ban period, with not having idea on exact time of the ban period. She asked for external assistance for continuing functioning of the VCC and the UCC as more nursing of members were still required for running these organisations by the community itself.

Community Perception and Conservation Awareness

The basic principle of community participation is the relationship between individual citizens and the state or an equivalent authority. Positive perception on certain aspects developed when citizens have control, delegated authority and true partnership with a respective authority in achieving any desired goals and objectives.

The study team conducted FGDs with the participants of the CBSMTH project. Many issues were on the table of discussion during the FGD. Male and female members, development organisations and project authority all were included in different phases of this process. Conservation for development was the key determinant of the FGDs.



It was observed that the awareness in relation to conservation of resources have reached at a satisfactory level. Capacity of the VCC members enhanced and they showed their commendable capacity in running their organizations, stopping fishing during breeding season, maintaining basic

principles during resource collection, and motivating others for conservation of haor resources.

During discussion, some UCC members were found vocal and confident. They were well aware of their demands and rights. Women members were also found highly motivated and enthusiastic for running organisations and conservation effort in the future.

Box 2.2: Benjamin's story – where dreams meet hopes and aspiration

Mr. Benjamin (a pseudonym), the president of the Bangalvita VCC, was a man in his 50s. He was expressing his satisfaction and accomplishment through his smiling face when the study team met him.

Mr. Benjamin was a farmer having eight members in the family. He was with the project since 2007. His wife was also a member of the VCC formed under the CBSMTH. She got loan of BDT 20,000 and BDT 10,000, under the agriculture category of the project and used the loan to buy cow for fattening and got a good return by selling those. Tanguar Haor was like a mother to Benjamin. It helped them in living their lives by providing food and livelihoods throughout the year. Thus, he believed that it was their utmost responsibility to aware local community about the importance of conservation to ensure livelihood.

He was happy with the initiatives taken by the project for conservation of *haor* resources through reducing dependency of the community on *haor* resources. However, he thought the committees formed under the project needed more nursing as they have started learning how to run an organization. He thought removal of external support at this stage would hamper the sustainability of the initiative.

He also mentioned that the dependency of people over *haor* resources reduced from the past, but it still existed. Still some people go for fishing due to their needs. He believed inclusion of each and every family with the conservation effort through scoping alternative income could be the only solution for reducing dependency on *haor* resources.

Aspiration

The study revealed that the communities of Tanguar Haor were well aware of conservation of natural resources. They were running their organization following the guidelines provided by the CBSMTH project. They were also helping to reduce illegal fishing. The dependency of people reduced to a certain level, but still there were scopes to work in this arena.

The VCC president of Bangalvita village mentioned that a lot of effort was given by the project team for conservation of *haor* resources and livelihoods development of *haor* dwellers. The SCM activities needed to be well-managed for reducing dependency of the local people. He believed that the project was an initiative that showed them the way to walk forward and more nursing of community organizations under the umbrella of collaborative effort. He also realized that both government and non-government organisations would help to ensure sustainability in conservation of *haor* resources and that might take a few more years.

Improvement in articulation of communities' demand took place and leaders demanded to engage themselves during planning of future conservation initiatives.



Chapter 3

GOVERNANCE:

Institutional and Legal Framework of Tanguar Haor Co-management



Institutional Development of Co-management in Tanguar Haor

Community-based resource management in Tanguar Haor emerged as a way to involve resource users and to utilize the local institutional arrangements and knowledge in this wetland's management. A co-management structure, emanating from a series of discussions and deliberations, was proposed to the Government of Bangladesh. As a result of concerted efforts, culminating with a formalized arrangement acceptable to the local people, district administration and authorized ministry, a co-management model within the structure was developed. The structure involved different levels of functions starting from village to district levels, and engaged the local community of Tanguar Haor to participate as well as the community organizations to negotiate and interact with the government machinery and vice versa, aiming to manage wetland's resources while ensuring welfare of the local communities.

The existing co-management governance under the CBSMTH project is apparently well thought-out with a foundation at the grassroots resource user level and linking up with the GOB's highest, policy-making level. The Village Co-management Committee (VCC) is at the bottom of the governance structure. As the name suggests, the VCCs were formed at the village level. The CBSMTHP facilitated the formation of 74 VCCs, covering 76 out of 88 villages around Tanguar Haor, and brought 7,089 members from 4,943 out of 10,205 households into the co-management process.¹¹ The VCCs are the bases for establishing four Union Co-management Committees (UCCs).



Community leaders participating in the election of Central Co-management Committee (CCC) of Tanguar Haor. © IUCN/ Md. Mehedi Hasan

¹¹ CBSMTHP (Community Based Sustainable Management of Tanguar Haor Project). (2016). Bi-annual Operational Report (September 2015-February 2016). Submitted to the SDC by IUCN Bangladesh, Dhaka. p. 42.

The Central Co-management Committee (CCC) is the apex body at the ecosystem level that serves as the voice for the Tanguar Haor community. The CCC was registered as 'Tanguar Haor Somaj Bhattik Soho-Bebostapona Society' (THSBSS) with the 'Registrar of Joint Stock Companies and Firms'.

However, the co-management system in Tanguar Haor remained functional, mainly by the Tanguar Haor Management Committee (THMC) that connected community organizations with the government. The THMC was formed with the district administration of Sunamganj, respective stakeholders and community leaders, and was headed by the Deputy Commissioner (DC) of Sumanganj. During the project period, the THMC provided stewardship with policy support in project implementation, and made appropriate recommendations to the Ministry of Environment and Forests (MoEF).

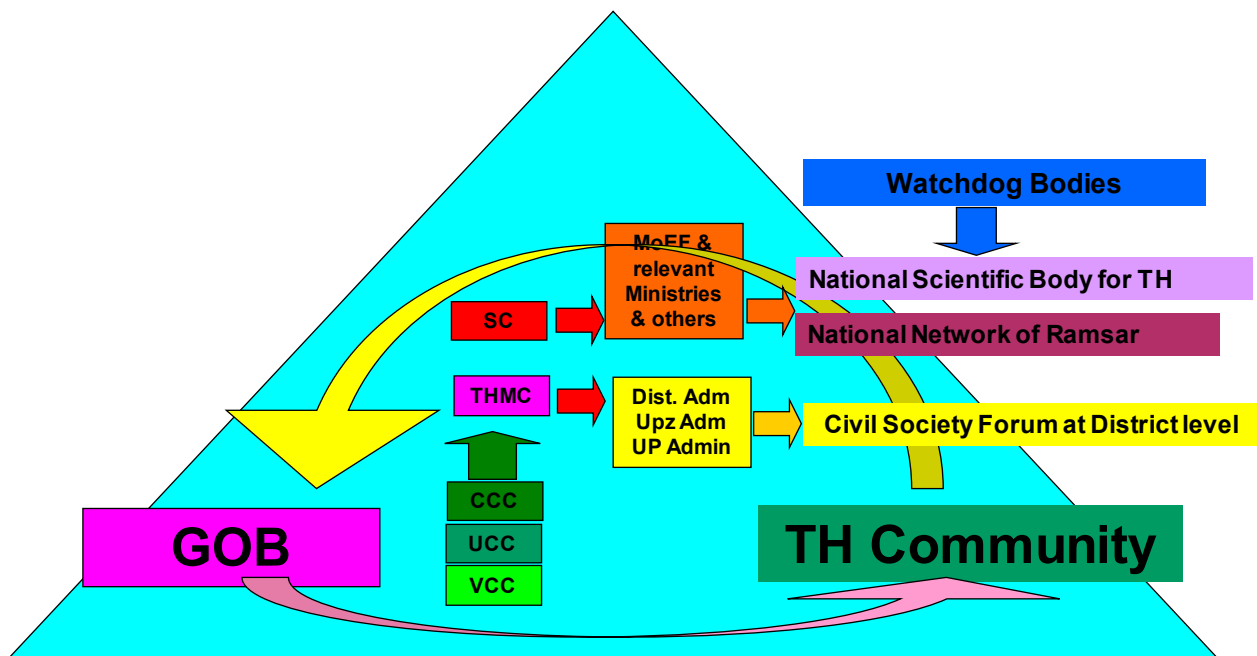


Tanguar Haor Management Committee (THMC) meeting. © IUCN/ Md. Mehedi Hasan

Besides, a Project Steering Committee (PSC) headed by the Secretary of the MoEF was also functioning at the national level. The PSC was mandated for monitoring and providing guidance on strategic project interventions with necessary policy initiatives in the field of Tanguar Haor wetland's resource management.

Other than the GoB participation, organizations like CNRS, GUS, BELA, Helvetas Swiss Intercooperation and ERA were included in the list of the concerned

stakeholders with the responsibilities for a specific component of the CBSMTH project at different phases of the CBSMTH project.



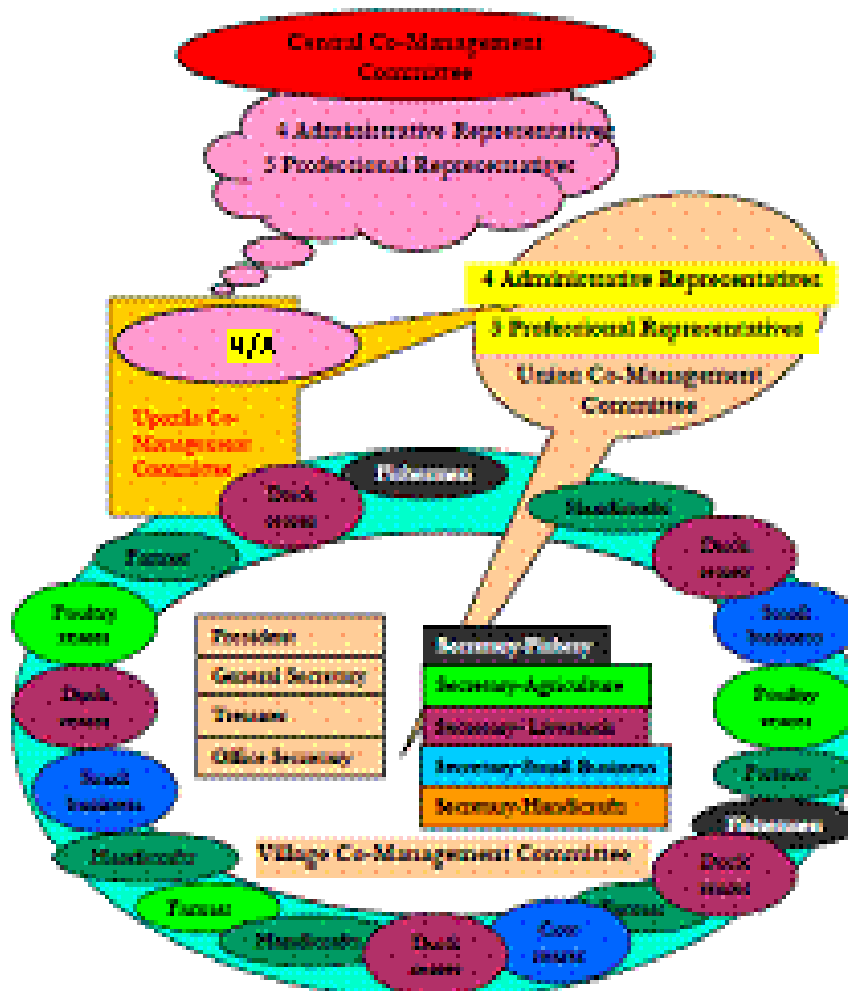
Institutional structure of Tanguar Haor community organization. Source: Mazumder, A. (2014) ¹²

The three-tier community organisation of Tanguar Haor since its formation had been functioning through a democratic process. Nine General Body members of the VCC, five professional secretaries, and four other office bearers; President, General Secretary, Office Secretary and Treasurer, were elected to the VCC for two years and form the VCC Executive Committee (EC). The VCC-EC members were aggregated at the concerned UCC as UCC General Body (GB) members, and they voted for formation of UCC-EC members.

¹² Mazumder, A. (2014). Mid Term Review. Final Report. Community Based Sustainable Management of Tanguar Haor Project - Phase III (Consolidation). IUCN Bangladesh Country Office, Dhaka, Bangladesh. pp. 17-24.

The UCC-EC members were aggregated into the CCC as CCC-GB members. At VCC level each voter of GB had the right to choose four office bearers, and one professional secretary from his/her own professional group in the EC. At the UCC level each voter of the GB had the right to choose only one member for the EC from his/her own group. On the other hand, at the CCC level each voter of the GB had the right to choose all members of the CCC-EC body. That means that the VCC was practicing five votes, UCC a single one, and CCC nine. Three representatives from the CCC represent the community at the THMC.

Portfolio based election system was introduced under the project. That is, an elected president of the VCC was only legible to compete for the UCC presidential candidature, and the same way an elected president of UCC was only legible to compete for the CCC presidential candidature. Three representatives from the CCC represented the community at the THMC.¹³



Structure of three-tier democratic leadership at community level. Source: Mazumder, A (2014)

Different types of meetings, such as weekly meetings, preparatory meetings, and monthly meetings of VCCs, weekly UCC-EC meetings, quarterly UCC-GB meetings, CCC-GB meetings, and CCC-EC meetings were held in the community organisation regularly. All the challenges, effort to strengthen community organisations, community actions for resources protection and necessary day to day issues were discussed and decisions were taken in the above-mentioned meetings. Women participated actively in decision-making process under a democratic organisational platform.

13 Hussain, A. (2014). Assessment of Wetland Governance System in Tangaur Haor Ramsar Site. Winrock International, Dhaka. pp. 9-11.

Legal Arrangement of Co-management Organisations

Community-based resource management systems cannot be revitalised in isolation. The planning and implementation of these systems require the development of new legal, administrative and institutional arrangements to complement contemporary political, economic, social and cultural structures.

The legal recognition of the CBOs as institutions by the appropriate authority is always a requisite for the continuation of the activities and implementation of the code of conduct in wetland resource management. The legitimacy of the CBOs, thus need to be confirmed to avoid any negation towards the CBOs' role from the outside entities. Legal recognition in fact helps the CBOs in various ways to claim their rights to the resources and protects their interests



through negotiation with formal institutions.¹⁴ Experience has shown that the sustainability of co-management organisations depends to a great extent on how solid is their legal footing.

In the context of increasing pressure on natural resources of Tanguar Haor, the need to formally codify the existing co-management practices through greater government involvement and legislative support continues to gain importance. However, the CBSMTH project through its “learning by doing” process over the years put in

place some crucial safeguard measures, mostly with the Government authorisation.

The THMC and the PSC were established through a GoB Gazette Notification, including a Terms of Reference for each committee. The two committees, although formed at district and national levels for the period of each phase of the CBSMTH project, immensely contributed to the smooth implementation of project activities in the field with a strong legal support. In case of Tanguar Haor community, the CCC (and its Constitution) was registered as a ‘Co-management Society’ under the 1860 Societies’ Registration Act. To execute function of the existing community organisation proactively and independently, the CCC constitution was also placed for amendment as well as ratification from the ‘Joint Stock Companies’. Though the VCCs and the UCCs did not have any separate legal standing, they were included in the CCC Constitution as supporting units.¹⁵

One of the remarkable progresses for bringing legal status to the Tanguar Haor community was made through obtaining a government gazette notification on fish profit distribution. The modalities for government-approved benefit sharing mechanism among community fishermen, community organisations and government allowed the community to harvest fish sustainably in Tanguar Haor and established their rights to access fish resources. Under this circular of the Government of Bangladesh on 13 March 2008, the concerned Ministry of Environment and Forests (MoEF) determined the ratio of share of fishery for the three stakeholders, namely, fishermen (harvester) 40%, Community 36%, and the Government 24%. The above ratio of share was determined through community level consultation, discussion at the THMC, National Steering Committee and the Ministry.¹⁶



14 Khan, S.M.M.H. (2011). Participatory Wetland Resource Governance in Bangladesh: An Analysis of Community-Based Experiments in Hakaluki Haor. Thesis Paper. University of Manitoba, Canada. pp. 141-142.

15 Mazumder, A. (2014). Mid Term Review. Final Report. Community Based Sustainable Management of Tanguar Haor Project - Phase III (Consolidation). IUCN Bangladesh Country Office, Dhaka, Bangladesh. pp. 17-24.

16 Hussain, A. (2014). Assessment of wetland governance system in Tanguar Haor Ramsar site. Winrock International, Dhaka. p. 17.

Later on, several modalities were designed for commercial and non-commercial fish harvesting and got legality with approval from the government. Among those, endorsement of the buffer zone fishing modality by the government was a great achievement for the CBSMTH project. The modality brought all the remote *beels* of Tanguar Haor into a single management, while establishing rights of the poor fishers. The benefit of this modality was that it drove community people towards understanding the value of biodiversity conservation and thus made less pressure on the core zone of Tanguar Haor. Also, a huge number of fishermen engaged in the buffer zone were deviated from the illegal fishing, which did not happen before.



Apart from fish harvesting modalities, the CBSMTH project significantly contributed to produce a number of policy documents, which directly or indirectly provide legal entitlements to the co-management organisations in Tanguar Haor. The publication of 'Tanguar Haor Management Plan Framework and Guidelines' (THMPF) has been a great success of the implementing project in Tanguar Haor. The framework book is not only considered a reference book for Tanguar Haor, but also carries a strong commitment of the Government of Bangladesh towards sustainable management of this wetland. Based on this framework, the project also developed 'Tanguar Haor Management Plan' aiming to accommodate the experience of previous phases with particular focus on social, economic and political issues of Tanguar Haor in the near future.

Besides the planning documents, the draft of 'Tanguar Haor Management Rules' (THMR) which was already accepted by the implementing ministry in principle, encompassed a re-designed co-management structure for Tanguar Haor. Thus, the THMR, other than playing an authoritative role for this wetland, is expected to strengthen the governance system of Tanguar Haor. In addition, the CBSMTH project produced some other policy documents, such as community guard policy and benefit-sharing agreement of forest resources. These policy and legal instruments would certainly contribute to ensuring sustainability of the Tanguar Haor resources beyond project interventions.

Another great achievement of the CBSMTH project was boundary demarcation of Tanguar Haor, which was completed with support and approval from the district administration of Sunamganj. Data in regard to boundary delineation was handed over to the district administration. The project erected pillars at the boundary of Tanguar Haor. This will help the Government and other organisations in applying any legal initiative or intervention in future, which was difficult earlier due to not having specific boundary for Tanguar Haor.



Fisherfolks setting off to harvest fish in Tanguar Haor. ©IUCN Bangladesh

Institutional Capacity Building of Co-management Organisations and Community Leaders

Building capacities and abilities of community leadership are always a requisite to ensure long-term sustainability of community-based institutions as well as the partnership with government agencies. The CBSMTH project made a continued and focused effort to identify and build the capacity of community leaders, with a view to having emergence of a new generation. During the project period, a total number of 6,066 community leaders, including 34.28% women leadership, at village level were trained for leadership development in organisation and co-management system.¹⁷



A leadership development training session participated by the community leaders of Tanguar Haor. © IUCN/ Md. Mehedi Hasan

Capacitating Tanguar Haor community through leadership training and mentoring now appeared to bear fruits in terms of their ability to lead and mobilise community people within the community structure already established there. The scope of issues discussed by the community leaders expanded to include resource management and protection (law enforcement) issues, poverty and income generation schemes, and market access questions. Capacity development of local leaders ensured for smooth functioning of the SCM operation, so that the community members can use this fund for income generation activities successfully. In addition, the community leaders grew skills for organising meetings at different levels of the existing co-management structure in Tanguar Haor.

During the 3rd phase of the CBSMTH project, the community leaders of CCC organised thirty-nine (39) Executive Committee body meetings and twenty-three (23) General Body meetings with support of project staff resulting 349 and 240 decisions, respectively. In most cases, the community has taken decisions related to SCM fund operation, commercial and non-commercial fish harvesting in Tanguar Haor, community guards' deployment for actions against fish and others resource poachers, and awareness building within the community against illegal resource extraction. The participation of female members in both categories of meetings were much appreciated with an overall average of 30%.

¹⁷ CBSMTHP (Community Based Sustainable Management of Tanguar Haor Project). (2015). Annual Operational Report. (July 2014-August 2015). Submitted to the SDC, by IUCN Bangladesh, Dhaka. p. 13.



Community leaders and members attending Union Co-management Committee's (UCC) quarterly meeting. © IUCN/ Md. Mehedi Hasan

On the other hand, the UCC leaders organised a good number of EC-meeting (668) and GB meeting (60) quarterly with the support of project during this time. The subjects of decisions were more or less similar to CCC meetings, except few different ones, like approval of financial support to individual community members. At the bottom tier, the VCC leaders organised weekly meetings and monthly meetings for SCM operation and others social and resources conservation issues. Apart from meetings at the community level, the leaders of Tanguar Haor participated in the THMC meetings at the district level during the 3rd phase, where the community leaders directly contributed to sharing the resources and in the maintenance of ecosystem services through implementing 75 decisions taken in favour of them.¹⁸

Nevertheless, the emergence of community leadership able to articulate community interests, especially in the domain of resource management and livelihood development remains a key condition for the sustainability of community organisations in Tanguar Haor. Efforts also need to be ensured to continue building robust community structures with the aim to work towards the generation levels of income that would allow the communities to move beyond subsistence benefits to envisage common investments to address some of the many substantial investments needed in this wetland.

Community Patrolling and Resource Protection

The presence of community guards and other law enforcement agencies for ecological restoration and protection of Tanguar Haor was another important achievement of the CBSMTH project. There was enhanced control of the community organisations together with law enforcing agencies comprising 24 Ansars, 12 policemen, and 29 community guards. Some local devotees of Tanguar Haor undertook the challenging task of community guarding at their wills. The guards patrolled the haor resources on a roster-basis in groups (3-4 person per group) all year round. The project facilitated to set up camp for community guards with providing necessary logistics. On the other hand, community organisations in Tanguar Haor shared the sheer responsibility of community guards by giving salary (on a monthly basis) from their own community fund.

¹⁸ CBSMTHP (Community Based Sustainable Management of Tanguar Haor Project). (2016). Bi-annual Operational Report (September 2015-February 2016). Submitted to the SDC, by IUCN Bangladesh Country Office, Dhaka, Bangladesh. p. 43.



Tanguar Haor Community Guards are starting their day by taking oath. © IUCN/ Md. Mehedi Hasan



A community guard is patrolling in Tanguar Haor. © IUCN/ Md. Mehedi Hasan

The CBSMTH project also demonstrated success in establishing and subsequently strengthening the community guards to work in coordination with the police and the Ansar in protecting the Tanguar Haor resource bases. The Ansars were deployed in the haor for about one decade with the government's financial support and under the supervision of the district administration of Sunamganj.

Different initiatives and attitudes of the district administration encouraged community guards to take an active role to protest against fish poachers in Tanguar Haor. In particular, the district administration was kind enough to support community guards by deploying a magistrate who was staying in Tanguar Haor on rotation all the year round. Such cooperation

has been largely contributing to minimize the rate of illegal harvesting of resources, including fishes, birds and reeds. The effectiveness of community patrolling is discussed in Chapter 5.



Executive Magistrate of Tanguar Haor instructing community guards to destroy illegal fishing nets and boats. © IUCN/ Wasim Newaz

Box 3.1: Okhil Das – a conservator and community leader of Tanguar Haor

Okhil Das, a popular name in Tanguar Haor, was working as a devoted leader as well as nature protector of this wetland for about a decade. Once, he was depended on Tanguar Haor and used to collect fuel wood for supporting his joint family of ten members. The initiation of CBSMTH project brought a change in his mind. Being motivated by project, he joined the Tanguar Haor community and avoided illegal harvesting of resources.

In 2007, Okhil played an active role as General Secretary of Tanguar Haor Adhoc Committee, and since the following year to 2010, he worked as the Agriculture Secretary of Village Co-management Committee (VCC). Besides, he served as a member of Community Force and Community Guard in 2007 and 2010, respectively. Despite being a village doctor by profession now, Okhil always provided enough time for Tanguar Haor. Considering his sincerity and dedication for the wetland's resources, Okhil was appointed as a Supervisor of Community Guard for one year in 2013.

During the period, he had a great role in community guarding for the protection of haor resources against all kinds of illegal harvesting, poaching, and hunting. In the meantime, he seriously participated in a number of patrolling activities with law enforcing agencies in day and night. Apart from that, Okhil also marked his presence in campaign programme for protection of trees, birds, fishes. In 2014, he became the General Secretary of the co-management committee of his village. In that year, Okhil appeared in a dual role. Along with the role of community leadership, he started to work as eco-tour guide after getting training under the project. At present, he is much involved in the development of eco-tourism in Tanguar Haor.

Okhil still dreamt of a protected Tanguar Haor. He wished to see a very strong community guard fully equipped with modern patrolling materials. He desired that a watch-tower would be built in his haor area. Okhil also demanded electricity supply and improved communication. As a nature conservator and leader of Tanguar Haor management bodies, he believed that the existing management system would be followed in other wetlands of Bangladesh one day.



“Tanguar Haor is our mother – we are responsible for its sustainable management and we always choose the best practices for its natural resource management” - Okhil Das

Chapter 4

RESOURCES:

Community People and
Well-being



Financial Resource Management

Community Fund Formation

The community level organisations had access to a number of funds available to them through the CBSMTH project. They had BDT 3.4 million-fund support for livelihood improvement programme. The SCM support was about BDT 68 million where the share for female was about BDT 19 million. As of August 2016, the CCC owned a social capital of about BDT 22.5 million. The VCC members could take loan for supporting specified income generating activities. This loan approval system was logical and transparent. As appeared from the official documents, loan disbursement and recovery systems should have worked right unless somebody maligned the system to take unwanted advantages.

The social capital of BDT 22.5 million was accumulated over the years, since 2007. This fund was a result of small contributions from all VCC members at Tanguar Haor. Each VCC member contributes BDT 2 as VCC-membership fee, which was nonrefundable and BDT 10 as savings on a weekly basis, which was refundable. Even though the total savings varied from VCC to VCC, the fund size for each VCC was around BDT 100,000 to BDT 150,000. The fund was used to provide revolving loan to the VCC members. The loan disbursement process was proposed at the VCC meetings, justified at UCC meetings, and finally got approved at the UCC meetings. Since, the loan approval processing was long and justified by a number of community strata; there was hardly any way available to someone willing to default.

Usage of Fund

There were specific purposes for which VCC members could take loan from this community-contributed fund. In most cases, loans were approved for short-term. Some of the purposes the VCC members got approved loans were: beef fattening; buying fishing implements such as net and boats; making handicrafts (from cane, bamboo, jute, and murta); small entrepreneurship; agriculture (seeds, fertilizers, and tillage implements); and poultry rearing. Based on the type of works selected for the fund support, the fund size varied significantly from as low as BDT 3,000 to as high as BDT 20,000. However, there was not any hard and fast system to determine the loan size. The VCC members used their discretion to decide the size of the loan. However, the usual practice was as follows: BDT 15,000 for fishing gears, BDT 5,000-20,000 for agriculture, BDT 10,000 for small business, BDT 20,000 for beef fattening, and BDT 5,000-10,000 for handicrafts. The loans were all individual; no group loan was sanctioned nor was there any plan for approving such loan in future.



A successful woman entrepreneur with her loyal husband. © IUCN/ Md. Mehedi Hasan

Social Capital Mobilisation

The interest accrued to the allotted loans was capitalised. The VCC members were the owners of the capital and the earned interest. Profit distribution mechanism was well documented and it did not create any problem at all. If a VCC member opted to exit from the VCC, her/his savings was given back to her/him with all the earned interest. However, the VCC membership money was nonrefundable.

Future of Social Capital Management (SCM)

There were well-planned accounts and ledger systems in managing the financial matters with all four UCCs. One cashier was assigned in each of the UCC office to prepare and maintain financial documents. However, the CBSMTH project staff used to help them in maintaining the accounts extensively. This help was open and rigorous – it started from filling up the loan application and ended at refunding the loan. This created dependency of the UCC people on the project staff. This practice reduced scope of UCC officials from learning how to manage the accounts.

During the study it was noted that some VCC members were less confident with running the SCM independently while they were doing this over the years with support from implementing NGOs. Illiteracy and limited trust on the capacity of UCC staff and dependency over project staff might be the reasons that decreased confidence of VCC members for running the SCM. Therefore, they were looking for external support for the management of the SCM.



A community member showing her successful vegetable gardening as an alternative livelihood option. © IUCN/ Md. Mehedi Hasan

Livelihood and Market Development

Background and objectives of livelihood programme

The people of haor are mostly either marginal farmers or poor to extreme poor labour wagers. A successful livelihood support programme for a large human community like those living in and around Tanguar Haor is undoubtedly a big challenge. The CBSMTH project provided technical, financial, and raw material supports to the local community to develop effective livelihood programmes to cover broadly the following objectives: (i) to ensure the households financially better able to support their own subsistence level needs; (ii) to help them combat the unemployment season (lean period); and (iii) to develop alternative income generation activities which might reduce their pressure on Tanguar Haor resources. As observed from the field conditions, the programme had a mixed kind of outcomes – It has achieved most of its objectives, but limited effort with regard to market development may suppress the sustainability of the initiative.

Supports provided

The CBSMTH project threw a livelihood improvement programme, popularly known as LIP. The LIP identified 700 households as the potential beneficiaries of financial support of about BDT 3.4 million. The financial assistance from SCM amounted to BDT 68 million where the share for female was about BDT 19 million. However, the Tanguar Haor community owned a social capital management (SCM) of about BDT 22.5 million at the end of the CBSMTH project. The project management managed to bring about 3,000 Vulnerable Group Feeding (VGF) cards annually from the government to combat the fishing-ban period of the year (roughly March-June). Total amount of rice allotted against each card was 60 kg. Thus, the total amount of rice given each year under VGF scheme was 180 Metric Tons (MT). The VGF help came from the Ministry of Disaster Management and Relief. In addition, about 50 MT hybrid rice seeds was distributed among 1,928 farmers to minimize agricultural losses from flush floods.

Income generation activities

The LIP programme supported a number of income generation activities in the communities. Some of the major activities were: paddy cultivation, commercial cultivation of vegetables at homesteads and around, nursery establishment, fish business, rearing of cattle like cows, goats, sheeps, and pigs, hatching of duck eggs, rearing of ducks and chickens, gorachery, small mobile business (feri), boat-making, handicraft and tailoring, tea stall, and other small entrepreneurship. It is important to note that, all these LIP activities are traditional and the people working on these had household level experiences. There was hardly any new AIGAs developed. Some training was provided to them on AIGAs.

There was hardly any diversity in the options for making the livelihoods of the Tanguar Haor-dependent communities. With few variations, the people were found engaged in a very few number of typical and traditional work. As seen almost in every VCC, females were making handicrafts in which they had traditional and indigenous training or experiences as those have local markets. Some efforts of trainings were provided from the CBSMTH project to promote or gear up their productivity in those work. The most common work the females were found engaged in were handicrafts of canes and bamboos, rearing ducks, mat-making, fattening beef and pork. Other than fishing, men were found engaged in operating passenger boats, renting boats, boat making and selling, and labour sales. In many cases, the male members of the households migrated to the big cities for works, like rickshaw pulling or masonry during the period of unemployment.

However, all the interviewees had confessed that their income increased from what it was before the project intervention. However, this income was not adjusted with inflation and market price. Nevertheless, a significant improvement was noticed in their understanding of income, price, and markets. They could clearly differentiate between money income and real income.



Women are making soft mat (Shital paati) by using 'murta' to sell in the market. © IUCN/ Md. Mehedi Hasan

Income and empowerment

There is a direct relationship between money income and decision-making power. The same has been found true for the women empowerment at Tanguar Haor. The study team conducted an exercise with 23 females from different VCCs to correlate their power to take decision in the family with their ability to contribute to the family expenses. These women were asked if they could save money, buy essential goods, take loan or lend money without prior permission from their husbands. They were also asked if they had any AIGAs to earn money for the family and if they could contribute to take important decisions, like sending kids to schools and having micro-credit from NGOs. The summary of the exercise is presented in Table 4.1.

Table 4.1: Quick appraisal of the empowerment of the women community at Tanguar Haor

Family size*	Income?	Savings?	Lending	Borrowing?	Buying?	Decision making
5-6	YES**	YES	YES	YES	YES	YES
5-7	NO***	NO	NO	YES/NO	YES/NO	NO

* Number of people in the household; **Total women surveyed = 17; *** total women surveyed = 6

The information as obtain from the quick appraisal clearly potrays that, a female with income made through AIGAs were more powerful in taking decisions in the family than the one with no income. Since the CBSMTH project had strong component on helping women at work at home, the project had contributed to empower the women in the region.

Market development

Any production activity is based on three broad considerations: (i) the demand analysis of the products being

planned to produce, (ii) The capacity of the organisation, both technical and financial, to produce the planned products, and (iii) the potential markets or consumers of the products. The demand and need assessment are the most important step in the production process. This process determines what products are demanding in the markets. This facilitates the on-time sale of all the products produced and the expected level of profit the producers want. Also, it minimises the risk of the businesses. The next big consideration should be given to the ability of the producers to produce the products. This is where the local entrepreneurs need extensive training and installation supports to effectively and efficiently produce their products. The third step – the market size identification is important. If the market demand size can be determined perfectly, the producers clearly know how much of each of the products should be produced for a market clearance condition to prevail.

In the LIP of the CBSMTH project, all the AIGAs developed were traditional and the producers were doing those for many years. The entrepreneurs already knew the kind of products they needed to produce. They also knew the market demand for their products. So, they were doing the same work with same level of demand and with the same set up of markets. The field work for this study was conducted in the late July 2016 – the full monsoon period. In most of the VCC surveyed, the men were found spending leisure time with almost no work at hand. The females were found weaving floor mat from murta.

Constraints of market development

The production of materials was limited to the demand by the local market. According to the VCC members, they do not hunt for a big urban market since they even cannot satisfy the demand for the local markets. Sometimes, some wholesalers came and collected the products; however, it reduced their margin of profit. So, the VCC member producers did not feel interested in looking for big market. They were interested to sell their products in the local markets by themselves. Another logic they erected was that – since most of the male members were unemployed (mainly during the monsoon), they had ample time to take their own products to the markets for sale. This is like they were captive (and satisfied too) to the local market and they did not feel interested to look for a bigger market. Another constraint to market development was the supply of raw materials. For example, patipata (murta) is now-a-days very rare and they cannot produce floor mat even to satisfy the local demand.

It was known from the CBSMTH project staff that there were a number of constraints in the way to structured market development for the products the VCC member were producing. The biggest hurdle they identified was the volume of production. The urban centres, which they contacted, were interested to market the locally produced handicrafts, but the bulk of volume they needed was many times higher than the volume the VCCs produced. The urban centres claimed that, since communication and transportation were tough and cost intensive, small quantity of production was not good a business proposition they could think of.

Ecotourism in Tanguar Haor

Conceptualizing ecotourism in Tanguar Haor

Ecotourism is having responsible trips to natural resource reserves, which takes into consideration the conservation of the environment, sustenance of the well-being of the local communities, and involves interpretation and education of both guides and guests. Therefore, this is a form of tourism where the guides and tourists are agreed upon environmental conservation and social welfare. It offers market-based sustainable solutions to conserving and enhancing bio-cultural diversity and helps protect the natural and cultural heritage of the touristic places. That being said, an important avenue the CBSMTH project explored was looking into the prospect of ecotourism development in Tanguar Haor. The initiative was new of its kind in that area. However, the programme showed marked potentials for future development with quite a few limitations to be addressed.

Social and economic benefits of ecotourism

Ecotourism was completely a new concept in the Tanguar Haor area. The CBSMTH project made it a reality in the project areas that ecotourism not only saves the environment, but also contributes to household income, enrichment of cultural exchange, education and development of the region. The educated young force can be put to the social welfare through ecotourism. The tourist guides were found making a very good income from the tourism activities.

From the diary of a tourist guide at Golabari Uttor Sripur, the Table 4.2 has been prepared.

Table 4.2: The list of travelers and the experience of their travels to Tanguar Haor as noted from a Tourist Guide's notebook*.

Sl.	Date of Arrival	Days of Stay	From	Group Size	Guide's Fees**	Tourist's comment
1.	03.07.2015	02	Chittagong	--	2000	Need healthy toilets
2.	04.07.2015	02	BUET	12	2000	Foods and boat are excellent
3.	21.07.2015	02	--	05	2000	Best enjoyed boat, food, and the behaviour of the guide
4.	24.07.2015	02	Sylhet	06	2400	Feel less secured
5.	14.08.2015	02	--	12	2400	Not possible to enjoy without guide
6.	15.08.2015	02	--	44	4000	--
7.	--	03	--	06	3000	Will be back again
8	29.08.2015	02	--	07	2400	Excellent scenery, food, and hospitality
--	--	--	--	--	--	--
40.	01.06.2016	02	--	06	2400	Tourism should be institutionalised
41.	13.07.2016	02	--	--	2400	Food and the guide are excellent

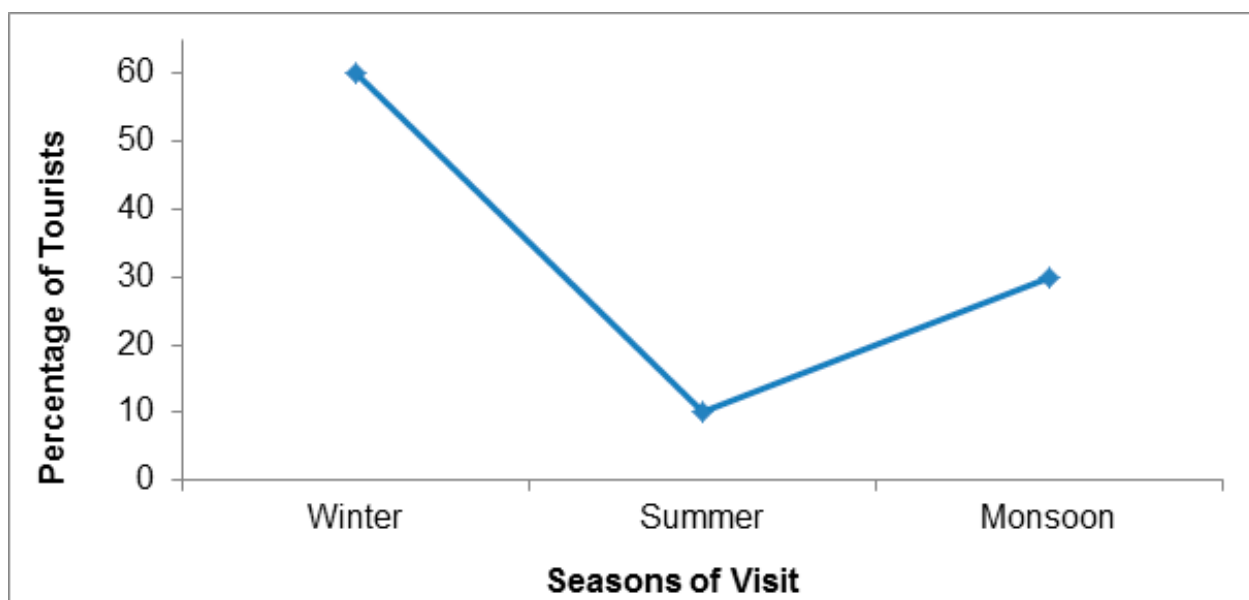
*The table is a part of a long list; **the price of the food supplied is not included.



A tourist exploring swamp forest by a country boat in Tanguar Haor. © IUCN/ A.B.M. Sarowar Alam

According to Table 2, a single tourist guide had 41 teams of tourist in a calendar year where each day fee for the guide was BDT 1,000-BDT 1,200. The length of stay for each of the team was 2-3 days. This indicates that the tourist guide's annual income as guide fees from this profession was around BDT 100,000. However, his income from this profession is in fact many folds of what he earned as his guide fees. The other sources of income of a tourist guide are: (i) income from the boat rental, which he used to take the tourists in the haor and (ii) food which he prepared for the tourists. Alongside the monetary out-turn, the Tanguar Haor society is being introduced to many people from almost all the districts of the country (sometimes, from abroad). On the other hand, the influx of tourist was also shaping the cultural of the area as well.

However, the income from guiding a tourist in the haor is not the same over a year. The number of tourists varies from season to season. The highest numbers of tourists come to visit Tanguar Haor in winter or dry season. The main attractions for the tourist to come to the haor in winter are the migratory birds. According to the tourist guides of Tanguar Haor – “more birds bring more tourists”. Therefore, tourism development in Tanguar Haor is dependent on the conservation of migratory birds in the region. This is an ideal example how ecotourism helps keep environment safe. However, the number of tourists declines significantly in the summer. This number increases again in the monsoon as shown in the line graph below.



Variation in the number of tourists across the seasons of a given year.

Environmental benefits of ecotourism

On being asked what ecotourism is, two tourist guides who study team visited in Golabari Uttar Sripur and Bangalvita responded - this is about enjoying the beauty of the nature while conserving the environment. According to them, earlier the visitors used to come here and did not know about the culture, heritage, and environmental significance of Tanguar Haor and the areas around it. More often, they were found to destroy the haor biodiversity, such as breaking small trees and hunting birds. Ecotourism solved this problem largely. In addition to providing necessary information about the history and culture of Tanguar Haor, the tourist guides emphasised on the significance of the healthy existence of the Tanguar Haor with all its biophysical components.

Date / /

দিমের নাম টাভেলার্স জয় স্টার্ট বুকেট
 রস্টিক - সংখ্যা ২২ জন
 সময়কাল ৩ ঘণ্টা জুলাই ও জুলাই
 অনুর) হাওড়ার পরিবেশ বেকা ভাঙ্গ
 জাহিড; কিলাস ডাই জুই জাতকিক মানুস
 লোকায়না প্রদান দেবর মজা করে
 জুই বালু
 গাইড ফি ২ দিনের ২০০০
 X ২০০০
 ৪০০০

Tourist Group Date: 04/07/2015
 from CTC

We came here 3rd July 2015.
 Dilal is well known to us. A very
 generous and well behaved guide.
 We always prefer him because
 he is trustworthy and he makes
 everything so easy for staying.
 I visit here often because
 temperature attracts me more
 and all the time we chose him
 as our guide. One request
 please make a toilet for
 tourist. Its very urgent, other
 everything is perfect here.

Thanks
 Abdullah Al Mijan
 03/07/15
 04/07/15

guide fees
 2000/x
 for today

Date / /

The Moon and hospitality will bring
 me here more than once.

Lagan
 30.10.15

Date / /

দেখা গেল মজার টেলিফোন হাওয়া মন.
 আলম-ভালো নাশালো ফিটমিলাবের
 মজা হয়, আলম মজা করুনাম
 আমবা,
 হিন্দালাহ আমর আমর ফেরে করলো
 আলম জেলা অধ্যক্ষ ছিল, দিনুবাধ.
 10-12-15

Permit/fee 1000



বেলাল মিয়া Tourist Guide
 গোলাবাড়ী উত্তর শীপুর, তাহিরপুর, সুনামগঞ্জ।
 মোবাইল: ০১৭২৩০৯১৩৫২, আইডি: TH ২০১৫০০০২
 টাংগুহাওড়ার পরিবেশ বেকা ভাঙ্গ

From the comment book of Belal Miah

Mr. Belal is a Tourist Guide who has received tourist guide training under the CBSMTH project. According to him, "The this taining has not only enhanced my knowledge in environmental conservation but also has given me very good opportunity to earn my livelihoods"

Tourists' needs

Many tourists have felt the need of healthy sanitation facility in the area. Table 4.2 also gives information of the length of stay in the haor area. In most cases, the tourists do not stay beyond 2 days. It's probably the shortest possible length of time for tourists to stay at an excellent and naturally decorated tourist spot. The area almost had no hotel or motel for the tourist to stay in. If there was, the length of stay could have been longer. However, there was a small cottage – *Haor Bilash* – in the Golabari, Uttor Sripur area built with private ownership. The cottage was still under construction – it did not have healthy sanitation facility and clean drinking water supply. The demand for lodging in the Tanguar Haor area for the tourists could be perceived from the fact that, the owner's income exceeded BDT 40,000 in the mid-2016 within a couple of months.



A community leader initiated a guest house in the middle of Tanguar Haor on his own land. © IUCN/ Md. Mehedi Hasan

One more important thing for the tourists could be a store that can display and sell goods of interest of the tourists. An observation tower was a much-needed attraction for the tourist to visit the tourism spots. There are a number of observation towers in Tanguar Haor, which the locals described as broken, unplanned, and with construction faults. Thus, were literally abandoned.

Tourist guide training – the issues

The identification of tourism development was an attractive and smart idea with the CBSMTH project. However, the tourism development initiative of the project could have been a greater success, if some issues in relation to guide selection for training were carefully considered.

Can ecotourism be an industry?

The Tanguar Haor is a 12,655-hectare area with immense natural resources. Its geographic location and biophysical structure have made it attractive to visitors from home and abroad. Tourism is at its very early stage of development in Tanguar Haor. The data obtained from the existing tourist records (from the tourist guides) in the haor area bid fair for the Tanguar Haor to become an important tourist hot-spot. Tourists are in great thirst to enjoy the beauty of Tanguar Haor – one of the largest freshwater wetlands of the country. Boundless water in the monsoon, crystal clear water in the dry season, thousands of chirping migratory birds in the winter, tasty fish and foods along with heartiest hospitality of the local people are some elements in favour of Tanguar Haor to be a tourism hot-spot.



Tanguar Haor Information Corner was placed in the Sunamganj Heritage Museum. © IUCN/ Md. Mehedi Hasan

The number of tourists is on the rise. The tourists are ready to enjoy the beauty of Tanguar Haor by paying the guide tours. Thus, the area has ample scope to become an ecotourism hot-spot.

A tourism guide board is critical for the management of tourism activities in Tanguar Haor. The tourist guides claimed that many tourists come here on their own. This is a loss to both the parties – the guides and the guests/ tourists. The tourists thus coming here are not well aware of the culture, heritage, and the tourist attractions of the area. Therefore, they go back with a poor perception about Tanguar Haor. In addition, they are potential threat to the threatened biodiversity of the haor. Since they do not have an eco-tour guide, they might not be motivated to conserve environment while enjoying nature. A tourist guide board or organisation can connect the tourists with potential tourist guides. This organisation would again be important from a revenue management perspective of the government. Since Tanguar Haor bids fair for a potential tourist spot in the near future, the government can earn a good sum of revenue from this sector. Now the tourist guides are freelance guides. If tourism can be institutionalised in Tanguar Haor, the government can earn a lot of revenue in the form of 'payment for ecosystem services' from the tourists.



Chapter 5

CONSERVATION:

Approaches, Strategies and Monitoring



Human existence intrinsically depends on the nature and natural resources. Wetland plays pivotal role in sustaining the equilibrium of the Earth's environment and in providing services and benefits to living organisms including human. The earth is losing wetland each and every day as a consequence of growing human pressure on using of its resources. The unsustainable development concept and activities of human has exacerbated diminishing of wetland resources and its biodiversity. The unabated anthropogenic development makes this planet more vulnerable habitat for human and other organisms gradually. Philanthropists and scholars are drawing attention to the policy-makers to formulate coherent policies for economic growth and for sustainable development taking into account conservation of nature and natural resources.

Biophysical Feature of Tanguar Haor

Tanguar Haor, a wetland of international importance is situated to the northwest part of Sylhet basin, which is at the foothill of Garo and Khasia Hills of Meghalaya State of India. In a hydrogeomorphic setting, Tanguar Haor is located under a heterogeneous mosaic of wetland system- the riparian wetland and the stream headwater. Geology, soil characteristics, and hydrological system influence the characteristics of this haor ecosystem. With the range of 12,655 hectares area this semi-natural wetland is divided into four broad landforms: piedmont depression, permanent wetlands (beels), floodplains and rivers with coordinated drainage system. The average elevation of this wetland ranges from 2.5 m to 5.5 m and even a few perennial depressions (beels) are less than 1 m below the sea level.

The topography and slope of the landscape create perennial and seasonal depressions, streams and canals, floodplains, and levees and ridges that are important habitat for biological assemblage. The blending of shallow and deep depressions, quantity and quality of open water, flood plains, ridges, hanging and emergent vegetation, swamp forest, interconnected channels/canals and rivers, and water flow make this ecosystem as the most productive wetland in Bangladesh. Its unique hydrogeologic feature is that despite being surrounded by major three river systems the water flows do not intrude this wetland directly rather natural less turbulent back water from the Surma River floods this haor mostly. Tanguar Haor is recognised as an excellent – and arguably the best –



A part of biodiversity in Tanguar Haor. © IUCN/ A.B.M. Sarowar Alam

example of the haor wetland type of the floodplains of north eastern Bangladesh¹⁹. Elsewhere in the region, such floodplain wetlands are either absent, have been entirely converted (e.g. in adjacent lowland India), or consist of entirely different assemblages of species (e.g. Burma/Myanmar) [Tanguar Haor Management Plan 2000].

Tanguar Haor differs substantially from other wetland because of its varying physical and biotic nature. This haor provides the most productive habitat, such as swamp forests, floodplains, reed beds and perennial open water body for biological species. Hundreds of perennial and seasonal ridges or levees (kanda), seasonal fallow land, deep and shallow perennial and seasonal depressions and deep and shallow natural inlets and outlets with transparent huge water volume are of unique features that maintains the ecological niche for numerous aquatic and terrestrial species of wetland ecosystem. A total of 109 shallow and deep depressions is of about 4,344 hectares land, which cover about 34.33% of the whole haor area. Almost all these beels of Tanguar Haor retain water throughout the year. Water depth at Tanguar Haor varies from 6 to 10 m in the wet season, to 2 to 6 m in the dry season. Its 1,058 hectares vegetation area serves as reed beds and swamp forests ecosystems. About 3447.65 hectares fallow land get seasonally inundated from April to October a year. This fertile fallow land turns into greenery with team up grass, scrubs and other plants. Such heterogeneity of this wetland ecosystem offers essential habitats for many hydrophytes, aquatic organisms, birds and wildlife.

The hydro-geomorphic location makes this haor a very distinctive in the entire haor ecosystem. The wetland is surrounded by three sides with three river systems-Bisarpasha-Gashi, Jadukata-Patlai, and Surma-Jadukata-Boulai arounds on its west, south and east sides, respectively. A number of other wetlands, such as Matian Haor, Kanamuya Haor, Shibbari Beel, and Thapner Beel are surrounded by its east, south and west sides. With exceptionally this haor is mostly feed up by the back water from the Surma river through Jadukata, Boulai and Patlai river systems. Its northern part is adjoining to the foot hills of the Garo and Khashi hills of Meghalaya state of India. About 42 streams or creeks flows from these hills and fall into the haor. But their aggregate confluent is very insignificant compared to the water come from the Surma. This typical geographic feature is reflected by its naturalness, species richness, structure, composition and function. With this exceptionality the wetland has become a rich harbour of many nationally and globally important terrestrial and aquatic assemblages.

Conservation Value of Tanguar Haor

From the centuries, Tanguar Haor attracts the tourists, ornithologist, botanists, biologists, and human settlers with its captivating scenic beauty, aesthetic and conservation value with economic opportunity. In 1835 William Griffith first reported its botanical importance and scenic beauty. Then it has been a research field to geologist, ornithologist, botanists and zoologists and ecologists. The significant conservation value of Tanguar Haor was reported from their studies and reports. According to the findings of the past studies, it is the last vestige of some nationally and internationally uncommon biological species.

In terms of sheer biological species abundance, it is one of the richest areas in Bangladesh. It offers the habitation for at least 150 wetland plant species, 141 freshwater fish species, 11 amphibians, 34 reptiles including 6 turtles, 7 lizards and 21 snake species, 208 bird species, and 19 mammal species. This wetland provides the habitats for various globally threatened wildlife species those are listed on IUCN Red Data lists and CITES Appendices. This includes 1 amphibian species, 3 turtles, 2 lizards, 4 snakes, 10 birds, and 6 mammal species.

At least 92 waterfowl species have been found at Tanguar Haor (including many migratory species), that make this haor by far the richest wetland in terms of water bird diversity²⁰. It is breeding area for some rare species, such as the Pallas's Fish-eagle (*Haliaeetus leucorhynchus*), Watercock (*Gallinix cinerea*), and Spot-billed Duck (*Anas poecilorhyncha*).

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Scott, D.A. (1989). A Directory of Asian Wetlands. IUCN-The World Conservation Union, Gland, Switzerland. 1182 pp.

Giesen, W. and Rashid, S.M.A. (1997). Management Plan for Tanguar Haor, Bangladesh. Final Draft. Restoring local community participation in wetland resource management. National Conservation Strategy Implementation Project-1, Ministry of Environment and Forests and IUCN, Bangladesh. 218 pp.



Tangiar Haor Information Corner was placed in the Sunamganj Heritage Museum. © IUCN/ Md. Mehedi Hasan

Rich fisheries biodiversity is its salient resources that earn its name as distinctive Mother Fishery among other freshwater bodies of Bangladesh. It provides significant habitat for freshwater fish and prawn species as grazing, spawning, breeding and nursery ground.

Tangiar Haor has significant ecosystem and conservation value with economic importance. This rich fisheries base impressively contributes to maintaining aquatic biodiversity in the entire haor ecosystem and replenishing the annual inland fish production of Bangladesh through its natural recruitment and dispersal processes. It significantly adds value to the national economy directly by supplying 14% annual catch to open-water fisheries production in Sunamganj district and 0.67% at national level.

It harbours some of the last vestiges of swamp forest in Bangladesh, and is one of the few remaining haor ecosystems with a more-or-less natural hydrological regime. About 56,000 people of 10,205 households in 88 villages surrounding its periphery are directly or indirectly dependent (93%) on this natural resource base for their daily livelihood options. On an average, 65.41% of the total inhabitants earns their daily means through fishing or related trades from this ecosystem.

Only for revenue generation, this regional wetland habitat was under leasing system from 1930 to 2001. It was captured by local and regional elite groups. Local community had no access right to the natural resources of Tangiar Haor. The leaseholders exploited the fisheries resources massively and were disinclined to protect other resources as well as averse to maintaining its ecosystem. The dependent community was then totally deprived of accessing to fisheries resources. Such deprivation practice pushed the community people to extract non-fish resources indiscriminately. Consequently, its habitat destruction and biodiversity loss aggravated, ecosystem degraded gradually and it lost the productivity as well. Concurrently environmental degradation, climate change or climate variability as well as trans-boundary effects triggered its vulnerability and exacerbated its ecosystem integrity.

Policies and Strategies for Conservation and Sustainable Management of Tanguar Haor

Effective governance is the pre-requisite aspect to sustainable conservation and management of natural resources. Hence, policy formulation to make effective the governance for Tanguar Haor wetland was the utmost priority to the project management. The Community-Based Sustainable Management of Tanguar Haor (CBSMTH) Project was the first-ever venture for establishing wetland co-management system in Tanguar Haor.



The role-model of five tier co-management structure for Tanguar Haor was piloted to create the synergy among the stakeholders in biodiversity conservation and natural resources management. The top two tiers – the Project Steering Committee (PSC) and the Tanguar Haor Management Committee (THMC) were the keys to functioning co-management system for this wetland management. The bottom three tiers were the driving forces to mobilize community participation in resource conservation and management and sustainable use of the resources. The harvesting modality of fisheries, reeds and forests, benefit sharing mechanism for fisheries resources, reeds and forests, community patrolling

guideline and community led monitoring and evaluation protocol were the key designed instruments that contributed to maintain this natural resource base.

The most notable policy intervention of the project management was the formulation of ‘Tanguar Haor Rules’. The legal binding to following the co-management system for this haor management will be ensured through gazette notification. On the other hand, community participation in protection, conservation, utilisation and management of the resources would be guaranteed by this rule. The implementation of these policies and guidelines certainly infuse the sense of ownership among the community people on this resource base that would ensure the sustainable conservation practices for this wetland. The project thrived towards establishing the functioning governance for wetland through formulation and execution of these policies and guidelines.

Sensitised Stakeholders for Tanguar Haor Resource Management

Effective participation in decision-making process and implementation the decision through the respective stakeholders is the imperative of functioning co-management system towards sustainable natural resources governance. In line with this project meticulously set strategies to ensure the effective participation of all stakeholders in Tanguar Haor management through comprising several committees. The project mobilised the poor and disadvantage community people as the primary stakeholder of the project. While civil society members were involved as social watch group. Law enforcement agencies comprised as critical supporting stakeholder of the project.

Role of Tanguar Haor Management Committee (THMC) in Resource Conservation

The THMC was the most effective decision-making committee at district level. The committee was formed with the relevant officials of district and Upazila level government line agencies and local Union Parishad Chairman and the representative from concerned non-government organizations. The members of these committees took decision

for conservation and management of the resources. It provided support to implement the decisions and to enforce the law and order in the haor. As the members of the THMC, the chairmen of four Union Parishads provided support to protection of the resources and conflict resolution emerged due to resource harvesting. Along with community awareness, Union Parshad (Council) chairmen resolved the criminal cases, if derived from illegal extraction of resources. The committee was notified to Bangladesh gazette and it was envisaged that as a regulative authority to Tanguar Haor it could maintain its function beyond the project period.

Community Awareness of and Responsiveness to Natural Resources

One of the major reasons behind the degradation of natural resources is over-exploitation of resources by the increased population. It is necessary to improve the level of understanding of natural resource dependent population for wise management of resources and conservation of biodiversity as well. Realising the potential of stakeholders' role for resource management, the project has involved community as well as other stakeholders with resource management and conservation initiatives.

A total of 7,000 members from about 5,000 households were organised under a registered society. The society had three tiers – village co-management committee (VCC, 74), union co-management committee (UCC, 4), and a central co-management committee (CCC). Their understanding on protection and conservation of this haor resources and co-management system was quite good. They could explain conservation value of Tanguar Haor resources with economic importance, their role and responsibilities in conservation and management (64%), and objective of their organization (72%). Most of them could realize the importance of Ramsar site and they feel proud of being the inhabitant of Tanguar Haor area. This type of community understanding and awareness, and sensitization of the primary and secondary stakeholders certainly improvise conservation practices for Tanguar Haor resources and its sustainable management.

Social Watch Group for Conservation Programme

Civil society can play a vital role to motivate both community and policy-makers for taking proper decision for resource management. This is a wise option to utilise image of civil society for motivating other stakeholders, specially the vested group. The project captured the unique strategy and involved civil society.

A total of four civil society groups were active and extended their support to community people in protection and management of this haor resources. They have been kind hearted to protection of Hizal-Karoch forests, resolution of internal conflict among the fishermen, and sustaining ban period of fishing in the wetland.

Engagement of Law Enforcement Body for Protection of Natural Resources

A total of twenty-four Ansar (national para force) members were engaged to patrol Tanguar Haor area, to protect illegal harvesting of resources, and to maintain the law and order situation in the designated area. The executive magistrate with police was deputed to maintain the law and order situation and provide support to law enforcement agencies and community guard in Tanguar Haor area.

It was reported in the consolidation phase (Bi-annual Operational Report 2015-2016, IUCN), a total of 500 joint actions were taken against fish poaching in Tanguar Haor by Ansar, Police, project staff, and community guards under the lead of the magistrate. It is estimated that these joint efforts captured and destroyed illegal equipment (i.e. boats, fishing nets, birds haunting nets, etc.) with approximate market value of USD 338,388.

Upazila level Monitoring Committee for Tanguar Haor Resources Management

Comprising with eleven members a monitoring team was formed at upazila (sub-district) level in order to provide vigilance support and monitor fish and bird sanctuaries maintenance, swamp forests conservation and plantation activities. The monitoring committee headed by Upazila Nirbahi Officer (UNO) paid visit to the haor and monitored the maintenance activities taken by the Ansar and community guards. The committee provided necessary assistance to the law enforcement bodies and community guards for protection of natural resources as and when required.

Community-driven Conservation Initiatives

Participatory Resource Management Planning (PRMP) was a significant implementation approach of the project for natural resources conservation and management. Community people identified conservation priorities and designed action plan every year. Plantation of climate-resilient plant species, conservation of *kanda* (ridges) for regeneration of reeds and other plants, conservation of vulnerable fish, bird and wildlife species, their habitat improvement, following ban season of fishing, and community patrolling for protection of resources were the top-most community initiatives.

The VCCs and UCCs implemented the annual action plans, while the CCC provided the technical and financial support to implement their action plans. A good number of community members were involved in protection of bird, wildlife and plant species from poaching and felling. These committees provided support to government enforcement bodies to control illegal extraction of natural resources, to oblige ban season of fishing in the *haor*, to protect biodiversity and to facilitate breeding fish, bird and wildlife species in this *haor* area. They organised court yard meetings to increase the understanding and awareness on biodiversity conservation and resource management.

The community members actively participated in natural resources monitoring in Tanguar Haor. The union level monitoring committees visited the authorised fish harvesting practice, verified the harvesting compliance, collected harvesting data, and made report accordingly. They also monitored the state of the reeds and forests patches in the *haor*. At the time of their monitoring to fishing ground or the reeds and forests patches they also protected the illegal extraction of these resources and seized the illegal fishing gears and other equipment. They protected unlawful harvesting of fisheries resources, illegal hunting of migratory water birds, and cutting or felling of reeds and trees, for example.

Community Patrolling System for Protection of Natural Resources

Protection of natural resources in Tanguar Haor is a huge task. Community people sometimes are not able to protect these from illegal harvesters' groups. Insufficient law enforcement body also cannot control the whole *haor* effectively. Considering this context, the CBSMTH project formulated a policy on community guarding system and introduced that system in 2012 for protection of the natural resources along with administrative body.

This community guarding system was totally operated by the Union and Central Committees of the Society. The community guards have been patrolling the *haor* for 24 hours a day individually. The community people came forward to assist to community guard for tackling any serious incident if happened during patrolling. The community guards provided support to the law enforcement bodies (Ansar, the para force) and the executive magistrate as and when to control illegal extraction of the resources. Community guards captured 15,075 kg

fishing net, 1,143 boats, and 9,940 traps during their patrolling. Action taken by the community guards built trust among the community people on the community guarding performance in resource protection. The Tanguar Haor Management Committee (THMC) also endorsed this system as the supportive community vigilance group in resource conservation. The policy document on community guard operation is in place and the community created a funding system to continue the community guarding system.

Such coordinated and collaborative approach and efforts impacted in the exemplary transformation to wetland restoration, its habitat improvement, biodiversity conservation, sustaining ecological integrity, and governance of Tanguar Haor's resources.

Turtle breeding ground: An example of community-led protection



Turtles play an important role for keeping the ecosystem healthy. It helps in seed dispersal, vegetation management, and control of insects and snail population. One of the major roles of turtles is to keep water clean by scavenging dead animals and preying weak and sick population. Turtles are also part of rich Bangalee culture.

Tanguar Haor is a unique place for some nationally and globally endangered and threatened turtle species. Human-induced unsustainable practices, like habitat destruction, use of pesticides and hunting for food, are the main threats for turtles harbouring this wetland.

Softshell peacock is one of the endangered species of Bangladesh breed during August- September in canal situated north-west part of Tanguar Haor near the villages of Rupnagar. Every year hunters caught this species with special hooks. In August 2014, Ali Usman Badal, General Secretary, Central Co-management Committee (CCC) came forward and motivated local people as well as religious leaders for stopping hunting of this majestic animal. Along with the raising awareness of local people for conservation of species, he managed to form a committee engaging motivated community members for guarding to stop hunting. From then on, turtle hunting has stopped in those areas during breeding season.

Swamp and Reed Plantation and Protection

Swamp and reeds are the unique features of *haor* ecosystem, which act as breeding ground for native fishes during the monsoon. Mammals take shelter during dry season. Reed lands are the unique place for both water birds and migratory birds as they take shelter and breed there. Swamp also supports communities by providing protection from wave action during monsoon. It also provides fuel wood to the community.

The project successfully mobilised community people in ecosystem restoration, habitat protection and improvement, conservation of biodiversity and management of resources through establishing a community organisation in Tanguar Haor area. Based on resource mapping and community mobility to resources and fish survey, the community people collaboratively identified the degraded or exposed habitat of flora and fauna for protection and restoration. About 85 hectares reeds bed, grass land, scrub/shrub land and swamp forest came under protection with the community cooperation. For increasing the vegetation coverage, a total of 125,000 hydrophilic plant, particularly Hizol (*Barringtonia acutangula*) and Koroch (*Pongamia pinnata*) were transplanted on kanda (ridge).

Zoning of natural resources was plotted with the cooperation of user groups and maintained the habitat for regeneration of reeds and swamp forests. In the lean season, the haor turns into shaggy land and booms with 150 plant species, including Hizol, Koroch, Barun, Pitali, and Phragmites. The nearby community people of those planted areas are the beneficiaries as per the designed modality of reeds and forests benefit sharing.



A co-management model was proposed and being practiced for Tanguar Haor by the community. The whole wetland is categorised into two geographical zones – the Core Zone and the Buffer Zone considering the maintenance of ecological conditions, sustainable utilisation of the natural resources, and conservation of biodiversity. The management system creates scope of benefit sharing mechanism for extraction, production

and improvement of natural resources that leads to ecological protection and habitat restoration of Tanguar Haor.

Collective effort saved swamp patch

Bangalvita, a tribal village of Tanguar Haor, located close to the hills of Meghalaya state of India. People of this village are well aware about services of haor ecosystem for life and livelihood. The awareness made them committed to protect resources around them. There is a nice patch of swamp adjacent to that village which is the pride of the villagers.



One day the beauty of swamp fall under threat of extinction due to collection of soil from the patch by the contractor for construction of road passing through the village. Robin Dazel, President of Bangalvita co-management committee came forward and protested against the work. But the contractor continued to do so. Robin informed this immediately to villagers and they collectively raised their voice against cutting of soil from the patch.

The huge gathering made the contractor bound to stop cutting of soil from the swamp patch. The collective initiative strengthened the confidence of community to stand against any intervention that hamper the ecological integrity.

Fish Sanctuaries

Fish sanctuaries are the protected places where harvesting of fish is totally prohibited. These are especially deeper part of the wetland. The CBSMTH project established 5 fish sanctuaries in different beels of Tanguar Haor. The project along with the community put katha (bamboo and tree branches) to protect the place from illegal fishermen. The sanctuaries also contributed to the restoration of other aquatic resources, like aquatic plants, snails, turtles, and phytoplankton.

Sustainable Fish Harvesting Practice

The current management practice allows community to harvest fish from this wetland to a sustainable level under some conditions on biodiversity conservation issues. The community were given responsibility of protection of Tanguar Haor resources with the help of Community Guards, including Government law enforcement body deployed by the district administration. They were also given responsibility for monitoring of Tanguar Haor ecosystem by the prescribed tools. With the consultation of community members, two guidelines for fish harvesting were developed that contributed to maintain sustainable limit of fish harvesting and protection of habitats. Community-led monitoring system was designed and practiced by the community leaders for ensuring the ban period of fish catch and sustainable yield level of other resources. It may be worth mentioning that the Government supported 3,000 poor fisher families of Tanguar Haor during this ban period (15 April-15 June) annually from VGF package since 2012.

Reduction of Community Dependence on Natural Resources

For sustaining the conservation initiatives, it is imperative to reduce the dependency level of the community on natural resources. Capacity development of community to involve in alternative income generating activities (AIGAs) is the most important building block of natural resources management in developing countries. The CBSMTH project successfully set strategies to develop community capacity in AIGAs through introducing community revolving funding system with Household Business Plan (HHBP).

More than 7,000 community members accumulated about BDT 20 million through giving subscription (SCM), depositing savings, taking loan from their common fund, and paying the loan with interest. About 5,555 HH members took loan from community fund and invested BDT 77,670,000 to run 56 trades/enterprises. Their household level monthly income increased from BDT 5,877 to BDT 7,963 through running/ getting engaged in business.

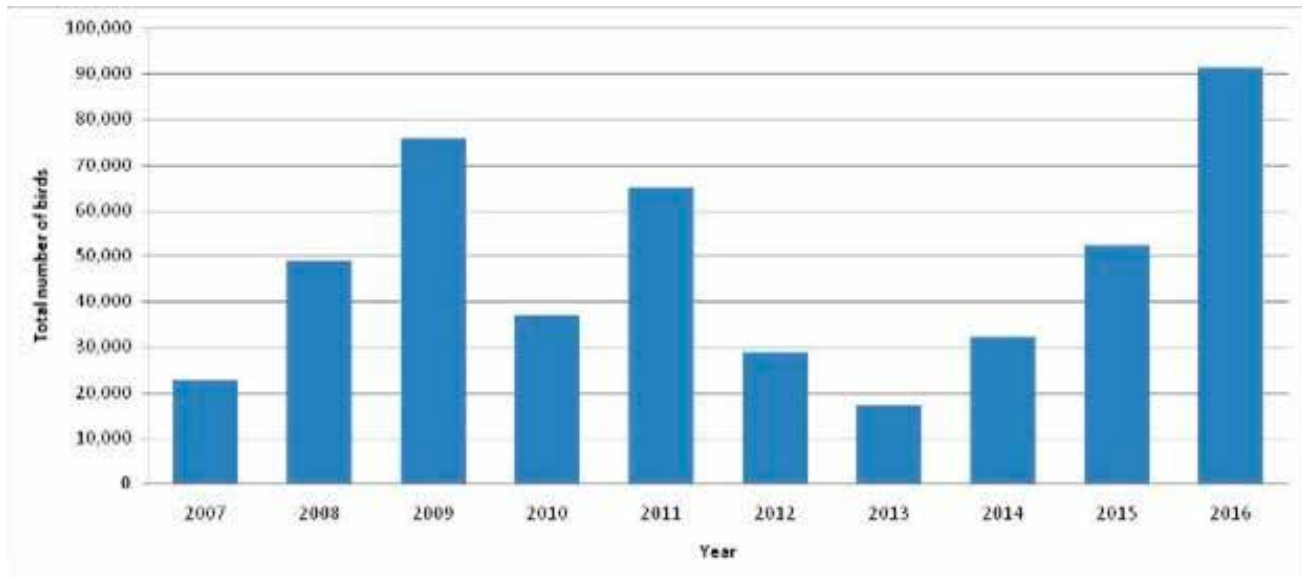
This additional earning contributed to improve their livelihoods and social status, and increased mobility to various arenas. As a result, many of these HH members gradually refrain themselves from illegal fishing, and cutting/felling of plants of this haor. In doing so, pressure on natural resources of the HHs decreases substantively. So, such change in income level certainly contributes to sustainable conservation of Tanguar Haor resources.

Conservation Efforts for Water Birds in Tanguar Haor

Tanguar Haor has been identified as a key wetland site of international importance, especially because of its vital link in an international network of sites for migratory water birds. This wetland fulfills at least three of the criteria, each of which alone is sufficient for proposing a Ramsar site. Thus, the haor became the second Ramsar site of Bangladesh, mainly for wintering water birds. On an average, 50,000 individuals of around 70-80 species, including many locally and globally threatened birds, are found every year in this haor. Every winter about 60 species of migratory birds visit Tanguar Haor, as this wetland is an ideal place for their food and habitat.²¹

The Ministry of Environment and Forests played a pivotal role for monitoring the status of migratory birds in Tanguar Haor. With assistance from the ministry, different stakeholders came to record water birds in the 1990s. Under the National Conservation Strategy and Implementation Project-1, small-scale winter bird census was carried out during this period by the 'Wetland International' with voluntary help from the Bangladesh bird club (Bbc). The Bbc continued the census till 2016 voluntarily. IUCN Bangladesh supported the Bbc from 2011-2016 from the CBSMTH and its other projects.

21 Alam, A.B.M.S., Chowdhury, M.S.M and Sobhan, I. (2012). Biodiversity of Tanguar Haor: A Ramsar Site of Bangladesh. Volume I: Wildlife, IUCN, Dhaka, Bangladesh. xi+234 pp.



Waterfowl Census in Tanguar Haor (IUCN, 2016)

The CBSMTH project initiated in 2007 brought a significant change in the status of bird population in Tanguar Haor. It was evident by the Asian Waterfowl Census Programme under which IUCN Bangladesh in association with the Bangladesh bird club has been conducting the waterfowl census every year in January. The above bar chart shows that the number of water birds went on fluctuations from 2008 to 2012, and the lowest count was recorded in 2013.

The increasing trend of waterfowl, especially since 2014 onwards, presents a healthy ecosystem of Tanguar Haor. It indicates that this wetland continues to produce rapid invertebrate to feed migrating and breeding waterfowls shorebirds. The wetland's open water emergent vegetation serve as foraging cover areas for waterfowl broods and molting adults. Reed beds and bushes provide habitats for migratory song birds, such as Warblers. The reed beds and water tolerant trees of Tangua Haor largely favour wetland's breeding birds – including several species of Egrets, Bitterns, Herons, Spot-billed Duck, Little Grebe, Striated Grassbird, Pallas's Fish Eagle and other resident raptors.²²



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Apart from the census, there has been a number of conservation initiatives under the CBSMTH project. The declaration of two bird sanctuaries in Tanguar Haor is still considered one of the major achievements of the project. The sanctuaries or hotspots provide a safe habitat not only for the bird species, but also for other wildlife of the wetland. The project has also identified the major targeted bird species of the haor, and thus, has taken adequate measures, which mainly included: (i) Artificial nest (new habitat creation) for Pallas's fish eagle and (ii) Protection for nesting sites of Indian spot-billed duck.²³ Protection measures have been largely undertaken by the community guards of Tanguar Haor. They have been not only ensuring the protection of sanctuaries, but also taking the responsibility to rescue birds from illegal hunting.

²² Chowdhury, S.U. (2013). Bird and Wildlife Sanctuary design for Tanguar Haor. IUCN Bangladesh, Dhaka. pp 10.

²³ Annual Operational Report. (July 2014-August 2015). Community Based Sustainable Management of Tanguar Haor Project - Phase III (Consolidation). IUCN Bangladesh, Dhaka. p. 39.

The CBSMTH project initiated a community-based biodiversity monitoring using a monitoring format. Local people showed their interest in birds/nature conservation. Individuals from different villages and co-management committees participated in monitoring activities facilitated by the project.

Establishment of 'Tanguar Haor Prakiti Sangho' comprising some schools of the haor area was a unique initiative of project where youth that given the opportunity to engage youth in nature conservation. A number of school programmes were held under the banner of "Prakiti Sangho" greatly motivated the school children towards conservation of the wetland species, including birds. They can now name many resident and migratory birds, and are also much aware of the importance of these species towards maintaining ecological integrity of Tanguar Haor.

Out of the project activity, the CBSMTH project facilitated some good initiatives for the conservation of bird species in Tanguar Haor. Bird ringing programme is one of those which is being carried out during waterfowl census in this wetland. With support from the project, renowned ornithologists of Bangladesh and some other countries visited the haor several times for ringing water birds. Bird ringing will allow us to know information on dispersal, migration, fly way, critical sites, longevity, behaviour, survival rate, reproductive success and population trends of migratory birds which is crucial for conservation and management planning. The project also leveraged support to another project of IUCN in developing wild bird surveillance for avian influenza at this Ramsar wetland.

The project interventions along with census, bird ringing and awareness activities created a momentum among the community people of Tanguar Haor. A radical shift in minds of the local people as well as community leaders can be attributed with their positive attitude towards conservation of species. A sense of responsibility for protecting water birds were gradually altering the passion for hunting birds in this wetland.

Box 5.1: Pallas's Fish Eagle – The King of Tanguar Haor!



Pallas's Fish Eagle is a migratory raptor of Bangladesh. During summer, it departs our country for Tibet due to availability of food there and stays there for 3-4 months. This eagle stays in the country during winter when the haor dries up and food is abundant for them. They prefer to stay in flocks and reproduces mostly in our country.

Tanguar Haor provides the largest breeding area in the country for these eagles. The abundance of food makes the haor an important site for this species. As identified, there are around 12 nesting sites of Pallas's eagle in this haor area.

The fish eagle's characteristics are quite unique. Only a few pairs of the eagle are seen in the haor every year, and these few pairs have enriched the diversity of the haor. One of the main characteristics of this bird is that it prefers to nest in the same place over and over again, if it has the opportunity. The bird nests on the trees of the haor.

Unavailability of suitable trees created breeding problem of this majestic species. The project erected towers for facilitating suitable place for breeding and marked natural breeding places. The project also involved community to guard their artificial and natural nests. The initiative helped in finding safe place for laying and incubating eggs and resulted birth of new generation.

Chapter 6

THE WAY FORWARD

Great diversity of wild waterbirds in Tanguar Haor. © IUCN/ Sakib Ahmed

Community Management of Natural Resources

The communities at Tanguar Haor were seen motivated towards the restoration and conservation of biodiversity resources at Tanguar Haor. The people showed their interest in running their organization, but the confidence for running community-based organisations by their own is yet to develop. For sustainability of the community organisations it will be wise to tag them with other financial organisations, like 'Palli Shanchay Bank' that can take over financial management of the community-led organisations. To meet the expenses, the fund, which was created over a long period, should be allowed to revolve across the VCC members and tagging with other financial organisation would allow to carry out loan programme properly.

For the organizational activities to be continued, the Upazila Cooperative Office may take a very positive role. They should provide technical and motivational supports to the VCCs and the UCCs to keep on the existing organizational activities in favour of Tanguar Haor conservation. As soon as possible, the VCCs should be registered with the Upazila Cooperative Office. This will help them become responsible to their works and the cooperative office would be able to monitor the on-going success of the organizational activities. Along with the government, NGOs need to carry out capacity strengthening for a few more years, so that wings of the government could take up and carry out initiatives taken previously.

Financial Resource Management

The donors or development partners cannot be responsible to shoulder a poor community forever. They are responsible for helping the community to learn how to depend on their own to ensure sustainable community management of natural and environmental resources. At this stage, when a good amount of fund is deposited by the community under the umbrella of community organizations, it should be revolved for livelihood enhancement, which can be ensured by tagging those organisations with other reputed government or non-government financial organisations as suggested above.

Further, some members found as a defaulter of loan taken from community fund (the SCM). Some took long time to repay loan. Therefore, a guideline needs to be developed that will provide indication or help in selecting person for providing loan against the request.

Livelihood and Market Development

The major objective of the livelihood development programme of the CBSMTH project was to reduce anthropogenic pressure on the resources of Tanguar Haor. The project focused on livelihood development by introducing popular options of livelihood through using community capital. More issues need to be taken under consideration before providing livelihood, like availability of raw material, market of product, communities preference, communication and transportation, and access to bigger market. The recommendations on overcoming the issues are contingent to identification of the weaknesses of the plan or initiatives. The following scopes could be explored and implemented.

It is essential to ensure availability of raw materials within the reach of the beneficiaries when they were trained on for engaging in specific livelihood options. For example, beneficiaries could be trained on both murta cultivation and mat-making process because there was a good scope for murta cultivation as marshy places were available all around the household of Tanguar Haor and it would offer benefit to community by providing shelter to the biodiversity and raw materials for mat production, which had both local and external market.

Innovation with new livelihood options for the community could diversify the engagement of the communities with the work and could solve unemployment even in the lean period. Introduction of new products with market opportunities would help the community to come out from poverty.

Demand and price of product largely depend on marketing opportunity of a product. Therefore, concentration should be given on market linkage for ensuring reasonable price and good profit from a product. Another important aspect that captures the interest of buyer is amount of the product. Potentials buyers want to purchase a bulk amount so that they could minimize their transportation and other costs associated with the marketing of that product. In some cases, beneficiaries could not grab the interest of external buyers due to small-scale production. The future initiative could play a vital role in engaging more community members for production of diverse products that have external market and also could create a local hub in cooperation with the NGOs or the government agencies for collecting those products and channeling to the bigger markets.

Communication and transportation are crucial components for marketing of products to the external markets. This is something that could not be done over-night. The efforts of improving only the internal biodiversity of Tanguar Haor might not yield sustainable development of the area until the local people are guaranteed better alternatives for earning their bread and butter.

Ecotourism in Tanguar Haor

Ecotourism enhances local capacity building and employment opportunities. Thus, ecotourism might be an effective vehicle for empowering the Tanguar Haor communities to fight against poverty and to achieve sustainable environmental objectives. If institutionalised, it is expected to promote better understanding and appreciation for water, fish, birds, plants and all other biophysical resources of the haor, local community, and their culture. With these objectives in mind, the following initiatives might help institutionalise the tourism industry in Tanguar Haor.

1. The tourists should be ensured with clean and healthy lodges to stay in. It should have healthy sanitation facilities such as clean toilet, continuous water supply, and clean drinking water.
2. An observation tower and tourist boats are some added requirements for flourishing tourism activities in the area.
3. To make the tourists feel free and secured, tourist police or some kind of security organisation could be arranged.
4. The communication network should be good enough to attract tourists from home and abroad to Tanguar Haor.
5. Above all, well-trained tourist guides are of great importance both for the satisfaction of the tourists and the conservation of natural and cultural resources in the area.

The project made a soft start for introducing ecotourism in Tanguar Haor that need to be improved and scaled up.

Promotion of Climate-resilient Livelihood

Livelihood improvement for reduction of dependency of communities are crucial for biodiversity conservation. Therefore, selection of proper livelihood options is an important task. Climate change make the job more difficult for development planners. The project has tried to address climate change, but more concentration is required for effective investment for livelihood enhancement. Future programmes should address impact of climate change and extend help to the community for adopting climate resilient livelihood options for their betterment.

Biodiversity Monitoring

The project has introduced participatory biodiversity monitoring to the community that will help in assessing health of Tanguar Haor resources. This activity needs to be carried out with help from specialised organisation. This type of assessment will guide policy-makers in taking decisions with regard to resource management.



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Motivation, Awareness and Capacity Building

The project has carried out awareness and capacity building programme which resulted in creation of awareness at local and national levels to a certain scale. Intensive motivation, awareness and capacity building campaign should be grounded involving media at grassroots level on conservation importance for sustainable livelihood. Awareness involving all stakeholders, especially the future generation, will contribute to enhanced understanding in favour of conservation.



Swamp Plantation

There is a huge scope for plantation with swamp tree species in Tanguar Haor that can provide shelter to the fish and act as fish breeding ground. Swamp forest plays an important role for nursing of mammals and reptiles as well. It has an important role in protecting household from high waves during the monsoon. These forests also provide fuel wood for domestic use. The CBSMTH project planted swamp sapling in some areas of Tanguar Haor and more potential areas need to be covered in the future.



Promotion of Climate Smart Stove and Plantation of Fast-growing Plants

The communities of Tanguar Haor have to depend on swamp forests for their fuel wood as they do not have to access to natural gas. Promotion of low-fuel-consuming stove can potentially reduce use of fuel wood and that ultimately reduce dependency of people over the swamp forests. In addition, fast-growing trees can be grown on raised land (kanda) or homesteads for managing demand for fuel wood.

Sustainability Potentials and Conclusions

Sustainability – where is it?

The community showed commendable improvement in their leadership, management of community-based organisation and biodiversity conservation with support from implementing organizations. However, capacity for running community-based organisations independently still need improvement. The CBSMTH project was able to involve 57.38% population in the co-management of Tanguar Haor. About 43% population is still out of co-management system and inclusion of rest of the population is necessary for wise management of Tanguar Haor resources.

It has been realised during the study that people were motivated and have positive intension in favour of biodiversity conservation and want to continue activities for betterment of their livelihoods. However, they still seek for external nursing for improving their capacity and confidence to run their organisations and conservation efforts independently.

Exploring the potentials for sustainability

- Co-management approach as governance mechanism of Tanguar Haor established its root quite successfully.
- The project showed success in covering the target area and population with the given resources.
- Scaling up took place rapidly as per the project goal.
- Formation of groups and zeal for savings found positive among members.
- Illegal fishing and poaching reduced significantly.
- Government brought poor fisherman and non-fisherman (non-commercial) under the social safety net programme (VGF).
- Cent percent of the female members exhibited commendable performance in utilizing their loan money and the timely return of the loan.
- Community rights and responsibilities were more pronounced through the CBSMTH project. However, sustainability was a big challenge in Tanguar Haor resource management.
- IUCN as a lead project implementing agency managed to create zeal among stakeholders about the collaborative governance of Tanguar Haor, which is very important for future intervention and/or scaling up of the project.
- Some UCC leaders were found vocal and confident. On being asked on their organizational ability they shouted, “DC, UNOs are all for people and the society; we will go to them and tell them our demand from them for the conservation of the ecosystem of Tanguar Haor”. This is praiseworthy that they understand their rights and responsibility of the government offices.
- Women were found very active and motivated to keep up the work. This belief and confidence need to be used for the environmental conservation at Tanguar Haor.

Steps to sustainability

The communities were found motivated towards conservation, which is commendable. The field survey indicated more cooperation from Upazila and District level administrations required for community-based management of Tanguar Haor. In a standard co-management mechanism, the government offices, community, and the development organizations should integrate their efforts to ascertain the objectives of any conservation work. Therefore, the following points need to be taken into consideration for sustainability of the present decade-long initiative.

- (1) The UCCs should be registered with the Upazila Cooperative Office so that the UCCs get organisational prescription from that office. This will help the community organisations to survive and flourish.
- (2) Intensive monitoring from the local and district level administrations is necessary to step up conservation effort by the community.
- (3) Since Tanguar Haor is a Ramsar site, there is no scope for the haor to be managed under leasing system, which was previously proved destructive for the ecosystem of the haor. What is needed is to have a comprehensive plan for the management of the ecological resources, so that the ecosystem services sustain. Selling ecosystem services, promoting ecotourism for example, could be an excellent option for the government to sustainably manage the haor while earning significant revenue from there.
- (4) Institutionalising the community-patrolling group is an obvious option for saving the ecosystem health of Tanguar Haor. The Ansars should be strictly administered to render their services to the conservation of the ecological resources of the haor. Rigorous monitoring is necessary from the THMC for establishing better coordination between the Ansar and the community guards.
- (5) The government should support the CPG with financial assistance so that they can save the haor from miscreants. However, community should also play their parts in supporting the CPG. Thus, the CPG will run with the joint-support of the government and the community, thus make them accountable to both the entities.
- (6) Political commitment to environmental conservation at both national and local levels is very important for sustainable management of the ecological resources of Tanguar Haor.
- (7) Since the haor dwellers have no alternative income sources other than fishing during the monsoon, the existing VGF programmes should be expanded and strengthened during the fishing ban period. Along with the VGF programme, innovative AIG options need to be introduced so that people can be employed during the lean period.
- (8) The stakeholder motivation towards biodiversity conservation is necessary. Motivational programmes for the stakeholders for the sustenance of Tanguar Haor with all its ecological resources should be a continued process.
- (9) Initiatives need to be taken to link up community-based organisation with financial organization(s) for smooth running of their financial activities.

The above recommendations are some broad initiatives that need to be continued to ensure sustainable management of Tanguar Haor. However, this list of initiative is not exhaustive. There are more problem-oriented steps and solutions, which also will require sufficient attention of the government and the community. To the end, only a coordinated effort of the community, development organizations, and the government could be a comprehensive solution to resolve the degradation of Tanguar Haor resources.