



Report on
**Political Economy Analysis in the
Sundarbans and Hakaluki Haor
Ecologically Critical Areas**



May 2024

Adaptation in Ecologically Critical Areas in Bangladesh (AECAB)

NABAPALLAB, a consortium led by CARE in partnership with



Report on

Political Economy Analysis in the Sundarbans and Hakaluki Haor Ecologically Critical Areas

Submitted by

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Acknowledgement

On behalf of the NABAPALLAB consortium and CARE, we are pleased to present the report **‘Political Economy Analysis in the Sundarbans and Hakaluki Haor Ecologically Critical Areas’**. The study carried out by the Center for Natural Resource Studies (CNRS) and the Centre for Climate Change and Environmental Research (C3ER) of BRAC University, and coordinated by CARE, provides a stakeholder landscape participating in or impacted by the ECAs with detailed insight on the formal and informal structures, institutions, or rules of the game. The report contributes to the designing of policy advocacy and stakeholder engagement plan of FCDO’s flagship project **Adaptation in Ecologically Critical Areas in Bangladesh (AECAB)**, locally known as **NABAPALLAB - Nature Based Adaptation towards Prosperous and Adept Lives & Livelihoods in Bangladesh**, led by CARE.

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Chief of Party, NABAPALLAB, Humanitarian & Climate Action Program

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Acronyms

ADP	Asian Development Bank
AIS	Agriculture Information Service
BAMIS	Bangladesh Agro-Meteorological Information System (BAMIS)
BDPC	Bangladesh Disaster Preparedness Centre
BECA	Bangladesh Environment Conservation Act
BELA	Bangladesh Environmental Lawyers Association
Bfri	Bangladesh Fisheries Research Institute
BINA	Bangladesh Institute of Nuclear Agriculture
BMD	Bangladesh Meteorological Department
BRRi	Bangladesh Rice Research Institute
BSCIC	Bangladesh Small and Cottage Industries Corporation
BWDB	Bangladesh Water Development Board
BYLC	Bangladesh Youth Leadership Center
CDD	Centre for Disability Development
CCDB	Christian Commission for Development in Bangladesh
CSO	Civil Society Organisation
CCGAP	Climate Change and Gender Action Plan
CZP	Coastal Zone policy
CBOs	Community Based Organisation
CSR	Corporate Social Responsibilities
CPP	Cyclone Preparedness Program
DAE	Department of Agriculture Extension
DDM	Department of Disaster Management
DoE	Department of Environment
DoF	Department of Fisheries
DLS	Department of Livestock Service
DPHE	Department of Public Health Engineering
DSS	Department of Social Service
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
DPE	Directorate of Primary Education
DSHE	Directorate Of Secondary & Higher Education
ECAs	Ecologically Critical Areas
Ess	Ecosystem Services
EbA	Ecosystem-based Adaptation
ECR	Environment Conservation Rules
EU	European Union
FFWC	Flood Forecasting and Warning Centre
FGD	Focus Group Discussion
FCDO	Foreign, Commonwealth & Development Office
GoB	Government of Bangladesh
HBRI	House Building research Institute
HBRI	House Building research Institute

IDCOL	Infrastructure Development Company
ICCCD	International Centre for Climate Change and Development
IFAD	International Fund for Agricultural Development
INGO	International Non-Governmental Organisation
IUCN	International Union for Conservation of Nature
KII	Key Informant Interview
LNGIs	Local and National Government Institutions
LGED	Local Government Engineering Department
LLA	Locally Led Adaptation
MoEFCC	Ministry of Environment, Forest and Climate Change
MoF	Ministry of Fisheries
MOFL	Ministry of Fisheries and Livestock
MoL	Ministry of Land
MSW	Ministry of Social Welfare
M&E	Monitoring and Evaluation
MCPPP	Mujib Climate Prosperity Plan
NAP	National Adaptation Plan
NBSAP	National Biodiversity Strategies and Action Plan
NCS	National Conservation Strategy
NFP	National Forest Policy
NRCC	National River Conservation Commission
NWP	National Water policy
NRM	Natural Resource Management
NABAPALLAB	Nature-Based Adaptation Towards Prosperous and Adept Lives and Livelihoods in Bangladesh
NbS	Nature-based Solutions
NGO	Non-Governmental Organisation
PKSF	Palli Karma-Sahayak Foundation
PEA	Political Economy Analysis
PKSF	Polli Kormo Shohayok Foundation
RRI	River Research Institute
SRDI	Soil Resource Development Institute
SREDA	Sustainable and Renewable Energy Development Authority
WB	The World Bank
TIB	Transparency International Bangladesh
USAID	U.S. Agency for International Development
UNICEF	United Nations Children's Fund
VCGs	Village Community Groups
WARPO	Water Resource Planning Organisation



Executive Summary

The UK Government's Adaptation in Ecologically Critical Areas project (known locally as NABAPALLAB - Nature-Based Adaptation Towards Prosperous and Adept Lives and Livelihoods in Bangladesh) aims to engage biodiversity- and natural resource-dependent communities to strengthen the climate resilience of the Sundarbans and Hakaluki Haor Ecologically Critical Areas (ECAs), conserve biodiversity, and at the same time, diversify and improve people's livelihood and reduce overdependence on critical ecosystems through innovative Nature-based Solutions (NbS) and Locally Led Adaptation (LLA).

CARE and its partners, through a focused political economy analysis (PEA), offers a systematic approach to identify and **analyse the structures, institutions or rules of the game – both formal and informal, and map the diverse actors** involved in or affected by the ECAs. The PEA reveals the characteristics of the natural resource endowment system and nature-dependent communities and elites in the ECAs, their political and economic structure, formal (policies and laws) and informal (local norms and practices) institutions roles, as well as common and divergent interests, power dynamics, and relationships among stakeholders like the communities and government agencies to non-governmental organisations and international donors.

The PEA provides a detailed insight, especially concerning the **unpacked problems** of policy implementation gaps, climate change challenges, elite control and exploitation of natural resources in both the ECAs. The analysis delves into the complex political dynamics, vested interests, and power asymmetries that influence policy and practice in both the ECAs, ultimately defining endowment and control over natural resources, which leads to the fundamental issue of ecological degradation and biodiversity loss in the two ECAs. The study presents key insights into what to influence; where and with whom to engage; how to engage meaningfully, as well as the importance of collaboration and evidence-based influencing to **avoid confirmation and conscious bias**.

The PEA underpins the importance of devising an engagement plan including **both top-down and bottom-up approaches**, starting from **responsible and accountable sector-wise**

Ecosystem based Adaptation (EbA) programming co-led and owned by the **local** community and duty bearers – irrespective of blockers, potential change makers, neutrals, and allies with high and low influence – as well as the policymakers at the **national level** to bridge the gaps, where possible, for **integrating and applying EbA principles into policies and practices and invest in such initiatives.**

It is obvious that a combination of technically sound and politically feasible approaches is needed to navigate through the intersecting political, social, and economic factors. As CARE and its partners rolls out the project on the ground, a few recommendations have come up, based on the PEA Framework analysis, as areas with **potential for change.** The **identified follow-up actions** set an **ambitious but practical reform-horizon** to ensure the **three A's: Acceptance, Authority (and accountability) and Ability** to achieve the reform goal(s) both in terms of addressing policy formulation and implementation gaps.

The identified follow-up actions involve motivating people and duty bearers with **incentives, not necessarily financial rewards, but with a cause or belief** which leads them to **'trade-off'** their gains or losses and prioritise actions for greater welfare of society. In the absence of a proper **political space**, often dominated by **reciprocal politics or clientelism**, NABAPALLAB will explore options for collaborations and coalitions to promote ecosystem-based productivity benefitting both the nature and economic interests of the diverging groups, while **guarding against rent-seeking behaviour.** Instead of giving way to the traditional **common reference points of social networking** to align with those in position of power to exploit, CARE and its partners will **scrutinise the elite bargain ideas** in the Sundarbans and Hakaluki Haor, and use the insights to **shape the agency** of the marginalised nature-dependent community and look to facilitate **positive deviance** by partnering with individuals or groups within the predominant social networks who could be an ally to NABAPALLAB to find sustainable solutions to the unpacked problems related to the bigger issue of ecological degradation and biodiversity loss and foster effective EbA.

In this mission towards the reform-horizon, UK Governments NABAPALLAB project will ensure it makes the best use of the structural advantages in relation to existing policy and political commitments such as the biodiversity-related strategies in Bangladesh's National Adaptation Plan (NAP), National Biodiversity Strategy and Action Plans (NBSAP), Ecologically Critical Area Rules, Protected Area Rules, Participatory Water Management Rules, Protection and Conservation of Fish Rules, Fish Conservation Act, and Bangladesh Environment Conservation Act etc. It will seek to influence these policies and plans in ways in which support the goals of the project, to conserve biodiversity, at the same time as diversifying and improve people's livelihoods and reducing overdependence on critical ecosystems through innovative Nature-based Solutions (NbS) and Locally Led Adaptation (LLA).

NABAPALLAB's strategic approach for the Sundarbans and Hakaluki Haor ECAs focuses on ecosystem-based adaptation (EbA) to address ecological degradation. This PEA will help the consortium to engage potential stakeholders ranging from government bodies like the Ministry of Environment, Forest and Climate Change (MoEFCC), Ministry of Land (MoL), Department of Agriculture Extension (DAE), Department of Environment (DoE), Bangladesh Forest Department (FD) to local communities and development partners. This will help to bridge policy implementation gaps and reduce elite control of natural resources in the wetland and mangrove ecosystems. Through advocacy, capacity-building, and alignment with national policies, NABAPALLAB seeks to foster sustainable conservation practices, enhance community resilience, and ensure equitable participation of the local communities in decision-making processes, thereby contributing to the long-term protection and restoration of these Ecologically Critical Areas (ECAs).

1. Introduction

In pursuing sustainable development, particularly in regions vulnerable to environmental challenges, such as Bangladesh, understanding the intricate interplay of ecology, climate and the underlying political economy including its key stakeholders is crucial. This report introduces the findings from a political economy analysis aimed at enabling the UK Governments Adaptation in Ecologically Critical Areas project (known locally as NABAPALLAB - Nature-Based Adaptation Towards Prosperous and Adept Lives and Livelihoods in Bangladesh) to achieve its goal.

Bangladesh, situated at the confluence of rivers and bordered by the Bay of Bengal, is highly vulnerable to a wide range of climate change impacts from extreme events such as cyclones and flooding to longer term changes in temperature, sea level rise and salinity. As the nation strives to adapt to these challenges, nature-based solutions (NbS) emerge as promising avenues for resilience-building. However, the success of such initiatives hinges not only on their technical feasibility but also on navigating the complex web of stakeholders and underlying political economy surrounding their implementation.

Bangladesh is rich in biodiversity and natural resources due to its hydro-metrology and geo-physical setting. The Bangladesh Environmental Conservation Act (1995) gives the authority to declare such valuable yet degraded ecosystems as Ecologically Critical Area (ECA) and undertake measures to improve or restore the habitat conditions. Therefore, it is a priority to make these ECAs resilient to climate impacts, while ensuring that the ecosystem services from these ECAs are maintained, to sustainably benefit surrounding local communities. The Sundarbans mangrove forest, the world's most extensive mangrove forest with wide range of flora and fauna, which covers 10,000 square km across Bangladesh (c.60%) and West Bengal (India) (c.40%)¹, is one of the ECAs essential for maintaining human life and means of subsistence in the southwest coast. Another ECA, the Hakaluki Haor, a wetland system in the Meghna-Surma River basin in north-eastern Bangladesh is an extensive marsh wetlands and habitat to different animal and bird species and serves as a nursery for fisheries. Both these ECAs and communities depending on them are threatened by climate change and over-extraction of resources.

Political Economy Analysis (PEA) offers a systematic approach to identify and analyse the structures, institutions and rules of the game – both formal and informal, and map diverse actors involved in or affected by the ECAs. A deep dive into these political economy aspects of the context in the Sundarbans and Hakaluki Haor has been immensely beneficial to the project in understanding the natural resource endowment system and characteristics of people dependent on the ECAs, their political and economic structure, formal (policies and laws) and informal (local norms and practices) institutions roles, as well as interests, power dynamics, and relationships among stakeholders like the communities and government agencies to non-governmental organisations and international donors. This analysis has enabled NABAPALLAB to avoid the pitfalls of applying a purely technocratic approach, but instead to effectively combine its technically sound foundation with a politically feasible approach that fosters inclusive decision-making processes. Complementing the stakeholder mapping, political economy analysis delves deeper into the underlying structures, institutions, and incentives shaping a pro-poor and gender-

¹ UNESCO World Heritage Convention, The Sundarbans: <https://whc.unesco.org/en/list/798/>

responsive decision-making processes. It unpacks the political dynamics, vested interests, and power asymmetries that influence policy formulation and implementation. In Bangladesh, where political, social, and economic factors intersect, political economy analysis provides valuable insights into the feasibility and sustainability of nature-based adaptation interventions. Therefore, before rolling out this project on the ground, it is necessary to understand the ECAs political economy along with the involvement and interests of divergent stakeholders. The goal is to work together, avoid conflicts, conserve the unique and important biodiversity of the ECAs and make the most of the natural resources they provide to help communities adapt to climate change.

1.1. Background of the Project

NABAPALLAB aims to engage natural resource-dependent communities to strengthen the climate resilience of the Sundarbans and Hakaluki Haor Ecologically Critical Areas (ECAs), conserve biodiversity, and at the same time, diversify and improve people's livelihood and reduce overdependence on critical ecosystems through innovative Nature-based Solutions (NbS) and Locally Led Adaptation (LLA).

The project has simultaneously conducted three separate assessments during its inception period to achieve these goals. The three assessments are i) an ecological assessment and detailed scoping study, ii) a stakeholder mapping and political economy analysis (PEA), and iii) a baseline study. Cumulative results of these studies have supported NABAPALLAB to (i) inform of the ecological status of the two ECAs, including their interplay with climate change and people dependent on them; (ii) design the best-fit interventions to achieve the project objectives; (iii) develop a policy advocacy and stakeholder engagement plan, and (iv) develop the result framework and M&E tools.



2. Objective of the Study

The stakeholder mapping and political economy analysis (PEA) will help the project develop a policy advocacy and stakeholder engagement plan. This will help NABAPALLAB's policy engagement approach by navigating the complex socio-political systems where community, local and national government and civil society may have converging and divergent interests. The specific objectives are the following:

- Conduct a Political Economy Analysis (PEA) and identify underlying factors, concerns and gaps related to implementing existing policies and commitments.
- Conduct a detailed stakeholder mapping to develop a policy engagement plan at the local and national level.
- Assess and propose strategies for advocacy and capacity building of communities and local and national government institutions (LNGIs) for effective ecosystem management and conservation, guided by a change process.

3. Scope of Assessment

This report encompasses an assessment of the gaps and opportunities for the implementation of the EbA programme, ensuring alignment with relevant local and national government regulations and policies, such as ECA, co-management, and sector-specific policies, including water, fisheries, agriculture, and land use. It explores the power dynamics, assessing the feasibility of alternative arrangements and mapping out the channels of influence. Furthermore, the PEA explores potential for change and follow up actions for the identified political economy challenges. NABAPALLAB seeks to harmonize the project's initiatives with the national government's policies, acts, and guidelines, especially with regard to National Adaptation Plan (NAP), Mujib Climate Prosperity Plan, National Fisheries Policies, Agriculture Policy, and Conservation Acts, considering both formal and informal rules of game. In doing so, the PEA examines policy reform or implementation drive and demand from the perspective of different individuals or groups, the barriers and their interests and incentives including identifying the potential champions or change makers, blockers, neutrals and allies with high and low influence in view of achieving the goals of the project.

4. Methodological Framework

This methodological framework ensures a systematic and thorough examination of political-economic factors to inform effective decision-making and implementation strategies for nature-based solutions in the Sundarbans and Hakaluki Haor ECAs. The Political Economy Analysis employed a qualitative research method to comprehensively understand the political, economic, and stakeholder contexts within the two ECAs, and identify pathways of change with a distinct set of actions to achieve the goals of the project. During the study, 179 FGDs, 211 KIs, 16 Upazila level consultations, and 5 district level consultations were organized where around 2,327 people were attended. The NABAPALLAB team conducted the Political Economy Analysis (PEA) according three phases (*problem definition, analysis and operational implications*) divided into five operational steps.

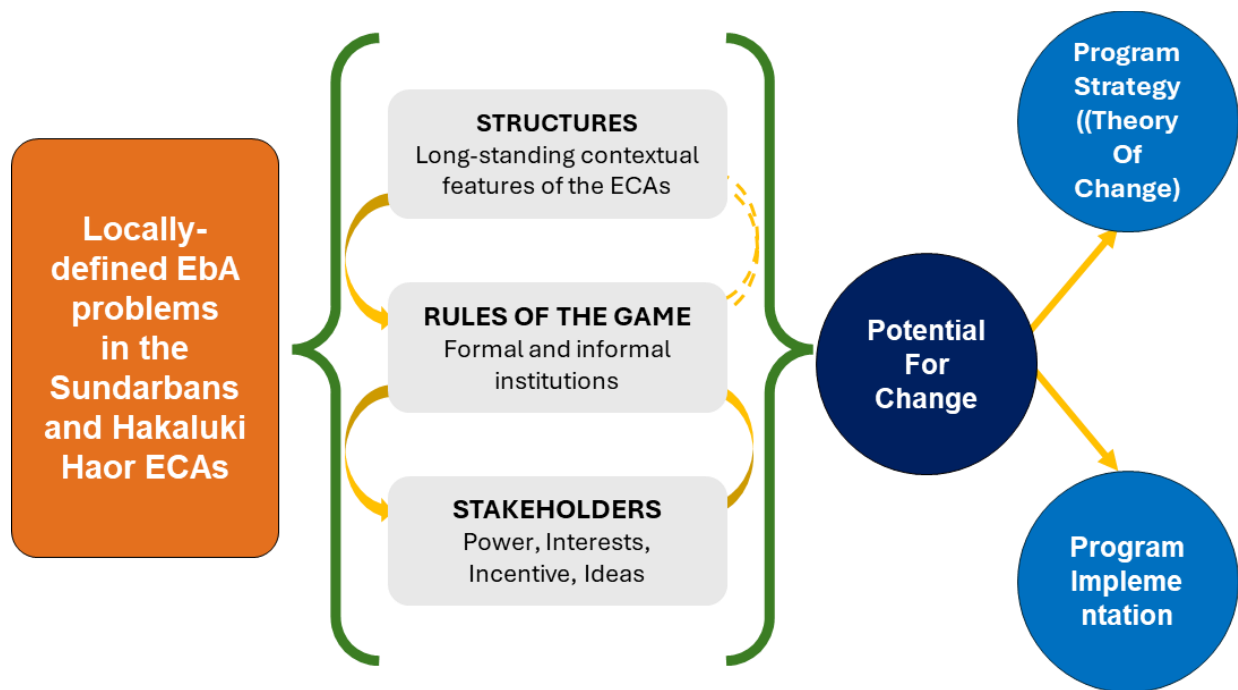


Figure 1 Methodological Framework of PEA of the Sundarbans and Hakaluki Haor ECAs

4.1. Unpacking the Problems of Define Priority Areas

It is important to be able to prioritize and unpack a single problem from the multiple and diverse issues faced in the Sundarbans and Hakaluki Haor and to prioritise the underlying causes and sub-causes which could or should be addressed first through local, regional, and national level initiatives to resolve the major issue. The NABAPALLAB team involved local communities,

government officials, private sectors, CSOs as well as local elites of both ECAs in in-depth consultation before discussing the issues with regional and national stakeholders. The discussions for the PEA focused on programme, sectors and local or national level concerns and opinions, as appropriate. To do this, the team identified and analysed the problem and underlying causes using a Fishbone/*Ishikawa* Diagram to unpack the problem in both the Sundarbans and Hakaluki Haor.

4.2. Structure of Analysis

The socio-economic and political environment have been identified for the two distinct ECAs and assessed through a literature review and secondary data and information on the history, geography, demographic and population characteristics, political system, structure of economy and geo-political context of both ECAs. The team also conducted FGDs, KIIs and consultations with different stakeholders e.g. government, academia, private sectors, media, research institutions, CBOs etc. at local, regional, and national level.



4.3. Institution/ Rules of the Game

The 'rules of the game' are the formal (the constitution, laws and regulations) and informal (social norms, cultures and values) characteristics of institutions that shape the incentives and capacity of key actors, the relationships between them, and how processes of political/ elite bargaining play out. These rules are critical in influencing opportunities for developmental change within the Sundarbans and Halkuluki Haor ECAs. They impact the behaviour, the legitimacy, acceptance and capacities of actors as well as on their relations and dependency on these two distinct ecosystems. These rules or institutions are relatively stable but can be changed in the medium-term perspective. The study identified both formal and informal institutions through literature reviews, secondary data, community consultations, FGDs, KIIs and discussions with relevant stakeholders.

4.4. Stakeholder Mapping

The behaviour of actors, organisations and groups is determined by their stakes, interests, incentives, individual and collective attitudes, ideas, ideologies and values. The team placed importance on realising who has which interest for change and who has what kind of power to make this change happen (power/influence-matrix - blocker, neutral, potential coalition and change maker). Looking at the stakeholders in the present enables an assessment of opportunities for positive deviation considering the socio-political context of the Sundarbans and Hakaluki Haor ECAs in the short term (distinguishing between foundational factors that are often very slow to change, rules of the game which may be sticky but might change in the medium term, and short-term factors that may offer windows of opportunity for positive change).

4.5. Potential for Change Leading to Strategy for Program Implementation

The previous steps are a basis for identifying the dynamics and trends that may lead to – or impede – reform. The strategy (Theory of Change-ToC) is our conclusion on what elements will make change happen, and what factors and dynamics can be expected to help realise a specific objective of reform. Based on the PEA, the strategy may relate to expected results in the long or medium term. The team conducted in-depth analysis of the roles and influence of stakeholders/ actors across the socio-economic, political and cultural aspects within the broader context of both ECAs. This comprehensive assessment has effectively shed light on the active engagement of the stakeholders/ actors during critical junctures and technological innovation processes, particularly in the promotion of positive deviation approaches for ecosystem-based adaptation in the Sundarbans and Hakaluki Haor ECAs. To take into consideration the new insights gained from the PEA, flexibility and adaptive management are required, as well as different approaches like working with social movements, bargaining with local elites² and positive involvement of powerful leaders. As PEA is not a one-off exercise, the NABAPALLAB team will ensure effective and continuous assessment, monitoring, evaluation and learning processes in the evolving context of the political economy perspective.

² Elites – World Development Report on governance – 2017 of World Bank defined elites who have ability to directly influence policy design and implementation, with a privileged voice on how power is managed and whether helps or hinders political leadership extending beyond formal governmental roles, and rarely exist in isolation, but rather relying on constituencies, positions, or resources to secure their profile and role, with their impact shaped by inter-elite interactions and linked to social groups and constituencies.

5. Political Economy Analysis of the Sundarbans and Hakaluki Haor

5.1 Identifying the Problems to be Focused on

The team collected views and perspectives of local communities and local political leaders along with other stakeholders in defining the problem to be addressed in the PEA. The team also identified root causes, power dynamics (high or low influence) and the role of the stakeholders that are causing challenges for ecosystem-based adaptation in both ECAs. The team ensured the discussions focused on programme, sectors, local and national level concerns and opinions, as appropriate. In the sectoral level, the team looked at the key actors, incentives, human-nature relationships and resources at play in each sector (i.e: water, environment, biodiversity, climate change, policy implementation, land use etc.). Thus, this PEA identified the underlying problem and causes that create a specific developmental or governance challenge in the context of two ECAs. The major problem identified in the Sundarbans and Hakaluki Haor ECAs is ecological degradation due to natural and anthropogenic phenomena. The team used two Fishbone/*Ishikawa* Diagrams (Figure 2 and 3) to unpack the problem and associated causes and sub-causes in the Sundarbans and Hakaluki Haor. The issues are as follows –

Impact of Climate Change: Over the years, Bangladesh is experiencing more frequent and severe natural hazards and extreme weather events due to climate change, with cyclones and floods becoming more frequent and intense. In 2024, there have already been three consecutive climate emergencies, which have affected nearly 13 million people across 30% of the country. Cyclone Remal and subsequent floods in the northeastern regions impacted over 8.3 million people, displaced 1.5 million, and destroyed 237,673 houses. Concurrently, flooding in the Jamuna basin affected an additional 5 million people. In total, 1,839 Government primary schools were damaged, many of which served as shelters, preventing children from attending school. The agricultural sector faced severe losses, with 1 million farmers and 4.8 million people impacted, resulting in an estimated \$130 million loss across 484,651 hectares. In 2023, heavy rain triggered flash floods in southeastern Bangladesh, exposing 2.4 million people and affecting 1.2 million, with substantial infrastructure damage. Additionally, Cyclone Mocha, which formed in May 2023, caused severe damage in Myanmar and southeastern Bangladesh, impacting 429,337 people and destroying thousands of homes particularly on Saint Martin's Island. In 2022, severe floods in northeastern Bangladesh, triggered by heavy rainfall in India, affected 7.2 million people, causing widespread displacement, destruction of homes and infrastructure, and urgent humanitarian needs. The floods resulted in an estimated financial loss of over \$462.5 million across housing, agriculture, livestock, fisheries, and WASH sectors.

The community people and the ecosystem of both ECAs are affected by the increase in frequency and intensity of climate induced shocks and stresses over the last few decades. The PEA identified that the Sundarbans ECA is significantly affected due to the increase of intensity and frequency of cyclone and storm surges as well as tidal inundation. Moreover, the sea level rise and the erratic rainfall pattern of last few years is also causing salinity intrusion in soil and water in the 10 km and beyond buffer zones of the Sundarbans reserve forest. Hakaluki Haor ECA is also facing climate induced shocks and stresses like flash flood, soil erosion and sedimentation. In the last few years, farmer and fisher communities of the Haor have been significantly affected by lightning and erratic rainfall patterns which contribute to creating drought conditions in this region. The region grapples with the dual challenges of excessive flooding and drought, intensifying due to excessive rainfall and rising temperatures. These changes have led to a decline in fish production and reduced water availability for irrigation in the dry season.

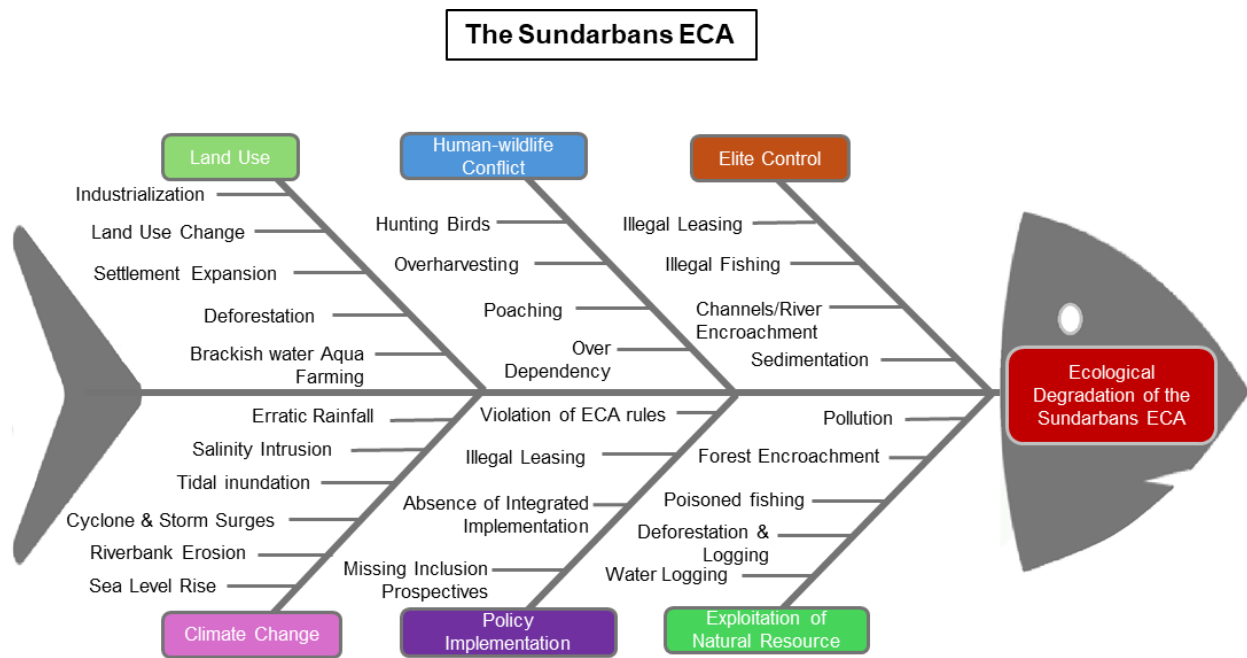


Figure 2 Identification of the problem and causes of the Sundarbans ECA

Policy Implementation Gap: Despite having numerous relevant policies, acts and laws in place for both ECAs, there are still gaps in the implementation process for effective Ecosystem based Adaptation (EbA) in the Sundarbans and Hakaluki Haor ECA. The PEA also found there is an urgent need for smooth and effective integration and alignment of policies between departments and other service providers. Some elite and vested groups are still violating the ECA rules and practicing rent-seeking behaviour which accelerates human-wildlife conflict and the exploitation of natural resources.

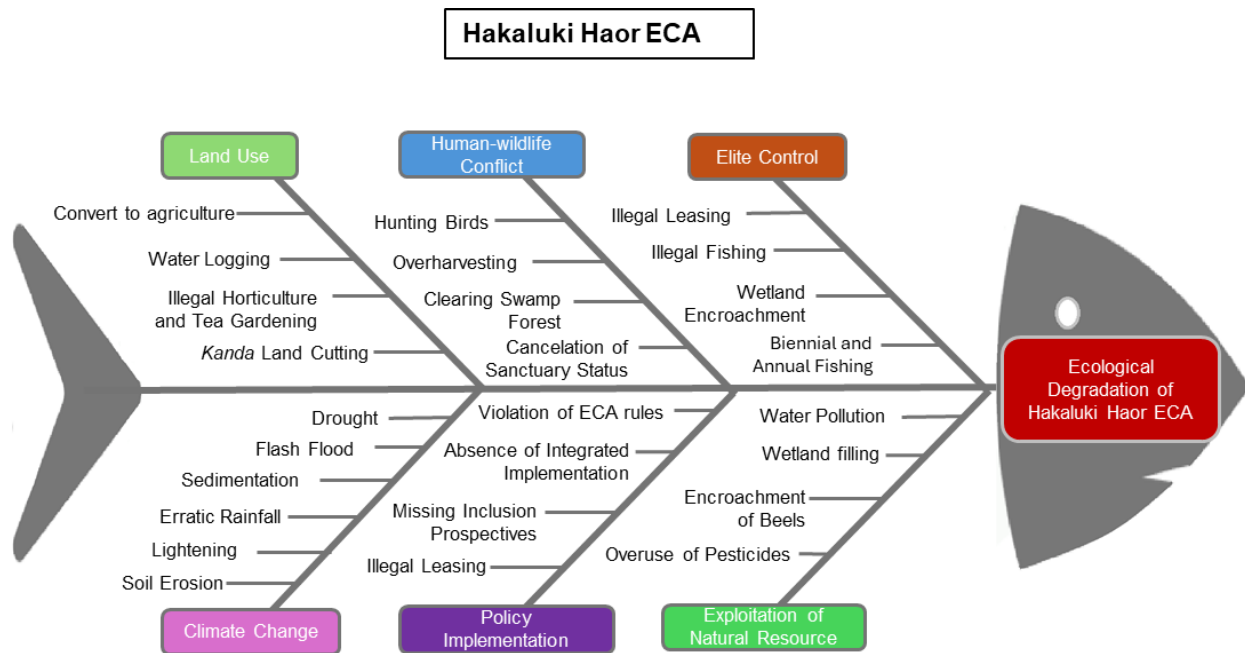


Figure 3 Identification of the problem and causes of Hakaluki Haor ECA

Elite Control: Control by elite groups like *Jalmahal*³ leasers, private contractors, land raiders, local large-scale shrimp farm owners, local money lenders (basically lend money to the in-land fishers), influential rich people, politically influenced individuals has become a common phenomenon for both ECAs resulting in illegal leasing and fishing, channel/ river encroachment and sedimentation in the Sundarbans. Besides, elite control is causing illegal leasing and fishing, wetland encroachment as well as biennial and annual fishing.

Human-Wildlife Conflict in both ECAs: Most of the communities living in these ECAs are dependent on natural resources. However, the human-wildlife conflict and exploitation of natural resources are currently out of control in these ECAs. In the Sundarbans, overharvesting, hunting birds and poaching are still impacting the biodiversity of the ECA. On the other hand, in Hakaluki Haor, overharvesting, clearing swamp forests and hunting birds are still going on. Thus, MoL cancelled the sanctuary status of 4 *beels*⁴ in the Haor ECA which has caused a huge threat to the biodiversity of the region.

Exploitation of Natural Resources: The PEA found that the community people and local vested groups are still involved in the forest encroachment, deforestation, logging, and water logging. Poison fishing and pollution are out of control in the Sundarbans. Similarly, the vested interested groups and local people also involved in water pollution, wetland filling and encroachment of beels in the Haor region. Overuse of pesticides are also affecting the water and soil quality of the Haor and hampering the agriculture and fish production.

Land Use Change: The land use is changing in the Sundarbans ECA due to settlement expansion, deforestation, industrialization and brackish water aquafarming. On the other hand,

³ Some of the lakes are considered to be very important freshwater fishing grounds and are locally called *Jalmahal*.

⁴ *Beel* is a large surface waterbody that accumulates surface runoff water through internal drainage channels; these depressions are mostly topographic lows produced by erosions and are seen all over Bangladesh.

community people and vested interested groups⁵ like *Jalmahal* leasers, land raiders, local large-scale shrimp farm owners, local money lenders, influential rich people, and politically influenced groups are practising horticulture and tea gardening in some of the areas and converting the watershed into agriculture by illegal landfilling in the Hakaluki Haor ECA. In addition, flash floods and sedimentation are also causing long-term water-logging scenarios and impacting the regular livelihood practices of the people significantly in this ECA.

Due to these environmental sensitivity and high anthropogenic pressures such as overharvesting, overfishing, pollution and illegal logging, the ecological status of the Sundarbans and the Hakaluki Haor ECA is very vulnerable to climate change exacerbating the current situation. The PEA identified and prioritised the following 4 high-level causes for the ecological degradation in both ECAs i) policy implementation (lack of) ii) climate change iii) elite control and iv) exploitation of the natural resources in both ECAs. These four areas should be a focus of the program implementation strategy for potential change in the ECA areas of the Sundarbans and Hakaluki Haor under NABAPALLAB interventions.

5.2. Structural Analysis of the ECAs

In many instances structural changes of the ECAs like demographic, geographical, historical, socio-economic and change in natural resources contribute to both political instability and to the creation of new and positive opportunities. The team identified the factors which are deeply rooted in the society and are underlying factors or characteristics of the governance system, sources of ecosystem services, and are embedded in social and economic structures as well as geographical and geo-strategic position of the Sundarbans and Hakaluki Haor ECAs.

The Sundarbans, the largest mangrove forest in the world, and Hakaluki Haor, a complex wetland system of the Meghna-Surma River basin, play a crucial role in protecting lives and livelihoods in the southwest coast and northeast Bangladesh respectively.

The NABAPALLAB Ecological Assessment and Detailed Scoping Study assessed the geographic and demographic context and ecosystems in two ECA sites. The Sundarbans ECA covers the surrounding area 10 km from the periphery of the reserved forest in the southern coastal region of Bangladesh. Within the scope of NABAPALLAB, this ECA spreads over nine (09) upazilas in three districts, i.e., Satkhira (Shyamnagar, Ashasuni), Khulna (Dacope, Koyra, Paikgacha), Bagerhat (Mongla, Rampal, Morrelgonj, and Sarankhola). It hosts a rich habitat with rare species, including tigers and various ecosystems, including wetlands, low-lying lands, riverside areas, homesteads, croplands, and coastal embankments.

The Hakaluki Haor ECA in the north-east of Bangladesh encompasses nine upazilas, including Fenchuganj, Golapganj (ECA), Balaganj, Dakhin Surma, and Beanibazar (Non-ECA) in the Sylhet district, as well as Barlekha, Juri, Kulaura (ECA), and Rajnagar (Non-ECA) in the Moulvibazar district covering an area of 18,386 ha. Hakaluki Haor is one of the most extensive marsh wetlands in the country and one of the large in the Asia, inhabited by over 200,000 people and 558 animal and bird species and is a breeding ground for fisheries. It comprises of 276 interconnecting Beels (238 state-owned and 38 private) covering an area of 18,115 ha, of which 4,926 ha of Beels (27%) and 621 ha of rivers and canals (3.3%), i.e., around 30 % of the wetland is especially suitable for sweet water fishes.

Both the ECAs are highly populated with widespread poverty. According to the Bangladesh Bureau of Statistics 2022, the total population of the Upazilas in Satkhira, Khulna and Bagerhat

⁵ a special concern or stakeholder in maintaining or influencing a condition, arrangement, or action especially for selfish ends or a group enjoying benefits from an existing economic or political privilege.

is 2,830,410, whereas the Upazilas in Sylhet and Maulavibazar that are part of the project have a population of 2,185,916. Shyamnagar, and Morrelganj Upazilas have comparatively large populations in Khulna region while Kulaura and Golapganj Upazilas have comparatively large populations in Sylhet region. In both regions, there are more females than males, with a male-to-female ratio of 49.7:50.2 in Khulna and 47.6:52.4 in Sylhet (BBS, 2022).

The Sundarbans and Hakaluki Haor ECAs are rich in natural resources and biodiversity and most people living in and around the ECAs depend on the natural resources and Ecosystem Services for their employment, income, food, nutrition, traditional health approaches and livelihoods. There are tremendous human pressures, agro-ecological pollution, uncontrolled market forces, lack of institutional coordination and application of biodiversity safeguarding regulations. These unsustainable practices and lack of proper application of protection and conservation policies and regulations are affecting the resource base, diversity, and productivity of the ecosystems.

Collaborative efforts among government agencies, local communities, Village Community Groups (VCGs) and environmental organisations are crucial for fostering long-term sustainability and resilience in the face of climate change and biodiversity degradation. Community members, especially women, youth, and vulnerable groups, have shown a strong willingness and interest to engage in activities to address the challenges posed by both anthropogenic and climate change impacts on ecosystems and livelihoods.

The NABAPALLAB Baseline, Ecological Assessment and Detailed Scoping Study assessed the socio-economic status and dependency on ecosystem services of communities in each ECA. The results are presented in the following table.

Table 1 Socio-economic status and dependency on ecosystem services

ECAs	Literacy rate	Poverty Rate	Direct livelihood dependence on natural resources		Cooking fuel practice	Existing adaptation practices	Drinking water source	Housing infrastructure
The Sundarbans	78.0% in Khulna	27.1% in Khulna region	35% HHs	Employment and income-60% Food and nutrition-42% Fuel collecting for cooking-34%	Wood-85.1% Straw & tree leaf-57.6%	Salt tolerant variety-50% Short duration crop-16.7%	Tubewell-36.7% RWH-56.4% Pond-39.2%	Reinforced roof-19.7% Plinth raising-15.7% Improve house-14.8%
Hakaluki Haor	78.2% in Sylhet	22.5% in Sylhet region	41% HHs	Fodder collection for cattle- 5% *average across both ECAs	Wood-90% Straw & tree leaf-21.5%	Flood tolerant variety-50% Early variety-25%	Tubewell-76.9% Tap/pipe-20%	Reinforced roof-22.1% Plinth raising-20.1% Improve house-16.5%

In the Sundarbans ECA, the core of the mangrove forest is owned and governed by the state and managed by the Bangladesh Forest Department. There are multiple stakeholders involved in the surrounding ECA, but the Department of Environment (DoE) plays a specific role in controlling it. Locally elected people's representatives have a big influence on the ECA due to the practice of elite capture and control and the tendency to give access to rich people.

On the other hand, in Hakuluki Haor ECA, the *Jalmahals* Act of 2009 which is a part of the government's Water Resources Management Policy, leases water bodies to fishers for three years without monitoring their activities. This allows the local influential leaseholders to overfish and maximize profits without considering the environment. The policy restricts poor fishers, who can't afford the fees, enabling local powerful individuals of the ECAs to exploit the wetlands. This situation encourages poor fishers to form associations while the wealthy invest in leases to capture the benefits.

5.3. Institution/ Rules of the Game

Institutions or "rules of the game" are established patterns of behaviour that shape the social, political and economic relations between actors (both individuals and organisations). The team analysed the gap in implementation of existing policies in the ECAs and recognised the role for formal and informal institutions and actors, trying to understand how and why they interact considering the major problems and underlying causes in the two ECAs. The negotiation process within local political processes involves ongoing bargaining among elite groups, reflecting the power dynamics between them. This analysis helped to identify more predictable, rules-based arrangements while fostering closer alignment between formal institutional structures and informal societal norms, values, culture and practice in both ECAs.

The study found that community people in both ECAs are deprived of the opportunity to engage in processes which directly affect their livelihoods due to existing practice of top-down approaches. Thus, the value of local knowledge and participation in the conservation of natural resources is not recognised. On the other hand, the study also highlighted that bottom-up approaches can deprive local communities of opportunities to receive scientific knowledge or expert opinions from experienced government officials working at higher levels. Therefore, a combination of both top down and bottom-up approaches to the governance and management of the ECAs and their natural resources is needed.

Formal Institutions

The PEA examined a wide range of laws and regulations related to cross-sectoral and environmental issues of the Sundarbans and Hakaluki Haor ECAs of Bangladesh. This included an extensive desk review of the policies, laws, acts, and regulations to identify gaps in support for climate change adaptation and mitigation, Ecosystem-based Adaptation (EbA), Natural Resource Management (NRM), Livelihoods, and Biodiversity interventions. Policy implementation gaps persist in both the Sundarbans and Hakaluki Haor ECA, hindering effective conservation efforts. Despite the presence of relevant policies and acts to deal with the water sector, agricultural development, coastal area, protected area disaster management and climate change like the Bangladesh Environment Conservation Act, 1995 (BECA, 1995); the Environment Conservation Rules (ECR, 2023); Climate Change and Gender Action Plan, 2013, National Forest Policy, 1994; the National Conservation Strategy 1992; National Environmental Management Action Plan (NEMAP), 1995; Coastal Zone policy, 2005, National Water Policy, 1999; the Forest Act 1927 (last modified 30th April 2000) challenges remain in translating these legal frameworks into tangible conservation actions on the ground.

The study included an in-depth review of the most relevant plans like the National Adaptation Plan (NAP) (2023-2050), National Biodiversity Strategies and Action Plan (NBSAP) 2016-2021, and Mujib Climate Prosperity Plan (2022) to identify the gaps in the implementation for protecting the Sundarbans and Hakaluki Haor ECAs. This analysis can be found in Table 2 in section 5.5.3. The team also identified the formal and informal institutions and potential 'trade offs' from

implementation of existing policies and suggests using these insights to shape the agency of the marginalised nature-dependent community with a view to facilitating positive deviance for the greater welfare of the ECAs. These findings will inform policy advocacy actions and recommendations for harmonized implementation to support climate change adaptation and biodiversity conservation.

The PEA revealed a power dynamic characterized by a triangular distribution of influence among governmental entities such as the government departments (i.e Forest Department, Department of Land, Department of Environment) and law enforcement agencies, local enterprises, and political leaders. These influential stakeholders collectively shape pricing strategies for resources and exert control over market dynamics through political consensus. While various regulations and embargoes are in place, certain individuals within these influential groups gain undue advantages by offering incentives to the responsible personnel, mainly from the government. Additionally, in some instances, they may also engage directly in resource extraction activities. Efforts to address these challenges should focus on fostering transparency, accountability, and equitable resource management practices across all stakeholders involved.

The Sundarbans is an area where geography intertwines with the dynamics of party politics. Those familiar with the Sundarbans are likely aware of the local practices, including "char politics." Over the past two and a half centuries, many people were encouraged to settle in the Sundarbans with the promise of receiving fertile land for clearing the forest. Although the reality often differed, these settlers have made their home on the island's periphery, contributing to its development. Throughout this time, an elite group has consistently found ways to benefit from the region's growth and opportunities.

The wetland management system of Hakaluki Haor ECA has traditionally prioritized revenue generation, with the government leasing wetlands without involving local communities in the decision-making process. The *Jalmahals*⁶ Management Policy of 2009, part of the Water Resources Management Policy, introduced a leasing system where specific water bodies are leased to fishers for three years. However, this system lacks proper oversight of fishing activities by leaseholders, leading to overfishing and environmental degradation. There is a lack of collaboration between formal and informal institutions in wetland management. The existing practice of top-down approach has failed to ensure the conservation of ecologically critical areas. The *Jalmahal* leasing policy excludes many poor fishers who cannot afford the fees, allowing powerful individuals to monopolize the benefits. This exacerbates the depletion of fisheries resources in the Hakaluki Haor ECAs.

The PEA also noticed that the Ministry of Land (MoL) manages revenue generation for government-owned land called khas in the wetlands of Hakaluki Haor ECA, excluding agency-owned lands controlled by the BWDB, roads and highways, etc. The MoL also controls open water bodies (rivers, beels, haors) above a specified size in Hakaluki Haor ECA, except for those that were transferred to the Ministry of Fisheries (MoF) under the new fisheries management policy. The MoL approves the process whereby the government acquires private land for private development programmes.

Informal Institutions

The Mangrove Forest User group comprises people involved primarily with economic activities - i.e. honey collectors, fishermen and timber collectors—in the Sundarbans. The PEA discovered

⁶ Some of the lakes are considered to be very important freshwater fishing grounds and are locally called Jalmahal.

that residents living near the ECAs of the Sundarbans hold a belief in BanBibi⁷'s protection against tigers. BanBibi is revered as the tiger deity of the Sundarbans, and various religious rituals are observed prior to venturing into the forest for honey and Golpata collection. These rituals include performing specific prayers and carrying 'tabij' (amulets) to ensure safety from tigers.

For instance, during the honey collection season in April, May, and June, the *Mouals* (honey/wax collectors) typically harvest only a portion (approximately two-thirds) of each honeycomb, leaving the remainder for regeneration. They use smoke from dry leaves during collection but avoid setting beehives on fire. Similarly, the *Bawalis* (wood collectors) leave at least one stem in each tree clump they cut and avoid harvesting from the same compartment annually, allowing for plant regrowth. They also refrain from cutting young and straight trees. *Golpata* (*Nypa fruticans*) harvesters follow specific guidelines as well. They are restricted from harvesting in any area more than once a year and avoid the period from June to September, which is the *Golpata* growing season. They cut only leaves that are about nine feet long, ensuring the central leaf and the adjacent five leaves in each clump are preserved. Additionally, young plants with just one utilizable leaf are not harvested. Additionally, fishermen of the Sundarbans also use traditional practices like using wooden boats which traditionally called '*dingi nouka*' for their fishing.

Based on our field assessment, approximately 200 years ago, *Jaminders* and their allies brought the Munda ethnic people from Ranchi, Jharkhand, and Chhattisgarh, India, to the Sundarbans, particularly Shaymnagar, Koyra, and Tala Upazilas in Satkhira district. They were tasked with clearing mangrove forests to create arable land. Many Mundas, being poor and landless, lived on khas land and relied on subsistence activities such as fishing, crab and rat collecting, gathering mud eels, kewra fruits, honey, mollusks, and hunting deer, boars, snakes, and wildfowl. Due to resource depletion and harvesting restrictions, they also engaged in subsistence farming.

The PEA found that Hakaluki Haor ECA plays host to a diverse array of marginalized and traditional ethnic groups residing within the region. This includes indigenous communities like the Khasia and Tripura tribes, known for their unique languages and cultural practices living in the south-eastern sites in the ECAs. The people who live by the haor are generally called haor dwellers⁸ and their livelihoods revolve around fishing and agriculture. Additionally, the main occupation of communities residing within the Hakaluki Haor is fishing and agriculture (mainly in winter season) mostly dependent on the wetland ecosystem of this ECA. Seasonal migrant laborers within the watershed catchment of the ECA further contribute to the local economy but often experience exploitation. Another marginalised vulnerable group living in the periphery of Hakaluki Haor ECA is the *Shobdakor*, traditional drummer and tea worker. Despite possessing valuable knowledge of natural resource management, these communities are vulnerable to issues like land tenure insecurity and environmental degradation. Recognizing and addressing the needs of these marginalized groups and including them in the decision-making processes related to the governance and management of the ECA and its natural resources is crucial for implementing sustainable conservation measures for Hakaluki Haor.

5.4. Stakeholder Mapping

The stakeholder mapping process involves identifying and categorizing stakeholders based on their roles, interests, and significance within the Sundarbans and Hakaluki Haor ECAs. This entails a comprehensive approach involving workshops with relevant actors, including local communities dependent on ecologically critical areas. The research team divided the

⁷ Banbibi is the most celebrated demigod of both the Hindu and Muslim inhabitants of the Sundarbans, and she is the guardian spirit of the mangrove delta.

⁸ Haor Dwellers - People who live by the haor are called haor dwellers.

stakeholders into 4 distinct categories i) change maker, ii) blocker, iii) potential coalition and iv) neutral according to their roles, interests, and influence. An additional focus on conducting in-depth gender analysis in target districts to address gender-specific needs, risks, and power dynamics was included. Based on this a diagram matrix was developed, allocating the government; development partners; CBOs, Youth-led organisations, NGOs and INGOs; academia/ think tank; and private sectors and media to their relevant blocks according to their role and influence.

The diagram matrix for both ECAs represents the stakeholder mapping for the NABAPALLAB project from the relevant groups according to their level of influence and degrees (for and against) of support relevant to their role in local, regional and national contexts. The team analysed the mapping and divided stakeholders into four categories, defined as;

- i. **change maker** who has high influence with active support.
- ii. **blocker** who has high influence but may not actively support.
- iii. **neutral** who has low influence and may not actively support.
- iv. **potential coalition** who has low influence with active support.

The PEA study team categorized the stakeholders considering the existing role, influencing tendency, support and potential contribution of different local and national stakeholders to the EbA interventions of NABAPALLAB in both ECAs.

The specific stakeholder diagram matrix for the Sundarbans and Hakaluki haor ECAs are described below –

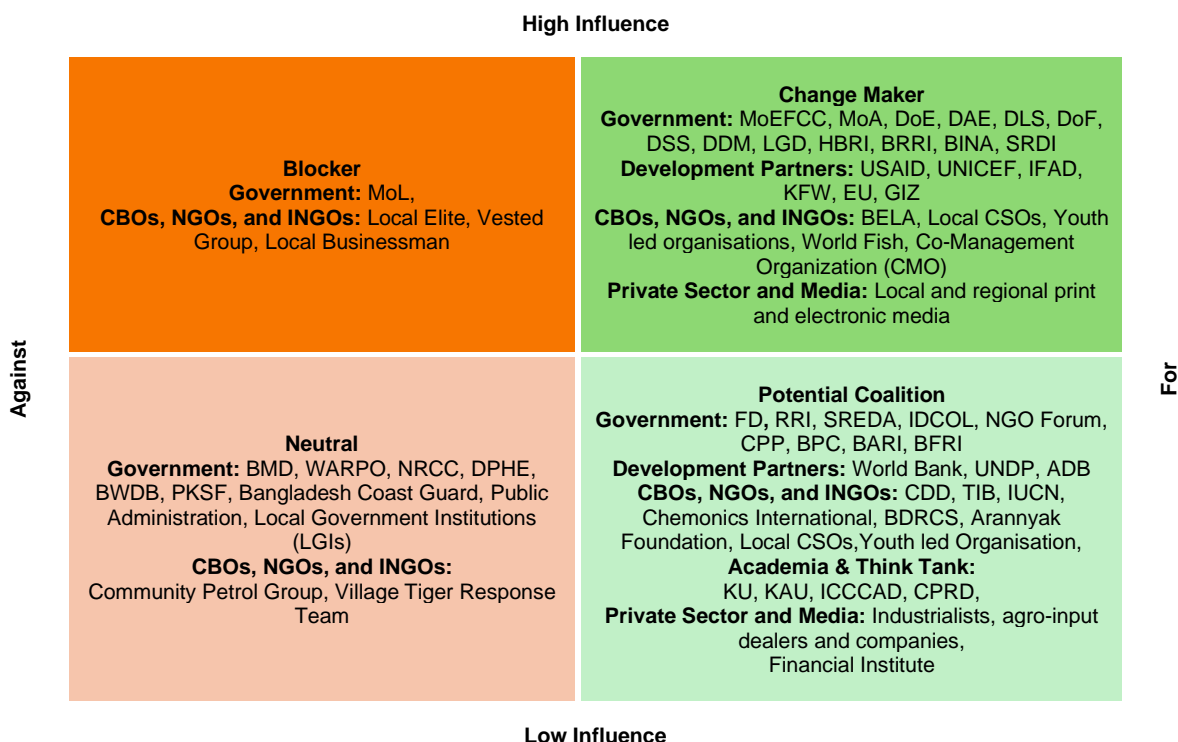


Figure 4 Stakeholder Mapping of the Sundarbans ECA

Stakeholder mapping of the Sundarbans ECA: The matrix diagram (Figure 4) illustrates the stakeholders in different sector according to their engagement and influence on the Sundarbans, highlighting the leadership of the Ministry of Environment, Forest and Climate Change (MoEFCC) in the national Ecological Critical Area (ECA) management committee. Collaboration with the Department of Environment (DoE) and Forest Department (FD) requires endorsement. The Ministry of Land (MoL) oversees government-owned land (*khas*⁹ land), while the Ministry of Agriculture (MoA) and its extension arm, the Department of Agriculture Extension (DAE), directly engage with grassroots farmers.

The DoE is the mandated authority for ECA oversight and the custodian of ECA Rule management, while the Department of Fisheries (DoF) is responsible for aquaculture resources and shapes fisheries policy, drafts sanctuary guidelines, and participates in local committees. Noteworthy governmental agencies such as the Department of Livestock Services (DLS), Department of Social Services (DSS), and Department of Disaster Management (DDM), HBRI, BRRI, BINA and SRDI are vital change-makers due to their influential roles and support. Stakeholder groups like USAID, UNICEF, IFAD, KFW, EU, and GIZ, representing development partners, alongside civil society organisations (CBOs, NGOs, INGOs such as BELA and local CSOs), Co-Management Organisation (CMO), and private sector and media entities (local and regional print and electronic media) exert significant influence and are instrumental in driving change and are in the position of change makers.

Conversely, the Ministry of Land (MoL), local elites, vested interest groups, and local businessmen, though influential, exhibit resistance to engagement, categorizing them as blockers.

Stakeholders with limited influence are placed in the low influence zone in the neutral group. However, others such as the Bangladesh Meteorological Department (BMD), Water Resource Planning Organisation (WARPO), National River Conservation Commission (NRCC), Department of Public Health Engineering (DPHE), Bangladesh Water Development Board (BWDB), Palli Karma-Sahayak Foundation (PKSF), Bangladesh Coast Guard, and Public Administration provide minimal support. Public administration and Local Government Institutes (LGIs)

Entities like the Forest Department (FD) are mandated for Protected Area (PA) Rule enforcement in the Sundarbans reserved forest. FD would be the potential ally for the coalition and possibility of bringing them as the change maker through NABAPALLAB initiatives and interventions. Entities within the low influence zone may contribute to bilateral processes, offering knowledge, on-the-ground presence, and community mobilization efforts, potentially forming coalitions. The River Research Institute (RRI), Centre for Disability Development (CDD), NGO Forum, Bangladesh Parjatan Corporation (BPC), Bangladesh Red Crescent Society (BDRCS), development partners, CBOs, NGOs, INGOs, academia and think tanks, private sector, and media outlets fall into the potential coalition category. International and donor agencies hold varying degrees of influence within NABAPALLAB, placing them in the potential coalition and change-maker zone. Their interest may be lower due to the platform's focus on sustainable development in the Sundarbans ECA. Local and international NGOs express high interest, although their influence levels differ. Autonomous research organisations like ICCCAD and CPRD demonstrate high interest but moderate influence due to their research-oriented focus.

Interest levels vary across stakeholders, with entities like MoEFCC showing high interest. Local Government Institutions (LGIs), especially the District and Upazila administrative offices, are highly interested and influential due to their proximity to project activities. Conversely, Union

⁹ *Khas* is government owned land. This applies not only to agricultural land, but also to other assets, such as non-agricultural land (urban, municipal, forest etc) and water bodies (river, haor, baor, beel etc.) In Bangladesh where nobody has property rights. *khas* land is government land described in register VIII.

Parishads exhibit lower levels of power, knowledge, influence, and interest compared to Upazila administrations.

Stakeholder Mapping of Hakaluki Haor ECA: In the context of the Haor Ecological Critical Area (ECA), stakeholders play pivotal roles (Figure - 5) akin to those observed in the Sundarbans ECA. While the Change Makers remain consistent with those identified in the Sundarbans ECA, including governmental bodies like the Ministry of Environment, Forest and Climate Change (MoEFCC) and various international development partners, no new stakeholders are introduced. However, in the blocker category, the inclusion of the Bangladesh Haor and Wetland Development Board (BHWDB) highlights significant challenges related to their engagement for the benefit of the local community. Ministry of Land (MoL), the owner of the *Jalmahals* Management Policy 2009 under which wetlands are being leased out have also been a blocker due to their role in leasing out wetland in the haor. Historically, local elites and vested interest groups have often reaped the benefits intended for the broader population, leaving marginalized communities with minimal improvements. This pattern raises concerns about the equitable distribution of resources and support, emphasizing the need for more transparent and inclusive strategies. In addition, the Flood Forecasting Warning Center (FFWC) is in the neutral category due to the limited role in the aims of the project (forecasting of flood situation) but there is possibility to collaborate with them and increase their engagement as a change maker. Notably, the inclusion of the Village Conservation Group (VCG) in the neutral category due to limited power and influence but has potential for coalition in local involvement towards conservation efforts. Additionally, considering the geophysical context of Hakaluki haor region, potential coalition with Sylhet Agriculture University (SAU) and using their knowledge expertise may add value in the implementation process. These adjustments reflect a dynamic landscape of stakeholder involvement, emphasizing the need for tailored strategies to harness their collective potential for supporting the implementation of ecosystem-based adaptation in the Haor ECA. From Government, NABAPALLAB will work for the coalition with departments like FD, RRI, DPE and collaborate with Development Partners: World Bank, UNDP, ADB, local level CBOs, NGOs and youth and women led organisations for bringing them the change makers through the interventions in the ECA.

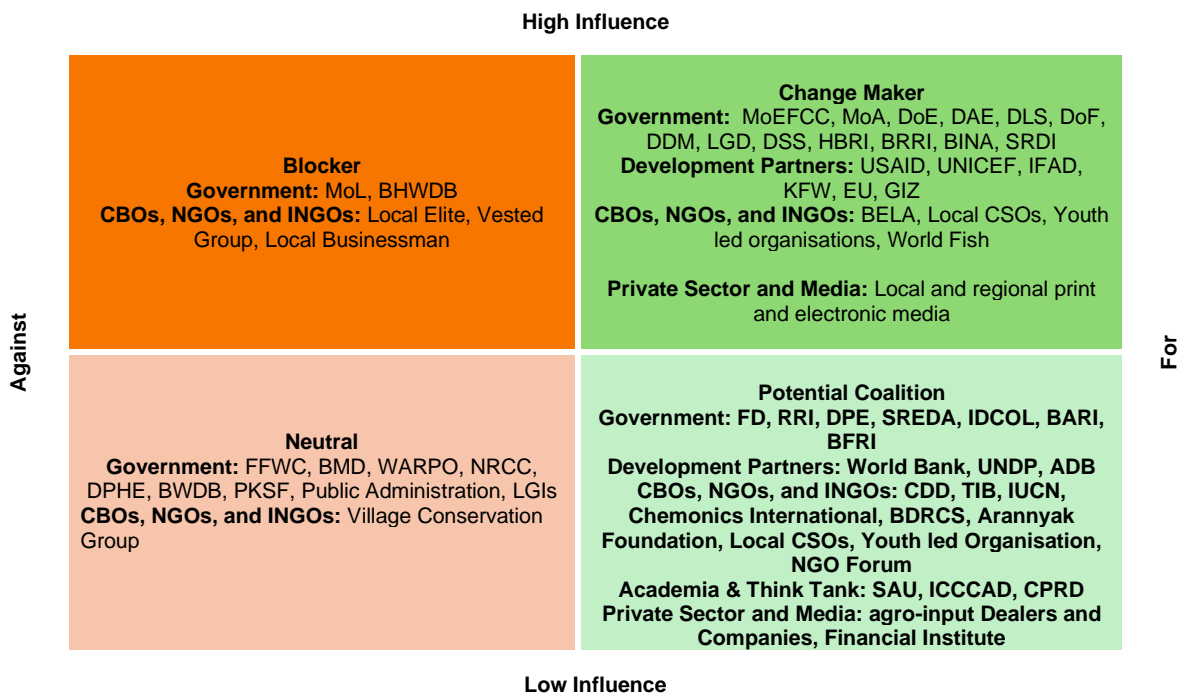


Figure 5 Stakeholder mapping of Hakaluki Haor ECA

5.5. Potential for Change Leading to Strategy for Program Implementation

Previously, the team identified the reasons behind the ecological degradation in both ECAs and prioritised the following 4 high level causes i) policy implementation ii) climate change iii) elite control and iv) exploitation of the natural resources. Although the main problems seem to be similar between the two ECAs, the underlying causes and reasons are varied considering the geographical, socio-economic and political scenarios of the Sundarbans and Hakaluki Haor. The team elaborated the identified factors which are affecting the nature, ecosystem and biodiversity of the state, political space and economic relationships, both directly and indirectly.

The team also demarcated and analysed the existing structures of the two ECAs and identified demographic information, geographic vulnerabilities, socio-economic conditions with potential risks, existing natural resources, occupational practices and traditional common reference points of social networking. These insights and analysis will help NABAPALLAB interventions towards potential bargaining ideas with local elites and use the insights to set the strategy for developing ecosystem-based adaptation solutions for marginalised nature-dependent community and look to facilitate positive deviance by partnering with local individuals or groups within the predominant social networks who could be an ally in this process.

The next step of the PEA involved looking at the 'rules of the game' or the political and institutional contexts that are influenced by structural changes, influence and role of formal and informal institutions, and in turn shape the behaviour and relationships between key actors, including their motivation and capacity to engage in pathways of changes. Here, the PEA identified the existing practices of agencies (both government and non-government) and actors with their top-down and bottom-up approaches, political space, which is dominated by reciprocal politics or clientelism, norms/rules, culture and values, rent-seeking behaviour of the elite and vested interested groups. According to this, the PEA identified the gap in implementation of existing policies in the ECAs and recognised the role for formal and informal institutions and actors. This will help to figure out how and why they interact to change over the short and medium term considering the climate change impact, policy implementation gap, elite control and exploitation of natural resources issues in the pathways to change to reduce the ecological degradation of the two ECAs.

The next step was to understand an actor's interest for change and power dynamics to make this change happen through stakeholder mapping by developing matrix diagram (power/influence-matrix - blocker, neutral, potential coalition and change maker) for two ECAs. These helped the team to develop strategic program by ensuring stakeholder engagement plan through including both top-down and bottom-up approaches, starting from responsible and accountable sector-wise Ecology based Adaptation (EbA) approaches and bridge the gap between the actors, duty bearers and communities to positive deviation in the pathway of changes. NABAPALLAB will follow the mentioned strategies and implementation plan for the potential changes in the Sundarbans and Hakaluki Haor ECAs –

- Strategising and Implementing the PEA Pathway of Change
- Stakeholder engagement plan towards pathway of changes
- Alignment with Government Policies and Acts
- Strategies for Advocacy and Capacity Building

5.5.1 Strategising and Implementing the PEA Pathway of Change

Considering the ecological degradation problem in both ECAs, NABAPALLAB identified program strategies and implementation actions and set a holistic approach to ensure the three A's: Acceptance, Authority (and accountability) and Ability to address the selected causes in the locally defined problem in section 5.1. The team also identified the underlying assumptions through local political processes of bargaining and compromise between actors, duty bearers at local, regional and national level, and community people. NABAPALLAB identified the potential for positive changes through engaging local actors by identifying their common interests and possible opportunities for negotiation as well as finding ways to motivate the people and duty bearers with incentives (not necessarily financial rewards), but with a cause or belief which leads them to 'trade off' their gains or losses and prioritise actions for a sustainable ecosystem-based adaptation in the two ECAs. The team considered the factors analysed in political economy scenarios in terms of engaging the actors, duty bearers and community people and their roles and influences. Areas explored included conducting market research, Rapid Market Appraisal (RMA), creating prototypes and piloting in the two ECA settings and finally developing business models for scaling up technical innovative and appropriate solutions for restoration and protection of ECAs through EbA approach. These solutions include locally-led adaptation practices; renewable energy solutions; climate resilient water supply and sanitation; environment friendly on-farm and off-farm livelihood practices; climate resilient homes and infrastructures; and weather and climate information services.

NABAPALLAB has the potential to use the following program strategies and implementation plans to address drivers of ecosystem fragility:

5.5.1.1 Addressing the impact of climate change in the two ECAs

One of the key approaches of NABAPALLAB (the project) is to build social-ecological resilience in the targeted ECAs through rehabilitation, protection, and co-management of degraded and semi-degraded ecosystems. The project plans to work in two wetland ECAs – i) the Sundarbans ECA in the Southwest (ECA includes only the managed forests and catchment area around the Sundarbans) and ii) Hakaluki Haor in the Northeast (ECA includes entire natural wetland ecosystem and surrounding watershed).

The PEA identified that the resilience and functioning of the natural and managed ecosystems in both the Sundarbans and Hakaluki Haor ECAs have been compromised by gaps in good governance of these social-ecological systems, leading to unsustainable land use changes which are accelerating ecosystem degradation. The identified problems and causes of the two ECA are also playing a crucial role in ecosystem rehabilitation and community based adaptive management. NABAPALLAB team also analysed the rules of the game and stakeholder mapping (with micro-macro linkages and issues) and navigated towards shaping pragmatic pro-poor inclusive ecosystem protection pathways to demonstrate transformative social-ecological resilience in the cause of sustainable EbA in both ECA sites.

Biodiversity co-benefits from the collaboratively designed NABAPALLAB activities, could include an increase in areas under natural vegetation (restoration), increased resilience of wetland ecosystems to climatic impacts, and increasing species populations in ECAs. These will be closely monitored through appropriate indicators. NABAPALLAB will also attempt to capture wider landscape-level ecosystem service benefits and engage women and most vulnerable in the climate change adaptation and mitigation initiatives.

5.5.1.2 Identifying underlying governance and policy implementation gap in the two ECAs

The PEA analysed the following governance and policy implementation gaps driving degradation and other threats to the status of the ecosystem with a view to initiating policy advocacy processes

with the relevant actors, duty bearers and CSOs at the local, regional and national level along with the community people living in the ECAs.

The Sundarbans: Since the declaration of ECAs by the MoEFCC in 1999, no coordinated management intervention has been implemented by the concerned agencies of the MoEFCC, viz. the DoE or FD, for the management of ECA as per the ECA guidelines. The FD works only within the Sundarbans ECA – natural resource management, viz. forest, fisheries, and other non-timber forest products. Although the fisheries (fish, shrimps, crabs) of the Sundarbans are a diverse, rich, and vital resource with high commercial and livelihood values, the absence of proper fisheries assessment and lack of conservation efforts may soon lead to a severe decline of fisheries of Sundarbans. The current fisheries management targets fishing access, harvest management, and fishing bans. However, over the last 15 years, FD, with the support of USAID, has been trying to establish a co-management system through effective engagement of local user communities (fishers and other resource collectors), local government, and stakeholders. Still, it remains in its infancy due to various factors.

The Hakaluki Haor case is different, *Khas* (state-owned) wetlands are leased to fishers' cooperatives by the district and sub-district administration using the *Jalmahal* Policy 2009, which has some weaknesses; thus, instead of poor fishers, local elites have got control of wetlands and get the most benefits from fishing while the fishers make some marginal benefits as fishing laborers. The DoE, with the support of UNDP and other development partners, implemented projects over the last 12 years or so and demonstrated wetland rehabilitation, swamp forest restoration, sanctuary establishment, formations of village-based conservation groups (VCGs), and union and upazila-level ECA management committees, livelihood supports, and others. However, these social and ecological management benefits could not be sustained due to lack of integration of good practices in Hakaluki management plans, non-functioning of union and upazila level ECA committees, non-functioning of endowment fund at upazila level, lack of interest of district and upazila administration in ECA management underpinned by the absence of DoE officials on the ground. As a result, the wetland management systems are still following traditional, resource-damaging pro-elite lease management approaches instead of pro-poor resource management. The implications of this are that the poor fishers are disconnected from wetland access and use rights, while the non-fisher elites reap significant benefits at the cost of ecosystem degradation and livelihood insecurity of the poor.

5.5.1.3 Supporting the enforcement of existing policies and regulations for reducing elite control and exploitation of natural resources

NABAPALLAB will work with local government stakeholders and NGO entities currently active in the two ECAs, for the prevention of elite control and exploitation of natural resources like illegal encroachment (channel/ wetland) and activities such as illegal fisheries, leasing, pollution, positioning, wetland filling etc. while involving local communities, vested interested groups and local elites in the understanding and enforcement of current policies for habitat and wildlife protection for ecosystem conservation.

As such, NABAPALLAB will work at the local scale with local communities in both these ECAs, while keeping track of the wider landscape and connectivity between ecosystems. For instance, connecting with Bangladesh fisheries acts and policies, and tiger and dolphin action plans, which represent landscape level initiatives for species conservation. The local and national authorities will play pivotal enabling and collaborative roles throughout the NABAPALLAB intervention. Data from the project, as well as best practices and insights, will be regularly shared and discussed with relevant entities, ensuring that future biodiversity conservation actions are well-informed with local-level data.

5.5.2 Stakeholder Engagement in Thematic Areas of NABAPALLAB

The PEA identified a complex interplay between the impact of climate change and the socio-economic diversification of the challenging political space which is often dominated by reciprocal politics or clientelism which impacts the ecosystem in terms of protection, conservation, and restoration of natural resources in the two ECAs. Critical to this endeavour is enhancing access to natural resources for vulnerable groups such as the poor, women, and indigenous communities, which is essential for fostering resilient livelihoods and minimising climate risks. The team also identified collaboration opportunities with government agencies, development partners, academia/ think tanks, INGOs, local CBOs, NGOs and youth-led organisations, private sectors, financial institutions and print and electronic media to integrate gender equality and social inclusion into ecosystem restoration, protection and management of the two ECAs. In section 5.4, the PEA outlined the existing stakeholders of the Sundarbans and Hakaluki Haor ECAs and divided them into blockers, potential change makers, neutrals, and allies/ potential coalition with high and low influence. Each stakeholder's roles, interests, and influence were meticulously scrutinized to develop an inclusive engagement plan. Notably, the gender dimensions of stakeholders were carefully considered throughout the mapping process, ensuring a comprehensive understanding of their diverse perspectives and needs. This approach will facilitate the establishment of effective partnerships and strategies tailored to address the multifaceted challenges inherent in ecosystem conservation and climate resilience. This PEA provided insights and guidance on whom and how to engage with the stakeholders of local, regional and national level for bridging the policy implementation gaps for an integrated EbA approach for the ECAs.

The findings from this PEA will help NABAPALLAB ensure collaborative efforts of Local Government Institutions (LGIs), Non-Governmental Organisations (NGOs), the private sector, and the local communities. The government bodies especially MoL, LGDs and BWDB in the ECAs are crucial for community infrastructure development, such as strengthening embankments and canal dredging. On the other hand, DAE, DoF, DLS, DSS as well as local CBOs, NGOs and development partners are playing crucial role in providing support to impoverished families and vulnerable communities to enhance climate resilient livelihoods, improved and responsive weather information and disaster readiness. NABAPALLAB will engage purposefully with all actors for local planning, resource allocation, and implementing adaptive and resilient strategies in terms of sustainable EbA approach in the ECAs. The PEA also identified the important role of the private sector in renewable energy solutions and WASH facilities for the vulnerable communities living in these critical areas. NABAPALLAB can catalyse this process by ensuring effective collaboration and coordination among all parties. At the same time, a shared platform can streamline the exchange of ideas and resolve conflicts, enriching the project's impact and sustainability. The following table illustrates the areas for stakeholder engagement considering the interventions of NABAPALLAB for the Sundarbans and Hakaluki Haor ECAs:

Table 2 Theme-wise stakeholder engagement

Major Thematic Areas	Stakeholder Engagement in the ECAs	
	The Sundarbans	Hakaluki Haor
Gender-inclusive NBS for Sundarbans, Hakaluki Haor and locally-led adaptation planning	MoEFCC, FD, MoA, DoE, DAE, DLS, DoF, DSS, DDM, LGD, WARPO, NRCC, BWDB USAID, UNICEF, IFAD, KFW, EU, GIZ, WB, ADB	MoEFCC, MoL, FD, MoA, DoE, DAE, DLS, DoF, DSS, DDM, LGD, WARPO, NRCC, BWDB USAID, UNICEF, IFAD, KFW, EU, GIZ, WB, ADB

	BELA, RRI, IUCN, INGOs, Local and regional print and Electronic Media, PKSF, Bangladesh Coast Guard, Public Administration, Local CSOs, CBOs and Youth led Organisation, Community Petrol Group, Village Tiger Response Team, KU, KAU, ICCCAD, CPRD, private sector	BELA, RRI, IUCN, INGOs, Local and regional print and Electronic Media, PKSF, Bangladesh Coast Guard, Public Administration, Local CSOs, CBOs and Youth led Organisation, SAU, VCG, VCF, ICCCAD, CPRD, private sector
Renewable energy solutions	SREDA, IDCOL, DAE, DLS, Local and regional print and Electronic Media, local CBOs, NGOs, and youth-led organisations, private sector	SREDA, IDCOL, DAE, DLS, Local and regional print and Electronic Media, local CBOs, NGOs, and youth-led organisations, private sector
Climate resilient and nature positive livelihood	DAE, DoF, DLS, BRRI, BINA, SRDI, BFRI, DSS, Local and regional print and Electronic Media, local CBOs, NGOs, and youth-led organisations, private sectors, financial institutions, KU, KAU, agro-input Dealers and Companies,	DAE, DoF, DLS, BRRI, BINA, SRDI, DSS, BFRI, Local and regional print and Electronic Media, local CBOs, NGOs, and youth-led organisations, private sectors, financial institutions, SAU, agro-input Dealers and Companies,
Climate-resilient homes and infrastructures	HBRI, BWDB, GIZ, DoE, local CBOs, NGOs, and youth-led organisations, private sectors, financial institutions	HBRI, BWDB, GIZ, MoL, local CBOs, NGOs, and youth-led organisations, private sectors, financial institutions
Climate resilient water supply and sanitation	DPHE, WARPO, local CBOs, DSS, NGOs, and youth-led organisations, private sectors, financial institutions	DPHE, WARPO, local CBOs, DSS, NGOs, and youth-led organisations, private sectors, financial institutions
Weather-informed Resilient and environment-friendly livelihood practices	BMD, DDM, BDRCS, DAE, DoF, DLS, CPP, Coast Guard, Community Petrol Group, Village Tiger Response Team, Local and regional print and Electronic Media, local CBOs, NGOs, and youth-led organisations	BMD, DDM, DAE, DoF, DLS, FFWC, BDRCS, VCG, VCF, Local and regional print and Electronic Media, local CBOs, NGOs, and youth-led organisations

In the Sundarbans, the team identified the stakeholders who have potential influence in biodiversity conservation and climate change adaptation but minimal supporting tendency, particularly those reliant on selected ECA, involved engaging and analysing relevant actors. This encompassed government agencies like Bangladesh Forest Department (FD) and Bangladesh Meteorological Department (BMD) those who have potential influence in the ECA. NABAPALLAB will use advocacy initiatives for effective collaboration which help to motivate for contributing to positive deviance for the community as well as the ecosystem of the ECA. For example, FD can contribute significantly to biodiversity conservation and climate change adaptation. Similarly, Agriculture Information Service (AIS) and Bangladesh Agro-Meteorological Information System (BAMIS) of DAE, with the collaboration of BMD, can contribute to climate smart agriculture and climate information service for the communities living in these two ECAs. NABAPALLAB could contribute by revising consensual implementation guideline for PA Rule 2017 with FD and ECA

Rule 2016 with DoE and supporting in terms of any potential revision in future, sharing guidelines, building stakeholder awareness, and ensuring implementation. One example of a collaboration initiative could be the sharing of entry fees among the co-management bodies. NABAPALLAB could take the initiative with the FD and MoEFCC to further review and approval of the Management plans for the three Sundarbans Wildlife Sanctuary World Heritage sites for 2015 to 2025 in collaboration with the World Bank's initiative.

In this case, there is opportunity to move Bangladesh Forest Department and Bangladesh Meteorological Department from neutral stakeholders to allies/ potential coalitions. The Bangladesh Tiger Action Plan for 2018-2027 prepared under a World Bank-supported project, and Bangladesh Dolphin Action Plan for 2020 to 2030, published by FD & MoEFCC with the support of UNDP, may be reviewed to analyse their impacts on the ground and provide recommendations for revision and/or implementation guidance where relevant.

There is also significant potential to move the Ministry of Land from their position as a blocker to change maker by ensuring effective implementation of laws and acts in terms of khas land and leasing management. Recently approved fisheries policy instruments viz. Marine Fisheries Act (2020), Marine Fish Capture (harvesting) policy 2022, Marine Fisheries Rule 2023 are relevant for the Sundarbans area. There is a need to assess the execution of these policies with the DoF, Ministry of Fisheries and Livestock (MoFL).

In Hakaluki haor ECA, the stakeholders with potential as change makers remain consistent with governmental bodies like the Sundarbans i.e MoEFCC, MoA, DAE, DLS etc. NABAPALLAB will respect the local societal ethical norms, principles, culture and values, while focusing on the economic, environmental and ecological, aspects of ECA conservation, the vulnerability of different groups dependent on these ECAs, and will work with youth and women groups e.g. Co-Management Organisations (CMO) and Village Conservation Groups (VCG) to build their capacity so that they become community leaders and change agents. Besides, climate (flood and saline) tolerant, regenerative agricultural practices will be promoted by implementing CARE's flagship Farmers' Field and Business Schools (FFBS) model so that men and boys can be identified and integrated into the implementation modality so they can not only support the women groups but also act as role models of positive masculinities among their groups. The PEA identified the effective collaboration and advocacy initiatives to use with Bangladesh Haor and Wetland Development Board (BHWDB) and MoL to move them from blockers to change-makers in terms of implementation of laws and acts for sustainable wetland management in favour of the people living in the Hakaluki Haor ECA by reducing the hostility of the powerful leaders, elites and vested interested groups. Collaboration is necessary with the Flood Forecasting Warning Center (FFWC) to reduce the loss and damage of the community people due to the impact of flood. The programme will follow a whole-of-society approach, where we will engage with people from all strata in the community, public sector service providers, private sector, civil society organisations and individuals. The local youth group, including women and girls, will build-up their capacity and contribute to developing social movements and Locally Led Adaptation Plans (LLAP) with technological innovation and nature-based solutions which serve the people's best interest of people and the Sundarbans and Hakaluki Haor ECAs.

Another important task is to develop national NbS guidelines in line with the IUCN's global standards for NbS - specifically ecosystem restoration /ecosystem-based adaptation, and Eco-DRR approaches. For this NABAPALLAB may collaborate with other initiatives like Protibesh Activity. NABAPALLAB will also look into the experience and learning of the ongoing SIDA's Participatory Planning in the Sundarbans, UNDP's Gender-Responsive Climate Change Adaptation projects in Sundarbans (experience of RWHS, climate-smart agriculture), GEF-UNEP-DoE's Ecosystem-based approaches to Adaptation (EbA), as well previous projects concerning ecosystem-based adaptation in the two ECAs, e.g., FCDO's Suchana project (Climate smart

fisheries and crop agriculture, livestock, private sector engagement, etc.). In Hakaluki Haor, NABAPALLAB could collaborate and learn from UNDP’s CBAECA, USAID’s Climate Resilient Ecosystems and Livelihoods (CREL) and Integrated Protected Area Co-Management (IPAC), GiZ’s Sundarbans Management Project (SMP), IUCN’s Mangroves for the Future (MFF) project, UNDP’s lesson learning of NBS at both Hakaluki and Sundarbans, G4CR’s NbS Activities at Sundarbans.

5.5.3 Alignment with Government Policies and Acts

Drawing on the findings from the PEA, NABAPALLAB will develop an alignment framework with national policies and guidelines to ensure coherence between project objectives and government priorities. This will involve identifying collaboration opportunities with government agencies and policymakers to address gaps and enhance support for ecosystem restoration and management initiatives. Additionally, the project will advocate for reforms in the relevant policies to promote the conservation and restoration of Ecologically Critical Areas (ECAs) and incorporate gender equality and social inclusion considerations. By aligning with relevant policies and advocating for necessary reforms, the project aims to contribute effectively to the conservation and restoration of ECAs in line with national objectives and guidelines.

An extensive desk review examined relevant policies, laws, acts, regulations, and strategies concerning climate change, ECA, NRM, LLA, and biodiversity interventions. This analysis aims to identify discrepancies and inadequacies in existing support and services, providing insights for targeted policy advocacy initiatives to enhance the implementation of Ecosystem-based Adaptation (EbA) strategies. The findings from the policy review will be shared with national-level policy stakeholders to foster a coordinated approach towards policy implementation. Additionally, recommendations are proposed to modify and refine related policies and strategies, ensuring alignment with project objectives and facilitating more effective conservation efforts. The following table illustrates the summary of the policy gap analysis along with the potential alignment with NABAPALLAB’s interventions.

Table 3 Summary of Policy Gap Analysis with the interventions of NABAPALLAB

Policy	Alignment with NABAPALLAB Interventions	Alignment and Gap Analysis
National Adaptation Plan (NAP) 2023-2050	Align with all the interventions of the project.	The National Adaptation Plan (NAP) for Bangladesh underscores the significance of enhancing ecosystem resilience and emphasizes nature-based solutions (NbS) to achieve ecosystem-based adaptation (EbA) while balancing economic growth and environmental sustainability. One of NAP's goals is to promote nature-based solutions for forestry conservation, biodiversity, and community well-being to achieve its vision. Strategies include scaling up EbA for wetlands conservation, restoring and conserving habitats, expanding community-based afforestation and reforestation, leading to increased use of nature-based solutions and biodiversity conservation. The proposed adaptation interventions involve action research for EbA and NbS, capacity development for

		<p>implementation, and research on climate change impacts on land, water, and ocean ecosystems.</p> <p>The National Adaptation Plan (NAP) aligns closely with EbA, nature-positive solutions, gender-responsive, and pro-poor adaptation frameworks. Objective 4 of the NAP focuses on promoting Nature-based Solutions (NbS) for forest and biodiversity conservation and enhancing community well-being.</p>
National Biodiversity Strategies and Action Plan (NBSAP) 2016-2021	<ul style="list-style-type: none"> • Gender-inclusive NBS for the Sundarbans, Hakaluki Haor and locally-led adaptation planning • Renewable energy solutions to support resilient livelihoods • Climate and weather risk informed resilient and environment-friendly livelihood practices 	<p>The policy document highlighted the implementation of the restoration plan for degraded forest ecosystems and wetland ecosystems, to address climate adaptation.</p> <p>The plan overlooks the crucial concept of Nature-based Solutions (NbS).</p>
Ecologically Critical Area Rules-2016	<ul style="list-style-type: none"> • Gender-inclusive NBS for the Sundarbans, Hakaluki Haor and locally-led adaptation planning • Climate resilient water supply and sanitation 	<p>The policy document outlines the responsibilities and functions of various committees and teams (national committee, district committee, upazila committee, and village conservation team) involved in the conservation and development of ECAs in Bangladesh. It recommends adopting alternative livelihood measures for the people dependent on the threatened areas.</p> <p>While the document emphasizes the importance of protecting Ecosystem Conservation Areas (ECAs), it fails to incorporate essential components such as climate change adaptation, Ecosystem-based Adaptation (EbA), Nature-based Solutions (NbS), and gender inclusion.</p>
Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009	<ul style="list-style-type: none"> • Gender-inclusive NBS for the Sundarbans, Hakaluki Haor and locally-led adaptation planning • Climate and weather risk informed resilient and environment-friendly livelihood practices 	<p>The Bangladesh Climate Change Strategy and Action Plan of Bangladesh is a part of the overall development strategy of the country. The document's emphasis on climate change adaptation, mitigation, and capacity building is inadequate, as it lacks comprehensive discussions on essential components such as Ecosystem-based Adaptation (EbA), resilient livelihoods, and Nature-based Solutions (NbS). Furthermore, it overlooks critical aspects of natural resource management and Ecosystem Conservation Areas (ECAs).</p>
Mujib Climate Prosperity Plan 2022	<ul style="list-style-type: none"> • Gender-inclusive NBS for the Sundarbans, Hakaluki Haor and locally-led adaptation planning 	<p>While the document effectively describes Adaptation, Adaptive Social Protection (ASP), Nature-based Solutions (NbS), Resilience, Risk Management, and natural resource management through clear definitions and illustrations of locally-led adaptation, it</p>

	<ul style="list-style-type: none"> • Climate resilient water supply and sanitation 	overlooks crucial aspects such as Ecosystem-based Adaptation (EbA) and Ecologically Critical Areas (ECA). Additionally, it lacks detailed depictions of well-executed plans or methodological frameworks.
Protected Area Management Rules 2017	<ul style="list-style-type: none"> • Gender-inclusive NBS for the Sundarbans, Hakaluki Haor and locally-led adaptation planning 	The document includes the activities of the co-management executive committee, co-management general committee, village conservation forum, people's forum, and community patrol forum for managing protected areas. The activities of the co-management committee include encouraging local stakeholders to participate in conservation efforts, promoting sustainable economic development within protected areas, prioritizing alternative income-generating activities, collecting funds for sustainable development, and supervising afforestation efforts. Additionally, it assists in managing fisheries resources, conducts awareness campaigns, and prevents illegal encroachment. Training programs for community members and assistance to the Forest Department in various tasks are also part of their responsibilities. Overall, the committee ensures effective conservation and management of protected areas as the government prescribes. The document lacks provisions for gender inclusion and Nature-based Solutions (NbS).
Participatory Water Management Rules 2014	<ul style="list-style-type: none"> • Climate-resilient homes and farms • Climate resilient water supply and sanitation 	The document overlooks the significance of climate change, Ecosystem-based Adaptation (EbA), natural resource management (NRM), Locally-led Adaptation (LLA), Nature-based Solutions (NbS), and biodiversity interventions. While primarily focuses on water management and stakeholder mapping, it fails to address these crucial elements. Additionally, it briefly touches upon the scoping of future biodiversity conservation and environmental preservation activities.
Protection and Conservation of Fish Rules 1985	<ul style="list-style-type: none"> • Climate-resilient homes and farms • Climate and weather risk informed resilient and environment-friendly livelihood practices 	These rules outline various measures aimed at the conservation and protection of fish species and aquatic ecosystems. The document lacks coverage of ecosystem-based adaptation, Nature-based Solutions (NbS), climate adaptation strategies, resilient livelihood approaches, and Gender Equality and Social Inclusion (GESI) considerations. However, Government of Bangladesh (GoB) is now formulating national fisheries policy.
Environment Conservation Act 1995	<ul style="list-style-type: none"> • Gender-inclusive NBS for the Sundarbans, Hakaluki Haor and locally-led adaptation planning • Climate resilient water supply and sanitation 	While the document prominently discusses the Conservation Act concerning environmental and ecosystem conservation, it fails to address the relevance and engagement of critical factors such as climate change, Environmental Conservation Agreements (ECA), Natural Resource Management (NRM), Landscape-Level Approaches (LLA), Nature-

		based Solutions (NbS), Ecosystem-based Adaptation (EbA), and biodiversity interventions. Moreover, it neglects to emphasize the importance of biodiversity conservation and environmental protection within its framework.
The Fisheries Policy	<ul style="list-style-type: none"> • Climate-resilient farms • Climate and weather- risk-informed resilient and environment-friendly livelihood practices 	The policy components mainly focus on enhancing production and employment opportunities, yet they lack integration with crucial environmental considerations. Notably absent are discussions regarding the relevance and engagement of climate change, Environmental Conservation Agreements (ECA), Natural Resource Management (NRM), Landscape-Level Approaches (LLA), Nature-based Solutions (NbS), Ecosystem-based Adaptation (EbA), and biodiversity interventions. Moreover, biodiversity conservation and environmental preservation strategies are insufficiently elucidated within the policy framework.

5.5.4 Strategies for Advocacy and Capacity Building

Awareness of EbA, NbS, and LLA is currently limited among various stakeholders. Communities and local actors possess minimal understanding of these concepts, particularly in the context of ECA. While government officials from departments like the BFD, DoF, DoE, DAE, and DLS are acquainted with the terms, they have minimal understanding about key elements and their linkages. In the Haor region, many fishermen, farmers, youths, and women remain unaware of NbS, EbA, and LLA, despite having received some training on the conservation and protection of wetlands, mangroves, and biodiversity within both ECAs. Members of Village Conservation Groups (VCG) and Village Conservation Forums (VCF) have also received training, awareness, and financial support concerning natural resource management and climate risk management in the past. However, there is a clear need for further capacity development in these emerging approaches to ensure that local communities can effectively contribute to and benefit from conservation and adaptation initiatives.

Furthermore, the project will leverage partnerships with local and national government institutions, development partners, civil society organizations (CSOs), academia, and the private sector to foster a collaborative environment conducive to Ecosystem-based Adaptation (EbA) approach and conservation. This collaborative approach will facilitate knowledge sharing, resource mobilization, and coordinated action across sectors. Specifically, NABAPALLAB will engage with key stakeholders identified in the PEA, such as MoEFCC, MoL, DAE, DoF, and BWDB, to align project interventions with national adaptation and biodiversity protection priorities outlined in national policies like the NAP, NBSAP, MCCP and Delta Plan 2100. Moreover, recognizing the critical role of community participation in sustainable development, the project will prioritize inclusive decision-making processes at the local level. This will involve conducting community consultations, workshops, and training sessions to empower local leaders and representatives, including women and nature-dependent community groups, in shaping project activities and advocating for policy reforms that support long-term conservation and protection goals. By strengthening institutional capacities, promoting inclusive policy development, and enhancing community resilience, NABAPALLAB aims to create an enabling environment that supports sustainable development and ecosystem resilience in the Sundarbans and Hakaluki Haor ECAs.

Based on the findings from the PEA, NABAPALLAB should engage with communities and local and national government institutions through targeted advocacy campaigns, highlighting the importance of gender equality and social inclusion in ecosystem restoration and management policies. This could involve developing capacity-building programs for poor farmers, fishermen and women to enhance their skills and knowledge about EbA, NbS and climate-resilient livelihoods. NABAPALLAB will also provide capacity-building initiatives for women, adolescents and nature-dependant marginalized people who are living in these ECAs. Support should be provided to encourage local communities to participate in decision-making processes and advocate for policy changes that align with the project objectives. Training and resources to build the capacity of government institutions to address ineffective ecosystem management and conservation could be provided. In addition, vocational training programs for the poor, women, and youth is very much needed. These strategies will help to promote inclusive policy development and implementation for sustainable conservation efforts.



6. Conclusion

Awareness of EbA, NbS, and LLA is currently limited among various stakeholders. Communities and local actors possess minimal understanding of these concepts, particularly in the context of ECA. While government officials from departments like the BFD, DoF, DoE, DAE, and DLS are acquainted with the terms, they have minimal understanding about key elements and their linkages. In the Haor region, many fishermen, farmers, youths, and women remain unaware of NbS, EbA, and LLA, despite having received some training on the conservation and protection of wetlands, mangroves, and biodiversity within both ECAs. Members of Village Conservation Groups (VCG) and Village Conservation Forums (VCF) have also received training, awareness, and financial support concerning natural resource management and climate risk management in the past. However, there is a clear need for further capacity development in these emerging approaches to ensure that local communities can effectively contribute to and benefit from conservation and adaptation initiatives.

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