



**Bangladesh Forest Department**  
Ministry of Environment, Forest and Climate Change

# Prospectus

## Strategic Environmental Assessment of South West Region and the Sundarbans



April 2020

Prepared by

**CEGIS**  
Center for Environmental and  
Geographic Information Services

**integra**  
CONSULTING  
Integra Consulting s.r.o.





# Contents

Introduction	1
Background	1
What is SEA?	3
What Kinds of Impact will the SEA Look at?	4
Some Issues	5
Steps in the SEA Process	9
Stakeholder Engagement and Communication	10
SEA Team Members	11
Contacts of the Team	11





## Introduction

This prospectus is aimed to provide all stakeholders - from government, the private sector and civil society, and all interested organisations and individuals - with some basic information about the Strategic Environmental Assessment (SEA) being undertaken of the South West (SW) Region and the Sundarbans (Figure 1). It sets out the reasons for the SEA and gives a brief introduction to its role, function and benefits. The aims and scope of the SEA are set out, and the steps in the process and products are described.

## Background

Bangladesh is on a trajectory to become a developed economy by 2041. In contributing to achieving this goal, the SW Region has significant prospects for development. Bangladesh is committed that such development should be sustainable and should not adversely affect the outstanding universal value of the Sundarbans.

The Sundarbans covers 10,000 km<sup>2</sup> of land and water in the Ganges Delta. It contains the world's largest area of natural mangrove forests and 60% of these forests is in Bangladesh; the remaining in India. The area has both local, regional and global significance due to its diversity, uniqueness, biological productivity and rich ecosystems, with a number of rare or endangered species living in the forest, including tigers, aquatic mammals, birds and reptiles. The area provides essential ecological services such as nursery ground for many fish species, and coastal erosion protection against storms, tidal surges and cyclones.

Some parts of the Sundarbans were proposed by the Government of Bangladesh (GoB) and subsequently designated by UNESCO as World Heritage Sites in 1997 (Figure 1). But, recently, concerns have been raised about the potential impacts on the Sundarbans of existing and planned developments in the SW Region. In this regard, UNESCO suggested to GoB to undertake a SEA to assess the impacts of development at a landscape and regional scale to help Bangladesh uphold the Outstanding Universal Value (OUV) of the Sundarbans. The overall aim is to ensure the sustainable development of the SW Region (Figure 3) whilst also ensuring the conservation of the Sundarbans.

The SEA will analyse the environmental and socio-economic impacts, existing and likely, of current and future Policies, Plans and Programmes (PPPs) for development and of important projects in the SW Region. In particular, the SEA will address PPPs covering all relevant sectors including, but not limited to the following: forestry, fisheries, transportation and communication, industry, power and energy, water resources, shipping, urbanisation, and tourism.

The SEA will identify the positive and negative, direct and indirect, transboundary, cumulative, synergistic and antagonistic, impacts of development in the region and address how these are impacting on or are likely to impact on (in the case of future PPPs) the region and the Sundarbans. It will also highlight the potential for enhancing positive impacts and for

trade-offs. The SEA will result in a Strategic Environmental Management Plan (SEMP) for the region that sets out a framework for monitoring the implementation of PPPs and individual mega development activities, providing a valuable tool

to help transition to sustainable development.

An overall objective is to engage widely with all relevant stakeholders to ensure that key concerns about development and environmental management in SW Region can be raised and taken into account.

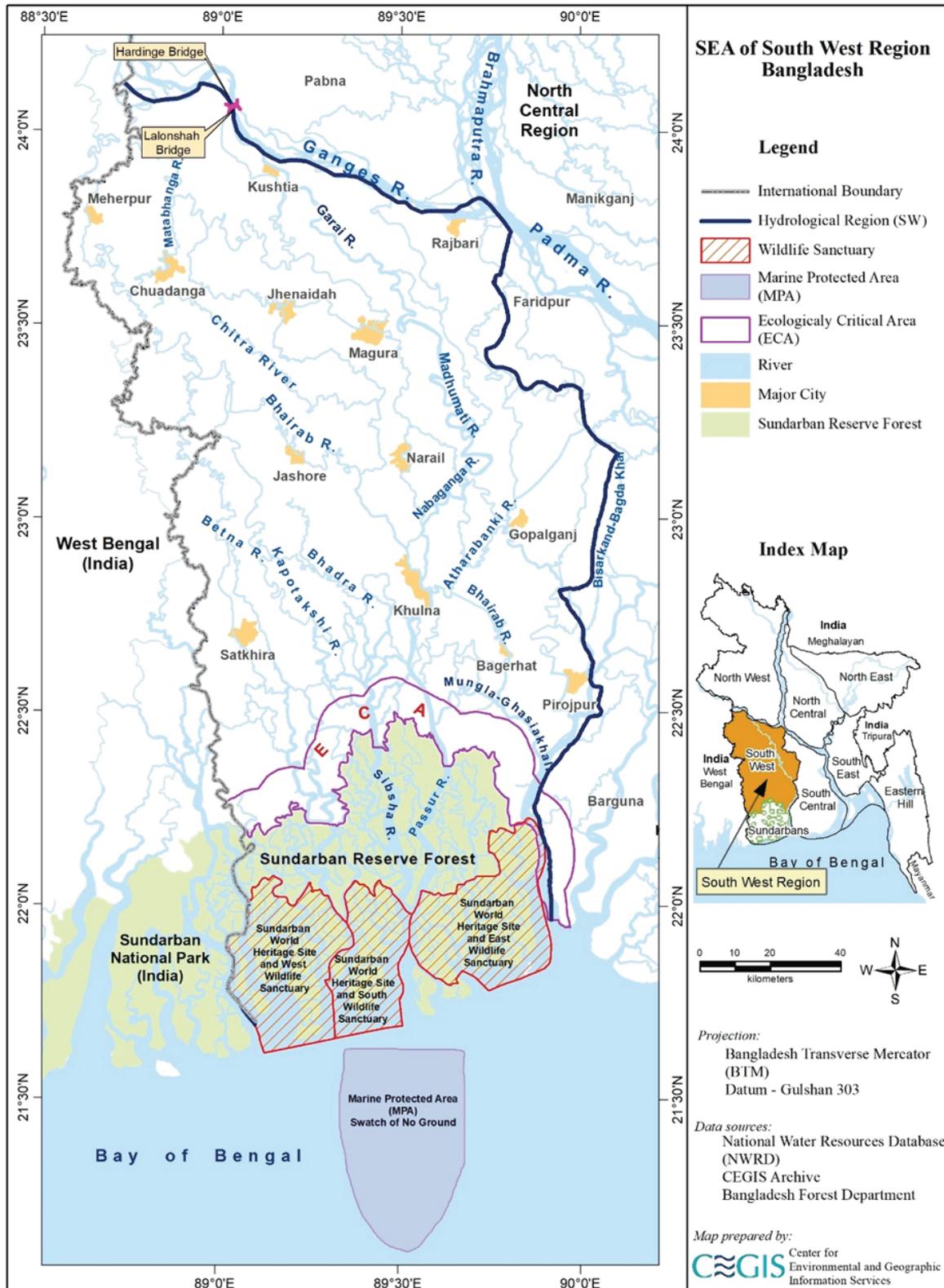


Figure 1: The SEA Area of Focus, World Heritage Sites and Protected Areas

A key objective is to engage widely with all relevant stakeholders to ensure that key concerns about development and environmental management in SW Region are able to be raised and taken into account.

### What is SEA?

There is a hierarchy of levels in public decision-making comprising policies, plans, programmes and then individual projects (Figure 2).

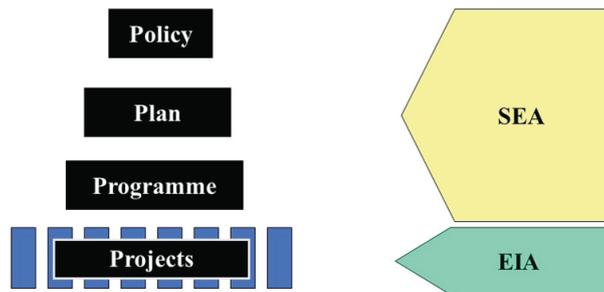


Figure 2: SEA, EIA and the Decision-making Hierarchy

Policies shape the subsequent plans, programmes and projects that put those policies into practice. Policies are thus top of the decision-making hierarchy. Policies, plans, and programmes (PPPs) are more ‘strategic’ than projects as they determine the general direction or approach to be followed towards broad goals. SEA is applied to these more strategic levels and deals with assessing broadly-defined proposals with a wide range of options usually available for assessment. As one moves down the hierarchy from policies to projects, the nature of decision-making changes, as does the nature of environmental and socio-economic assessment needed. Table 1 indicates how SEA differs from Environmental Impact Assessment (EIA) which is used to assess the impacts of individual projects. But as Table 1 shows, it differs considerably from SEA.

The experience gained from undertaking EIAs and SEAs of plans and programmes feeds into the design of policy SEAs. There is two-way flow between the four levels. Some major public instruments (e.g. White Papers) do not fit easily into the simplified hierarchy shown in this figure.

The uptake of SEA has grown since first introduced in the 1980s and it is now used in countries all over the world to support PPP preparation and implementation

and over 60 countries now have formal legal and regulatory requirements for SEA. But there has been very little experience of its application in Bangladesh. So this SEA is playing a pilot role. It will help to raise awareness of the role, methods and value of the process, and hopefully will stimulate its wider uptake in the country.

In a nutshell, SEA involves analytical and participatory approaches for the environmental evaluation of proposed policies, plans and programmes, and for evaluating the inter linkages with economic and social considerations. It is a planning tool that aims to improve strategic decision-making. It complements planning by (a) generating information on environmental and socio-economic issues, (b) providing a platform for stakeholder dialogue on these issues with well-structured debate involves.



**Table 1: Comparison between SEA and EIA**

Indicator	SEA	EIA
Level of application	Policies, plans and programmes	Specific projects
Alternatives	Broad range considered (eg to PPPs, scenarios, economic growth trajectories).	Considers limited range
Who does it?	Commissioned by government.	Usually prepared and/or funded by project proponents.
Focus	Decision on policy, plan and programme implications for future lower-level decisions.	Obtaining project permission, and rarely with feedback to policy, plan or programme consideration.
Process	Multi-stage & iterative, with feedback loops.	Well-defined & linear, with clear beginning and end (e.g. from feasibility to project approval).
Emphasis	Meeting balanced environmental, social and economic objectives in policies, plans and programmes. Includes identifying macro-level development outcomes.	Mitigating impacts (environmental and social) of a specific project, but with identification of some project opportunities, off-sets, etc.
Consideration of cumulative impacts	Key component of assessment	Limited consideration

government, the private sector and civil society, and (c) offering a mechanism to take the results of the assessment and debate into account in institutions and governance.

SEA uses a variety of tools in a flexible and adaptive way, rather than a single, fixed, prescriptive approach as is usually the case with EIA. SEA can complement and strengthen EIA at the project level by: (a) identifying prior information needs and potential impacts, providing the context and parameters for subsequent EIAs of projects designed to implement a policy, plan or programme; and (b) making EIA and the project review process more streamlined and efficient by addressing many issues at a more strategic level - including concerns that may relate to project justification so that EIAs can be more effective by being designed to focus on local and site- or project-specific concerns.

### What Kinds of Impact will the SEA Look at?

The SEA will look at all the developments (projects, infrastructure, etc.) likely to arise over the next 20 years in the SW Region as a result of implementing current and proposed policies, plans and programmes across all relevant sectors (e.g. particularly forestry, fisheries, agriculture, water, power and energy, tourism, urbanization, industry, transportation/ communication and shipping, and others). The environmental and socio-economic impacts of developments under these sectors will be

assessed including those which are positive/negative, direct/indirect, domestic/transboundary, cumulative, and synergistic/antagonistic. Impacts arising across the SW Region will be assessed as well as those that impact upon the outstanding universal value (OUV) of the Sundarbans, including those that are transboundary in nature (ie arising across regional boundaries within Bangladesh and across international boundaries) – as illustrated in Figure 3.



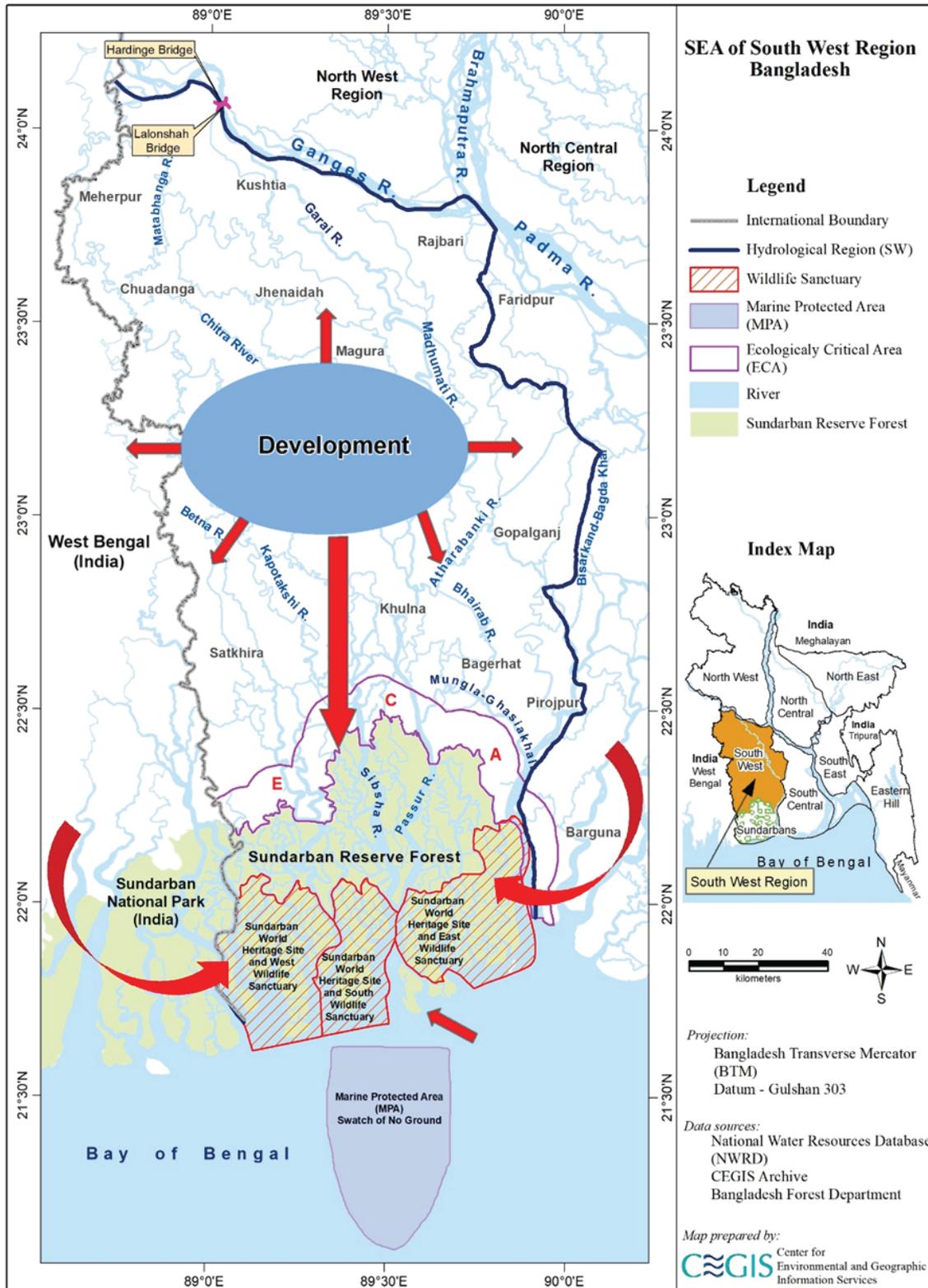


Figure 3: Schematic Flow Diagram of Impacts of Development Affecting the SW Region

### Some key issues

An initial analysis by the SEA team has identified a range of key environmental and socio-economic issues that the SEA will need to address (Table 2). This analysis will be deepened

and verified, and issues prioritised, following the scoping phases when a range of multi-stakeholder workshops and consultations will be organised at national, regional and local levels.

Table 2: Initial List of Key Environmental and Socio-economic Issues

Environmental Issues	Comment/examples of potential impacts
<p><b>Pollution and waste</b> (solid and liquid)</p> <ul style="list-style-type: none"> <li>• Surface waters. Brackish and sea water</li> <li>• Groundwater</li> <li>• Air</li> <li>• Oil</li> <li>• Waste disposal</li> <li>• Plastics</li> </ul>	<p>Pollution &amp; waste management is a major concern for the ecological integrity of the SW Region of Bangladesh and the Sundarbans due to different developmental initiatives.</p>
<p><b>Water flow dynamics in rivers</b></p>	<p>Change of water flow in rivers of SW Region may change the region's economic sustainability/integrity as well as livelihood patterns and crop production.</p>
<p><b>Sedimentation and siltation</b> (fluvial and tidal)</p> <ul style="list-style-type: none"> <li>• Dredging and disposal</li> </ul>	<p>Sedimentation and siltation management is a challenge to maintain river flows. Disposed dredged materials can affect the regeneration of trees &amp; survival of existing forests as well as benthic aquatic biodiversity.</p>
<p><b>Salinity</b></p> <ul style="list-style-type: none"> <li>• Groundwater</li> <li>• Soil</li> </ul>	<p>Due to reduced flow of upstream fresh water and channel siltation, and resultant sea water intrusion/inundation, soil and groundwater salinity has increased and soil productivity has decreased as well as livelihood diversity.</p>
<p><b>Noise</b> - particularly due to shipping in Sundarbans</p>	<p>Noise from the regular movement of ships (notably along major rivers of Sundarbans) can disrupt wildlife movement, cause localisation of populations and result in inbreeding.</p>
<p><b>Habitat fragmentation</b></p>	<p>Increased movement of ships in the international routes through the Sundarbans may be causing fragmentation, inhibiting wildlife movement, undermining biodiversity conservation and reducing ecosystem productivity.</p>
<p><b>Loss of biodiversity</b></p>	<p>Some environmental as well as regional &amp; local activities may affect biodiversity (particularly in the Sundarbans), with loss of keystone species and their prey base due to poaching and habitat degradation as a result of climate change &amp; anthropogenic activities.</p>
<p><b>Invasive alien species</b></p>	<p>Invasive alien species are a problem in the Sundarbans and ecologically critical areas. They are the major threat to ecosystem productivity as well as regeneration of desired species - an important concern for natural resource managers.</p>
<p><b>River bank erosion</b> – due to port expansion and boats</p>	<p>River bank erosion is a particular concern in the Sundarbans due to bow-waves from the increased numbers of fast-moving ships and due to river bed siltation, formation of new islands and changed river courses, as well as increasing sea water inflow in SW Region.</p>
<p><b>Climate change</b></p> <ul style="list-style-type: none"> <li>• Sea level rise</li> <li>• Salt water intrusion</li> <li>• Erratic rainfall &amp; distribution</li> <li>• Increased average temperatures</li> </ul>	<ul style="list-style-type: none"> <li>• Sea level rise is a global threat that will impact on the region</li> <li>• Many factors have reduced river flow in the region, decreasing flushing time, with increased periods of saltwater exposure</li> <li>• Shifting of monsoon with erratic rainfall has impacted on the cropping season and pattern</li> <li>• There is no evidence of significant increased temperatures yet, but climate models predict a significant increase in the future.</li> </ul>

Environmental Issues	Comment / examples of potential impacts
<ul style="list-style-type: none"> <li>Cyclones &amp; storm surges</li> <li>Greenhouse gas emissions</li> </ul>	<ul style="list-style-type: none"> <li>Cyclones making landfall impact on livelihoods (killing people and causing damage). Cyclone frequency has decreased but may rise in the future.</li> <li>Rapid industrialisation and urbanisation is likely to lead to increased greenhouse gas emissions. Expansion of flood-irrigated paddy rice has increased methane emissions.</li> </ul>
<p><b>Exceptional floods</b> (with potentially damaging water levels)</p> <ul style="list-style-type: none"> <li>Freshwater floods (due to rain) upstream</li> <li>Tidal</li> <li>Poor drainage infrastructure</li> </ul>	<p>Freshwater flooding may occur due to: heavy rain in the upstream/catchment areas of SW Region, lack of drainage infrastructure and high tidal flow.</p>
<p><b>Industrialisation</b></p> <ul style="list-style-type: none"> <li>Power generation – oil, gas, coal</li> <li>Pipelines</li> <li>Petroleum</li> <li>Cement</li> <li>Special economic zones</li> </ul>	<p>Industrialization of the inland parts of SW Region can create air &amp; water pollution as well as other potential impacts on biodiversity &amp; livelihoods of the region.</p>
<p><b>Urbanisation</b></p>	<p>Rapid urbanization in the 14 districts of SW Region as well as in the environmentally critical area around The Sundarbans can affect the extent of air &amp; water pollution and agricultural productivity etc.</p>
<p><b>Land use changes</b></p>	<p>Land use changes north of The Sundarbans are arising due to population &amp; economic growth of SW Region, e.g. shrimp cultivation, infrastructures &amp; urbanization, etc. Impacts of this include loss of biodiversity, reduced soil productivity and loss of livelihood opportunities</p>
<p><b>Hotspot areas</b> (important area)</p>	<ul style="list-style-type: none"> <li>Due to lack of periodic maintenance of parts of the polder system has created water-logged areas around Jessore, Khulna and Satkhira;</li> <li>Peat soil in areas around Gopalganj and Khulna are used as fuel may increase GHG emission.</li> <li>Some Important areas of SW Region are facing habitat degradation &amp; biodiversity loss.</li> </ul>
Socio-economic issue	Comment
<p><b>Livelihoods</b></p> <ul style="list-style-type: none"> <li>Conflicts between economic sectors</li> <li>Access to resources (eg in Sundarbans)</li> <li>Salinity</li> </ul>	<ul style="list-style-type: none"> <li>Salinity intrusion causes conflicts, eg: shrimp cultivators vs crop producers; powerful/rich land controller’s vs the powerless, smallholder and marginalized people, etc.</li> <li>Access by forest-dependent people to forest resources (and thus their livelihood options) is frequently limited by official legal institutional controls.</li> <li>Causes health problems (eg skin conditions), reduces drinking water quality – impairing people’s ability to work, and affects crop production, etc.</li> </ul>
<p><b>Out-migration</b></p>	<p>Both involuntary and economic out-migration (mainly poor people) is common in SW Region, especially from coastal areas. Much is driven by disasters, indebtedness, dispossession/land grabbing, lack of livelihood options, etc. Poor people move to unhealthy urban slums and become further marginalised in an unfamiliar and uneven job market. Some educated people move to urban areas /overseas for employment. Migrant remittances can supplement family incomes, especially helpful after disasters.</p>

Socio-economic issue	Comment
<p><b>Health &amp; sanitation</b></p> <ul style="list-style-type: none"> <li>Water-borne, respiratory &amp; salinity-related diseases</li> <li>Diet</li> <li>Inadequate health facilities and access</li> <li>Arsenic contamination (of drinking water &amp; irrigated rice)</li> </ul>	<ul style="list-style-type: none"> <li>Local people, especially children and elderly people, are particularly susceptible to water-borne, respiratory and salinity-related skin diseases</li> <li>Poor diet causes malnutrition.</li> <li>Health service providers are based in city/urban and peri-urban areas. They are not easily accessible by people and/or emergency patients living in remote areas, due to poor communication networks</li> <li>Lack of public toilets in urban and semi urban areas. As a result, local people, especially women face problems during public gatherings and at local markets.</li> <li>This is a serious issue in parts of the Ganges River floodplain and the northern part of the tidal floodplain.</li> </ul>
<p><b>Gender related issues</b></p>	<p>Women face socio-political exclusion in decision-making processes - both in the home and society. They also bear a heavy burden for collecting potable water, fuelwood (from the Sundarbans and adjacent areas), etc. Women often encounter security problem while travelling alone to/from remote areas.</p>
<p><b>Education</b></p> <ul style="list-style-type: none"> <li>Low environmental awareness</li> <li>High male dropout</li> </ul>	<ul style="list-style-type: none"> <li>Males from poor households need to support family income, resulting in high drop out and/or lower attendance at school.</li> <li>Poor communication network in the rural area often discourages school attendance.</li> </ul>
<p><b>Loss of traditional knowledge</b></p>	<p>Technological advancement &amp; other development activities may be causing loss of traditional knowledge.</p>
<p><b>Loss of cultural heritage</b></p>	<p>Lack of proper maintenance &amp; negligence due to low revenue return, inadequate budget allocation, etc.</p>
<p><b>Security</b> – kidnapping of fishermen</p>	<p>Kidnapping of forest produce extractors for ransom is an important issue for the management of the Sundarbans</p>
<p><b>Seasonal tourism</b></p>	<p>Uncontrolled tourism causes loss of biodiversity, disruptive noise and water pollution etc.</p>
<p><b>Illegal activities</b></p> <ul style="list-style-type: none"> <li>Poaching and hunting</li> <li>Poison fishing</li> <li>Illegal tree cutting</li> <li>Trafficking of wildlife products</li> <li>Corruption</li> </ul>	<p>These issue are of major concern in the Surdarbans, causing loss of habitat and biodiversity (terrestrial &amp; aquatic) &amp; economic loss for communities.</p>
<p><b>Institutional Issues</b></p>	<p>Lack of manpower, capacity development &amp; logistics are major institutional issues – impeding environmental management (In general) and overall management of the Sundarbans.</p>

**Note:**

*This table is provisional and illustrative only. The scoping phase of the SEA will identify and analyse the key issues in detail, including through consultations and stakeholder meetings, and efforts will be made to verify assumptions and facts. Issues and impacts in the Sundarbans will often be different to those affecting the region inland.*

## Steps in the SEA Process

The SEA will follow international principles for good practice in SEA as contained in the SEA Guidance of the Development Assistance Committee of the Organisation for Economic Cooperation and Development. It will also be undertaken in

accordance with the eight UNESCO World Heritage Impact Assessment Principles. In these regards, the SEA will be conducted through a sequence of phases as shown in Table 3 and summarised in Figure 4. The exact timetabling may need to be adjusted according to how the Covid-19 pandemic plays out.

Table 3. Schedule for SEA process

Phase	Description	Date
1	<b>Inception</b>	January-February 2020
2	<b>Screening</b> Identify those policies, plans & programmes likely to have significant environmental and socio-economic impacts to be included in the SEA	Mid-February to end April 2020
3	<b>Scoping</b> a. Gather baseline information/data – prepare thematic baseline papers b. Prepare baseline environmental and socio-economic profile (current status of key themes/factors, trends, etc). c. Stakeholder analysis and start stakeholder engagement (consultations at national, regional and local levels. d. Review policies, plans & programmes & identify environmental/social objectives. e. Draft scoping report f. Public comment on draft scoping report g. Final scoping report	April to mid-August 2020
4	<b>Main assessment</b> a. Development of future scenarios – to inform assessment process b. Initial assessment impacts of alternatives (eg high, medium & low economic growth trajectories) c. Interim SEA report d. Circulate interim SEA report for open comment e. Finalization of preferred alternative f. Deeper assessment (of impacts) of preferred alternative	Mid-August 2020 to mid-February 2021
5	Draft SEA report and draft SEMP	By end February 2021
6.	Review – of draft SEA and SEMP a. Two national multi-stakeholder review workshop	March 2021
7.	Finalisation & submission of SEA Report and SEMP	By end May 2021
8.	Monitoring and evaluation of PPPs	Ongoing

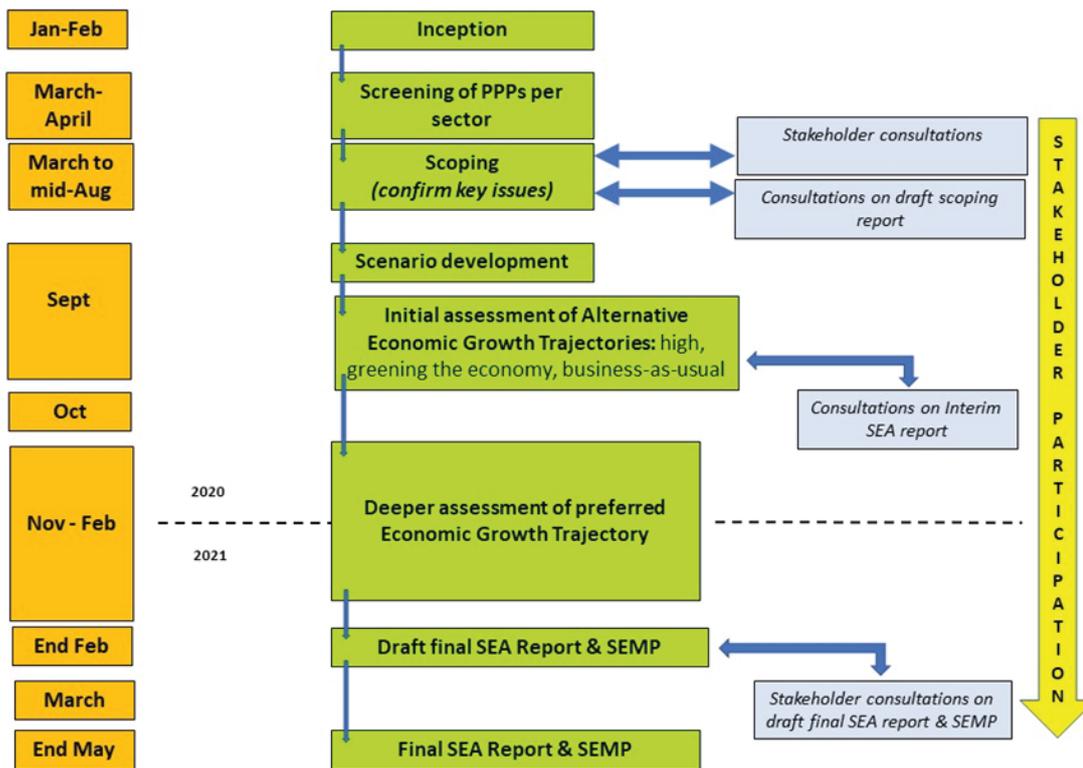


Figure 4: Steps in the SEA Process

### Stakeholder Engagement and Communication

A major internationally accepted principle of good practice in SEA is that there should be effective participation of all relevant stakeholder throughout all key steps of the process. To this end, during the inception phase, stakeholder analysis will be undertaken to identify all key stakeholders from government, the private sector, civil society, NGOs/civil society organisations and others – at national, regional and local levels, and those concerned with transboundary issues.

A stakeholder strategy will be developed for engagement and communicate with stakeholders. In ideal circumstances, we would wish to organise semi-structured interviews with key informants and random informal interviews in the field. In addition, we would wish to organise a programme of multi-stakeholder workshops and consultative meetings at national and regional levels and in all districts and in selected upazilas. Plus, our aim would be to arrange focus sessions for particular occupational groups (eg fisherfolk, farmers, urban dwellers, marginalised groups) and special meetings for women, where appropriate.



Smallholder Farmer Meeting

However, due to the current Covid-19 pandemic and the risks posed by public meetings, we will instead need to seek your views, comments and suggestions via email – at least for the foreseeable few months. Therefore, we would much appreciate to receive any comments you or your organization may have on the following:

- The SEA process as described in this Prospectus;
- Any additional key issues (environmental, social or economic) which you feel are not captured in Table 2 of this Prospectus;
- Any views you might have on any of these issues currently listed or that you may suggest to include in our assessment work.

We will keep all the email exchanges and feedback that we receive strictly for internal use to inform the process and improve our understanding and response to critical issue. Reference to all views submitted will remain anonymous in our reports, unless you explicitly indicate that you want, you or your organisation to be mentioned.

The SEA will be conducted in an open, transparent and science based way with information about the process and emerging results (including draft and final reports) provided on a website. Newsletters (including in local language) will be produced and

information circulated through the media (newspapers and radio).

The final reports will be issued in both English and local language.

### The SEA Team Members

The team conducting the SEA comprises a mix of international and national experts (Table 4).

### Contacts of the SEA Team

The SEA team is keen to hear from anyone with information, views and suggestion about:

- Key issues in the SW Region that the SEA should address (environmental, social, economic, other), particularly those that affect the Sundarbans.
- Major current and planned developments and large (mega) projects in SW Region.
- Key plans for SW Region.
- Major past studies that provide useful information for the SEA.
- Available information and data; and who can provide it.
- Your interest to engage further in the SEA.

### Contacts of the SEA Team



**Md. Zaheer Iqbal**

Project Director, SEA Project

Email: dcf-rims@bforest.gov.bd

Tel: +88-01711-443750



**Professor Barry Dalal-Clayton**

SEA Team Leader

Integra

Email: bdalalclay@aol.com



**Zahir Uddin Ahmed**

SEA Deputy Team Leader, CEGIS, Dhaka

Tel: +88-01711 581429

Email: zahirfd84@yahoo.com



**Mushfiq Ahmed**

SEA Liaison Officer, CEGIS, Dhaka

Tel: +88-01712 588262

Email: mahmed@cegisbd.com

Table 4: SEA Team Members

Name	Expertise/Responsibility	Organization
Prof. Barry Dalal-Clayton, PhD	Team Leader	Integra
Zahir Uddin Ahmed	Deputy Team Leader	CEGIS
Dr. Jean-Roger Mercier	Environmental Assessment	Integra
Dr. Vladislav Bizek	Environmental Modelling	Integra
Dr. Manimul Haque Sarker	River Morphology	CEGIS
Mir Sajjad Hossain	Transboundary Water Management	CEGIS
Motaleb Hossain Sarker	Tourism	CEGIS
Dr. Mahmood Hossain	Mangrove Ecology	CEGIS
Dr. Dilruba Ahmed	Gender and Stakeholder Participation	CEGIS
Md. Shahidul Islam	Remote Sensing	CEGIS
Dr. Mohammad Zashim Uddin	Plant Taxonomy	CEGIS
Jalal Ahmed Choudhury	Power and Energy	CEGIS
Dr. Kazi Md. Noor Newaz	Ecology and Biodiversity	CEGIS
Dr. Chowdhury Saleh Ahmed	Policy and Institutional Affairs	CEGIS
Dr. Moinul Hossain	Land Transportation	CEGIS
Md. Tariqul Islam	Forest Management	CEGIS
Apurba Kumar Sarker	Economic Policy Planning and Investment	CEGIS
Capt. Md. Sayedul Hoque Khan	Water Navigation	CEGIS
Mohammad Abdur Rashid	Agriculture and Landuse	CEGIS
Kazi Kamrull Hassan	Environmental Planning	CEGIS
Dr. Farhana Ahmed	Transportation and Infrastructure Planning	CEGIS
Mohammed Mukteruzzaman	Fishery	CEGIS
Sarazina Mumu	Urban Development	CEGIS
Md. Firoyz Alam	GIS Data Analysis and Mapping	CEGIS
Sudipta Kumar Hore	River Morphology	CEGIS
Laila Sanjida	Tourism	CEGIS
H. M. Nurul Islam	Water Quality and Pollution	CEGIS
Mushfiq Ahmed	Biodiversity and Wildlife	CEGIS
Dr. Md Shibly Sadik	Environment and Disaster Management	CEGIS
Md Shifuddin Mahmud	Livelihood	CEGIS
Tanvir Ahmed	Flood Modelling	CEGIS
Bhuiya Md Tarmin Al Hossain	Climate Change Modelling	CEGIS
Kushal Roy	Climate Change	CEGIS
Pronab Kumar Halder	Industry and Power	CEGIS
Md. Monowar-ul Haq	Water Resources Management	CEGIS
Ahmed Zulfiqar Rahaman	Hydrology and Climate Change	CEGIS
Mohammad Kamruzzaman	Ecology and Biodiversity	CEGIS
Abdul Halim Farhad Sikder	Soil and Environment	CEGIS
Md. Ashis Mawla	Education	CEGIS
Faisal Ahmed	Security, Conflict and Power Structure	CEGIS
Hifzur Rahman	Public Health	CEGIS
Tanvir Ahmad Rifat	Population and Demography	CEGIS
Amith Dutta	Ethnicity and Culture	CEGIS





**CEGIS**

Center for Environmental and  
Geographic Information Services

*A Public Trust under the Ministry of Water Resources*

House 6, Road 23/C, Gulshan 1

Dhaka 1212, Bangladesh.

Phone: 88 02 58817649-52; 9842581, 9842551

Email: [cegis@cegisbd.com](mailto:cegis@cegisbd.com), Web: [www.cegisbd.com](http://www.cegisbd.com)



**integra**  
CONSULTING

**Integra Consulting s.r.o.**

Pobřežní 18/16, 186 00 Prague 8, Czech Republic

E-mail: [office@integracons.com](mailto:office@integracons.com)

Web: [www.integracons.com](http://www.integracons.com)

Phone: +420 774 541 484