



FWC SIEA 2018

FRAMEWORK CONTRACT FOR THE IMPLEMENTATION OF EXTERNAL AID 2018

LOT No. 1 SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES AND RESILIENCE

EX-POST EVALUATION OF THE PROJECT "SUNDARBANS ENVIRONMENTAL AND LIVELIHOODS SECURITY (SEALS)

Service Contract No. 2019/404715

FINAL REPORT

JULY 2019



Ex-post Evaluation (EPE) of the project "Sundarbans Environmental and Livelihoods Security (SEALS)

Service Contract No. 2019/404715

Final Report

Date: 29/05/2019

DISCLAIMER

This report has been prepared with the financial assistance of the European Commission. The views expressed herein are those of the consultants and therefore in no way reflect the official opinion of the European Commission.

Authors of the Report:

Prof. Steven M. Newman FRSA - Team
Leader and Environmental Specialist

Mr. Shamim Akhter. - Civil and Mechanical
Engineering Specialist

Contractor name and address

Project Planning and Management Ltd.
98A Knyaz Boris I St.
Sofia, Bulgaria

Phone: +359 2 953 3567
Fax: +359 2 905 8810
E-Mail: ppm@ppm.bg

PPM internal number: 031

In order to minimise the environmental footprint, only one copy of this report is printed in full (including annexes). All recipients of the physical copies will receive a soft copy containing the related annexes.

Table of Contents

Table of Contents	4
Acronyms	6
1. Introduction	7
1.1 Description of the Action	7
1.2 Approach of the ex post evaluation (EPE).....	9
1.2.1 Report Structure.....	12
1.2.2 Project or Programme?.....	12
1.2.3 Grading, level of evidence and datum points	16
2. Answered questions / Findings	18
2.1 Relevance & design.....	18
2.1.1 What is the quality of relevance, clarity, realism and coherence today?	18
2.1.2 Sources of Evidence	19
2.1.3 Overall Grade.....	19
2.2 Effectiveness	20
2.2.1 Methods and triangulation	20
2.2.2 Have the planned two results and ultimately the project purpose been achieved. What is the level of quality?	20
2.2.3 Findings including sources of evidence	20
2.2.4 Sources of Evidence	29
2.2.5 Overall grade	29
2.3 Impact	29
2.3.1 Methods and triangulation	29
2.3.2 To what extent has the project purpose contributed to the overall objective?	29
2.3.3 What are the main impact prospects and pathways?	30
2.3.4 Evidence	32
2.3.5 Grade	32
2.4 Sustainability.....	32
2.4.1 Methods and triangulation	32
2.4.2 General Findings	32
2.4.3 To what extent has sustainability been achieved through being embedded in policy?	33
2.4.4 How could aspects of institutional and financial sustainability be improved?	33
2.4.5 Threats to long terms sustainability as of today	34
2.4.6 Grade	34
2.5 Coherence of the action.....	35
2.5.1 What is the coherence of the Action itself, with the EU strategy in Bangladesh in the biodiversity and environmental protection sector and with other EU policies and Member State Actions?	35
2.5.2 Grade	35
2.6 EU added value	35
2.6.1 To what extent does the Action bring additional benefits to what would have resulted from EU Member States' acting alone?	35
2.6.2 Grade	35
2.7 Cross cutting.....	35
2.7.1 Formulation document	35
2.7.2 What is the quality of gender linked approaches?	36
2.7.3 How well has the action addressed environment and climate change issues?	36
2.7.4 How has the action capitalised on rights based and leave no one behind approaches?	36
2.7.5 Grade	36
2.8 Lessons learned in order to improve potential future Actions	36
2.8.1 What are the top 5 issues that would improve effectiveness in the context of this form of action?	36
2.8.2 What are the top 5 lessons learned that will be of central importance in future EU programming in the sector?	37
2.8.3 What challenges/opportunities exist for actors in order to continue, maintain and scale-up their efforts with the target community / region?	38

3. Conclusions and Recommendations	40
2.9 Conclusions	40
2.9.1 Relevance and design	40
2.9.2 Effectiveness.....	40
2.9.3 Impact	41
2.9.4 Sustainability.....	41
2.9.5 Coherence	42
2.9.6 EU added value	42
2.9.7 Cross cutting Issues	42
2.10 Recommendations.....	42
2.10.1 Introduction	42
2.10.2 EU.....	42
2.10.3 GoB.....	44
2.10.4 BFD.....	44
2.10.5 Concern and World Vision	45
2.10.6 World Vision.....	45
4. Annexes to the report.....	46
Administrative Annex 1 - The Terms of Reference	46
Administrative Annex 2 Team CVs.....	53
Administrative Annex 3 - Itinerary.....	56
Administrative Annex 4 - Persons Met	59
Administrative Annex 5 - Project documents consulted	72
Technical Annex 1 - Chronology of Significant Events.....	73
Technical Annex 2 - Evaluation matrix showing methods	77
Technical Annex 3 - Questionnaires.....	78
Technical Annex 4 - Programme logical frameworks	79
Technical Annex 5 - Engineers report	99
Technical Annex 6 - Photographic evidence	106
Technical Annex 7 - Maps (FAO forest change)	108
Technical Annex 8 - Projects in Fisheries and livestock	109
Technical Annex 9 - Government order relating to co management of forests.....	112
Technical Annex 10 – References.....	121

Acronyms

BFD	Bangladesh Forest Department
CREL	Climate-Resilient Ecosystems and Livelihoods
EC	European Commission
EIA	Environmental Impact Assessment
EPE	Ex Post Evaluation
EU	EU European Union
EUD	European Union Delegation
GIZ	Deutsche Gesellschaft Fur International Zusammenarbeit
IRMP	Integrated Resource Management Plan
JJS	Jagrata Juba Shangha
M&E	Monitoring and Evaluation
MIS	MIS Management Information System
MoEF	Ministry of Environment and Forests
MTR	Mid-Term Review
OECD DAC	The Organisation for Economic Co-operation and Development's Development Assistance Committee
PD	Project Director
PSC	Project Steering Committee
ROM	EC Results Oriented Monitoring Mission (ROM)
SEALS	Sundarban Environment and Livelihood Security
SHG	Self-help Groups
SIZ	Sundarban Impact Zone
SRF	Sundarban Reserve Forest
TAT	Technical Assistance Team
UNESCO	The United Nations Educational, Scientific and Cultural Organization
WHS	World Heritage Site

1. Introduction

1.1 Description of the Action

Context

The Sundarbans is an area with a considerable amount of research activity. The latest thinking on the social and ecological resilience of the area is expressed in two books:

Climate change adaptation and social resilience in the Sundarbans edited by Odonnell and Wodon (2018);

The Sundarbans: a Disaster-Prone eco-region edited by Sen (2019);

According to Den and Ghorai (2019) the Sundarbans is an agglomeration of about 200 islands, separated by some 400 interconnected tidal rivers, creeks and canals spanning across India and Bangladesh. They state that the current extent is 10,217 km² and that this represents about 35% of what it was 200 years ago. 58% of the area (5955 km²) is in Bangladesh. They claim that the eco-region is part of the world's largest delta formed out of sediment brought down by the Ganges, Brahmaputra and Meghna rivers and that it is the largest contiguous block of mangrove forest remaining in the world.

The current management plan for the Sundarban Reserved Forest (SRF) in Bangladesh is known as the Integrated Resources Management Plan for the Sundarbans 2010-2020 (IRMP). This is a primary management document for the Bangladesh forest department who are legally responsible for the SRF.

Recently this has been augmented by management plans for four of its 5 sanctuaries:

- Sundarban West Wildlife Sanctuary Management plan 2015-2025;
- Integrated Management Plan for the Three Wildlife Sanctuaries for Freshwater Dolphins (2015-2024);

The IRMP (2010) claimed that the SRF is an exceptional economic resource – some 600,000 people directly depend on it for their livelihood. Timber harvested from the SRF has in the past been a major resource, but currently a logging ban is in place. A variety of non-timber forest products such as honey, wax, medicinal plants, nippa palm, cane, bamboo and grass are produced and extracted from the SRF. The 12,000 km of river in the SRF produce a large quantity of fish, shrimps and crabs. In addition, the Bay of Bengal is home to an important marine fishing industry whose stocks originate in the Sundarbans. The communities who depend upon SRF resources for a significant proportion of their livelihoods live in the so-called Sundarbans Impact Zone (SIZ)¹, a band extending **20 km** outside the SRF boundary. Its productive value, particularly towards the west, is threatened by ecological changes due to upstream diversion of fresh water, mostly in India, and by unsustainable harvesting over several decades.

The IRMP recognised this with the following vision statements in support of the claim that the approach is one of collaborative management for a range of outcomes and outputs:

1. The Sundarbans shall continue to provide subsistence resources including forest produce and fish at a level in which the sustainability of the resource is ensured, though emphases will be on reducing dependency and improving current resources management practices.
2. Traditional users will acquire a greater awareness and shared responsibility and a share in the financial benefits as a result of co-managing the resources and will act accordingly to help conserve them.
3. The BFD will involve local people in the SRF co-management, and other relevant government agencies such as the Department of Fisheries and the Department of Environment (DOE) will be consulted, whenever required.
4. The BFD will develop its capacity including infrastructure, logistics and technical capacities and seek technical assistance where appropriate in the SRF management.
5. Development and efficient operation of alternative income enterprises in the landscape will help adapt the local community to climate change.

¹ Although not all communities in such an arbitrarily defined zone depend on the SRF, whereas others further afield may have a stake.

6. Wildlife and fish resources will prosper throughout the SRF where populations will thrive at optimum carrying capacity. The SRF landscape will be managed to ensure that essential ecological services are maintained, and terrestrial and aquatic ecosystems are well adapted to climate change. The wildlife sanctuaries and wetlands will be managed to provide secure habitat for wildlife and fish resources.
7. Specific sites, infrastructure and routes in designated areas of the SRF will be developed and/or maintained to provide for quality ecotourism experiences.
8. In order to take advantage of the increasing nature tourism, the Forest Department will seek public private partnerships, consistent with the guidelines and principles established by the GOB to improve the ecotourism services and facilities.
9. The effects anticipated to result from climate change will be recognized, and mitigation and adaptive management strategies developed and implemented in order to ensure the maintenance of ecosystem goods and services.
10. Restoration and maintenance of essential ecological functions including restoring stream-flows will be recognized.
11. The Sundarbans, as the largest contiguous mangrove system in the world and befitting its world heritage site designation, will become the internationally recognized example of collaborative management of a mangrove ecosystem, with provisions for sustainable carbon financing for more effective conservation efforts in the SRF in tandem with a broad range of programs supporting poverty reduction and sustainable socio-economic development in the landscape.

The Project:

The problem identified by the participatory project formulation process (carried out from September to November 2008) was:

“Proper SRF management is undermined by ineffective patrolling, lack of people’s participation, lack of enforcement of laws and regulations, institutional corruption and lack of FD capacity, leading to over-exploitation of SRF resources. The net result is depletion of biodiversity and forest degradation leading to a change in the equilibrium of ecosystems and reduced protection from natural disasters.”

The formulation team noted that problems of SRF dependent communities are exacerbated by seasonal unemployment, high population density, and lack of alternative means of livelihood. They also highlighted the need for people’s participation and developed the Sundarbans Environmental and Livelihoods Security (SEALS) Project. The so called project was actually a programme of interventions each with a different duration and intervention logic (more detail is given in section 1.2). A chronology of significant events that impinge on the evolution is presented in technical Annex 1.

The major component was implemented from November 2011 until May 2015 by the Bangladesh Forest Department (BFD) and the NGOs World Vision and Concern Worldwide and their partners.

The Overall Objective was:

To contribute to maintained or improved ecosystem productivity, and the environmental and social integrity of the north coastal lands of the Bay of Bengal.

This means forest **and** non-forest lands and it **includes** the Indian states of West Bengal, Orissa and Andhra Pradesh (northern portion).

The financing agreement states that the project purpose was *“to realize sustainable development of the Sundarbans Reserved Forest (SRF) and the people who now depend on its resources.”*

Previous evaluations:

An EC Results Oriented Monitoring Mission (ROM) was mobilised in March 2012. A mid-term review (MTR) was carried out in the period from 28 August to 17 September 2013.

The MTR mission critically analysed and assessed the implementation of the project in relation to the following activity clusters: (1) Restore, modernise and **cyclone-proof SRF protection** in light of the new management plan; (2) Establish **sustainable Management Information System** to guide Sundarban Reserve Forest (SRF) protection and management; (3) Improve **sustainability of SRF resource extraction**; (4) Develop **alternative livelihoods** for SRF dependent households; (5) **Reduce disaster risk** of Sundarban Impact Zone (SIZ) communities dependent on SRF. They used these five entities as if they were results for their analysis of effectiveness.

There was no final evaluation of the major (government) component of the SEALS project.

Stakeholder map

The final beneficiaries of the programme are not specified in the financing agreement. For the purpose of this evaluation, the team would describe the beneficiaries to be all those citizens that benefitted directly from the EC funded work via the BFD and project NGOs

Key actors include:

- Bangladesh Forest Department;
- Concern Worldwide;
- World Vision;
- Agriconsulting;
- CEGIS;

The management structure as viewed by Agriconsulting is shown overleaf.

1. The main government actor was the forest department which is part of the Ministry of Environment and Forests (MoEF);

with the following other actors are listed in the ToR and may have had a role in steering committee meetings:

2. Ministry of Fisheries and Livestock;
3. Ministry of Land;
4. Ministry of Finance;
5. Ministry of Local Government;
6. Ministry of Water Resources;
7. Ministry of Law and Justice;
8. Ministry of Agriculture;
9. Ministry of Social Welfare;
10. Ministry of Planning;

The involvement of the above was studied during the field work and those interviewed are listed in Administrative Annex 4.

Key international donors and actors involved in relevant parallel actions include USAID, Winrock, FAO, World Bank, ADB, DANIDA, GIZ, IUCN (mangroves for the future).

1.2 Approach of the ex post evaluation (EPE)

Methodology

The ToR states that the focus of the evaluation is on “impact and sustainability” and that a key objective is to obtain “Key lessons and recommendations in order to improve potential future Actions”.

In order to do this it was necessary to include a **design analysis** (including relevance, realism, coherence and clarity) and to do an Ex-post **effectiveness analysis** to find out what outcomes made a significant contribution to achieving the project purpose. The design analysis also contributed to the construction of a simplified and updated theory of change.

EPEs are used throughout the European Commission to assess whether a specific intervention was justified and whether it worked (or is working) as expected in achieving its objectives and why. EPEs also look for unintended effects (i.e. those which were not anticipated at the time of the formulation) and look for evidence

of causality². A key part of the evaluation was to capture this unintended effects and outcomes. This is best achieved by using a technique known as appreciative inquiry³ as part of key informant interviews. This also helps in the study of institutional sustainability as it locates the energy for change within organisations at the present time. This approach will act as a good complement to the logical framework analysis linked techniques to be used in the evaluation.

The methodology used a mixture of methods including key informant interview, document analysis, site visits and financial modelling. These methods were triangulated wherever possible.

Specific questions to be used in the group and key informant interviews flowed logically from the following set of generic opening questions:

- What is the main strength of your organization/community?
- How did the project build on this?
- For those closely involved with the project: "What has been your happiest moment on the project?"
- What have been the main benefits of the project and why?
- What do you consider to be islands of excellence?
- Will these benefits continue without donor project funding and if so, how?
- How have any benefits spread to other areas, sectors and or countries?
- If we could do only one thing in the future to address climate change resilience in the context that you were working, what would that be?
- If we had to design a new project based on the lessons learned and mistakes made in SEALS what would you improve or add?
- How could BFD/local actors be helped to perform better?
- What other suggestions do you have that could improve joint working and understanding in relation to the threats and opportunities posed by climate change?

The evaluation questions in relation to the OECD DAC entities are presented in the evaluation matrix shown in Table 1. Indicators were based on those in the financing agreement and linked logical frameworks.

Table 1: Evaluation Matrix (DKGF refers to Document analysis, Key informant interview, Group interview and Financial analysis respectively)

Evaluation Parameters	Question	Methods
Relevance & design	What is the quality of relevance, clarity, realism and coherence and how could this be improved in future?	DKG
Effectiveness	Have the planned outcomes and ultimately the project purpose been achieved. What is the level of quality?	DKGF
	What are the top 5 issues that would improve effectiveness in the context of this form of action?	DKGF
Impact	To what extent has the project purpose contributed to the overall objective?	DKG
	What are the main impact prospects and pathways?	DKG
Sustainability	To what has sustainability been achieved through being embedded in policy?	DKG
	How could aspects of institutional and financial sustainability be improved?	DKGF
Coherence of the action	What is the coherence of the action itself, with the EU strategy in the countries and with other EU policies and Member State Actions?	DKG
EU added value	To what extent does the Action bring additional benefits to	DKG

² <http://ec.europa.eu/trade/policy/policy-making/analysis/policy-evaluation/ex-post-evaluations/>

³ <https://www.iisd.org/library/locating-energy-change-introduction-appreciative-inquiry>

	what would have resulted from EU Member States' acting alone?	
Cross cutting	What is the quality of gender linked approaches?	DKG
	How well has the action addressed environment and climate change issues?	DKG
	How has the action capitalised on rights based and leave no one behind approaches?	DKG
Lessons learned	What are the top 5 lessons learned that will be of central importance in future EU programming in the sector?	DKG
	What challenges exist for actors in order to continue, maintain and scale-up their efforts with the target community / region?	DKGF

The core evaluation questions will be augmented with analysis of:

- Capacity development of the beneficiary agencies;
- The analysis of unexpected, positive or negative, impacts;
- The analysis of the extent to which the impacts benefited or adversely impacted respectively men and women;
- Changes in behaviour, attitude, knowledge;

These were stipulated in the ToRs.

General limitations of evidence collected, risks of bias, and mitigating measures.

Evaluation missions of short duration (field phase less than two months) tend to have the limitations outlined in Table 2 below. Suggested mitigation measures are included.

Table 2. Limitations, risks and mitigation measures

Evidence or data type	Limitation	Risk	Mitigation measure
Biodiversity: Species populations and species richness	Based on samples	Different methods or indices used	Ensure that comparable datasets are used in terms of sampling and indices
Attribution	Projects rarely use control or counterfactual areas	The actor wrongly claims that they are solely responsible for a given outcome	Proceed with caution and get secondary supporting evidence. If attribution is not possible use the term possible contribution
Actors and or beneficiaries give less than accurate information	Biased information may arise from those who have a vested interest in maintaining the support of the project	This can skew the sample so that averages are not accurate	Take the largest sample and randomise as much as possible. Triangulate the data in the case of contradictions and other concerns

Actual difficulties encountered during the phase and mitigation measures adopted:

Two difficulties were encountered. They are listed in the table 3 below:

Table 3. Difficulties and mitigation measures

No.	Difficulties	Mitigation measures
1.	Forestry staff in Khulna not available due to meetings requiring their attendance in Dhaka	Telephone interviews conducted
2.	Cyclone	Field work replaced with document analysis and telephone interviews

1.2.1 Report Structure

Standard OECD DAC terminology is used throughout with the definition of Impact refined in a manner cognisant of EC guidelines i.e. effects on beneficiaries and ecosystems within the management system boundary of expected results is analysed under effectiveness. Impact is defined as the contribution of the project purpose to the stated overall objective. Evaluation questions (agreed at inception) are embedded under each evaluation entity and this forms the report outline.

The report has the following annexes, which deal with how the mission was administered.

1. ToR;
2. EPE Team CVs;
3. Itinerary/work plan;
4. Persons met/interviewed;
5. Project Documents supplied;

The report also contains technical annexes, which show key data sources used by the evaluation team.

The approach of the evaluation is summarised in the evaluation matrix presented as technical annex 2. The questionnaires used are given in technical annex 3. The four logical frameworks of the action are presented in technical annex 4.

1.2.2 Project or Programme?

The MTR found that:

“The structure of SEALS contains some inconsistencies. The BFD’s planning (DPP) ends on 31/12/2014 while the EU Project agreement runs from 10/11/2010 to 31/5/15. Differences exist also in the logical frameworks of the Development Project Proforma (DPP) and the Project Agreement, and different financial cycles are maintained by the Bangladesh Forest Department (BFD) and Non-Governmental Organisations (NGOs) collaborating in the project. Since all partners have separate contracts with EU, this is not giving direct managerial problems, but it complicates the analysis of the project”.

Financial analysis of the programme (without audit and evaluation costs) based on the April 2019 CRIS data is given overleaf in table 4.

Table 4. Financial details of the sub projects within the SEALS programme

Component	Paid amount (€)	Start	End	%
BFD	2976296	10/04/2011	09/06/2015	36%
Technical Assistance	6915967	01/07/2011	10/05/2015	8%
Worldwide vision	1993163	01/02/2012	31/05/2015	24%
Concern worldwide	1970524	01/01/2012	30/04/2015	24%
Management Information system (MIS)	34000			0%
Pontoons and gangways (P&G)	700100			8%
Total	8365680			

It should be noted that the BFD component has infrastructure costs including pontoons and gangways. Also much of the MIS was designed under the TA contract.

Table 5 gives a breakdown of the BFD budget using the PE figures from the MTR.

Table 5. Allocation of costs in the BFD budget using MTR data and current (May 2019) exchange rates (95.1)

Item	Cost taka	Cost euro	% of total
1. Works	267,712,200	2,832,584	41.2%
2. Equipment	111,545,400	1,180,229	17.1%
3. Vehicles	95,506,400	1,010,525	14.7%
4. Supplies	28,817,600	304,911	4.4%

5. Staff Costs	62,682,200	663,222	9.6%
6. Office Operating Cost	11,272,600	119,272	1.7%
7. Vehicle/Boat Operating Costs	14,074,000	148,913	2.2%
8. Other Operating Costs	1,252,100	13,248	0.2%
9. Communication & Visibility Costs	10,975,300	116,126	1.7%
10. Bank Charges	2,000,000	21,161	0.3%
11. Contingencies	44,616,500	472,074	6.9%
Total	650,454,394	6,882,267	

The bulk of the BFD budget is used for physical entities. (Items 1-4 represent 77% of the budget). 77% of 36% (Table 5) is 28% so **infrastructure is the largest component in the programme budget.**

The total amount spent training for the BFD staff according to the completion report was 2,660,490 taka or €28,150. This represents only 0.45% of the budget.

The intervention was administered by the EUD under 4 different logical frameworks as shown in the table 3 overleaf.

Analysis of this table shows that:

1. If the logical frameworks were hierarchical i.e. the project purpose of the financing agreement was adopted NGOs and the TAT as the overall objective of their logical frameworks then the intervention could be called a project. As this was not the case the intervention is more accurately described as **a programme**;
2. The NGOs appear to have (based on reading their progress reports and interviewing the project managers interpreted the overall objective word Sundarbans (highlighted in bold) to mean the Bangladesh Sundarbans. This is unfortunate as they all have links if not programmes with India and could have proactively contributed **to maintained or improved ecosystem productivity, environmental integrity and social integrity of the north coastal lands of the Bay of Bengal.**

Activities conducted during the field phase:

Four types of evaluation activity were carried out over the period 15/4/19 to 17/5/19:

1. Document analysis;
2. Expert informant interview;
3. Group interview of community-based organisations;
4. Field inspection and patrolling;

Findings are based on the triangulation of the results arising from this. Questionnaires used in the evaluation are presented in Technical Annex 3.

The phasing of the mission is presented in table 6 below with explanations and sample sizes (the detailed itinerary is presented in Administrative Annex 3):

Table 6. Phasing of the mission

Date	Activity	Explanation and sample size
14 th April - 19 th April	Expert informant interviews in Dhaka	NGO, Donors, Government and relevant donor projects. Over 20 persons
20 th April - 30 th April	Forestry department interviews and field inspections of major forestry structures and the reserve	A major structure is defined as a fully equipped building, boat or fluvial structures Over 5 structures studied The reserve visit was based on a one-day patrol via boats. Over 20 persons

1 st May - 3 rd May	Community visits and group interviews as part of NGO work (JJS)	Over 100 persons
4 th May - 5 th May	Field work replaced with document analysis and telephone interviews	Cyclone made travel dangerous
6 th May - 12 th May	Community visits and group interviews as part of NGO work with forestry structure inspections (World Vision and Shushilan)	Over 200 persons and 2 structures
13 th May -16 th May	Expert informant interviews in Dhaka	NGO, Donors, Government and relevant donor projects. Over 20 persons

Table 7. Key features of the project logical frameworks in the SEALS programme

Source	Note	Overall Objective	Project Purpose	Activity clusters
Financing agreement	Accepted by government but note used by BFD for reporting e.g. OVIs on outcome of training, efficacy of patrolling and status of wildlife or forest extent were never reported on	To contribute to maintained or improved ecosystem productivity, environmental integrity and social integrity of the north coastal lands of the Bay of Bengal	Sustainable development of the Sundarbans Reserved Forest and the people who now depend on its resources	Patrolling/protection improved systems, Patrolling/protection improved conditions, Patrolling/protection improved competence
TA team	Produced by the M&E consultant but no evidence of use	To secure the integrity of the environment and biodiversity of the SRF in Bangladesh	To develop a sustainable management and biodiversity conservation system for all SRF resources on the basis of environmentally sound plans and the participation of all key stakeholders	Management plan development, reducing offences, reducing human wildlife conflict, reducing human pressure, ecotourism, community management of the SRF
Concern Worldwide Sundari Project with local partners JJS and Shushilan	Used and reported against. Not clear if Sundarbans was interpreted as Bangladesh only	To contribute to maintaining and/or improving Sundarbans biodiversity.	To reduce the human pressure on the Sundarbans	Community management of the SRF via CMCs, disaster resilience, poverty reduction through alternative income
Worldwide Vision Our Forest Our Life' project	Used and reported against. Not clear if Sundarbans was interpreted as Bangladesh only	To reduce the human pressure on the Sundarbans by increasing the sustainability and productivity of SRF resources through community action	No project purpose but three specific objectives; food security and income, disaster resilience and co management	Food security and income, disaster resilience and CMCs

Simplification of intervention logic and restatement as a simple theory of change:

The “project” is actually a programme with four logical frameworks. The logical framework in the financing agreement has two purposes and this makes effectiveness analysis overly complicated. The purpose of an ex-post evaluation is balanced toward lessons learned rather than an audit. We propose the following theory of change in order to enhance the power of analysis.

For the analysis of all of the evaluation element apart from lessons learned, the intervention logic of the financing agreement will be used, and efforts will be made to align the ex post evaluation with the approach (activity clusters” used by the MTR).

For the lessons learned a more powerful theory of change will be tested.

Based on the intervention logic of the financing agreement and its linked logical framework the elements are outlined below.

The project purpose is:

The Bangladesh Sundarban Reserve Forest function is conserved today for the benefit of all.

The OVIs are (1) forest extent protected, and (2) populations levels of economic species maintained.

The overall objective is:

To contribute to maintained or improved ecosystem productivity, and the environmental and social integrity of the north coastal lands of the Bay of Bengal.

The OVIs are (1) forest extent protected (2) populations levels of economic species maintained and (3) Sustainable increase in income levels of coastal communities.

It is assumed that this has been realised (no data is available from project sources).

Result 1 is:

Forest department adopt best practice in protecting Bangladesh Sundarban Reserve Forest function.

OVIs are:

1. Target levels of equipped monitoring stations and vessel have been obtained;
2. Target levels of monitoring linked to frequency, staffing and data management have been obtained;
3. Target levels of morale and confidence as evidenced by planning and linked proposal writing;

Result 2 is:

Surrounding communities adopt best practice in income generation and protecting Bangladesh Sundarban Reserve Forest function in a disaster-prone environment.

OVIs are:

1. Target levels of income source change (from harmful extraction to minimal effect on the mangrove) have been achieved without financial loss;
2. Target levels of disaster management and planning achieved (reduction in mortality rates and or 75% have shelter access);
3. Target levels of school attendance achieved (over 70%);
4. Target levels of patrolling and forest restoration achieved through some form of forest co management;

1.2.3 Grading, level of evidence and datum points

Grading is based on EC ROM approaches (Excellent, Good, Problems and Serious deficiencies).

Evidence level ranges from Good (documents/physical evidence and testimony), Anecdotal (testimony only) and None.

Datum points are dates corresponding to:

- Day before the project started 2012
- Day project ended 2015
- Now (May 2019)

2. Answered questions / Findings

2.1 Relevance & design

2.1.1 What is the quality of relevance, clarity, realism and coherence today?

Reasoning

The analysis of design has four components that ask the questions, is the design relevant to policy and the needs of beneficiaries? Is the design clear to all involved and especially to managers. Is the design realistic in terms of delivery the promised entities given the funding and human resources? Finally; is the design coherent, in other words is it logical that attainment of the results will lead to achieving the stated purpose.

Methods and limitations with mitigating measures

Design analysis is based on project document analysis (the full list is given in administrative annex 5). The financing agreement and linked logical framework and any MTR are key documents. Design can be changed at inception and at Mid-term if all parties agree and there is a significant change to be made. The only limitation is not having a complete set of documents. This risk was mitigated against by cross checks with all relevant actors.

Answers

The 2012 ROM found the project relevant to the needs of the forest and linked communities but found problems with the logical framework. The 2013 MTR found the design complicated with different logical framework and time periods for the works by the BFD and NGOs but did not carry out a detailed analysis of design elements.

The design was relevant to National government policy on forest and to the EU Country Strategy at the time but is less relevant to the current EU MIP (2014-2020) for Bangladesh apart from the social development aspects linked to EU Agenda for Change: i) Strengthening Democratic Governance, ii) Food and Nutrition security. Environment is not a focal-areas for the current MIP. However, environment and especially this project is of highly relevant to the regional programming for ASIA MIP 2014-2020 including in climate adaptation and mitigation strategies. Pollution, deforestation, uncertain water supply and degradation of the environment in a manner that affects the poor most acutely. Furthermore, Addendum No.1 to the Multiannual Indicative Programme between the European Union and the People's Republic of Bangladesh for the period 2014-2020 takes note of recent emphasis on environment and climate change and calls for an amount of EUR 35 million should be reduced from sectors "Food security and Nutrition" (EUR 25 million) and "Education and skills development" (EUR 10 million) and transferred to the Regional Indicative Programme for Asia and remain earmarked for investments in Bangladesh as set out in the Regional Indicative Programme for Asia. In summary the project is now **highly relevant**.

There are **problems with clarity** of the intervention logic in that both the overall objective and project purpose are formulated as activities with no clear endpoint (targets). The OVIs for overall objective, project purpose and results are mainly activities. For example, the capacity of the BFD to manage and improve the mangrove should be assessed on what happens on the ground rather than what tools they have in their toolkit e.g. monitoring. The logical framework ideal as a tool for monitoring and evaluation or for adaptive management comparing alternative strategies. This latter aspect is hampered by a lack of operationally useful assumptions (most are actually general risks).

There was also a lack of clarity with alignment of NGO work with the SEALS logical framework and linked progress reporting templates. The overall objective of the NGO project outlined in their logical frameworks is concerned with the Bangladesh Sundarbans and not the coastal are of the Bay of Bengal which included India. The progress reporting template did not have headings (which would serve as prompts to report on Bay of Bengal platforms (outlined in the call for proposals, lessons learned or policy/procedural reform issues. This is a serious missed opportunity which will have a negative effect on impact (spread of effects to India) facilitation.

The financing agreement outlines inception phases and periods of phase out but does not mention what activities and outputs are required. The overall work plan was given in the financing agreement and is reproduced below in Table 8.

The formulation report recognised that cooperation between government departments in India and Bangladesh would be difficult and did not outline potential impact pathways. In addition, the financing agreement with government the EU contract with NGOs and did not give any clues about how the spread of effects to the Bay of Bengal could be pursued and facilitated.

Table 8. Overall work plan for the SEALS project

Actions	Year 1				Year 2				Year 3				Year 4				Year 5			
Result 1																				
Inception	x	x																		
BFD Implementation			x	x	x	x	x	x	x	x	x	x	x	x	x	x				
Phase out																			x	x
Result 2																				
Inception	x	x																		
Call for proposals		x	x	x																
NGO Implementation						x	x	x	x	x	x	x	x	x	x	x				
Phase out																			x	x

The 54-month implementation period is adequate so **Realism is good**.

It is logical to try to protect the mangroves biodiversity and services to people by providing skills for alternative approaches and income sources. **Coherence is good**.

The idea of using **school attendance as an indicator is excellent** as it is easy to monitor, and in many cases has been shown to be a good proxy for improved family harmony and income. Income is a notoriously difficult parameter to measure directly as people often feel there could be negative consequences if they share this information.

2.1.2 Sources of Evidence

Key documents used were connected with EU policy and programming, the formulation report, ROM report, MTR and the financing agreement with linked SEALS logical framework.

2.1.3 Overall Grade

Good

2.2 Effectiveness

2.2.1 Methods and triangulation

Effectiveness analysis involves assessing if the contracted results have been achieved and to what extent these results and any unexpected outcomes contributed to the project purpose. It also involves assessing any benefits received by the project beneficiaries.

The approach involves studying key progress documents and any validations or updates in external evaluation reports. These findings are then triangulated with sample interviews of the relevant actors and beneficiaries. For physical outcomes, further triangulation is achieved through site visits.

2.2.2 Have the planned two results⁴ and ultimately the project purpose been achieved. What is the level of quality?

Reasoning

The logical framework has two purposes concerned with (1) protecting the resource known as the Sundarbans Reserve Forest (SRF) and (2) providing people in the buffer zone, called the Sundarbans Impact Zone (SIZ) with resources so as to reduce negative practices on the mangrove.

Result 1 is concerned with the capacity of the government of Bangladesh so that they can make a valuable contribution. Result 2 is concerned with improving the financial, social, human and technical capital of the buffer zone communities in the face of cyclones.

The Bangladesh forest department is the only government agency funded by the project is the primary actor for result 1. It was assisted by a Technical Assistance Team (TAT) who provided technical and management guidance and training.

There was no final evaluation for this project within the SEALS programme.

Two international NGOs (Concern Worldwide and Worldwide vision) are funded in order to deliver result 2.

There were final evaluations for both NGO sub projects.

2.2.3 Findings including sources of evidence

Result 1 Forest department adopt best practice in protecting Bangladesh Sundarban Reserve Forest function

Ex-Post Evaluation OVI Target levels of equipped monitoring stations and vessel have been obtained.

The final report of the BFD shows that all buildings and equipment was procured as per the programme estimates. Table 9 below gives the numbers involved according to the second SEALS newsletters.

Table 9. Major Physical works completed under the SEALS project

Works	Number delivered
New buildings	21
Pontoon gangways	6
Office building repair	15
Residential building repair	31
Pond excavation at camp	3000 m ³
wooden jetty repair or replacement	14

Radio equipment was left out of the EU support as it was reported by the former Project Director (PD) that this would be supplied by another project. This was further validated by budget analysis (no budget for radio equipment).

⁴ From the Seals logical framework

Interviews with relevant forestry staff at the district level showed that the EU contribution was game changing and resulted in a major change in the ability of the department to function in terms of patrolling. The baseline were camps consisting of hessian sheets and bamboo poles, primitive boats and no effective communication. Senior officers were not able to ascertain if junior staff had turned up for work. At the time of the ex post all sample facilities were on the whole in a good state of repair and were operational (See technical annex 5 for a full engineers report. Interviews with the District Forest Officers (DFOs), showed that proposals had been made to make up shortfalls and that the real limiting factor was the cooperation and vigilance of the local communities as exemplified by Community patrol groups set up as part of the government order December 2017 on forest co-management. Technical annex 6 shows some relevant photos of the state of camps before the SEALS intervention.

The EPE team went on a day long boat patrol following a route punctuated by stops at key forest camps and stations (Mongla to Karamjal to Harbaria to Harintana to Andharmanik to Chandpai and back to Karamjal and Mongla).

The positive aspects were increased revenue from tourism and the facilities at Karamjal (the main entrance for tourists to the Sundarbans). Good EU visibility was maintained with logos still present on buildings restored and rainwater tanks supplied.

Areas for improvement include better fuel efficiency of speed boats and radio communication equipment (non in the boat and most radio masts at camps/station broken and not functional).

The grade for this OVI is good especially considering BFD budget constraints.

[Ex Post Evaluation OVI Target levels of monitoring linked to frequency, staffing and data management have been obtained.](#)

This OVI is concerned with management of the SRF or more precisely the information needs of managers so they can improve the effectiveness with respect to timely data in respect to the following data entry forms:

- 1 *General Patrol Form*: consists of information on the GPS locations of patrolling routes, formation of the patrol team, names and ranks of the team members, type of patrol etc.
- 2 *Forest Offence Form*: important for collecting data concerning any kind of law breaches in the SRF. All the forest offences found during the MIST Patrol are recorded in this form with GPS location as well as photographs taken on the offense.
- 3 *Animal Mortality Form*: meant to be used for recording animal death related information such as the GPS locations, photographs, cause of death etc.
- 4 *Wildlife Sighting Form*: wildlife sightings during the MIST patrol are to be recorded in this form. Information on this form include GPS location, habitat type, direct/indirect sighting, photographs of the animal etc.
- 5 *Ecological Data Form*: data such as timber measurement, count of timber species in sample plots etc. are recorded with GPS locations in this form.

It is clear based on document analysis and interviews that it was the SEALS project that moved the FD from incomplete and unverified/quality controlled paper reporting to a digital system with cross compliance. This is a major achievement. The MIS data architecture and linked GIS approach are outlined in two excellent TA reports.

The training activity, although low in budget (€28,150) had a significant effect on the quality of patrolling and monitoring.

Table 10 below shows the nature of the training and the number of people involved. Interviews with a sample of staff (over 50 persons) led to the following inferences:

1. All stated that the training was very good but there was a need for refresher training;
2. Many said that the first aid was of great use in disaster situations outside of their normal job roles;
3. Those involved with rifle training stated that today their weapons are rather outdated;

Table 10. Training topics and the number of people involved. (data taken from the BFD Project Completion report)

Training topic	Number of BFD staff trained by end of project
First aid	590
MIST	200
Biodiversity Management	125
Ecosystem Management	95
Forest Measurement and Survey	98
Forest Guard Capacity building	202
Awareness training	80
Forest Guard Rifle training	200
Total	1590

Ex Post Evaluation OVI Target levels of morale and confidence as evidenced by planning and linked proposal writing.

The SEALS project contributed to a dramatic increase in morale and confidence of BFS staff at all levels according to a sample of BFD staff and key informants (e.g. Winrock, GIZ etc and Chief Wildlife Officer). Higher level officers including the BFD PD went on to produce proposals and obtain funding/improved conditions for forestry work/staff on a grand scale. These include:

1. The World Bank Sustainable Forest and Livelihood Project (US\$ 129m or € 115.7m);
2. The GoB Surakha project (400 crore taka or € 423m) to help communities such as those in the Sundarbans SIZ;
3. Increased budget for boat fuel from 48 lack taka (€ 5079) in 2016 to 2 crore taka (€ 2.1m) in 2018. This is an increase of over 416 times;
4. 30% allowance for BFD “staff at risk” (includes all patrol staff in Sundarbans) ;

Unexpected negative or positive outcomes

Publications (positive)

The TAT produced excellent quality reports on biodiversity and conservation management. The survey work on plant species diversity led to the publication of peer reviewed journal publication of international quality (more detail is given in the Impact section).

Higher protection status (positive for biodiversity)

The work of the SEALS project contributed to the increase in the number of sanctuaries in the Sundarbans from just 3 in the SRF to 5 including 2 dolphin sanctuaries. The extent of the terrestrial sanctuaries in the SRF was increased from 24% to 54% cover.

Creation of new management plans (positive)

The work of the SEALS project contributed to the Sundarban West Wildlife Sanctuary Management plan 2015-2025 produced **10 November 2014**. The plan author has commented “We used SEALS plans (institutional, equipment, operational, infrastructure, etc.) and data for the formulation of the plan and Zahir Uddin Amad (SEALS PD) was a key resource person”.

Result 2 Surrounding communities adopt best practice in income generation and protecting Bangladesh Sundarban Reserve Forest function in a disaster-prone environment

The contracted NGOs presented final reports with OVI values attained against targets and also had final evaluations. This data is presented with findings in Tables 9 and 10 overleaf. The conclusion is that all OVI targets have been exceeded by the NGOs.

The EPE conducted group interviews in a sample of villages across the areas where the NGOs operated. The survey did not use random sampling as this was not feasible given the time available as many distant locations would require many days to visit. The EPE insisted on visiting beneficiaries that had been

interviewed by the MTR team wherever possible. This limited the potential for the NGOs to select locations with the best results.

The results are given in Table 11. All results were triangulated with observations in the village and surrounding areas and talks with other informants e.g. members of local government.

[Ex Post Evaluation OVI Target levels of income source change \(from harmful extraction to minimal effect on the mangrove\) have been achieved without financial loss.](#)

The EPE team expected a dramatic reversion (from 2015 to 2019) back to illegal extraction, but this was not the case. When the informants were asked about the lack of reversion they said that they were now aware of the low price given by money lenders for the illegal harvest. They could sell legal products at higher prices. They also stated the incredible hardships facing extractors of attacks by tigers and kidnapping by dacoits. Some alleged that the BFD was involved in corruption, so permits were too expensive. Some of the women interviewed had up to three new income side-lines thanks to the project. The most profitable enterprises were goat rearing and crab moulting (soft shell crabs are exported). Overall the average income from legal sources had increased by 5%. All community based organisations had bank accounts but none of the ones interviewed had asked for a loan or sought microcredit.

[Ex Post Evaluation OVI Target levels of disaster management and planning achieved \(reduction in mortality rates and or 75% have shelter access\).](#)

The level of shelter access was promised by Concern only and the final evaluation showed that this was very nearly attained at 72.4%. The EPE found that 90% of those interviewed had adequate disaster preparedness which is impressive without refresher training. The innovative approach of World Vision to have ward level disaster plans was also impressive. Answers to questions were triangulated by additional questions to individuals on what they would do once they received a warning. The common answer was to prepare "go bags" that include first aid items, dried food and key documents such as deeds in waterproof bags.

Table 11. Concern performance data against sample OVLs

Indicator	Target	End of project achievement	Final evaluation
Income source change from extraction to non extraction	40% reduction in unsustainable and exploitative practices of SRF resource extraction compared to baseline	60% HH reduced exploitative practices of SRF resources extraction as a result of earning alternative income from other sources while 14% people stopped resource harvesting fully. Longer stay (>15days/month) in the Sundarbans was reduced by 38% in 3 years' time (less than 5 days).	This study found that a higher proportion of the households (98%) could find a way of alternate income
Levels of disaster management achieved	75% target families have access to early warning system and shelters during natural disaster	99.7% targeted families have access to early warning system and 72.4% go to shelters during natural disaster	Endline survey explored about 61% households are aware of four or more disaster preparedness options which remains below the project target
School Attendance	70% of the children of target communities attend school by end of project	96%	The end line survey found that proportion of school going children was as high as 96% (51% boys and 45% girls)
Patrolling and forest co management	Local UP, FD, and the SIZ community through CBOs develop annual plan for SRF co-management and improved governance, implement the plan and follow up quarterly for SRF	100% of Targeted SIZ UPs, CBOs engaged with FD to develop plan, implement and follow up progress for co-management of SRF. However, effective interactions among Upazilas, CBO and FD yet to develop.	Peoples involvement in forest management System has been met fully.

Table 12. World Vision performance data against sample OVIs

Indicator	Target	End of project achievement	Final evaluation
Income source change from extraction to non-extraction	5000 people trained on long-term, environmentally friendly alternative livelihoods opportunities, including at least 20% of women and 1.53% of disabled	Achieved	As per study findings, 14.8% people are engaged in SRF resource collection (24.2% male and 4.7% female) which is lower than the figures observed during the baseline survey (19.1%) and the targeted value (15%).
Levels of disaster management achieved	20% of target people who know at least three disaster risk reduction measures relevant in the SIZ	Achieved by 20,297 people. 16 Union Disaster Committees supported	The data depicted that 100% of wards are implementing their own DRR plans covering at least 3 of the 5 priority areas for the action. Nearly 79% people have access in local DMCs with DRR plans and 100% target wards with operational ward disaster management committees (DMCs) linked up with union level DMCs. More than 61% households reported that they practiced at least two DRR options to reduce impacts of disasters. 80.1% households mentioned that they received disaster warning information from Union or Upazila level DMCs.
School Attendance	2000 child extractors targeted with non-formal education and vocational training.	Achieved and 852 out of 1000 went back to school	School dropout rate is only 6.5%. As a result of project intervention, 38% of the children who had dropped out have been able to go back to school.
Patrolling and forest co management	35% of target collectors reporting interactions with SRF co-management committees for improving and monitoring SRF protection	56% of target population participate in Village Conservation Forum/Village Peoples forum as part of the CMC structure	More than 49% of people said they cooperated with or helped the CMC and 56% of people said they participate in the Village Conservation Forum while 60.1% of people said the concerns raised at VCF level were heard by the CMC.

Table 13. Group interview data for selected project villages in May 2019. Data is for % attainment in relation to the end of project result in 2015

Location	Date in May 2019	NGO	Group	N	I	F	D	S	M
Pathurighata	1	JJS	Tishta SHG	21	100	100	100	100	100
Koyra	2	JJS	Uttorbetkashi CBO	19	120	80	100	100	97
Koyra	2	JJS	Meghna SHG	12	125	95	100	100	80
PC Baroikhali	6	WV	PCB SLG	17	100	100	100	100	100
Dorulhuda	7	WV	Dorulhuda SLG	15	100	100	100	100	100
Bashtola	9	WV	Bashtola SLG	28	100	100	100	100	100
Kalinagar	10	Shushilan	Kalinagar SHG	18	100	50	100	100	100
Datinakaly	11	Shushilan	Datinakaly SHG	12	115	95	100	100	100
Total				142					
Average					105	90	100	100	97

Key:

OVI= Objectively verifiable indicator

100% means no change; 125% means 25% increase; 80% means 20% drop;

N= Number of persons in the group interview

I = Income by estimate/bank balance

F= Forest (could be n/a)

D= Disaster preparedness in terms of an effective plan

S= School attendance

M= Child Mortality and Stunting

Ex Post Evaluation OVI Target levels of school attendance achieved (over 70%)

Concern exceeded their 70% target and produced 96% school attendance. World vision achieved their target. EPE results show that these levels were maintained as of May 2019. This is excellent and very important as it shows two things: (1) Income is adequate for parents and they do not need child labour which in this case was involvement in illegal extraction and (2) That children now have a wider choice in life and can see beyond the miserable livelihood of a harassed extractor.

Ex Post Evaluation OVI Target levels of patrolling and forest restoration achieved through some form of forest co management

Concern achieved their target and World Vision exceeded their target of 35% and achieved 56%. These levels were galvanised to some extent by the government issuing an order in December 2017 that sets out the responsibilities and benefits to both parties in forest co management as recognised by government. World Vision also facilitated tree planting and other models of governance for forest management outside of the SRF.

EPE results show that 90% of the levels were maintained in May 2019. There could be two reasons for this (1) government promises of honoraria paid to community patrollers has still not happened and (2) promises of a 50% revenue share also have not happened. A number of individuals interviewed also felt that some of the people's committees had been captured by elites. Given these factors the 90% EPE value is very impressive.

Unexpected negative or positive outcomes

Communities adopt environmental restoration and improvement through tree planting (positive)

The Forest Conservation Committee at Ekri established by World Vision was an unexpected positive outcome. The group had gone well beyond what was expected and planted 35000 trees. They were also involved in a difficult struggle to get access to 25 acres of Kash (underutilised government) land along the roadside (3m in length) for tree planting (this would improve cyclone resistance). Their work helped 165 beneficiaries.

Fisheries and livestock department develop new support projects based on the experience and lessons learned of Concern (positive)

The Minister of fisheries and livestock visited the work of Concern and was inspired to create new programs for aquaculture relevant to the Sundarbans with an emphasis on nutrition sensitive agriculture and livelihoods.

High profile and high net worth investors build on physical improvements and community unity in the Western Sundarbans (positive)

Shushilan worked with Concern in the Western part of the Sundarbans. This is the most difficult location for the SEALS project with extremely limited agricultural opportunity, high salinity and major problems with drinking water. The area was devastated by cyclones especially:

- November 2007: Cyclone Sidr with wind speeds up to 260 km/hour, made landfall on southern Bangladesh, causing over 3,500 deaths and severe damage.
- 27–29 May 2009: A severe Cyclone Aila attacked offshore 15 districts of south-western part of Bangladesh with wind speeds up to 120 km/hour; about 150 persons killed, 2 lac houses and 3 lac acres of cultivated land and crops losses.

The work of the project and other NGOs has achieved so much uplift and infrastructure improvement that high profile net worth investors have recently started investment projects in the area:

- Shakib Al-Hasan the most famous cricketer (current national team captain) in Bangladesh has established an agro farm linked to crab culture Village-Datinakhali, Union: Burigoalini, upazilla: Shyamnagar, District: Satkhira.
- The Akiz group is one of the largest companies in Bangladesh. They are investing in new buildings with rain-water collection and purification facilities.

Small scale desalination plants are now profitable (positive).

Southwest coastal Bangladesh has an acute scarcity of safe drinking water. Both the government and non-government organizations are now promoting reverse osmosis based small scale desalination plants (SSDPs) to ensure safe drinking water. These are highly profitable and have the potential for development as social enterprises.

The EPE team did not discover any unexpected negative outcomes arising from SEALS

Attainment of the project purpose: “the Bangladesh Sundarban Reserve Forest function is conserved today for the benefit of all.

Ex Post Evaluation OVI forest extent protected

Annual data (for the period 2012 to 2019) could not be obtained but on the basis of an analysis over the period 2000 to 2015 (see unpublished map one provided by FAO in technical annex 7) this has been achieved. The value of 0.1% decrease is within error limits so in simple terms there has been no change in forest cover. All key informant interviewed were confident that there has been no change in forest cover for the period 2012 to 2019). The patrol transect followed by the EPE team also supports this.

Table 14 below shows the data.

Table 14. Change in tree cover and forest cover in the Sundarbans (Area 6,136 km²)2000-2015

Variable	2000	2015	% change
Tree cover (km ²)	3755	3765	0.3
Forest cover (km ²)	3983	3979	-0.1

It is highly likely that the attainment of both result one, and result two have contributed to this.

Ex Post Evaluation OVI populations levels of economic species maintained

The Bangladesh government enforced logging bans in 1970s and 1980s to halt deforestation and the restriction on the harvesting of plants followed. In this context the main economic species of the area are all animals.

The tiger is the top of the list in terms of revenue generated. This revenue comes from tourism and Table 15 below shows the level of income obtained by the Forest department in Khulna including tourism and how it is increasing. It is reasonable to assume that the levies charged by the forest department represent only 1% of the total income obtained by the private sector in the form of hotels, food, guide services and transport.

Table 15. Revenue recorded for forest co management committees (CMC) in Khulna based on data provided in CREL (2018) converted to euro (€1 = \$1.115)

CMC	2013	2014	2015	2016	2017	2018	Total
Chandpai CMC	36987	81519	86062	59543	89300	54254	407667
Dacope-Koyra CMC	2001	78	784	12597	45370	23708	84541
Sarankhola CMC	3439	17515	13523	8291	10067	4346	57184
Satkhira CMC	3742	9801	12346	6370	26761	9773	68795
Total	46169	108913	112715	86801	171499	92081	618187

Total revenue received since 2013 is €618,187 (based on the above table) and the guesstimate of the value of tourism would be a hundred times this value at €61,818,700.

Tiger population estimates have suffered from a lack of consistency of methods i.e. measurements over the period before 2015 they were, based on pug marks (footprints) and over the period 2015 to 2018 were based on camera trap photos. Recent data was not available during the field work but an extract of an article in the Dhaka Tribune published on 21/5/19 is given below:

*“The number of Royal Bengal tigers in the Sundarbans of Bangladesh has risen to some extent in the last three years. The rising trend in tiger numbers was found in the latest tiger census, “Second Phase Status of Tiger in Bangladesh Sundarbans 2018,” said sources at the Bangladesh Forest Department on Tuesday. An event will be organized on Wednesday where the findings will be formally announced at the Hoimonti auditorium of Ban Bhaban (Forest Department) in Agargaon. According to an earlier census in 2015, a total of 106 tigers were recorded in the Sundarbans, but that number rose to 114 in the 2018 survey. A Forest Department official, on condition of anonymity, said the second phase census began in 2016 under the USAID BAGH project. Camera trap methods were used to record the number of tigers. He said the survey was conducted over an extended period of time, starting December 1, 2016. Cameras were set up in 1,659 square kilometres of tiger inhabited areas in the Sundarbans. Of the total area, 1,208sq km are in Satkhira, 165sq km in Khulna, and 283sq km in the Shoronkhola range of Bagerhat. A total of 491 cameras at 239 points of the Sundarbans were set up on trees. The cameras captured 2,466 images of tigers for the 249-day census. **With this latest report, tiger numbers have increased 8% in three years.** Forest department sources say the draft of the latest survey report was also sent to the Wildlife Institute of India for confirmation*

of the findings. The Indian institute has confirmed the findings to be accurate. **They also said that poachers are the principal threat to the very survival of the Bengal tigers.**

Unexpected negative or positive outcomes

The following unexpected positive outcomes were observed by the EPE team:

Oil spill

A major oil spill occurred in the Sundarbans area in 2014 due to the capsizing of the oil tanker in the Shela River in the Sundarbans on the 9th of December 2014. Concern was in a good position to respond and was awarded the following small contract (€19,900) by the EU called 'Promoting Co-Management through Education and Awareness building of communities for protection and development of Sundarbans Reserve Forest'. The project was a major success and built upon the environmental awareness and improved motivation of the people linked to Concerns work under the SEALS programme.

Plant species diversity

Chaffey and Sandom (1985) listed 66 plant species from Bangladesh Sundarbans with 37 families. The SEALS study by Islam *et al* (2014) recorded 63 identified plant species with 15 unidentified from the three protected areas. This can be taken as an increase.

2.2.4 Sources of Evidence

The sources of evidence used in the above were documents, photos, key informant interviews, group interviews and site visits.

2.2.5 Overall grade

Excellent. The results are of excellent quality, the project purpose was achieved and is still achieved as of May 2019.

2.3 Impact

2.3.1 Methods and triangulation

Impact analysis involves assessing if the contracted project purpose has been achieved and to what extent this has contributed to the overall objective.

The approach involves studying key progress documents and any validations or updates in external evaluation reports. These findings are then triangulated with sample interviews of the relevant actors and beneficiaries. For physical OVs, further triangulation is achieved through site visits where possible.

2.3.2 To what extent has the project purpose contributed to the overall objective?

The overall objective is taken as:

To contribute to maintained or improved ecosystem productivity, and the environmental and social integrity of the north coastal lands of the Bay of Bengal.

The OVs are (1) forest extent protected (2) populations levels of economic species maintained and (3) Sustainable increase in income levels of coastal communities.

The northern coastal lands of the Bay of Bengal include the non-Sundarbans coastal districts of Bhola and Chittagong and the Indian states of West Bengal Orissa and Andhra Pradesh.

The EPE mission did not conduct any visits to interviews in the Indian side of the Bay of Bengal due to resource limitations. The formulation mission for the project did go to India but found that there were major barriers to cooperation between the line departments of India and Bangladesh as all cooperation has to be agreed by the highest level of government first. Departments cannot be proactive without permission.

Ex Post Evaluation OVI (1) forest extent protected

Data on the protection of mangrove forest function in India was not made available to the EPE team. It can be inferred that both the cyclone protection and the fish/shell fish hatchery function of the Bangladesh Sundarbans will contribute to benefits for India so this OVI has been achieved.

Ex Post Evaluation OVI (2) populations levels of economic species maintained

The tiger population has free movement between Bangladesh and India so again this OVI has been achieved.

Ex Post Evaluation OVI (3) Sustainable increase in income levels of coastal communities

The people in the SIZ of the Bangladesh Sundarbans trade with Indian counterpart across the border so it is axiomatic that the economic uplift achieved by the project will have a positive impact in India.

2.3.3 What are the main impact prospects and pathways?

Major scale up via a major World Bank loan (€115.7m)

This includes all coastal districts but excludes the Sundarbans.

The development objective of the Sustainable Forests and Livelihoods (SUFAL) Project for Bangladesh is to improve collaborative forest management and increase benefits for forest dependent communities in targeted sites. It has four components. First component, Strengthening Institutions, Information Systems and Training will focus on improving organizational capacity, administrative and operational procedures, research and information systems, that will enable implementation of other components of the project and have wider positive impacts across the Bangladesh Forest Department (BFD) that last well beyond the project. It has five sub-components.

- 1 strengthening organizational capacity;
- 2 applied research;
- 3 training;
- 4 strengthening monitoring, information management systems and forest inventory and
- 5 communications and outreach;

The second component, strengthening collaborative forest and protected areas management will finance restoration and afforestation through collaborative forest management (CFM) which will give forest dependent communities a stake in the management of forests and protected area (PAs). It has three sub-component. i) institutionalizing collaborative forest management; ii) restoration of degraded forests, coastal green belt and renovation of field infrastructure; and iii) improving protected areas and wildlife management; Third component, increasing access to alternative income generating activities (AIGAs), forest extension services and trees outside forests (TOF). It has three sub-components. i) community mobilization and organization; ii) alternative income generating activities (AIGAS); and extension services and trees outside forests (TOF); fourth component, project management, monitoring and reporting will finance the BFD's project management unit (PMU) at the headquarters and in the 28 districts where field implementation will take place.

It is headed up by Zahir Uddin ex PD of SEALS and he will use SEALS approaches directly in all components.

MoUs with India

Article 2 of the MoU between India and Bangladesh on Conservation of the Sundarban of September 06, 2011 states that:

“Both Parties, with a view to exploiting the potential of the Sundarban for development and alleviation of poverty, agree to undertake, but not limited to, the following endeavours:

- *consider and adopt appropriate joint management and joint monitoring of resources;*
- *explore the possibility of implementing conservation and protection efforts, encourage mangrove regeneration, habitat restoration and rehabilitation programs, which would eventually increase the potential for carbon sequestration;*

- *develop a long-term strategy for creating ecotourism opportunities for both countries, which will create synergy and generate greater revenue“;*

This sets the framework for the impact pathway in relation to OVI 2. If this is successful it will impact the area in a way that could be evaluated against all of the overall objective OVIs:

1. Coastal communities' livelihoods less sensitive to climate-related disasters
2. Sustainable increase in income levels of coastal communities
3. Productivity of mangrove-dependent fisheries stable or increasing
4. Ratio of area protected to maintain biological diversity to surface area (MDG Indicator no. 26)

In addition there would be a contribution to an outcome of: Relevant government line agencies and departments in India and Bangladesh adopt best practice in terms of integrated conservation and development approaches

Trust as evidenced by cross country verifications

Bangladesh asks India to verify its report on the tiger census and vice versa. This is the actual impact pathway and interviews with Bangladesh staff showed that it is still operating well and was assisted by the SEALS project.

Bay of Bengal platforms and actions e.g. by Concern

Concern have made significant presentation of SEALS experiences including gender aspects to four sub-regional workshops on community resilience to climate change in the Bay of Bengal-for the years 2012, 2013, 2015 and 2017.

Exchanging management plans

It is highly likely that the Western Sanctuary management plan will be studied by relevant Indian agencies.

Publications

The TA team leader and colleagues have published refereed papers in International journals and books on Sundarbans Biodiversity and this are having impact.

NGO bridging

Both Concern and World Vision operate in the other coastal districts of Bangladesh. They also operate in India and Bangladesh so there is opportunity for the sharing of ideas and innovations.

Concern took experience from the Sundari project and made a contribution to the Bangladesh summit on sustainable development in Dhaka (16-19 August 2014). They organised a session on sustainable management of natural resources and Mr Naryan Chandra Chanda, state minister for Fisheries and Livestock stated that he would take “the initiative to reduce the salinity of coastal areas”. He then visited the project area 5-7 November 2014 where he stated that he would work with other Ministries to design a big project for the South West region. Technical annex 8 shows the current portfolio as influenced by Concern and Project 12 is the result.

World vision have applied their experiences into other coastal areas through the following themes:

- **Livelihood:** Alternative Income Generating Activities (AIGA) (technology training & input support), Formed Ultra Poor Groups & asset transfer for ultra-poor groups, vocational training for unemployed/drop out children (driving, sewing, handicraft, beautification, auto mobiles mechanic, mobile servicing, paper bag/packets etc. Homestead gardening, training on Nursery Improvement with support of fruit trees are implementing in the areas of coastal belt e.g. Chattagram & Cox’s Bazar;
- **Value Chain:** Value Chain approaches & experiences such as Duck rearing, vegetables (bitter gourd, bottle gourd & patal) and milking cows;
- **Capacity building on DRR,** Disaster preparedness, Early warning systems, strengthening disaster management committees, Hazard mapping, emergency preparedness & response, recovery programs are implementing those areas. Climate change adaptation practices are functioning through our livelihood sectors;

- Education: Applied for Early Children Development (ECD) programs & Reading Club (Literacy Boost) for the children & students. These are model based programs. Few programs are focusing for the drop out children;
- Environment: Tree/sapling plantation, improved cooking stoves, Palmyra Palm plantation;

2.3.4 Evidence

The evidence here is limited to mainly key informant interviews. The EPE team did not have access to primary data or attributed secondary data in areas outside the Bangladesh Sundarbans.

2.3.5 Grade

Good. The grade could have been excellent if implementers had invested in appropriate M&E that showed clearer attribution.

2.4 Sustainability

2.4.1 Methods and triangulation

Sustainability analysis involves assessing if the project benefits are maintained after the funding ceases and also assessing sustainability pathways.

The approach involves studying key progress documents and any validations or updates in external evaluation reports. These findings are then triangulated with sample interviews of the relevant actors and beneficiaries. For physical OVIs, further triangulation is achieved through site visits where possible.

2.4.2 General Findings

In order to assess sustainability, it is important to define the timescale. The EPE suggest a period of the next five years. It is useful to identify the elements of the project that need to be sustained.

These include:

- 1 Forest function through ecosystem properties;
- 2 Reducing pressure through forest co management;
- 3 Buildings;
- 4 Smart patrolling;
- 5 Access to credit;
- 6 Access to markets and income uplift;
- 7 Village scale protection from disasters;

Forest function through ecosystem properties

Most ecologists would argue that the plant species diversity and the gaseous exchange of the roots in the Sundarbans mangrove gives it a higher resilience than most terrestrial forest. It has a high capacity to adapt to changes in salinity, cyclone damage and pollution. It will shrink however if there are significant changes in sea level. In other words environmental sustainability is good.

The function of the forest can be defined as landscape scale protection from cyclones, and the production of economic species such as tiger and fish/prawns/crabs. The project has improved financial sustainability of the forest department and institutional sustainability in terms of partnerships between the forest department and local people and the forest department and treasury. Financial and institutional sustainability is good.

Reducing pressure on the SRF through a Country specific model of forest co management and linked patrolling

USAID and especially the CREL project have supported the development of forest co management committees and linked structures with financial subsidy. This has now finished in the Sundarbans. The 2017 government order provided policy level sustainability to the Bangladesh model and promised honoraria for community forest patrol staff and a 50% share in revenue. This has not happened due to no transfer of revenue funds from the treasury to the BFD and Senior forestry staff have been told they will be audited for all revenue funds dispersed respectively. Two of the four CMCs in the project area have ceased to function. In summary there are problems with sustainability of the current government model of forest co-management.

Buildings

A full report on the state of the buildings and linked facilities is given in technical annex 5. The condition remains good as of today with only one building showing structural issues. Meetings with senior officers in Dhaka suggest that funds will be forthcoming for annual maintenance. Sustainability is therefore good.

Smart patrolling technology

The development of this is currently supported by the government of Germany in project implemented by GIZ. The Smart approach uses the data architecture platform developed by SEALS and the financial sustainability of the system is good.

Access to credit

The EPE survey of village-based groups showed that none were in receipt of micro-credit or bank loans through a lack of confidence in the financial stability of the enterprises. This presents problems for sustainability.

Access to markets and Income uplift

There has been a dramatic increase in the number and volume of markets for the products of aquaculture so financial sustainability is good. Environmental sustainability is limited by disease risk (already a serious problem for freshwater prawn in the West Sundarbans) and salination (reducing the opportunities for freshwater aquaculture.). Tourism development has great potential and is in its infancy as of today. There is inward investment in both the East and West so overall sustainability is good.

Village scale protection from disasters

The EPE survey showed that once a community learns and rehearses disaster management and response, it never forgets it. Sustainability of this is excellent and will increase as more shelters and protective embankments are constructed.

2.4.3 To what extent has sustainability been achieved through being embedded in policy?

The 2017 government order (technical annex 9) on forest co-management is an excellent instrument of policy that has galvanised the forest protection element of the SEALS project. SEALS made a contribution to the formulation of this act in terms of facilitating and learning from practical implementation of relevant committee and group structures. The problems outlined in the general findings section should not be seen as insurmountable. The chances for positive advocacy have been increased by SEALS via the work of the NGOs. Sustainability has been achieved to a good extent through embedding in quality.

2.4.4 How could aspects of institutional and financial sustainability be improved?

Ideas for the improvement of financial and institutional sustainability are presented below.

Enforcement and the rule of law

Institutional sustainability of forest protection could be improved by better interagency cooperation e.g. between forestry, fisheries and the police. The BFD only has jurisdiction in the forest and within 5km of the seaward end of the forest. The police can patrol markets of illegal goods on land and the fisheries department can patrol areas out to sea.

The rule of law could be improved by better case tracking and publicity. The BFD is happy when an offender is found guilty but does not invest in (1) studying the outcome in terms of whether fines are ever paid or custodial sentences are not commuted (2) giving press released on successful outcomes.

Social enterprise at a larger scale

The NGOs did excellent work on the facilitation of enterprise at individual or household level. The high target numbers in terms of number of households, meant that upscaling or federating to create larger scale social enterprises remained a missed opportunity.

Public private partnerships

Public private partnerships can be an excellent way to raise capital when government budgets in a specific sector are limited. These have a potential to make a contribution to both institutional and financial

sustainability in two project areas; forest protection/restoration and the provision of drinking water. This was a missed opportunity in the project.

2.4.5 Threats to long terms sustainability as of today

Threats to long term sustainability on a 50-year timescale are given below using references listed in technical annex 10.

Salinity

Salinity of the aquatic system in the present deltaic complex, situated in the inshore region of Bay of Bengal is primarily regulated by anthropogenic factors (like barrage discharge, run-off from the adjacent landmasses etc.) and natural factors (like siltation, plate tectonics).

A simulation study by Trevidi *etal* (2014), predicts an alarming hypersaline environment in the central Indian Sundarbans and this will affect the Bangladesh Sundarbans. They used secondary data coupled with real time data, inter-annual variation of surface water salinity in three sectors (western, central and eastern) of Indian Sundarbans during 1984-2013. Surface water salinity has decreased by 0.63 and 0.86 psu per year in the western and eastern sectors respectively, whereas in the central sector, it has increased 1.09 psu per year. They investigated the future salinity (in 2043, 30 years after 2013) in the three sectors of the deltaic complex considering the present data set of 30 years as the baseline.

Climate change and Sea level rise

A recent paper by Mukul *etal* 2019 shows that tigers could disappear from the Bangladesh Sundarbans simulated the likely future distribution of Bengal tiger in the Sundarbans forest was modelled using IPCC RCP6.0 and RCP8.5 scenarios. The results suggest a rapid decline in the Bengal tiger population and suitable habitats in the Sundarbans. By 2070, there will be no suitable tiger habitats remaining in the Bangladesh Sundarbans. Climate change will have a more pronounced effect on tiger habitats than that of sea level rise in the area.

Paul and Chaterjee (2019) report that 12 million (4.5 million in India and 7.5 million in Bangladesh) Sundarbans residents face the grim prospect of large-scale inundation and permanent displacement in the near or distant future.

Pollution (include Mongla port and the power station)

Two major risks for the future are presented below.

The Port of Mongla is the second busiest seaport of Bangladesh. It is located in Bagerhat District in the south-western part of the country; and lies 62 kilometres (39 mi) north of the Bay of Bengal coastline. Mongla is one of the major ports of the Bengal delta. Mongla is located 48 kilometres (30 miles) from the city of Khulna, which is a regional industrial centre and is set for massive expansion based on industrial processing with linked large scale dredging of the river. The major aquatic pollution risk here is linked to both shipping and from industrial units on land. Oil pollution from rupture of vessels or from cleaning out the tanker storage compartments is possible. Sewage and industrial wastes from the industrial units also poses a threat.

The India funded Rampal **power station** is a 1320 megawatt coal-fired **power station** at Rampal Upazila of Bagerhat District in Khulna, that is currently being built despite not conforming to international Environmental Impact Assessment (EIA) standards. The EPE could only find a domestic EIA which was not produced by an independent and neutral body (see GoB 2013) The major pollution risk is linked air pollution linked to CO₂ and oxides of nitrogen and sulphur.

2.4.6 Grade

Excellent. The time frame used is the next five years. There may be problems in the longer term if climate change is not seriously reduced through mitigation measures.

2.5 Coherence of the action

2.5.1 What is the coherence of the Action itself, with the EU strategy in Bangladesh in the biodiversity and environmental protection sector and with other EU policies and Member State Actions?

The 2014-2020 MIP for Bangladesh does not mention biodiversity. It states that “across sectors, EU aid integrate cross-cutting issues such as gender equality, human and labour rights, and quality of life as well as priorities such as disaster risk reduction, environment and climate change adaptation which in Bangladesh remain a priority for EU attention. The action is coherent with this. The action is coherent with EU global strategy on biodiversity as exemplified by the 2012 publication The EU biodiversity strategy to 2020. “By 2050, European Union biodiversity and the ecosystem services it provides – its natural capital – are protected, valued and appropriately restored for biodiversity’s intrinsic value and for their essential contribution to human well-being and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided. 2020 headline target: halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.” Member states such as Denmark, Germany and the UK have supported biodiversity work in Bangladesh through various instruments as this is coherent with their environmental policy.

2.5.2 Grade

Good

2.6 EU added value

Definition of EU added value.

There are many definitions of EU added value and any index would be multifaceted. In the context of this evaluation, the team was? guided by the evaluation question which compares what the action achieved over and above what aid from a member state alone could achieve. The most obvious answer is that EU member states do not have any European Horizontal Programmes such as EU SWITCH where more than one European Country is involved in a partnership to benefit a specified region e.g. Asia

2.6.1 To what extent does the Action bring additional benefits to what would have resulted from EU Member States' acting alone?

The action does not bring any additional benefits to what would have resulted from EU member states action alone. The design did not include any form of Europe Bangladesh technology transfer or trade synergies.

2.6.2 Grade

Problems

2.7 Cross cutting

The ToR requests an assessment of cross-cutting issues and asks if gender equality and environmental sustainability were taken into account in the identification/formulation documents and the extent to which they have been reflected in the implementation of the Action and its monitoring.

2.7.1 Formulation document

The formulation document is weak in terms of gender equality and how this is to be achieved. The term is only mentioned three times in the document and in every case there is no definition.

The only relevant comment is in the call for proposals annex designed to increase awareness in NGOs. It states “A score of 5 (very good) will only be allocated if the proposal contains specific added-value elements, such as promotion of gender equality and equal opportunities...”

2.7.2 What is the quality of gender linked approaches?

Both of the contracted NGOs had a focus on women and widows and used gender disaggregated data for management and planning. This has had a significant effect on gender equality in that women are now more independent financially. The EPE team noted that now the main gender problems in the project areas is concerned with young males. They are now better educated but there are not many job opportunities. This was becoming a concern for parents.

2.7.3 How well has the action addressed environment and climate change issues?

The project had environment and climate change as a central concern and provided adaptation solutions. Concern were facilitated to go beyond the action and become responsive to serious oil spill. They and the EUD are to be commended for this excellent and timely action.

2.7.4 How has the action capitalised on rights based and leave no one behind approaches?

The action did not use a rights-based approach but focused on the most vulnerable and brought about major benefits.

2.7.5 Grade

Good

2.8 Lessons learned in order to improve potential future Actions

2.8.1 What are the top 5 issues that would improve effectiveness in the context of this form of action?

Based on the EPE work and in retrospect, the top 5 issues that would improve effectiveness and or impact in the context of this form of action Budget include the following:

Logical framework and linked Reporting templates

The NGO logical frameworks should have been clearer about the fact that impact was to be assessed in relation to the Sundarbans in the Bay of Bengal and not just Bangladesh.

Reporting templates should have had sections on impact prospects, behavioural outcomes and assumption testing. Training should have been given to help managers to respond appropriately linked to the guidelines on project cycle management.

Budgets for interconnections

There should have been small budgets (e.g. for workshops) to allow (1) for greater linkages with relevant agencies in Bangladesh e.g. police, customs and fisheries and (2) synergy with relevant Indian agencies.

European technology linked to the support of the European Union

The EPE learned the lesson based on the triangulated findings on result 1 that protection against illegal poaching on land and illegal fishing was very expensive linked to the fuel consumption of motor boats. Much of this could be replaced and or augmented by remote approaches. Europe is a world leader in drone and satellite technology for monitoring forests and fisheries. Much of the research and development of this technology was funded by the European Union. This is of central relevance to modern forest surveillance. This was a missed opportunity.

Tracking outcomes linked to training

Many people were trained by the project but government and NGO managers could have done more to find out the outcome e.g. by asking trainees to give individual action plans on becoming qualified.

Procedural reform and attribution

There were many missed opportunities on procedural reform during the course of the action and managers did not pick up on this. Also managers were in positions of influence at high level meetings and many said they had influenced policy makers. If they had gone one step further and asked for letters of attribution e.g.

Livestock minister thanks concern for its suggestion on coastal livelihood and states that this lead to programme X.

2.8.2 What are the top 5 lessons learned that will be of central importance in future EU programming in the sector?

Regional or bilateral approach

One of the main lessons learned from design analysis was that for biodiversity projects it is important to identify of the high biodiversity reserves require management from the nation or many nations. The Sundarbans is a clear example of a transboundary reserve with any management effects on the Bangladesh side affecting the Indian side and vice versa. Indeed, two investment projects funded by the Government of India, the Farraka barrage and the Rampal power station will have a profound effect on the future potentials for the area. It should be noted that the National Action Plan and climate change policy of India 2008 does not address sea level rise storm surges or urban flooding issues. These are of central relevant to the Sundarbans. EPE analysis of the design of the SEALS project led to the realisation that a bilateral approach (EU Bangladesh) is not the optimal modality for conservation of the Sundarbans. A regional approach would have been more effective with an advocacy component tackling policy and procedural reform issues.

Importance of aquatic resources to climate smart nutrition sensitive food security

Nutrition was not an element in the ToR for the EPE mission, but it was evident that there was an extremely low incidence of child stunting and child mortality in a manner that was atypical for Bangladesh. Thanks in part to the SEALS project the Bangladesh Sundarbans is an exemplar of Climate Smart livelihood resilience in a manner that considers the role of biodiversity and nutrition sensitive food production (essential amino acid, essential fatty acid, energy and vitamins) using aquatic and terrestrial resources.

Whole river approach

In most of the interviews with technical experts in relevant government departments and NGOs, it became clear that they had learned that the future of the mangrove was dependent on the quantity and quality of the water from the rivers that flow into the SRF.

Given that climate change is affecting the Himalayas, causing potentially catastrophic glacier lake outburst floods linked to glacier melt, plus the barrage effect outlined above it is important that the EU builds on lessons learned on whole river management and governance by such agencies as the Mekong River Commission and ICIMOD. The central lesson is that it is impossible to have a significant effect on downstream parts of a river including a delta unless monitoring and agreements take place at key points from source to the sea. Management of rivers entering Bangladesh is of central relevance to maintaining food security and this is a focal area in the MIP.

Sentinel landscapes

In most of the interviews with technical experts in relevant government departments and NGOs, it became clear that they had learned that more could have been achieved on using the SRF as a sentinel or look out for what is happening to the hydrology in the region due to climate change and other anthropogenic forces. In addition respondents felt that more could have been done on procedural reform in relation to environmental aspects The EPE mission found that abiotic environmental measurement was not part of the SEALS project and neither was procedural reform. There is a need for global monitoring and solutions to climate change at the landscape level. A sample of up to 100 representative landscapes is required for international monitoring of planetary boundary effects e.g. Green House Gas levels and the Nitrogen cycle etc. Delta landscapes such as the Sundarbans are required. These can also act as living laboratories to test policy or procedural reform idea at a pilot scale in order to analyse impact. The EU should take note of this idea in its programming and set up agreements for the permanent International staffing of monitoring and learning teams. It should be noted that the EU already funds the CGIAR system and that they have already started to do research on the sentinel landscape approach in the context of agroforestry and food security. The relevant website is listed in Technical Annex 10.

Climate change finance

In most of the interviews with technical experts in relevant government departments and NGOs, it became clear that they had learned that more could have been achieved on funds leverage.

The EPE mission found that the SEALS project did not have any support from climate change finance. For future EU programming it is important that this opportunity is explored through links with GCCA, The green climate fund or by use of multi donor trust funds. One exciting opportunity would be the endowment fund approach where donors give a capital sum, to be invested under high levels of fiduciary control (governance structure 1) and the landscape management and learning endeavour is funded in perpetuity by use of the interest generated and managed by a multidisciplinary team (governance structure 2). Ideally the Sundarbans would have its own endowment fund with government support at prime minister level in order to break down silos formed by line agency interests.

Urban rural linkages

In most of the interviews with technical experts in relevant government departments and NGOs, it became clear that they had learned that more could have been achieved on synergy with private sector investors.

The EPE mission found that the SEALS project was a traditional integrated conservation and development project based on two zones (a high biodiversity core zone known as the SRF and a buffer zone known as the SIZ). It may be worth considering a triple zone approach which would include the above plus a special development zone which could yield very high revenue for example from accessing land betterment value. In the Sundarbans example, agricultural land could be purchased for the building of an eco-city where part of the revenue generated from industrial and housing rents could be used to fund ecological restoration. Urban rural link projects are rare within EU programming at present and represent a missed opportunity.

Technology transfer

The EPE learned the lesson based on the triangulated findings on result 1 that protection against illegal poaching on land and illegal fishing was very expensive linked to the fuel consumption of motor boats. Much of this could be replaced and or augmented by remote approaches. The EU has supported many member states to work together on in high tech wildlife protection and surveillance, and remote sensing. A typical example is <https://landsense.eu/Themes/Forest-Habitat-Monitoring>.

These were a missed opportunities in the context of the SEALS project. The potential benefit would be reduced cost per arrest. In addition the sight of drones and intruder alarms may deter trespass and or other illegal action.

2.8.3 What challenges/opportunities exist for actors in order to continue, maintain and scale-up their efforts with the target community / region?

The EU as an actor was covered in the previous section. Other actors are considered below. It should be noted that there are significant differences between the modus operandi of the NGOs involved in the SEALS project. World Vision is a child sponsorship organisation whereas Concern is not.

GoB

Table 16 overleaf shows how the budget of GoB has increased at key dates relevant to the EPE.

Table 16. Growth in the GoB budget for the years 2012, 2015 and 2018.

Year	2012	2015	2018
crore taka	190,000	260,508	464,500
million taka	19,000,000,000,000	26,050,800,000,000	46,450,000,000,000
euro	201,033,417,573	275,635,860,764	491,473,802,436
exchange	95		
factor	1	1.4	2.4
billion euro	201.03	275.64	491.47

On this basis the GoB has the funds to scale up interventions demonstrated by the SEALS project. The main challenge today would appear to be coordination and cooperation between line agencies.

BFD

The two biggest challenges for the BFD are (1) to ensure terms and conditions of employment for forest rangers and guards remain acceptable as significant drops could make alternative illegal behaviour by officers more attractive and (2) to deliver on the provisions of the 2017 forest co management act and obtain the funds for honoraria for community patrol groups and deliver on 50% revenue sharing.

Concern

- 1 In order to build on the good momentum of environmental advocacy gained from the SEALS project e.g. in relation to Bay of Bengal platforms and COP meetings. It is important to obtain and use letters of action/attribution from key policy makers so that attributable outcomes can be tracked and facilitated;
- 2 Given the current situation in the Sundarbans it is important to capitalise on government safety net monies for beneficiaries and the potential for private partners to develop profitable social enterprises such as small-scale desalination plants for drinking water;
- 3 Given the impressive effects on income, there is now an opportunity to include health and nutrition aspects in future environmental development projects;
- 4 For training it is essential to monitor and study the effects of training by asking for individual action plan so that pathways for scale up can be identified;
- 5 For scale up there appears to be great potential for working with partners to development profitable social enterprises linked to the sale of desalinated water and ecotourism packages;
- 6 Ex post evaluations should be considered as part of organisational learning and the development of scale up strategies;

World Vision

- 1 There is now an opportunity to consider points 2-5 above;
- 2 Child sponsors could be seen as social capital for advocacy if in judicious industrial development threatens the wellbeing of the child;
- 3 Child led evaluation should be a key way forward to build on successful programmes;
- 4 Environmental awards should be given for successful child-sponsor relations so that scale up can be encouraged;

3. Conclusions and Recommendations

2.9 Conclusions

2.9.1 Relevance and design

Relevance and design analysis addresses the question: What is the quality of relevance, clarity, realism and coherence and how could this be improved in future?

Based on evidence from document analysis cross checked through discussions of findings with key stakeholders the overall grade is good. In other words, the conclusion is that the project had a good design and this remains relevant today.

This conclusion is based on findings that **relevance** to EU policy and programming was good then and now. **Realism** was good given the time scale for producing the results, and that **Coherence** was good. It was logical to try to protect the mangroves biodiversity and services to people by providing skills for alternative approaches and income sources. The grade for design is not excellent however as there here were many problems with clarity of design.

A range of findings led to the conclusion on design clarity. Firstly the overall objective and project purpose were formulated as activities with no clear endpoint (targets). Secondly there was lack of operationally useful assumptions (most are actually general risks). The financing agreement was not clear about what was required at inception and phase out. There was also a lack of clarity with alignment of NGO work with the SEALS logical framework and linked progress reporting templates. (The overall objective of the NGO project outlined in their logical frameworks is concerned with the Bangladesh Sundarbans and not the coastal are of the Bay of Bengal which included India. (The progress reporting template did not have headings (which would serve as prompts to report on Bay of Bengal platforms (outlined in the call for proposals, lessons learned or policy/procedural reform issues. (Finally the financing agreement outlines inception phases and periods of phase out but does not mention what activities and outputs are required.

2.9.2 Effectiveness

Two evaluation questions were posed in relation to effectiveness:

- Have the planned outcomes and ultimately the project purpose been achieved.
- What is the level of quality?
- What are the top 5 issues that would improve effectiveness in the context of this form of action?

The overall grade is Excellent. Triangulated findings from progress and evaluation reports, verified by site inspections and key informant interviews showed that both results were obtained and were of excellent quality. The outcome of this was that the project purpose was achieved. Result 1 was concerned with the capacity of the government of Bangladesh so that they can make a valuable contribution. Result 2 was concerned with improving the financial, social, human and technical capital of the buffer zone communities in the face of cyclones.

Many observers stated that in relation to result 1, the infrastructure and technological support provided by the EU was no less than game changing for the BFD.

The formulation report in 2008 recognised that the following was needed: *“A wholesale change of protection strategy is required, backed with a substantial improvement in operating conditions for FD staff, particularly those who actually implement policy – those actively operating on patrol, etc”*.

This has been achieved based on the findings of the mission, and it is directly attributable to the SEALS project.

In relation to result 2, the social changes of disaster preparedness, increased income options, improved school attendance were very impressive and exceeded targets. The project purpose was and is still achieved today. Many positive unexpected outcomes were obtained.

2.9.3 Impact

For impact analysis the guiding questions were (1) To what extent has the project purpose contributed to the overall objective and (2) What are the main impact prospects and pathways?

The project purpose from the constructed theory of change is:

- **The Bangladesh Sundarban Reserve Forest function is conserved today for the benefit of all.**

The OVIs are (1) forest extent protected, and (2) populations levels of economic species maintained.

The overall objective is:

- **To contribute to maintained or improved ecosystem productivity, and the environmental and social integrity of the north coastal lands of the Bay of Bengal.**

The OVIs are (1) forest extent protected (2) populations levels of economic species maintained and (3) Sustainable increase in income levels of coastal communities.

The overall grade is problems. This is not because the EPE feel that there has been anything less than high impact but because all parties did not have sufficient methods and approaches for demonstrating attributable effects in the north coastal lands of the bay of Bengal (which includes India). Without the strong evidence, the EPE team can merely state that impact prospects are excellent based on the pathways of high quality of publications, facilitation of champions such as the ex PD, and cross verification of wildlife population reports (e.g. tiger population increase).

The impact of the project could have been greater if aspects of river management that affect the delta were included. The finding on the Faraka barrage is a case in point.

2.9.4 Sustainability

For sustainability analysis the guiding questions were (1) To what has sustainability been achieved through being embedded in policy? And (2) How could aspects of institutional and financial sustainability be improved?

The project also played a key role in policy aspects linked to the 2017 government order on forest co management based on interview data with key informants.

The overall grade is Excellent. The following benefits were sustained as of May 2019 due to good institutional and financial factors:

- Forest function through ecosystem properties maintained;
- Reducing pressure through forest co management;
- Buildings and smart patrolling allow professional forest management operations;
- Access to markets and income uplift attained;
- Village scale protection from disasters attained;

The reason why sustainability is not graded as excellent is that in the longer term the effects of climate change are anticipated to be more devastating and relate to greater number and intensity of cyclones, sea level rise and greater salinity.

The EPE found that there are opportunities for improvement in institutional in relation to forest protection. This could be improved by better interagency cooperation e.g. between forestry, fisheries and the police. The BFD only has jurisdiction in the forest and within 5km of the seaward end of the forest. The police can patrol markets of illegal goods on land and the fisheries department can patrol areas out to sea.

The rule of law could be improved by better case tracking and publicity. The BFD feel that their responsibility is finished when an offender is found guilty but does not invest in (1) studying the outcome in terms of whether fines are ever paid or custodial sentences are not commuted (2) giving press released on successful outcomes.

The EPE found that there are opportunities for improvement in financial sustainability via the mechanism of public private partnerships where large scale corporate investment could be harnessed linked to infrastructure development along the feeder rivers or in the delta.

The EPE found a serious blockage relation to Forest Co management as outlined in **S.R.O. No. 314-Law/2017.-** In the exercise of the power conferred by section 52 of the Wildlife (Conservation and Security) Act, 2012 (Act No. 30 of 2012). The act foresees (1) a 50% of ecotourism revenues going to local partners in forest co-management and (2) honoraria to be paid under the auspices of District Forest Officers (DFOs) for works related to forest protection. Neither have occurred due to (1) lack of funds transfer from the treasury to the department and (2) fear of audit by DFOs.

2.9.5 Coherence

The overall grade is good in terms of EU regional and global policy on environment and biodiversity. SEALS design analysis showed that it was a project with a central concern on the environment of the mangrove reserve forest and surrounding areas and that biodiversity conservation through maintenance/improvement of the populations of key species (e.g. tiger) was a central outcome.

2.9.6 EU added value

This has been defined as added value compared to member states operating alone. The EU has approaches that link a sub set of European Countries to a sub set of another region e.g. Asia. Bilateral member state approaches do not have this on such a comprehensive level.

The overall grade is Problems. The project did not build on pan European strengths in relevant technologies e.g. modern remote surveillance and monitoring approaches linked to the detection of forest disturbance and wildlife poaching by remote sensing and telemetry. Examples of the technologies concerned can be seen at <https://landsense.eu/Themes/Forest-Habitat-Monitoring>.

2.9.7 Cross cutting Issues

The overall grade is Good. Gender approaches were adequate and the project was embedded in good environmental practice. The project started before leave no one behind and rights based approaches so they were not fully embedded in the approach.

2.10 Recommendations

2.10.1 Introduction

The recommendations presented below relate to future programming (with relevant policy or budget line) as the action studied was completed some four years ago. They are clustered in relation to the actor concerned, time bound and prioritised in a way that takes into account lead times. The links with conclusions and any relevant findings are shown. Most of the recommendations refer to a period when climate change will be on top of the agenda and funds available through blending and especially climate change finance architectures will be considerably higher than current Overseas Development Agency (ODA) funding envelopes. Realism is scaled to this new horizon.

2.10.2 EU

It is important to consider the EU as an actor at both bilateral and regional levels. Bilateral action is administered by the EUD in Bangladesh in a manner conforming with the Bangladesh MIP 2014-2020. Regional (Asia wide) actions are administered by EC HQ in Belgium under the Regional Asia MIP 2014-2020. The assumption is that the focal sectors for both MIPs will remain for the new MIPs starting 2021.

EUD Bangladesh

The entry point for the recommendation is the

- **Focal sector 2: Nutrition and improved food security;**
- **Result area:** Vulnerability to shocks and stresses reduced including expected impacts from climate change;

The EPE mission has found that the legacy of the SEALS project is an exemplar of climate smart livelihood resilience in a manner that considers the role of biodiversity. This is supported by conclusion 3.1.2 on effectiveness where excellent results were obtained. An expected outcome was found in relation to result 2 in that the Minister of fisheries and livestock visited the work of Concern and was inspired to create new programs for aquaculture relevant to the Sundarbans with an emphasis on nutrition sensitive agriculture (essential amino acid, essential fatty acid, energy and vitamins) and livelihoods. Multi donor investment in the Sundarbans could be estimated at over €1 billion over the past 20 years. The idea is to capitalise on this investment.

The EUD should work with partners (e.g. Green Climate Fund, World Bank, Asian Development Bank and EU member states) to mobilise an identification mission to develop an endowment trust fund for a Delta Sentinel Landscape for Climate Change Resilience with the Sundarbans at its heart (The buffer zone (up to 50km from the edge of the SRF) should include important commercial areas e.g. Mongla port). The purpose is to double food security, expand the area of forest, increase population levels of economic species by 50% and reduce climate change linked annual death rates to zero. Result areas could include:

- Key planetary boundary⁵ changes monitored professionally;
- Key national and international policy (especially those involving India and Bangladesh linkages) procedural reforms facilitated and tested;
- Approaches sustainability replicated in other parts of South Asia;

Targets would be set annually. The fund would be overseen by the Prime Minister's office as suggested in interviews at the BFD, and would have two structures of governance as sanctioned by government order; (1) fiduciary governance of the principal fund with a target of achieving 3% annual interest and (2) Executive board for annual expenditure and result attainment. Donors may wish to be represented on both committees. The EU would be placed to have a representative on the both committees to ensure due diligence in fiduciary controls and to support planning and decision making by the board. Indicative funding for the principal sum would be €500 million. This would allow for an annual operational budget (not for permanent staff) of €5 million and the creation of 50 permanent internationally qualified staff posts with an annual package equivalent to €100,000.

This is a permanent solution and not a "project". It should overcome problems of silo thinking and turf battles by government ministries and line agencies. It would be part of a global plan to have over 100 sentinel landscapes at key areas on the planet in order to learn how to sustainably measure and improve global health and wellbeing in the face of climate change.

The urgency of this recommendation is high given lead times and the process should be started by end of December 2019.

EC HQ Belgium

The entry point for the recommendation is the

- **Regional integration in South and North-East Asia (i.e. non-ASEAN) Other Sub Regional Programmes;**
- **Specific objective 1:** Promote cross-border cooperation between two or more Asian partners;

⁵ <http://www.anthropocene.info/planetary-boundaries.php>

- (including SAARC) with priority areas such as climate change, environment and natural resources management, disaster preparedness/risk reduction, border and migration management, and the fight against illicit drugs and trafficking;
- **Expected Result:** Improved regional cooperation on measures to combat climate change and to improve the sustainable management of natural resources;

The EPE mission found that food security availability of water for drinking and crops and the protection of biodiversity in the Sundarbans is strongly linked to **judicious river management**. Conclusion 3.1.3 outlines that impact could have been greater if river issues were included. This river management involves the actions of another Country. At the scale of the Sundarbans it is India. On a national scale river management by China, India and Myanmar has a pivotal effect on food security in Bangladesh.

EC HQ should mobilise an identification mission to develop a pilot project on **Profitable bilateral and multilateral river management for enhanced biodiversity conservation and climate change resilience**. This would look at new models of international whole river governance and would use financial modelling (cost benefit analysis) of rivers from source (Himalayan region) to the Sea (Deltas). Income would come from payment for ecosystem services and climate change finance. The EPE mission on SEALS suggest that the Ganges should be one river (India and Bangladesh) and another could be the Brahmaputra (China India and Bangladesh).

The project should be based at regional agencies with the relevant competence such as biophysical modelling skills. Cost benefit analysis, advocacy in relation to policy/procedural reform at the regional scale. Possibilities include SAARC and ICIMOD (with the required technical assistance).

The purpose is total net benefit of whole river increased through profitable climate smart regional agreements. Indicators could include income increment per country, biodiversity enhancement and reduction in climate change linked mortality and morbidity rates. Key results areas could include:

- At least 10 influential policy or procedural reform briefs produced;
- At least 10 simple bioeconomic spreadsheet models produced;
- At least 10 influential key informant groups convened, and action plans facilitated;

The urgency of this recommendation is high given lead times and the process should be started by end of December 2019.

2.10.3 GoB

The EPE found a serious blockage relation to Forest Co management as outlined in **S.R.O. No. 314-Law/2017**.- In the exercise of the power conferred by section 52 of the Wildlife (Conservation and Security) Act, 2012 (Act No. 30 of 2012). The act foresees (1) a 50% of ecotourism revenues going to local partners in forest co-management and (2) honoraria to be paid under the auspices of District Forest Officers (DFOs) for works related to forest protection. Neither have occurred due to (1) lack of funds transfer from the treasury to the department and (2) fear of audit by DFOs.

The recommendations is: Treasury and or relevant line agencies to investigate and unblock government funds flow in relation to Forest Co management.

Priority high by end of December 2019.

2.10.4 BFD

Given the positive conclusions on impact and result 1 effectiveness and the difficulties that the team encountered on getting up to date information, the main recommendation for BFD concerns communication and visibility.

BFD to publicise successes more clearly on their website in relation to SRF annual data on tiger populations, forest extent, and financial benefit to local and national citizens.

Priority medium by end of December 2020.

2.10.5 Concern and World Vision

The following recommendations link to the conclusion and findings on effectiveness:

- 1 In order to build on the good momentum of environmental advocacy gained from the SEALS project. It is recommended that the organisation obtains and uses letters of action/attribution from key policy makers so that attributable outcomes can be tracked and facilitated.
- 2 Given the current situation in the Sundarbans it is recommended that the organisation capitalises on government safety net monies for beneficiaries and the potential for private partners to develop profitable social enterprises such as small-scale desalination plants for drinking water.
- 3 Given the impressive effects on income, there is now an opportunity to include health and nutrition aspects in future environmental development projects.
- 4 For training it is essential to monitor and study the effects of training by asking for individual for an action plan so that pathways for scale up can be identified. The individuals in question include anyone receiving any form of training or taking part in an exposure visit or study tour. This is even more important for individuals that hold high levels of office e.g. Ministers.
- 5 For scale up it is recommended that the organisation investigate working with partners to development profitable social enterprises linked to the sale of desalinated water and ecotourism packages.
- 6 Ex post evaluations should be considered as part of organisational learning and the development of scale up strategies.

Priority medium by end of December 2020.

2.10.6 World Vision

The following recommendations link to the conclusion and findings on effectiveness:

- 1 Child sponsors could be seen as social capital for advocacy if in judicious industrial development threatens the wellbeing of the child.
- 2 Child led evaluation should be a key way forward to build on successful programmes.
- 3 Environmental awards should be given for successful child-sponsor relations so that scale up can be encouraged.

Priority medium by end of December 2020.