Environmental and Social Impact Assessment Report of 540 MTPD Greenfield Soybean Oil Plant at Mirsarai Economic Zone, Chattogram, Bangladesh

ESIA Report- Appendix

PREPARED FOR
Samuda Food Products Ltd.

DATE
15 October 2024

REFERENCE
0721054

DOCUMENT DETAILS

The details entered below are automatically shown on the cover and the main page footer. PLEASE NOTE: This table must NOT be removed from this document.	
DOCUMENT TITLE	Environmental and Social Impact Assessment Report of 540 MTPD Greenfield Soybean Oil Plant at Mirsarai Economic Zone, Chattogram, Bangladesh
DOCUMENT SUBTITLE	ESIA Report- Appendix
PROJECT NUMBER	0721054
Date	15 October 2024
Version	02
Author	Arpan S, Subhojyoti D.C., Dwaipayan D, Prachiti M. Baishali C, Abhishek R.G
Client name	Samuda Food Products Ltd.

DOCUMENT HISTORY

				ERM APPROVAL TO ISSUE		
VERSION	REVISION	AUTHOR	REVIEWED BY	NAME	DATE	COMMENTS
Draft	01	Arpan S, Subhojyoti D.C., Dwaipayan D, Prachiti M. Baishali C, Abhishek R.G	Tufail K. Arun V. Subhradeb P.	Subhradeb P.	10 September 2024	
Final	02	Arpan S, Subhojyoti D.C., Dwaipayan D, Prachiti M. Baishali C, Abhishek R.G	Tufail K. Arun V. Subhradeb P.	Subhradeb P.	15 October 2024	

APPENDIX A POLLUTION SOURCES AND MITIGATION MEASURES

POLLUTION SOURCES AND MITIGATION MEASURES

AIR EMISSIONS

CONSTRUCTION PHASE

The likely emissions from the construction activities would include the following:

- Generation of windblown dust from project site (the ground level of the site has been increased by filling up with sand)
- Fugitive emissions from material handling, transportation, piling, use of construction machinery etc.
- Fugitive dust emissions from movement of vehicles from unpaved internal roads.
- Fugitive dust emission arising from various activities such as piling, transportation of material (loading and unloading), vehicular movement (on unpaved roads) should be minimized through sprinkling of water. Vehicular emission should be controlled through proper maintenance of vehicles and vehicles operated at project site. It would be ensured that the vehicles have proper Pollution Under Control (PUC) Certificate.

OPERATION PHASE

Particulate matter and Volatile Organic Carbons (VOCs) will be the principal emissions from the project during the operation phase. Fugitive dust will be generated from the processing, including cleaning, screening, and crushing, of raw materials, whereas VOC emissions will be primarily from the use of n-hexane as oil extraction solvents. Emissions in the form of VOCs/odour is also anticipated from the oil refining processes *viz*. deodorization tower and Desolventizer-Toaster (DT).

The project will also be generating Green House Gases (GHGs) from operation of gas based captive power plant (power plant capacity would be 17.2 MW of which 12 MW will be used for SFPL and rest will be used for other sister units of Samuda) and through use of auxiliary boilers with an estimated capacity of 54 tons per hour.

Adequate stack height (approx. 67 m) will be provided and will equipped with a silencer and ducting line. Dust will be controlled through scrubbers, bag filters etc. The emissions shall be below the levels as provided in the WBG group guidelines.

NOISE EMISSIONS

CONSTRUCTION PHASE

Noise emission generated from piling, movement of vehicle and other construction machinery. Movement of vehicles will be restricted to daytime only, moreover, the vehicles would follow specific route and avoid populated areas.

OPERATION PHASE

During operations phase noise will be generated from movement of vehicles, jetty operation, conveyors, boilers, pumps, cooling towers, compressors, mixing and grinding mills etc. Suitable acoustic enclosures will be used to reduce intensity and propagation of sound. Noise

emissions shall be below the levels as provided in the WBG group guidelines. Workers will be instructed to use ear plugs at high noise generating areas.

WASTEWATER MANAGEMENT

CONSTRUCTION PHASE

The liquid effluents generated during the construction phase will include domestic sewage from temporary site office and labour accommodation areas. It is estimated that approximately 38.7 KL of sewage will be generated from the site office and labour accommodation area and the same will be treated through one septic tank and soak pit system. It was reported by SFPL that septic tank will be developed in an area of 405 m^2. The approximate diameter of the soak well would be 3.6 meters and a depth will be approximately 4 meters. The septic tanks will be cleaned twice a year by SFPL.

OPERATION PHASE

During operation phase 240 m^3/day process effluent will be generated along with 36.9 m^3/day domestic effluent. Process wastewater will be treated in an Effluent Treatment Plant (ETP) with capacity of 240 m^3/day. The ETP will be for all the facilities within the Samuda premise. The treated wastewater after compliance to the Schedule-4 of ECR, 2023 discharge standards will be discharged at the BEZA storm water drain planned to be developed adjacent to the project site. Domestic wastewater will be treated through septic tank and soak pit arrangement.

There is also requirement of discharge boiler blow down from the project site. It is understood that the same after treatment will be discharged to the BEZA drain.

There is also a possibility of pollution of marine water from bilge and ballast water discharges from vessels berthing at the jetty carrying raw material during the operation phase. The E&S management measures applicable for the vessels will not be under SFPL's control, however, SFPL will ensure that the vessels should possess necessary MARPOL certifications and also ensure that vessels berthing at the jetty do not discharge bilge and ballast water into the sea during berthing.

As per EMP, the following table outlines the various units involved in the ETP. It categorizes these units into three main types, i.e. Physical, Chemical, and Biological, with a focus on sludge treatment and other water treatment processes.

TABLE A1 DIFFERENT UNITS OF ETP

Physical Unit	• Screening • Well-water separator • Equalization
Chemical Unit	• pH correction • Flocculation/coagulation
Biological Unit	• Activated sludge • Biofilm reactor/biological clarifiers
Sludge treatment	• Heat drying

Source: EMP

The **Table A2** below details the standards for raw and treated effluent as specified in the EMP.

TABLE A2 STANDARD OF EFFLUENT (RAW AND TREATED) AS PER EMP

Parameters	Unit	Value	
		Raw effluent	Treated Effluent
Color	--	Black	Colorless
pH	--	6.0-9.0	6.0-9.0
TSS	mg/l	600	--
TDS	mg/l	<_5000	<_30
BOD_5 20°c	mg/l	<_5000	<_200
COD	mg/l	<_10000	10
Oil & grease	mg/l	300	--

Source: EMP

WASTE MANAGEMENT

CONSTRUCTION PHASE

The key solid waste that is expected to be generated during construction phase is the following:

- Domestic waste from temporary site office; hazardous waste like waste oil, lubricants, oil contaminated rags etc.;
- The hazardous wastes in the form of empty paint cans, chemical container etc. will be stored onsite at separate designated covered area provided with impervious flooring and secondary containment. The storage containers/ bins/ drum will be clearly marked and identified for their hazards. The hazardous waste materials will be disposed through authorized vendor;
- Bio-degradable domestic solid waste will be disposed at compost pit within the project site. The recyclable waste will be disposed through local vendors.

OPERATION PHASE

During operation phase, waste generated from the project manufacturing processes will include waste soya meal, seed cake, soya hulls, lecithin, etc. This will also include soap stock, spent acids and spent bleaching earth generated from the degumming, neutralization and bleaching process of vegetable oil. In addition to the process waste, additional solid waste is also expected to be generated in the form of domestic waste at site office, scrap materials like scrap tools, damaged PPEs etc.; hazardous waste like waste oil, lubricants, used transformer oil; damaged batteries; electronic waste etc. Following measure will be adopted for disposal of solid waste;

- The hazardous wastes viz. used oil, ETP sludge, spent acid will be stored temporarily onsite at separate designated covered area provided with impervious flooring and secondary containment and will be disposed in accordance with best practices through approved third-party vendors.

- Waste soya meal, seed cake, soya, soya hulls, lecithin and lecithin oil will be sold to vendors. No approved vendors need to be identified for the aforementioned waste materials.
- Bio-degradable domestic solid waste will be disposed at compost pit within the project site. The recyclable waste will be disposed through local vendors.

OCCUPATIONAL HEALTH AND SAFETY IMPACTS

Occupational health and safety impacts due to construction and operation phases are presented below:

CONSTRUCTION PHASE

Movement of trucks, operation of equipment and machinery and construction activities will expose the workers to occupational hazards. Dust and noise could also negatively impact health of the workers. At the construction site workers could be injured due to falling objects. Back injury could occur during lifting of heavy equipments.

The mitigation measures to be undertaken during construction phase are presented below:

- Workers should be trained on site health and safety issues prior to joining, with regular training sessions and toolbox talks.
- Unauthorized persons should not be allowed to enter the project site.
- Personal Protective Equipment (PPE) including ear plugs, safety shoes, safety eyewear, hard hats must be worn at all times on the site. Chemical resistant suits, gloves to be work be personnel working with hazardous chemicals.
- All contraction workers should have access to first aid facilities.
- A permit to work system to be developed and implemented prior to any site-based works with special focus on electrical works, working at heights, hot works, confined space entry etc.
- SFPL should provide treatment and compensation as per Bangladesh Labour Law 2006 in case of any accidents.
- Firefighting systems, including sprinklers, fire extinguishers, will be strategically placed and clearly labelled.
- A near miss and accident reporting system will be followed and corrective efforts shall be made to avoid / minimize near miss incidences.
- Coordination with a local hospital/BEZA clinic in case of serious incidents.

OPERATION PHASE

Occupational health and safety impacts during operation phase could happen from:

- Exposure to chemicals *viz* solvent (hexane) and acids/alkali as part of its storage and handling during vegetable oil extraction and refining process.
- Potential hazards from confined space entry and installation & operation of electrical installations.
- Potential risks of fire and explosion from combustible dust generated at grain/seed silos; bulk storage and handling of flammable solvents (*viz*. hexane).

The mitigation during operation phase is presented below:

- Regular health and safety training and toolbox talks should continue.
- PPEs including ear plugs, safety shoes, safety eyewear, hard hats must be worn at all times on the site.
- Chemical resistant suits, gloves to be work be personnel working with hazardous chemicals
- All workers should have access to first aid facilities.
- A permit to work system to be implemented prior to any site-based works with special focus on electrical works, working at heights, hot works, confined space entry etc.
- Treatment and compensation as per Bangladesh Labour Law 2006 in case of any accidents to be continued
- Firefighting systems, including sprinklers, fire alarms, fire extinguishers, will be strategically placed, and maintained during the operation phase.
- Mock drill to test the efficiency of the firefighting equipment to be conducted
- Temperature sensor and gas detectors will be installed in silos
- A near miss and accident reporting system will be followed and corrective efforts shall be made to avoid / minimize near miss incidences;
- Coordination with a local hospital/BEZA clinic in case of serious incidents.

APPENDIX B APPLICABLE ENVIRONMENTAL, HEALTH AND SAFETY (EHS) STANDARDS

AMBIENT AIR QUALITY STANDARD

The Bangladesh Ambient Air Quality Standards (AAQS) per Environmental Conservation 1997 Amendment 2005 SRO no. 255-Law/2022 -Air Pollution Control Rules 2022 is given in **Table B1.**

TABLE B1 AMBIENT AIR QUALITY STANDARDS/GUIDELINES

Bangladesh Air Pollution Rules 2022)				**WHO Standard**		**WBG Guidelines for Vegetable oil processing**
Parameter	**Unit**	**Average Time**	**Value**	**Average Time**	**WHO Ambient Air Quality Standard[1]**	
SPM	µg/m^3	8 hr	200(1)	--	--	
PM_{10}	µg/m^3	Annual	50(2)	Annual	70 (Interim target-1)	--
		24 hr	150(1)		50 (Interim target-2)	--
					30 (Interim target-3_	--
					20 (Guideline)	--
				24 hr	150 (Interim target-1)	--
					100 (Interim target-2)	--
					75 (Interim target-3)	--
					50 (Guideline)	--
$PM_{2.5}$	µg/m^3	Annual	35(2)	Annual	35 (Interim target-1)	--
		24 hr	65(1)	24 hr	25 (Interim target-2)	--
					15 (Interim target-3_	--
					10 (Guideline)	--
					75 (Interim target-1)	--
					50 (Interim target-2)	--
					37.5 (Interim target-3)	--
					25 (Guideline)	--
SO_2	µg/m^3	1 hr	250(1)	24 hr	125 (Interim target-1)	--
		24 hr	80(1)		50 (Interim target-2)	--

[1] WHO Air Quality Guidelines Global Update, 2005, PM 24 hour values is the 99th percentile.

					20 (Guideline)	--
				10 minute	**500 (Guideline)**	--
NO_2	µg/m^3	Annual	40(2)	Annual	**40 (Guideline)**	--
		24 hr	80(1)	1 hr	**200 (Guideline)**	--
CO	µg/m^3	1hr	20(1)	--	--	--
		8 hr	05(1)			--
O_3	µg/m^3	1hr	180(1)	8 hr daily maximum	160 (Interim target-1)	--
		8 hr	100(1)		**100 (Guideline)**	--
Pb	µg/m^3	Annual	0.25(2)	--	--	--
		24 hr	0.50(1)			--
NH_3	µg/m^3	Annual	100(2)			--
		24 hr	400(1)			--
Dust	mg/Nm^3	--	--	--	--	10 (dry dust) 40 (wet dust)
Hexane	mg/Nm^3	--	--	--	--	100
VOCs	kg solvent loss/t feedstock	--	--	--	--	Animal fat: 1.5 Castor: 3 Rape seed: 1 Sunflower seed:1 Soya beans (normal crush): 0.8 Soya beans (white flakes):1.2 Other seeds and other vegetable matter: 1.5 (fractionation excluding degumming) 4 (degumming)

[Note: (1) Air should not exceed the standard more than one in a year. (2) Annual mean should be less than standard

Note: The ambient air standard of WB Group is more stringent, hence ambient air quality standard of WB Group will be applicable.

NOISE LEVEL STANDARD

Noise quality standard as per Noise Pollution (Control) Rules 2006 is given in the **Table B2**.

TABLE B2 NOISE LEVEL STANDARDS/ GUIDELINES[2]

National Ambient Noise Standard			IFC Noise Level Guidelines		
Category of Area/ Receptor	**Day (dB(A))**	**Night (dB(A))**	**Receptor**	**Daytime noise levels (07:00 – 22:00)**	**Nighttime noise levels (22:00 – 07:00)**
Silent Zone	45	35	Residential; institutional Educational	55	45
Residential Area	55	45	Industrial and commercial	70	70
Mixed Area	60	50			
Commercial Area	70	60			
Industrial Area	75	70			

[Note: (1) The time from 6 a.m. to 9 p.m. is counted as daytime. (2) The time from 9 p.m. to 6 a.m. is counted as night time. (3) Area up to a radius of 100 meters around hospitals or educational institutions or special institutions/ establishments identified/to be identified by the Government is designated as Silent Zones where use of horns of vehicles or other audio signals, and loudspeakers are prohibited.

Note: The ambient noise standard of Bangladesh is more stringent, hence ambient air quality standard of Bangladesh will be applicable.

EFFLUENT STANDARD

Standards for Waste from Industrial Units or Projects Waste as per ECR-2023 Schedule 4 is given in **Table B3** for discharge in inland surface water.

TABLE B3 STANDARDS FOR WASTE FROM INDUSTRIAL UNITS OR PROJECTS WASTE[3]

SL No	Parameter	Unit	Inland surface water	Public sewer at secondary treatment plant	Coastal area
1.	Ammoniacal Nitrogen (as elementary N)	mg/l	50	50	50
2.	Ammonia (as free ammonia)	mg/l	5	5	5
3.	Arsenic (As)	mg/l	0.2	0.2	0.2
4.	BOD5 at 20°C	mg/l	30	250	100
5.	Boron as B)	mg/l	2	2	4
6.	Cadmium (Cd)	mg/l	2	1	2
7.	Chloride	mg/l	600	600	-
8.	Total Chromium (Cr^{-})	mg/l	0.5	1.0	1.0
9.	COD	mg/l	200	400	250
10.	Chromium (as hexavalent Cr)	mg/l	0.1	2.0	1.0
11.	Copper (Cu)	mg/l	3.0	3.0	3.0
12.	Fluoride (as F)	mg/l	2	15	15

[2] Schedule 4 (Standards for Sound) of the Environmental Conservation Rules, 1997 amended September 7, 2006
[3] Schedule 10 (Standards for Waste from Industrial Units or Projects Waste) of the Environmental Conservation Rules, 1997

SL No	Parameter	Unit	Inland surface water	Public sewer at secondary treatment plant	Coastal area
13.	Sulfide (as S)	mg/l	1	-	5
14.	Iron (Fe)	mg/l	3	3	3
15.	Total Kjeldahl Nitrogen (as N)	mg/l	100	-	100
16.	Lead (pb)	mg/l	0.1	1.0	2.0
17.	Manganese (Mn)	mg/l	2	2	2
18.	Mercury (Hg)	mg/l	0.01	0.01	0.01
19.	Nickel (as Ni)	mg/l	1.0	2.0	5.0
20.	Nitrate (as elementary N)	mg/l	10.0	-	20
21.	Oil & Grease	mg/l	10	20	20
22.	Phenolic Compounds (as C_6H_5OH)	mg/l	1	5	5
23.	Dissolved phosphorus	mg/l	5	-	-
24.	Radioactive Product a. lpha particle	Microcurie/l	Determined by Bangladesh Atomic Energy Commission		
25.	pH	-	6-9	6-9	6-9
26.	Selenium (as Se)	mg/l	0.05	0.05	0.05
27.	Zinc (Zn)	mg/l	5.0	15	15
28.	Temperature	°C	Not more than 5° C of waterbody ambient temperature		Not more than 5° C of waterbody ambient temperature
29.	Total Suspended Solids (TSS)	mg/l	100	500	100
30.	Cyanide (as Cn)	mg/l	0.1	2.0	0.2
31.	Total Residual Chlorine	mg/l	1.0	--	1.2
32.	Bio Assay Test		90% fish are still alive in treated liquid waste after 96 hours	90% fish are still alive in treated liquid waste after 96 hours	90% fish are still alive in treated liquid waste after 96 hours

[Note: (1) These standards shall be applicable to all industries or projects other than those specified under the heading "Standards for sector wise industrial effluent or emission." (2) Compliance with these standards shall be required from the moment an industrial unit starts trial production, and in other cases,

from the moment a project starts operation. (3) These standards shall be inviolable even in case of any sample collected instantly at any point of time. These standards may be enforced in a more stringent manner if considered necessary in view of the environmental conditions of a particular situation. (4) Inland Surface Water means drains/ponds/tanks/water bodies/ ditches, canals, rivers, springs and estuaries. (5) Public sewerage system means treatment facilities of the first and second stage and also the combined and complete treatment facilities. (6) Irrigable land means such land area which is sufficiently irrigated by wastewater taking into consideration the quantity and quality of such water for cultivation of selected crops on that land. (7) Inland Surface Water Standards shall apply to any discharge to a public sewerage system or to land if the discharge does not meet the requirements of the definitions in notes 5 and 6 above.]

Effluent Guidelines for Vegetable Oil Processing for WBG group is presented below

TABLE B4 EFFLUENT GUIDELINES FOR VEGETABLE OIL PROCESSING FOR WBG GROUP

S. No.	Parameter	Unit	Standard Limit
1.	pH	-	6-9
2.	BOD_5	mg/l	50
3.	COD	mg/l	250
4.	Total Nitrogen	mg/l	10
5.	Total Phosphorus	mg/l	2
6.	Oil & Grease	mg/l	10
7.	Total Suspended Solids	mg/l	50
8.	Temperature increase	°C	<3
9.	Total coliform bacteria	MPN/100 ml	400
10	Active Ingredients / Antibiotics	-	To be determined on a case-specific basis

SEWAGE DISCHARGE STANDARD

Sewage discharge standard as per ECR-2023 Schedule 3 (Standards for Sewage Discharge) is given **Table B5**.

TABLE B5 STANDARDS FOR SEWAGE DISCHARGE[4]

S. No.	Parameter	Unit	Standard Limit
1.	Temperature	°C	30
2.	pH	-	6 to 9
3.	BOD at 20°C	mg/l	30
4.	COD	mg/l	125
5.	Nitrate	mg/l	50
6.	Phosphate	mg/l	15
7.	Suspended Solid	mg/l	100
8.	Coliform	No./100 ml	1000
9.	Oil & grease	mg/l	10

[Note: (1) This limit shall be applicable to discharges into surface and inland waters bodies. (2) Sewage shall be chlorinated before final discharge; Residual chlorine not more than 0.2 mg/L.]

[4] Schedule 3 (Standards for Sewage Discharge) of the Environmental Conservation Rules, 2023

DRINKING WATER STANDARD

Drinking water standard as per ECR-2023 Schedule 2B is given in **Table B6**.

TABLE B6 STANDARDS FOR DRINKING WATER[5]

S. No.	Parameter	Unit	Standard Limit
1	Fecal Coliform	C.F.U/100ml	0
2	Total Coliform	C.F.U/100ml	0
3	Free Residual Chlorine	mg/l	0.20
4	Nitrate (NO_3^-)	mg/l	45
5	Arsenic (As)	mg/l	0.05
6	Turbidity	NTU	5
7	Aluminium (Al)	mg/l	0.20
8	Ammonia (NH_3)	mg/l	1.50
9	Barium (Ba)	mg/l	0.70
10.	Benzene (C_6H_6)	mg/l	0.01
11	Boron (B)	mg/l	1.0
12	Cadmium (Cd)	mg/l	0.003
13	Calcium (Ca)	mg/l	75
14	Chloride (Cl)	mg/l	250*
15	Carbon tetra Chloride (CCl_4)	mg/l	0.005
16	1,1 Dichloro Ethen (1,1 $C_2H_4Cl_2$)	mg/l	0.03
17	1,2 Dichloro Ethen (1,2 $C_2H_4Cl_2$)	mg/l	0.03
18	Tetra Chloro Ethane ($C_2H_2Cl_4$)	mg/l	0.04
19	Tri Chloro Ethane ($C_2H_3Cl_3$)	mg/l	0.02
20	Pentachlorophenol	mg/l	0.009
21	2,4,6 Tricholorphenol	mg/l	0.20
22	Chloroform ($CHCl_2$)	mg/l	0.09
23	Total Chromium (Total Cr)	mg/l	0.05
24	Colour	Hazen unit	15
25	Copper (Cu)	mg/l	1.5
26	Cyanide (CN)	mg/l	0.05
27	Fluoride	mg/l	1
28	Hardness (as CaCO3)	mg/l	500

[5] Schedule 2B (Standards of Drinking for Drinking Water) of the Environmental Conservation Rules, 2023

S. No.	Parameter	Unit	Standard Limit
29	Iron (Fe)	mg/l	0.3 – 1.0
30	Total Kjeldahl Nitrogen	mg/l	1
31	Lead (Pb)	mg/l	0.01
32	Magnesium (Mg)	mg/l	30 – 35
33	Manganese (Mn)	mg/l	0.4
34	Mercury (Hg)	mg/l	0.001
35	Nickel (Ni)	mg/l	0.05
36	Nitrite (NO_2)	mg/l	1.0
37	Odor	--	Odorless
38	Oil and grease	mg/l	0.01
39	pH	--	6.5 – 8.5
40	Phenols	mg/l	0.002
41	Potassium (K)	mg/l	12
42	Radioactive materials (gross alpha activity)	Bq/l	0.01
43	Radioactive materials (gross beta activity)	Bq/l	1.0
44	Selenium (Se)	mg/l	0.01
45	Silver (Ag)	mg/l	0.02
46	Sodium (Na)	mg/l	200
47	Suspended particulate matters (SS)	mg/l	10
48	Sulfide as H_2S	mg/l	0.05
49	Sulfate (SO_4^{2-})	Mg/l	250
50	Total dissolved solids (TDS)	mg/l	1000
51	Temperature	°C	20-30
52	Tin (Sn)	mg/l	2
53	Zinc (Zn)	mg/l	5
54	Aldrin/Dieldrin	microgram/l	0.03
55	Anionic detergents	mg/l	0.2

**For Coastal areas- 1000 mg/l*

INLAND WATER QUALITY STANDARD

Inland water standard as per ECR 2023 Schedule 2A is given in **Table B7**.

TABLE B7 STANDARD FOR INLAND SURFACE WATER[6]

Best Practice based classification		Parameters											
		pH	BOD (mg/l)	DO (mg/l)	Total Coliform (MPN/100 ml)	NO_3 - N mg/l	NH4 - N mg/l	PO_4-P mg/l	Total Cr mg/l	Pb mg/l	Hg mg/l	TDS mg/l	COD mg/l
A	Source of drinking water for supply only after disinfecting	6.5-8.5	≤ 2	≥ 6	≤ 100	7.0	0.1	0.1	0.02	0.03	0.001	1000	10
B	Water usable for recreational activity	6.5-8.5	≤ 3	≥ 5	≤ 50	7.0	0.3	0.5	0.2	0.05	0.001	1000	10
C	Source of drinking water for supply after conventional treatment	6- 9	≤ 3	≥ 5	≤ 5000	7.0	0.3	0.5	0.02	0.03	0.001	1000	25
D	Water usable by fisheries	6- 9	≤ 6	≥ 5	≤ 5000	7.0	0.3	0.5	0.05	0.1	0.004	1000	50
E	Water usable by various process and cooling industries	6.5-8.5	≤ 12	≥ 1	-	-	2.7	-	0.1	0.1	0.05	1000	100
F	Water usable for irrigation	6.5-8.5	≤ 12	-	≤ 50,000	5.0	1.5	2.0	0.1	0.1	0.002	1000	100

[Note: (1) In water used for pisciculture, maximum limit of presence of. (1) Electrical conductivity for irrigation water – 2250 mmhos/cm (at a temperature of 25°C); sodium less than 26%; boron less than 0.2%.]

COASTAL WATER QUALITY STANDARD

Coastal water quality standards as per ECR,2023 Schedule 2A is given in **Table B8**.

TABLE B8 STANDARD FOR COASTAL WATER

Parameter	Unit	Entertainment	Fishing Activities				Industry
		Coral Community	Natural Areas*	Direct Contact**	Secondary Contact***	Aquaculture and Shellfish culture	Industry and other
pH	-	7.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-9
Suspended Solid	mg/l	2	25	5	10	50	100
DO	mg/l	>=5	>=5	-	-	>=5	>=5
COD	mg/l	2	8	-	-	5	5
Total Coliform	CFU/100ml	1000	1000	1000	5000	1000	-
Fecal Coliform	CFU/100ml	200	200	200	1000	200	-

[6] Schedule 2 (Standards of Inland Surface Water) of the Environmental Conservation Rules, 2023

Parameter	Unit	Entertainment	Fishing Activities				Industry
		Coral Community	Natural Areas*	Direct Contact**	Secondary Contact***	Aquaculture and Shellfish culture	Industry and other
NO_3^-N	mg/l	0.2	0.3	0.8	0.8	0.8	1
PO_4^{-3}	mg/l	0.04	0.05	0.08	0.08	0.08	0.1
Oil and grease	mg/l	0.01	0.01	-	-	0.14	5
Phenols	mg/l	0.05	0.05	-	-	0.05	0.05
As	mg/l	0.001	0.001	-	-	0.003	0.003
Cd	mg/l	0.005	0.005	-	-	0.005	0.005
CN^-	mg/l	0.002	0.002	-	-	0.007	0.0014
Hexavalent Cr	mg/l	0.005	0.005	-	-	0.05	0.1
Pb	mg/l	0.05	0.05	-	-	0.05	-
Hg	mg/l	0.0001	0.0001	-	-	0.0001	0.0001

Note: *Conservation of natural areas, such as: mangroves, sea grasses, wildlife habitats and marine spawning, nursing and feeding grounds;

** Water sports, such as: swimming, diving, surfing where there is direct contact with water; And

*** Water sports, such as: boating, fishing and other activities where the possibility of exposure to water is minimal.

CANADIAN SEDIMENT QUALITY GUIDELINE

There is lack of any sediment quality guideline in Bangladesh. No sediment quality guideline has been developed by WBG. Canadian sediment quality guideline in presented in **Table B9**, which is used as a reference internationally and has been referred for the current assessment.

TABLE B9 CANADIAN SEDIMENT QUALITY GUIDELINE

Substance	No Effect Level	Lowest Effect Level	Severe Effect Level
Arsenic	--	6	33
Cadmium	--	0.6	10
Chromium	--	26	110
Copper	--	16	110
Iron	--	2	4
Lead	--	31	250
Manganese	--	460	1100

Substance	No Effect Level	Lowest Effect Level	Severe Effect Level
Mercury	--	0.2	2
Nickel	--	16	75
Zinc	--	120	820
TOC	--	1	10
TKN	--	550	4800
TP	--	600	2000
Aldrin	--	0.002	8
BHC	--	0.003	12
Chlordane	0.0002	0.007	6
DDT Total	--	0.007	12
Dieldrin	0.0006	0.002	91
Endrin	0.0005	0.003	130
HCB	0.01	0.02	25
Heptachlor	0.0003	--	--
Hepoxide	--	0.005	5
Mirex	--	0.007	130
PCB (Total)	0.01	0.07	530
Acenaphthene	--	--	--
Anthracene	--	0.220	370
Benz(a)anthracene	--	0.32	1480
Benzo(b)fluorine	--	--	--
Benzo(k)fluoranthene	--	0.24	1440
Benzo(a)pyrene	--	0.37	2
Benzo(g,h.i)perylene	--	0.17	320
Chrysene	--	0.34	460
Dibenzol(a,h)anthracene	--	0.06	130
Fluoranthene	--	0.75	1020
Fluorene	--	0.19	160
Naphthalene	--	--	--

Substance	No Effect Level	Lowest Effect Level	Severe Effect Level
Phenanthrene	--	0.56	950
Pyrene	--	0.49	850
PAH (total of 16)	--	4	10000

Source: https://atrium.lib.uoguelph.ca/server/api/core/bitstreams/d662f9f3-49b4-403e-95ce-8c481224cd1a/content
Notes: Values are in mg/kg (ppm) dry weight unless otherwise specified
No Effect level: At which no toxic effects have been observed on aquatic organisms. This is the level at which no biomagnification through the food chain is expected. Other water quality and use guidelines will also be met at this level.
Lowest Effect Level: indicating a level of sediment contamination that can be tolerated by the majority of benthic organisms.
A Severe Effect Level: indicating the level at which pronounced disturbance of the sediment dwelling community can be expected. This is the sediment concentration of a compound that would be detrimental to the majority of benthic species.

APPENDIX C - AMBIENT AIR AND AMBIENT NOISE QUALITY MONITORING REPORT

Project Name	:	Environmental Monitoring for Samuda food products limited, Mirsharai Economic Zone, Chattogram, Bangladesh
Description of Monitoring	:	Ambient Air Quality
Monitoring Personnel	:	EQMS Monitoring Team (Md Mahabub Alam & Al Hasan Kabir)

Monitoring Location	:	**Station No**	**Location**	**Geo-coordinate**
		AQ-1	Near the workers dormitory of Samuda Construction Limited.	22˚43'1.03" N 91˚29'4.54" E
Reporting Date	:	14.05.2024		
Description of Analysis	:			

Location	**Sampling Date**	**Ambient Air Pollutants Concentration in µg/m³**					
		SPM	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NO_2**	**CO mg/m3**
AQ1 (Week 1-4)	26.04.2024	140.64	79.64	54.64	10.15	18.11	0.16
	29.04.2024	130.38	74.32	49.30	14.28	17.23	0.03
	03.05.2024	136.36	77.89	51.89	11.70	22.91	0.01
	06.05.2024	134.93	76.32	50.82	15.23	25.14	0.12
Duration (hrs.)		8	24	24	24	24	8
***Air pollution control rules 2022**		**-**	**150**	**65**	**80**	**80**	**5**
High volume air Sampler/Lata Envirotech 250		Gravimetric Method	Gravimetric Method	Gravimetric Method	West-Geake Method	Jacob & Hochheiser Method	Iodin Penta oxide Method

--End--

Note: * Air pollution control rules 2022

Legend: *SPM -Suspended Particulate Matter, PM_{10} -Particulate Matter of a diameter of 10 micron or less, $PM_{2.5}$ -Particulate Matter of a diameter of 2.5 micron or less, SO_2 -Sulphur Di-Oxide, NOx -Oxides of Nitrogen, CO - Carbon Monoxide*

Project Name : Environmental Monitoring for Samuda food products limited, Mirsharai Economic Zone, Chattogram, Bangladesh

Description of Monitoring : Ambient Air Quality

Monitoring Personnel : EQMS Monitoring Team (Md Mahabub Alam & Al Hasan Kabir)

Monitoring Location :	**Station No**	**Location**	**Geo-coordinate**
	AQ-2	Near Noapara jame moSFPLue	22˚44'0.74" N 91˚30'25.47" E

Reporting Date : 14.05.2024

Description of Analysis :

Location	**Sampling Date**	**Ambient Air Pollutants Concentration in µg/m³**					
		SPM	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NO_2**	**CO mg/m3**
AQ2 (Week 1-4)	23.04.2024	95.73	53.51	38.50	11.03	15.09	0.03
	27.05.2024	100.92	56.63	41.28	10.20	19.14	0.02
	01.05.2024	95.37	52.27	37.23	6.51	12.57	0.04
	08.05.2024	92.68	51.31	36.50	9.20	14.02	0.03
Duration (hrs.)		8	24	24	24	24	8
***Air pollution control rules 2022**		**-**	**150**	**65**	**80**	**80**	**5**
High volume air Sampler/Lata Envirotech 250		Gravimetric Method	Gravimetric Method	Gravimetric Method	West-Geake Method	Jacob & Hochheiser Method	Iodin Penta oxide Method

--End--

Note: * Air pollution control rules 2022

Legend: *SPM -Suspended Particulate Matter, PM_{10} -Particulate Matter of a diameter of 10 micron or less, $PM_{2.5}$ -Particulate Matter of a diameter of 2.5 micron or less, SO_2 -Sulphur Di-Oxide, NOx -Oxides of Nitrogen, CO - Carbon Monoxide*

Project Name	:	Environmental Monitoring for Samuda food products limited, Mirsharai Economic Zone, Chattogram, Bangladesh
Description of Monitoring	:	Ambient Air Quality
Monitoring Personnel	:	EQMS Monitoring Team (Md Mahabub Alam & Al Hasan Kabir)

Monitoring Location	:	**Station No**	**Location**	**Geo-coordinate**
		AQ-3	Near South Mogadiya beribadh road	22˚42'51.0" N 91˚31'35.23" E

Reporting Date	:	14.05.2024
Description of Analysis	:	

Location	**Sampling Date**	**Ambient Air Pollutants Concentration in µg/m³**					
		SPM	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NO_2**	**CO mg/m3**
AQ3 (Week 1-4)	24.04.2024	124.58	70.09	48.02	16.44	19.47	0.01
	28.04.2024	135.25	75.23	50.23	10.50	12.25	0.03
	02.05.2024	131.25	78.25	47.56	7.56	10.18	0.05
	05.05.2024	130.32	72.23	50.53	11.23	13.70	0.04
Duration (hrs.)		8	24	24	24	24	8
***Air pollution control rules 2022**		**-**	**150**	**65**	**80**	**80**	**5**
High volume air Sampler/Lata Envirotech 250		Gravimetric Method	Gravimetric Method	Gravimetric Method	West-Geake Method	Jacob & Hochheiser Method	Iodin Penta oxide Method

--End--

Note: * Air pollution control rules 2022

Legend: *SPM -Suspended Particulate Matter, PM_{10} -Particulate Matter of a diameter of 10 micron or less, $PM_{2.5}$ -Particulate Matter of a diameter of 2.5 micron or less, SO_2 -Sulphur Di-Oxide, NOx -Oxides of Nitrogen, CO - Carbon Monoxide*

Project Name : Environmental Monitoring for Samuda food products limited, Mirsharai Economic Zone, Chattogram, Bangladesh

Description of Monitoring : Ambient Air Quality

Monitoring Personnel : EQMS Monitoring Team (Md Mahabub Alam & Al Hasan Kabir)

Monitoring Location :	**Station No**	**Location**	**Geo-coordinate**
	AQ-4	Near Charsarat moSFPLue	22˚45'2.43" N 91˚29'32.01" E

Reporting Date : 14.05.2024

Description of Analysis :

Location	**Sampling Date**	**Ambient Air Pollutants Concentration in µg/m³**					
		SPM	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NO_2**	**CO mg/m3**
AQ4 (Week 1-4)	25.04.2024	90.31	41.67	37.29	4.21	8.06	0.03
	30.04.2024	65.50	28.58	18.31	7.55	10.26	0.00
	04.05.2024	77.31	35.50	26.50	3.50	7.56	0.01
	07.05.2024	85.03	39.50	29.32	5.15	14.71	0.01
Duration (hrs.)		8	24	24	24	24	8
***Air pollution control rules 2022**		**-**	**150**	**65**	**80**	**80**	**5**
High volume air Sampler/Lata Envirotech 250		Gravimetric Method	Gravimetric Method	Gravimetric Method	West-Geake Method	Jacob & Hochheiser Method	Iodin Penta oxide Method

--End--

Note: * Air pollution control rules 2022

Legend: *SPM -Suspended Particulate Matter, PM_{10} -Particulate Matter of a diameter of 10 micron or less, $PM_{2.5}$ -Particulate Matter of a diameter of 2.5 micron or less, SO_2 -Sulphur Di-Oxide, NOx -Oxides of Nitrogen, CO - Carbon Monoxide*

Ambient Noise Monitoring report

Project Name	:	Environmental Monitoring for Samuda food products limited, Mirsharai Economic Zone, Chattogram, Bangladesh
Description of Activity	:	Ambient Noise Level
Monitoring Personnel	:	EQMS Monitoring Team (Md. Mahabub Alam & Shakik Ahmed Walid)
Monitoring Locations	:	

S.No	Monitoring Location	Station Number	Dates	Geographical Coordinates	
				Latitude	Longitude
1.	Infront of Samuda workers dormitory, BSMSN	NL1	23.04.2024 - 24.04.2024	22°43'0.52"N	91°29'4.57"E
2.	Near CP Mor, BSMSN	NL2	24.04.2024 - 25.04.2024	22°43'54"N	91°30'23"E
3.	Near BEPZA main gate, BSMSN	NL3	25.04.2024 - 26.04.2024	22°44'42"N	91°29'27"E
4.	Infront of Executive Engineer office, PGCB, BSMSN	NL4	26.04.2024 - 27.04.2024	22°44'12.85"N	91°28'6.302"E

Reporting Date	:	15.05.2024

Sampling Locations	Location Setting (IFC/DOE)	Time	Noise Level in dB(A)			Bangladesh Standard*	IFC Guideline
			Leq	L_{max}	L_{min}		
ANL-1	Industrial Zone	Day	48.0	66.4	35.1	75	70
		Night	44.0	57.4	31.6	70	70
ANL-2	Mixed Zone	Day	62.2	83.4	40.4	60	55
		Night	53.5	76.6	40.7	50	45
ANL-3	Mixed Zone	Day	60.6	88.1	34.0	50	55
		Night	48.4	67.5	40.1	40	45
ANL-4	Industrial Zone	Day	60.7	88.6	35.5	75	70
		Night	46.4	68.1	31.6	70	70

Hourly Noise Monitoring Data- Equivalent noise level in dB(A)

Hours	NL1	NL2	NL3	NL4
0000-0100	35.74009	45.90679	41.0722	64.00744
0100-0200	35.50929	44.48492	44.63002	46.52828
0200-0300	35.46989	44.67561	46.84611	49.34178
0300-0400	35.32885	44.85457	47.22948	43.00627
0400-0500	35.64017	43.37982	42.27555	41.94018
0500-0600	35.39509	43.1647	44.14172	42.34741
0600-0700	46.43337	43.38698	46.41464	41.76259
0700-0800	51.76935	43.41253	49.11271	40.9696
0800-0900	52.39988	43.39341	45.32861	41.58362
0900-1000	52.24188	43.39591	46.41369	46.77188
1000-1100	58.41031	43.36982	42.65144	47.63612
1100-1200	63.90043	49.51642	42.0275	43.91244
1200-1300	58.1068	56.11526	54.35402	48.4314
1300-1400	64.60708	54.31686	47.71375	54.31972
1400-1500	56.51223	54.12295	48.82457	56.03447
1500-1600	60.8874	58.90253	49.25727	56.40022
1600-1700	68.22846	59.42755	45.58584	59.06773
1700-1800	58.97003	54.99519	48.06905	49.97258
1800-1900	62.73289	62.36282	47.40282	56.50521
1900-2000	51.02623	64.78044	47.74647	53.00238
2000-2100	51.2771	50.70715	40.52273	54.08033
2100-2200	42.63387	69.11628	40.54654	51.17598
2200-2300	44.95795	49.43132	39.07954	51.3755
2300-2400	36.9974	44.05154	40.08843	60.59765

APPENDIX D - CRITICAL HABITAT SCREENING

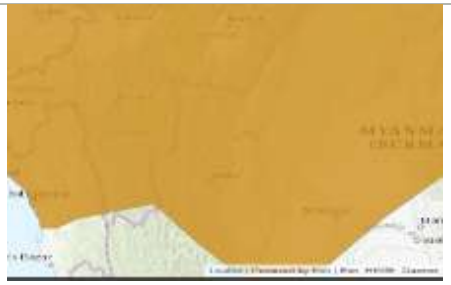
Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Goonch Catfish	*Bagarius bagarius*	Actinopterygii	VU	1b	 https://www.iucnredlist.org/species/213648894/213648930	The EAAA is located outside the distribution range of the species. Its habitat preferences usually involve clear and swift rivers having substrates of sand and rocks. The species is screened out as a potential critical habitat assessment candidate.
Thorny Seahorse	*Hippocampus histrix*	Actinopterygii	VU	1b	 https://www.iucnredlist.org/species/10070/54905206	The EAAA is located within the distribution range of the species. Its habitat preferences include different substrates, like sponges, weedy rocky reefs, seagrass beds, and soft corals. Furthermore, it is usually found at depths of 10-40 metres. Estuarine marine habitat is not expected to be rocky reef or coral reef with hard substratum rather estuarine and marine environment is expected to be loaded with silt and with soft sandy/silty sea floor. The species has been screened out considering absence of suitable habitat. *Source: Lourie, S.A. 2016. Seahorses: A Life-Size Guide to*

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
						Every Species. The University of Chicago Press, Chicago, Illinois, USA, 160 pp.
Great Seahorse	*Hippocampus kelloggi*	Actinopterygii	VU	1b	 https://www.iucnredlist.org/species/41010/54908593	The EAAA is located within the distribution range of the species. Its habitat preferences are soft bottomed habitats, usually associated with gorgonian corals and sea whips. Furthermore, it is reportedly found at depths of upto 152m. Estuarine marine habitat are not expected to be rocky reef or coral reef with hard substratum rather estuarine and marine environment is expected to be loaded with silt and with soft sandy/silty sea floor. The species has been screened out considering absence of suitable habitat. *Source: Lourie, S.A., Foster, S.J., Cooper, E.W.T. and Vincent, A.C.J. 2004. A Guide to the Identification of Seahorses. Project Seahorse and TRAFFIC North America, University of British Columbia and World Wildlife Fund, Washington D.C.*

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Hedgehog Seahorse	*Hippocampus spinosissimus*	Actinopterygii	VU	1b	 https://www.iucnredlist.org/species/107259870/54906372	The EAAA is located within the distribution range of the species. It is usually found residing in silt and sand bottoms found in reef systems. Estuarine marine habitat is not expected to be rocky reef or coral reef with hard substratum rather estuarine and marine environment is expected to be loaded with silt and with soft sandy/silty sea floor. The species has been screened out considering absence of suitable habitat.
Three-spot Seahorse	*Hippocampus trimaculatus*	Actinopterygii	VU	1b	 https://www.iucnredlist.org/species/10087/17252219	The EAAA is located within the distribution range of the species. Its habitat preferences are shared with shrimp trawling areas, including soft substrates such as sand and mud as well as macro algae and soft corals. Furthermore, it is usually found at depths of 10-100 metres. Estuarine marine habitat is not expected to be rocky reef or coral reef with hard substratum rather estuarine and marine environment is expected to be loaded with silt and with soft sandy/silty sea floor. The species has been

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
						screened out considering absence of suitable habitat. *Sources: FAO. 2008. Fishstat online database. Global Capture Production. Available at: http://www.fao.org/fishery/statistics/global-capture-production. Lourie, S.A., Foster, S.J., Cooper, E.W.T. and Vincent, A.C.J. 2004. A Guide to the Identification of Seahorses. Project Seahorse and TRAFFIC North America, University of British Columbia and World Wildlife Fund, Washington D.C.*
Longhead Eagle Ray	*Aetobatus flagellum*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/169243577/124440562	EAAA is located within the distribution range of Longhead Eagle Ray. The species is reported from coastal waters of Bangladesh. Considering EAAA represents insignificant proportion of the geographic range of the species, it is screened out considering absence of suitable habitat. *Source: Habib K.A. and Islam M.J. (2020). An updated checklist of Marine Fishes of Bangladesh. Bangladesh J. Fish. 32(2) : 357-367. Shark Fisheries in the Bay of Bengal, Bangladesh: Status and Potentialities. 2011*

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Spotted Eagle Ray	*Aetobatus ocellatus*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/42566169/42566212	EAAA is located within the distribution range of the species. Suitable habitats include marine neritic and marine oceanic areas. Considering EAAA supports insignificant proportion of suitable habitats, the species is screened out as a critical habitat candidate species.
Mottled Eagle Ray	*Aetomylaeus maculatus*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/60120/124440727	EAAA is located within the distribution range of Mottled Eagle Ray. There are records of this species from coastal waters of Bangladesh. The species is listed in the fish species that are recorded from the landing centres of Chattogram by University of Chittagong. The species has been screened-in as a potential critical habitat assessment candidate. *Source: Habib K.A. and Islam M.J. (2020). An updated checklist of Marine Fishes of Bangladesh. Bangladesh J. Fish. 32(2) : 357-367*

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Banded Eagle Ray	*Aetomylaeus nichofii*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/84784918/68607458	EAAA is located within the distribution range of the species. This is found in marine neritic, intertidal, and oceanic habitats. This species has been screened out as a potential critical habitat candidate species.
Snow Trout	*Schizothorax plagiostomus*	Actinopterygii	VU	1b	 https://www.iucnredlist.org/species/128725859/139131270	The EAAA is located outside the distribution range of the species. Its habitat preferences include clear-running snow-fed hill streams and rivers over stony beds. It requires a water temperature above 20°C for survival. The species is screened-out as a potential critical habitat assessment candidate.
Asian Small-clawed Otter	*Aonyx cinereus*	Mammalia	VU	1a		This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
						Hence, this species is screened out as possible critical habitat candidate.
Narrow Sawfish	*Anoxypristis cuspidata*	Chondrichthyes	CR	1a		The species is a bentho-pelagic species that inhabits estuarine, inshore and offshore waters to at least 40 m depth (Last and Stevens 2009). Inshore and estuarine waters are important habitats for juveniles and pupping females, whilst adults predominantly occur offshore,Such habitats are present in the EAAA and also the EAAA falls within the distribution range of this species. A. cuspidate are reported to be present in coastal waters of Bangladesh. However, the species is not listed in the fish species recorded from the landing centres of Chattogram by University of Chittagong. The species has been screened out as a potential critical habitat assessment candidate. *Source: Sawfish exploitation and status in Bangladesh. MD ANWAR HOSSAINa, BENJAMIN S. THOMPSONb,c,*, GAWSIA WAHIDUNNESSA CHOWDHURYa,b,*

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
						SAMIUL MOHSANINb, ZUBAIR H. FAHADb, HEATHER J. KOLDEWEYc and MD ANWARUL ISLAMa,b
Oceanic Whitetip Shark	*Carcharhinus longimanus*	Chondrichthyes	CR	1a	 https://www.iucnredlist.org/species/39374/2911619	The EAAA is located within the distribution range of the species. The species is found in the open oceans of the tropical and subtropical regions. These types of habitats are not present within the EAAA. The species has been screened out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Bengal Whipray	*Brevitrygon imbricata*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/161728/109916824	EAAA is located within the distribution range of these species. The species is found in marine neritic, intertidal, and oceanic habitats. This species has been screened in as a potential critical habitat candidate.
Spoon-billed Sandpiper	*Calidris pygmaea*	Aves	CR	1a, 3a	 https://www.iucnredlist.org/species/22693452/154738156	The EAAA is located within the non-breeding range of the species. The species occurs in lagoon spits, willow sedges and dwarf birch near lakes and marshes. It prefers to breed within 5km of seashore. During winters, it prefers sandy tidal mudflats with an uneven surface and very shallow water. These types of habitats are present within the EAAA. The species has been screened in as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Clubnose Guitarfish	*Glaucostegus thouin*	Chondrichthyes	CR	1a	 https://www.iucnredlist.org/species/60175/207731709	EAAA is located within the distribution range of the species. However, the species is not reported from coastal waters of Bangladesh. The species is not listed in the fish species recorded from the landing centres of Chattogram by University of Chittagong. The species is screened out as a potential critical habitat assessment candidate.
Great Knot	*Calidris tenuirostris*	Aves	EN	1a, 3a	 https://www.iucnredlist.org/species/22693359/155482913	The EAAA is located within the wintering (non-breeding) range of the species. The species occurs in coastal habitats such as inlets, bays, harbours, estuaries, intertidal muds, and sandflats etc. These types of habitats are present within the EAAA. The species has been screened in as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Pigeye Shark	*Carcharhinus amboinensis*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/39366/173434051	EAAA is located within the distribution range of this species. It occurs in inshore and offshore waters to a depth of at least 60 m, juveniles are known to occur in the outer part of estuaries. These types of habitats are present within the EAAA. The species has been screened out as a potential critical habitat assessment candidate.
Silky Shark	*Carcharhinus falciformis*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/39370/205782570	EAAA is located within the distribution range of this species. It occurs in inshore and offshore waters to a depth of at least 60 m, juveniles are known to occur in the outer part of estuaries. These types of habitats are present within the EAAA. The species has been screened out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Bull Shark	*Carcharhinus leucas*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/39372/2910670	EAAA is located within the distribution range of this species. It occurs in inshore and offshore waters to a depth of at least 60 m, juveniles are known to occur in the outer part of estuaries. These types of habitats are present within the EAAA. The species has been screened out as a potential critical habitat assessment candidate.
Green Sawfish	*Pristis zijsron*	Chondrichthyes	CR	1a	 https://www.iucnredlist.org/species/39393/141792003	This Green Sawfish is mainly found in coastal marine, mangrove and estuarine habitat, even in very shallow waters, but can also occur far offshore to a depth of more than 70 m. Though range distribution of this species is uncertain in Bangladesh suitable habitat is present in the EAAA and there are some evidence of Pristis zijsron being caught in Bangladesh. Local fishermen reported that the species is not recorded at the coastal areas of Chattogram. The species is not listed in the fish species recorded from the landing centers of Chattogram by University

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
						of Chittagong. The species has been screened out as a potential critical habitat assessment candidate. *Source: A B Haque, S. Das. First confirmed record of the Critically Endangered green sawfish Pristis zijsron from Bangladeshi waters. Nov 2018*
Blacktip Shark	*Carcharhinus limbatus*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/3851/2870736	This species is associated with open ocean or coral reef. Marine EAAA do not provide suitable habitat for these species. This species is screened out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Blacktip Reef Shark	*Carcharhinus melanopterus*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/3851/2870736	This species is associated with open ocean or coral reef. Marine EAAA do not provide suitable habitat for these species. This species is screened-out as a potential critical habitat assessment candidate.
White Shark	*Carcharodon carcharias*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/3855/212629880	This species is associated with open ocean or coral reef. Marine EAAA do not provide suitable habitat for these species. This species is screened out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Bottlenose Wedgefish	*Rhynchobatus australiae*	Chondrichthyes	CR	1a	 https://www.iucnredlist.org/species/41853/68643043	EAAA is located within the distribution range of Bottlenose Wedgefish. However, the species is not reported from coastal waters of Bangladesh. The species is not listed in the fish species that are recorded from the landing centers of Chattogram by University of Chittagong. The species is screened-out as a potential critical habitat assessment candidate *Source: Shark Fisheries in the Bay of Bengal, Bangladesh: Status and Potentialities. 2011* *Habib K.A. and Islam M.J. (2020). An updated checklist of Marine Fishes of Bangladesh. Bangladesh J. Fish. 32(2): 357-367*
Smoothnose Wedgefish	*Rhynchobatus laevis*	Chondrichthyes	CR	1a	 https://www.iucnredlist.org/species/41854/124422344	EAAA is not located within the distribution range of Smoothnose Wedgefish. Moreover, the species is not reported from coastal waters of Bangladesh. The species is not listed in the fish species that are recorded from the landing centers of Chattogram by University of Chittagong. The species is screened out as a potential critical habitat candidate. *Source: Shark Fisheries in the Bay of Bengal, Bangladesh: Status and Potentialities. 2011*

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
						Habib K.A. and Islam M.J. (2020). An updated checklist of Marine Fishes of Bangladesh. Bangladesh J. Fish. 32(2): 357-367
Hooktooth Shark	*Chaenogaleus macrostoma*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/161695/173437577	The EAAA is located within the distribution range of Hooktooth Shark. It prefers marine neritic habitats, on continental and insular shelves with depths up to 160 m. The EAAA offers such habitats. The species has been screened out as a potential critical habitat candidate.
Burmese Bambooshark	*Chiloscyllium burmensis*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/161616/124515789	The EAAA is located within the distribution range of Burmese Bambooshark. It prefers marine neritic habitats, on shallow inshore habitats between depths of 5-15 m, up to 30 m depth. Its preferred habitats, include coral reefs, intertidal pools and soft sedimentary beds. The EAAA offers such habitats. The species has been screened in as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Greater Spotted Eagle	*Clanga clanga*	Aves	VU	1b,3a	 https://www.iucnredlist.org/species/22696027/203868747	The EAAA is located within the non-breeding range of the species. The species is found in lowland forests near wetlands. These types of habitats are present within the EAAA. The species has been screened-in as a potential critical habitat assessment candidate. *Source: Shark Fisheries in the Bay of Bengal, Bangladesh: Status and Potentialities. 2011*
Sharpnose Guitarfish	*Glaucostegus granulatus*	Chondrichthyes	CR	1a	 https://www.iucnredlist.org/species/60166/68623788	EAAA is located within the distribution range of Sharpnose Guitarfish. There are records of this species from coastal waters of Bangladesh. Local fishermen reported that the species is recorded in the coastal areas of Chattogram. The species has been screened in as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Pelagic Thresher	*Alopias pelagicus*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/161597/68607857	EAAA is located within the distribution range of Pelagic Thresher. The species is recorded from coastal waters of Bangladesh. Local fishermen reported that the species is not recorded in the coastal areas of Chattogram. The species is not listed in the fish species recorded from the landing centres of Chattogram by University of Chittagong. The species is screened-out as a potential critical habitat assessment candidate.
Grey Reef Shark	*Carcharhinus amblyrhynchos*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/39365/173433550	EAAA is located within the distribution range of Grey Reef Shark. There are records of this species from coastal waters of Bangladesh. Local fishermen reported that the species is recorded at the coastal areas of Chattogram. The species is listed in the fish species that are recorded from the landing centres of Chattogram by University of Chittagong. However suitable reef habitat is not present within the Marine EAAA.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
						The species has been screened out as a potential critical habitat assessment candidate.
Winghead Shark	*Eusphyra blochii*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/41810/68623209	EAAA is located within the Habitat Range of the Species. The Winghead Shark mostly occurs on the continental shelves and is mainly found in coastal nearshore waters. This species has been reported from coastal waters of Bangladesh. Local fishermen reported that the species is not recorded at the coastal areas of Chattogram. The species is not listed in the fish species recorded from the landing centres of Chattogram by University of Chittagong. The species has been screened-out as a potential critical habitat assessment candidate. *Sources: Shark Fisheries in the Bay of Bengal, Bangladesh: Status and Potentialities. 2011*

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Widenose Guitarfish	*Glaucostegus obtusus*	Chondrichthyes	CR	1a	 https://www.iucnredlist.org/species/60170/207283191	EAAA is located within the distribution range of Widenose Guitarfish. Local fishermen reported that the species is recorded from the coastal areas of Chattogram. The species is listed in the fish species that are recorded from the landing centres of Chattogram by University of Chittagong The species has been screened-in as a potential critical habitat assessment candidate.
Giant Guitarfish	*Glaucostegus typus*	Chondrichthyes	CR	1a	 https://www.iucnredlist.org/species/104061138/68623995	EAAA is located within the distribution range of Giant Guitarfish. There are records of this species from coastal waters of Bangladesh. The species is listed in the fish species that are recorded from the landing centres of Chattogram by University of Chittagong. The species has been screened in as a potential critical habitat assessment candidate. *Source: Habib K.A. and Islam M.J. (2020). An updated checklist of Marine Fishes of Bangladesh. Bangladesh J. Fish. 32(2): 357-367*

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Ganges Shark	*Glyphis gangeticus*	Chondrichthyes	CR	1a	 https://www.iucnredlist.org/species/9281/12978210	This species is known only from the lower reaches of the Ganges-Hooghli river system, West Bengal, India. It possibly occurs in other river systems in the area, particularly in Bangladesh. Could also occur in shallow marine estuaries although there are no verified marine reports of this species to date. There is a possibility of finding Gangetic Shark in the EAAA. Local fishermen reported that the species is recorded at the coastal areas of Chattogram. The species listed in the fish species that are recorded from the landing centres of Chattogram by University of Chittagong The species has been screened-in as a potential critical habitat assessment candidate. *source: Gawsia w Chowdhury*, Muntasir akash1 and Alifa bintha haque1. status of the ganges river shark glyphis gangeticus. department of zoology, university of dhaka, dhaka-1000, bangladesh*

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Black-capped Kingfisher	*Halcyon pileata*	Aves	VU	1b	 https://www.iucnredlist.org/species/22683249/212490546	The EAAA is located within the non-breeding range of the species. The species is found in open cultivated lands, creeks, wooded seashores, and coastal mangroves, feeding on insects, crabs, and fishes. These types of habitats are present within the EAAA. The species has been screened in as a potential critical habitat assessment candidate.
Pallas's Fish-eagle	*Haliaeetus leucoryphus*	Aves	EN	1a, 3a	 https://www.iucnredlist.org/species/22695130/199521572	The EAAA is located within the distribution range of Pallas's Fish Eagle and the species is associated with wetlands, large lakes and rivers. These types of habitats are present with the EAAA with the presence of Sandwip channel and numerous other canals. The species has been screened-in as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Ocean Turf Grass	*Halophila beccarii*	Liliopsida	VU	1b,2a	 https://www.iucnredlist.org/species/173342/6995080	EAAA is located within the distribution range of this marine plant species. It mostly occurs in upper intertidal zones and grows on muddy sand substrates. Such habitats are present in the EAAA. The species has been screened-in as a potential critical habitat assessment candidate.
Coach Whipray	*Himantura uarnak*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/201098826/124528737	EAAA is located within the distribution range of Coach Whipray. It prefers shallow waters, and inshore waters upto a depth of 50 m. Its availability is widespread from South Africa till Philippines and is therefore native to Indian Ocean and Western Pacific Ocean. The species has been screened in as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Longhorned Pygmy Devil Ray	*Mobula eregoodoo*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/41832/166793082	EAAA is located within the distribution range of Longhorned Pygmy Devil Ray. There are records of this species from coastal waters of Bangladesh. Local fishermen reported that the species is not recorded in the coastal areas of Chattogram. The species is not listed in the fish species recorded from the landing centres of Chattogram by University of Chittagong. The species is screened out as a potential critical habitat assessment candidate.
Honeycomb Whipray	*Himantura undulata*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/161621/124516589	EAAA is located within the distribution range of Honeycomb Whipray. There are records of this species from coastal waters of Bangladesh. Local fishermen reported that the species is recorded in the coastal areas of Chattogram. The species is listed in the fish species that are recorded from the landing centres of Chattogram by University of Chittagong. The species has been screened out as a potential

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
						critical habitat assessment candidate.
Sicklefin Devil Ray	*Mobula tarapacana*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/60199/124451161	EAAA is located within the distribution range of Sicklefin Devil Ray. There are records of this species from coastal waters of Bangladesh. Local fishermen reported that the species is not recorded in the coastal areas of Chattogram. The species is not listed in the fish species recorded from the landing centres of Chattogram by University of Chittagong. The species is screened out as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Bentfin Devil Ray	*Mobula thurstoni*	Chondrichthyes	EN	1a	 iucnredlist.org/species/60200/124451622	EAAA is located within the distribution range of Bentfin Devilray. Local fishermen reported that the species is recorded in the coastal areas of Chattogram. Marine EAAA located in the extinct distribution range. The species is screened out as a potential critical habitat candidate.
Sharptooth Lemon Shark	*Negaprion acutidens*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/41836/173435545	EAAA is located within the Habitat Range of the Species. The Sharptooth Lemon Shark mostly occurs in shallow inshore and offshore waters upto minimum depths of 90 m and is most found around coral reefs and its sandy plateaus. However suitable reef habitat is not present within the Marine EAAA. The species has been screened out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
A sea cucumber species	*Holothuria fuscogilva*	Holothuroidea	VU	1b	 https://www.iucnredlist.org/species/200715/2681354	EAAA is located within the distribution range of this particular sea cucumber species. It mostly occurs in deeper waters between 15-30 m, although its range extends between 0 and 40 m. Such habitats are present in the EAAA. The species has been screened out as a potential critical habitat candidate.
A sea cucumber Species	*Holothuria lessoni*	Holothuroidea	EN	1a	 https://www.iucnredlist.org/species/180275/1609567	EAAA is located within the distribution range of this particular sea cucumber species. It mostly occurs in sandy or muddy bottoms in lagoons or reef flats within a depth range of 0-10m. Such habitats are present in the EAAA. The species has been screened out as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
A sea cucumber Species	*Holothuria scabra*	Holothuroidea	EN	1a	 https://www.iucnredlist.org/species/180275/1609567	EAAA is located within the distribution range of this sea cucumber species. This species is attracted to muddy sand or mud habitats. This species is distributed mainly in low energy environments behind fringing reefs or within protected bays and shores, close to mangroves. Such habitats are present in the EAAA. The species has been screened out as a potential critical habitat candidate.
Whale Shark	*Rhincodon typus*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/19488/2365291	EAAA is located within the distribution range of Whale shark. Whale Sharks are found in both coastal and oceanic habitats and Whale Sharks are reported from the coastal waters of Bangladesh. The species is listed in the fish species that are recorded from the landing centres of Chattogram by University of Chittagong. The EAAA does not provide suitable depth profile for the species. The species is screened out as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Sailfish	*Istiophorus platypterus*	Actinopterygii	VU	1b	 https://www.iucnredlist.org/species/170338/46649664	The EAAA is located within the distribution range of the species. It is usually found in oceanic and epipelagic environments, in the upper 10 m, with temperatures ranging between 21-28°C. The species has been screened in as a potential critical habitat candidate.
Shortfin Mako	*Isurus oxyrinchus*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/39341/2903170	EAAA is located within the distribution range of Shorttail Whipray. Found globally in tropical and warm-temperate waters down to 888 meters, the species is neritic oceanic, epipelagic, mesopelagic, and neritic species. The species has been screened in as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Indo-Pacific Leopard Shark	*Stegostoma tigrinum*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/41878/161303882	EAAA is located within the distribution range of Indo-Pacific Leopard Shark. It is a resident of the shallow waters of the tropical and subtropical shores, commonly found around rocky coral reefs, sand plateaus near the corals, up to a depth of 62 m. However suitable reef habitat is not present within the Marine EAAA. The species has been screened out as a potential critical habitat candidate.
Longfin Mako	*Isurus paucus*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/60225/3095898	EAAA is located within the distribution range of Longfin Mako. The species listed in the fish species that are recorded from the landing centres of Chattogram by University of Chittagong. The species has been screened out as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Broadfin Shark	*Lamiopsis temminckii*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/169760690/124508850	EAAA is located within the distribution range of Broadfin Shark. It is native to the northern Indian Ocean and is found close to shore. This shark is known from costal water of Bangladesh. As suitable habitat is present in the EAAA, presence of this shark in EAAA, cannot be ruled out. Local fishermen reported that the species is recorded at the coastal areas of Chattogram. The species listed in the fish species recorded from the landing centres of Chattogram by University of Chittagong. The species has been screened out as a potential critical habitat candidate species.
Indian Flapshell Turtle	*Lissemys punctata*	Reptilia	VU	1b	 https://www.iucnredlist.org/species/123802477/3008930	The EAAA is located within the distribution range of the species. Habitat preference of the species include aquatic environments, such as rivers, lakes, ox-bows, streams and ponds to salt marshes, rice fields and urban canals, including sources that are non-perennial as well. Such type of habitats is present

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
						within the EAAA. The species has been screened in as a potential critical habitat candidate.
Smooth-coated Otter	*Lutrogale perspicillata*	Mammalia	VU	1a	 https://www.iucnredlist.org/species/12427/164579961	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.
Bigeye Thresher	*Alopias superciliosus*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/161696/894216	The EAAA is located outside the distribution range of Bigeye Thresher. It prefers marine neritic and oceanic habitats on continental shelves, inshore/ shallow waters, and in the epipelagic and mesopelagic zones away from land. The EAAA offers insignificant proportions of such habitats. The species is screened out as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Shorttail Whipray	*Maculabatis bineeshi*	Chondrichthyes	CR	1a	 https://www.iucnredlist.org/species/107605000/175219173	EAAA is located within the distribution range of Shorttail Whipray. It is a resident of marine neritic and intertidal habitats in the benthic zones, on the muddy substrates of inshore waters up to a depth of 100 m, predominantly within 50 m. The species has been screened in as a potential critical habitat candidate.
Graceful Shark	*Carcharhinus amblyrhynchoides*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/40797/68611625	EAAA is located within the distribution range of these species. The species is found in marine neritic and marine intertidal habitat. It is demersal and pelagic and occurs inshore on continental and insular shelves from the surface to a depth of 50 m, it prefers sandy and submerged seagrass habitats. As the EAAA does not provide suitable habitat, this species is screened out as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Whitespotted Whipray	*Maculabatis gerrardi*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/161566/175219648	EAAA is located within the distribution range of Whitespotted Whipray. There are records of this species from coastal waters of Bangladesh. Local fishermen reported that the species is recorded in the coastal areas of Chattogram. The species has been screened out as a potential critical habitat assessment candidate.
Reef Manta Ray	*Mobula alfredi*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/195459/214395983	EAAA is located within the distribution range of the species. Considering the EAAA supports insignificant proportions of suitable habitats, the species is screened out as a critical habitat candidate species.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Oceanic Manta Ray	*Mobula birostris*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/198921/214397182	EAAA is located within the distribution range of the species. Considering the EAAA supports insignificant proportions of suitable habitats, the species is screened out as a critical habitat candidate species.
Spinetail Devil Ray	*Mobula mobula*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/110847130/176550858	EAAA is located within the distribution range of Spinetail Devil Ray. There are records of this species from coastal waters of Bangladesh. The species is listed in the fish species that are recorded from the landing centres of Chattogram by University of Chittagong. The species has been screened-in as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Ocean Sunfish	*Mola mola*	Actinopterygii	VU	1b	 https://www.iucnredlist.org/species/190422/97667070	The EAAA is located within the distribution range of the species. It is usually found in oceanic and pelagic environments, within depths of 30-70 m. The species has been screened in as a potential critical habitat candidate.
Great Slaty Woodpecker	*Mulleripicus pulverulentus*	Aves	VU	1b	 https://www.iucnredlist.org/species/22681585/241500854	The EAAA is located within the non-breeding range of the species. The species is found in semi-open moist deciduous and tropical evergreen old growth, lower elevation forests, such as the teak forests or tall mangroves. These types of habitats are present within the EAAA. The species has been screened in as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Chinese Numbfish	*Narcine lingula*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/161523/124499677	The EAAA is located within the distribution range of Chinese Numbfish. It prefers marine neritic habitats, on continental shelfs between depths of 1-200 m, both in- and offshore waters. The EAAA offers such habitats. The species has been screened-in as a potential critical habitat candidate.
Smallspot Numbfish	*Narcine maculata*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/161560/124506650	The EAAA is located within the distribution range of Smallspot Numbfish. It prefers marine neritic habitats, on continental shelves between depths of 30-80 m, both in- and offshore waters. The EAAA offers such habitats. The species has been screened-in as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Grey Bamboo Shark	*Chiloscyllium griseum*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/41792/124416752	EAAA is located within the distribution range of the species. Considering the EAAA supports insignificant proportions of suitable habitats, the species is screened out as a critical habitat candidate species.
Slender Bambooshark	*Chiloscyllium indicum*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/41791/124416590	EAAA is located within the distribution range of the species. Considering the EAAA supports insignificant proportions of suitable habitats, the species is screened out as a critical habitat candidate species.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Longtail Butterfly Ray	*Gymnura poecilura*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/60117/124440205	EAAA is located within the distribution range of the species. Considering the EAAA supports insignificant proportions of suitable habitats, the species is screened out as a critical habitat candidate species.
Snaggletooth Shark	*Hemipristis elongata*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/41874/68625034	EAAA is located within the distribution range of the species. Considering the EAAA supports insignificant proportions of suitable habitats, the species is screened out as a critical habitat candidate species.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Indo-Pacific Finless Porpoise	*Neophocaena phocaenoides*	Mammalia	VU	1a	 https://www.iucnredlist.org/species/198920/50386795	Indo-Pacific Finless Porpoises are most found in shallow coastal waters, less than 200 m deep, including mangrove swamps, and estuaries. These types of habitats are present within the EAAA. The species has been screened-in as a potential critical habitat assessment candidate.
Shortlip Numbfish	*Narcine brevilabiata*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/61406/124456946	The EAAA is located outside the distribution range of Shortlip Numbfish. It prefers marine neritic habitats, on continental shelfs between depths of 41-70 m. The species is screened-out as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Indian Softshell Turtle	*Nilssonia gangetica*	Reptilia	EN	1a	 https://www.iucnredlist.org/species/39618/2930943	The species inhabits mostly rivers and large canals, preferably with turbid water, muddy bottom areas etc., such habitats are present within the EAAA. However, The EAAA is located within the distribution of the species in Bangladesh. The species has been screened-in as a potential critical habitat assessment candidate.
A marine goby fish species	*Omobranchus smithi*	Actinopterygii	VU	1b	 https://www.iucnredlist.org/species/48342284/48353451	The EAAA is located within the distribution range of the species. It is usually found shallow bays and estuarine areas. The species has been screened in as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Brown Numbfish	*Narcine timlei*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/161445/178201830	It prefers marine neritic habitats, on continental shelfs between depths of 5-50 m. The EAAA offers such habitats. However, due to insignificant proportions of the suitable habitats, the species is screened out as a potential critical habitat candidate species.
Tawny Nurse Shark	*Nebrius ferrugineus*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/41835/173437098	EAAA is located within the distribution range of the species. Considering the EAAA supports insignificant proportions of suitable habitats, the species is screened out as a critical habitat candidate species.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Irrawaddy Dolphin	*Orcaella brevirostris*	Mammalia	EN	1a	 https://www.iucnredlist.org/species/15419/123790805	Irrawaddy Dolphins have a discontinuous distribution in coastal waters of the tropical and subtropical Indo-Pacific and are predominantly associated with freshwater inputs like estuary and river mouth, like the EAAA. Their area of occupancy is concentrated in deep pools associated with confluences and above and below rapids. Such micro habit conditions are often found in creeks and Channels in mangrove areas. About 5,383 Irrawaddy dolphin were reported from open estuarine waters of Bangladesh and 451 in creeks and channels of the Sundarbans mangrove forest in Bangladesh. The species has been screened-in as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Milk Shark	*Rhizoprionodon acutus*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/41850/68642326	EAAA is located within the distribution range of the species. Considering the EAAA supports insignificant proportions of suitable habitats, the species is screened out as a critical habitat candidate species.
Blotched Fantail Ray	*Taeniurops meyeni*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/60162/68646736	EAAA is located within the distribution range of the species. Considering the EAAA supports insignificant proportions of suitable habitats, the species is screened out as a critical habitat candidate species.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Broad Cowtail Ray	*Pastinachus ater*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/70682232/124550583	EAAA is located within the distribution range of the species. Considering the EAAA supports insignificant proportions of suitable habitats, the species is screened out as a critical habitat candidate species.
Porcupine Ray	*Urogymnus asperrimus*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/39413/68648645	Most of the species are associated with open ocean or coral reef. Marine EAAA do not provide suitable habitat for these species. These species are screened-out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Narrow Cowtail Ray	*Pastinachus gracilicaudus*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/104306073/104306117	EAAA is located within the distribution range of Narrow Cowtail Ray. There are records of this species from coastal waters of Bangladesh. Local fishermen reported that the species is recorded in the coastal areas of Chattogram. The species is listed in the fish species that are recorded from the landing centres of Chattogram by University of Chittagong. The species has been screened-in as a potential critical habitat assessment candidate. *Sources: Habib K.A. and Islam M.J. (2020). An updated checklist of Marine Fishes of Bangladesh. Bangladesh J. Fish. 32(2) : 357-367*
Steppe Eagle	*Aquila nipalensis*	Aves	EN	1a,3a	 https://www.iucnredlist.org/species/22696038/205452572	The EAAA is falling within the extant passage range of Steppe Eagle. It inhabits areas of savannah, steppe and semi-desert, and the species tends to avoid sea crossings. These types of habitats are not present within the EAAA. The species is screened-out as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
White-winged Duck	*Asarcornis scutulata*	Aves	EN	1a, 3a	 https://www.iucnredlist.org/species/22680064/110103586	Inhabits freshwater wetlands, within or adjacent to evergreen, deciduous or swamp forests, on which it depends for roosting usually in tree holes. While the range map for this species does overlap with the EAAA, suitable habitats are not present in the EAAA. The species is screened out as a potential critical habitat candidate.
Bleeker's Whipray	*Pateobatis bleekeri*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/104208524/175220678	EAAA is located within the distribution range of Bleeker's Whipray. There are records of this species from coastal waters of Bangladesh. Local fishermen reported that the species is recorded in the coastal areas of Chattogram. The species is listed in the fish species that are recorded from the landing centres of Chattogram by University of Chittagong. The species has been screened in as a potential critical habitat candidate. *Source: Habib K.A. and Islam M.J. (2020). An updated checklist of Marine Fishes of Bangladesh. Bangladesh J. Fish. 32(2): 357-367*

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Whitenose Whipray	*Pateobatis uarnacoides*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/161547/175221157	EAAA is located within the distribution range of Whitenose Whipray. There are records of this species from coastal waters of Bangladesh. Local fishermen reported that the species is recorded in the coastal areas of Chattogram. The species is listed in the fish species that are recorded from the landing centres of Chattogram by University of Chittagong The species has been screened out as a potential critical habitat assessment candidate. *Source: Habib K.A. and Islam M.J. (2020). An updated checklist of Marine Fishes of Bangladesh. Bangladesh J. Fish. 32(2): 357-367*
Asian Giant Softshell Turtle	*Pelochelys cantorii*	Reptilia	CR	1a	 https://www.iucnredlist.org/species/135458600/1076984	The EAAA is located within the distribution range of the species. Its Habitat preferences include large lowland rivers, lakes, reservoirs, and estuarine areas including mangrove channels and coastal mudflats near river mouths. It nests on riverbanks and sea beaches. The species has been screened-in as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Common Pochard	*Aythya ferina*	Aves	VU	1b, 3a	 https://www.iucnredlist.org/species/22680358/205288455	The EAAA is located within the non-breeding range of the species. The species occurs in well-vegetated eutrophic to neutral swamps, marshes, lakes and slow-flowing rivers with areas of open water and abundant emergent fringing vegetation. These types of habitats are not present within the EAAA. The species has been screened-out as a potential critical habitat candidate.
Great Hornbill	*Buceros bicornis*	Aves	VU	1b	 https://www.iucnredlist.org/species/22682453/184603863	The EAAA is located within the distribution range of the species. The species is found in wet evergreen and mixed deciduous forests. It requires tall trees for nesting and deciduous areas to visit fruit trees. These types of habitats are not present within the EAAA. The species has been screened out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Largetooth Sawfish	*Pristis pristis*	Chondrichthyes	CR	1a	 https://www.iucnredlist.org/species/18584848/58336780	Largetooth Sawfish are generally restricted to shallow (<10 m) coastal, estuarine, and fresh waters. These types of habitats are available within the study EAAA. Local fishermen reported that the species is recorded at the coastal areas of Chattogram. The species is listed in the fish species that are recorded from the landing centres of Chattogram by University of Chittagong The species has been screened in as a potential critical habitat assessment candidate.
Indian Spotted Eagle	*Clanga hastata*	Aves	VU	1b	 https://www.iucnredlist.org/species/22729779/95021573	The EAAA is located outside the distribution range if the species. The species usually nests in trees and favours open habitats such as agricultural lands, wetlands, open forests, and forest clearings. The species has been screened out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Burmese Python	*Python bivittatus*	Reptilia	VU	1b	 https://www.iucnredlist.org/species/193451/151341916	The EAAA is located within the distribution range of the species. Habitat preference of the species include forested areas, including mangrove forests and rainforests, but is also found in grasslands, marshes, streams, and rivers, along with wet rocky areas. Such type of habitats are present within the EAAA. The species has been screened-in as a potential critical habitat assessment candidate.
Bengal Florican	*Houbaropsis bengalensis*	Aves	VU	1b	 https://www.iucnredlist.org/species/22692015/130184896	Bengal Florican is presently presumed to be extinct in Bangladesh. Hence the species is screened out as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Island Mackerel	*Rastrelliger faughni*	Actinopterygii	VU	1b	 https://www.iucnredlist.org/species/170324/170086625	The EAAA is located within the distribution range of the species. It is usually found in epipelagic and neritic aquatic environments, where surface water temperatures remain over 17°C. The EAAA provides a suitable habitat for the species hence it has been screened in as a potential critical habitat candidate.
Chinese Pangolin	*Manis pentadactyla*	Mammalia	CR	1a	 https://www.iucnredlist.org/species/12764/168392151	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.

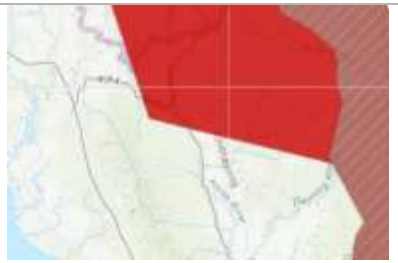
Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Tiger	*Panthera tigris*	Mammalia	EN	1a	 https://www.iucnredlist.org/species/15955/214862019	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.
Dhole	*Cuon alpinus*	Mammalia	EN	1a	 https://www.iucnredlist.org/species/5953/72477893	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Asian Elephant	*Elephas maximus*	Mammalia	EN	1a	 https://www.iucnredlist.org/species/7140/45818198	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.
Bengal Slow Loris	*Nycticebus bengalensis*	Mammalia	EN	1a	 https://www.iucnredlist.org/species/39758/179045340	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Western Hoolock Gibbon	*Hoolock hoolock*	Mammalia	EN	1a	 https://www.iucnredlist.org/species/39876/17968083	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.
Phayre's leaf monkey	*Trachypithecus phayrei*	Mammalia	EN	1a	 https://www.iucnredlist.org/species/175862145/175862149	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Blond-bellied Langur	*Trachypithecus pileatus ssp. Pileatus*	Mammalia	EN	1a	 https://www.iucnredlist.org/species/22041/196580469	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.
Blue Whale	*Balaenoptera musculus*	Mammalia	EN	1a	 https://www.iucnredlist.org/species/2477/156923585	This is an oceanic species, and the EAAA does not offer suitable habitat. Hence, the species are screened out as possible critical habitat candidates.
Bowmouth Guitarfish	*Rhina ancylostoma*	Chondrichthyes	CR	1a	 https://www.iucnredlist.org/species/41848/124421912	EAAA is located within the distribution range of Bowmouth guitarfish. There are records of this species from coastal waters of Bangladesh ( ). The species is listed in the fish species that are recorded from the landing centers of Chattogram by University of Chittagong The species has been

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
						screened-out as a potential critical habitat assessment candidate.
Ganges River Dolphin	*Platanista gangetica*	Mammalia	EN	1a	 https://www.iucnredlist.org/species/41756/50383346	Ganges river dolphins are mainly concentrated in sharp meanders and counter-current pools around channel convergences. Although deltaic waters account for a major component in its range, this species is less likely to inhabit coastal waters, and generally prefers a thalweg depth of 5-12 m in bigger channels, and 2.5-5m in smaller channels. Such habitat is absent in the EAAA. The species has been screened-out as a potential critical habitat assessment candidate.
Sun Bear	*Helarctos malayanus*	Mammalia	VU	1a	 https://www.iucnredlist.org/species/9760/123798233	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
						screened out as possible critical habitat candidate.
Bengal Guitarfish	*Rhinobatos annandalei*	Chondrichthyes	CR	1a	 https://www.iucnredlist.org/species/161478/124492224	EAAA is located within the distribution range of Bengal Guitarfish. It is a dweller of marine neritic environments, predominantly living close to the inner continental shelf, between depths of 5-73 m. The species is screened-in as a potential critical habitat assessment candidate.
Clouded Leopard	*Neofelis nebulosa*	Mammalia	VU	1a	 https://www.iucnredlist.org/species/14519/198843258	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Capped Langur	*Trachypithecus pileatus*	Mammalia	VU	1a	 https://www.iucnredlist.org/species/22041/196580469	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.
Asiatic Black Bear	*Ursus thibetanus*	Mammalia	VU	1a	 https://www.iucnredlist.org/species/22824/166528664	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.
Sambar	*Rusa unicolor*	Mammalia	VU	1a	 https://www.iucnredlist.org/species/41790/85628124	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
						screened out as possible critical habitat candidate.
Smoothback Guitarfish	*Rhinobatos lionotus*	Chondrichthyes	CR	1a	 https://www.iucnredlist.org/species/161677/124526883	EAAA is located within the distribution range of Smoothback Guitarfish. It is a dweller of marine neritic environments, predominantly living close to the inner continental shelf, up to a depth of 73 m. The species is screened-in as a potential critical habitat assessment candidate.
Northern Pig-tailed Macaque	*Macaca leonina*	Mammalia	VU	1a	 https://www.iucnredlist.org/species/39792/217754289	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Binturong	*Arctictis binturong*	Mammalia	VU	1a	 https://www.iucnredlist.org/species/41690/45217088	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.
Greater Hog Badger	*Arctonyx collaris*	Mammalia	VU	1a	 https://www.iucnredlist.org/species/70205537/45209459	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Mainland Serow	*Capricornis sumatraensis*	Mammalia	VU	1a	 https://www.iucnredlist.org/species/162916735/162916910	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.
Leopard	*Panthera pardus*	Mammalia	VU	1a	 https://www.iucnredlist.org/species/15954/215195554	This is forest dwelling species, likely to be present at the forest areas of the Chittagong Hill Tracts. The forest habitats of the Chittagong Hill tracts are separated from the coastal areas by dense residential and industrial areas of Chittagong City. Hence, this species is screened out as possible critical habitat candidate.
Sperm Whale	*Physeter macrocephalus*	Mammalia	VU	1a		This is an oceanic species, and the EAAA does not offer suitable habitat. Hence, the species are screened out as possible critical habitat candidates.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
					https://www.iucnredlist.org/species/41755/160983555	
Fishing Cat	*Prionailurus viverrinus*	Mammalia	VU	1a	 https://www.iucnredlist.org/species/18150/221434864	The EAAA lies outside the distribution range. Its habitat preferences usually include water bodies and marshlands. The EAAA does not offer suitable habitats for the species. The species has been screened-out as a potential critical habitat assessment candidate.
Javanese Cownose Ray	*Rhinoptera javanica*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/60129/124442197	EAAA is located within the distribution range of Mottled Eagle Ray. It is a benthopelagic species, mostly found in tropical waters up to depths of 50 m. The EAAA offers such habitats. The species has been screened out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Oman Cownose Ray	*Rhinoptera jayakari*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/195474/175221403	EAAA is located within the distribution range of Giant Freshwater Whipray. These species are found in marine neritic, marine intertidal, marine coastal and marine oceanic habitats. These species have been screened out as potential critical habitat assessment candidates.
Mangrove Plant Species	*Sonneratia griffithii*	Magnoliopsida	CR	1a		Based on a discussion with the Forest Department, it is reported that this species is not found in the area. Hence this species is screened out as a potential critical habitat candidate.
Mangrove Plant Species	*Heritiera fomes*	Magnoliopsida	EN	1a		Based on a discussion with the Forest Department, it is reported that this species is not found in the area. Hence this species is screened out as a potential critical habitat candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Indian Skimmer	*Rynchops albicollis*	Aves	EN	1a, 3a	 https://www.iucnredlist.org/species/22694268/178970109	It occurs primarily on estuaries and coasts . These type of habitats are present within the EAAA. Though the EAAA is located outside the distribution range of the species, however, its presence in the EAAA cannot be ruled out. The species has been screened-in as a potential critical habitat assessment candidate.
Black Softshell Turtle	*Nilssonia nigricans*	Reptilia	CR	1a	 https://www.iucnredlist.org/species/2173/2778172	The EAAA is located close to the distribution range of the species. Habitat preference of the species include rivers/streams/creeks etc . Such type of habitats are present within the EAAA. In Bangladesh the species is only reported from the pond of Hazrat Bayazid Bostami shrine in Chittagong city which is located outside the EAAA. So the species is screened-out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Hawksbill Turtle	*Eretmochelys imbricata*	Reptilia	CR	1a	 https://www.iucnredlist.org/species/8005/12881238	The EAAA is located within the distribution range of the species. The species nest on insular and mainland sandy beaches throughout the tropics and subtropics . These types of habitat are present within the EAAA. However, the species is rare in Bangladesh and last nesting was reported in 1998 in Saint Martin Island . Local fishermen reported that the species is not sighted at the coastal areas of Chattogram Moreover, no turtle nesting is reported from the Chattogram beach areas. So, the species is screened-out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Three-striped Roofed Turtle	*Batagur dhongoka*	Reptilia	CR	1a	 https://www.iucnredlist.org/species/10953/152042542	The EAAA is located outside the distribution of the species. Its range limited to the Ganga lowlands of northern India and Bangladesh. Its natural habitat including main rivers and major tributaries, using sand banks, rocks and snags to bask. So, the species is screened-out as a potential critical habitat assessment candidate.
Northern River Terrapin	*Batagur baska*	Reptilia	CR	1a	 https://www.iucnredlist.org/species/10953/152042542	The EAAA is located outside the distribution of the species. Its natural habitat includes estuarine river sections and sand banks. Its range is now limited to the Sundabans area of India and Bangladesh. So, the species is screened-out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Indo-Pacific Humpback Dolphin	*Sousa chinensis*	Mammalia	VU	1a	 https://www.iucnredlist.org/species/82031425/123794774	Ganges river dolphins inhabit tropical to warm-temperate zones, mainly in the coastal waters, including open coasts and bays, mangrove swamps, coastal lagoons, over rocky reefs, estuarine areas, and sandbanks and mudbanks areas. Such habitats are present in the EAAA. The species has been screened out as a potential critical habitat assessment candidate.
Green Turtle	*Chelonia mydas*	Reptilia	EN	1a	 https://www.iucnredlist.org/species/4615/247654386	The EAAA is located within the distribution range of the species. Its habitat preferences include nesting on sea beaches, followed by an oceanic phase and coastal neritic feeding areas. However, consultation with forest department indicates that Marine turtles do not nest in the coastal region within the EAAA or surrounding area. The species is screened-out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Spotted Pond Turtle	*Geoclemys hamiltonii*	Reptilia	EN	1a	 https://www.iucnredlist.org/species/9029/152050337	The EAAA is located outside the distribution range of the species. Its habitat preferences include shallow, densely vegetated standing waterbodies. So, the species is screened-out as a potential critical habitat assessment candidate.
Crowned River Turtle	*Hardella thurjii*	Reptilia	EN	1a	 https://www.iucnredlist.org/species/9696/3152073	The EAAA is located outside the distribution range of the species. Its habitat usually includes pools, ponds, canals and oxbow lakes, and occasionally large and medium-sized rivers, estuarine situations, other aquatic situations, and sand banks. Its range starts at 10m above MSL, and in the Ganga-Brahmaputra basin of India and Bangladesh. So, the species is screened-out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Yellow Monitor	*Varanus flavescens*	Reptilia	EN	1a	 https://www.iucnredlist.org/species/22872/127899602	The EAAA is located outside the distribution range of the species. Its distribution follows the Indus, Ganges, and Brahmaputra river systems. It is usually found in humid habitats, like riverbanks, canals, and rice fields. So, the species is screened-out as a potential critical habitat assessment candidate.
Scalloped Hammerhead	*Sphyrna lewini*	Chondrichthyes	CR	1a	 https://www.iucnredlist.org/species/39385/2918526	EAAA is located within the distribution range of Scalloped hammerhead. This is a coastal and semi-oceanic pelagic shark, found over continental, insular shelves and in deep water near to them, ranging from the intertidal and surface to at least 275 m. The pups of this species tend to stay in coastal zones, near the bottom, occurring at high concentrations during summer in estuaries and bays ( ). Such habitats are present in the EAAA. Generally, this species is found in the coastal waters of Bangladesh ( ). Local fishermen reported that the species is recorded at

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
						the coastal areas of Chattogram. The species is listed in the fish species that are recorded from the landing centers of Chattogram by University of Chittagong. The species has been screened-in as a potential critical habitat assessment candidate.
Indian Peacock Softshell Turtle	*Nilssonia hurum*	Reptilia	EN	1a	 https://www.iucnredlist.org/species/39619/2931203	The EAAA is located within the distribution range of the species. The species inhabits rivers, lakes and ponds . Reportedly, it avoids saline river mouths . EAAA is located in estuarine area, with all inland rivers within the terrestrial EAAA are expected to be influence by tide to some extent. So suitable habitat for the species is not present within the EAAA. So, the species is screened-out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Loggerhead Turtle	*Caretta caretta*	Reptilia	VU	1b	 https://www.iucnredlist.org/species/3897/119333622	The EAAA is located within the distribution range of the species. The species inhabits coastal neritic feeding areas , and prefers the insular and mainland sandy beaches during nesting periods. This type of habitat is present within the EAAA . However, consultation with forest department indicates that Marine turtles do not nest in the coastal region within the EAAA or surrounding area. The species is screened-out as a potential critical habitat assessment candidate.
Mugger	*Crocodylus palustris*	Reptilia	VU	1b	 https://www.iucnredlist.org/species/5667/3046723	The EAAA is located within the distribution range of the species. The species usually inhabits rivers, lakes, reservoirs, hill streams, village ponds, and man-made tanks. It may also be found in coastal saltwater lagoons. Villagers and Forest Department have not recoded presence of any Crocodile species within the EAAA. The species is screened-out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Leatherback Turtle	*Dermochelys coriacea*	Reptilia	VU	1b	 https://www.iucnredlist.org/species/6494/43526147	The EAAA is located within the distribution range of the species. The species usually inhabits oceanic, deep-diving marine turtle inhabiting tropical, subtropical, and subpolar seas. This type of habitat is present within the EAAA . However, consultation with forest department indicates that marine turtles do not nest in the coastal region within the EAAA or surrounding area. The species is screened-out as a potential critical habitat assessment candidate.
Olive Ridley Turtle	*Lepidochelys olivacea*	Reptilia	VU	1b	 https://www.iucnredlist.org/species/11534/3292503	The EAAA is located within the distribution range of the species. Habitat preference of the species include sandy beaches . Such type of habitats are present within the EAAA. The species has been reported to lay eggs in the Saint Martin's Island, Sonadia Islands and some coastal areas of the Sundarbans . However, consultation with forest department indicates that Marine turtles do not nest in the coastal region within the EAAA or surrounding

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
						area. The species is screened-out as a potential critical habitat assessment candidate.
King Cobra	*Ophiophagus hannah*	Reptilia	VU	1b	 https://www.iucnredlist.org/species/177540/1491874	The EAAA is located outside the distribution range of the species. Its distribution follows primarily in pristine forests, but it can also be found in degraded forest, mangrove swamps and even agricultural areas with remnants of woodland. So, the species is screened-out as a potential critical habitat assessment candidate.
Cave Racer	*Elaphe taeniura*	Reptilia	VU	1b	 https://www.iucnredlist.org/species/192204/2055202	The EAAA is located outside the distribution range of the species. Its distribution hilly and rugged terrain covered with wet and dry forests, deciduous and pine forests, and grasslands . So, the species is screened-out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Great Hammerhead	*Sphyrna mokarran*	Chondrichthyes	CR	1a	 https://www.iucnredlist.org/species/39386/2920499	EAAA is located within the distribution range of Great hammerhead. Sphyrna mokarran is a coastal-pelagic and semi-oceanic tropical hammerhead occurring close inshore and well offshore, over the continental shelves, island terraces ( ). Such habitats are present in the EAAA. Reports of great hammerhead shark from coastal or oceanic waters of Bangladesh exist. The species is listed in the fish species that are recorded from the landing centers of Chattogram by University of Chittagong. The species has been screened-in as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
A sea cucumber species	*Stichopus herrmanni*	Holothuroidea	VU	1b	 https://www.iucnredlist.org/species/180238/1604460	EAAA is located within the distribution range of this sea cucumber species. It mostly occurs in seagrass beds, rubble and sandy-muddy bottoms between 0 and 25 m. Such habitats are present in the EAAA. The species has been screened out as a potential critical habitat assessment candidate.
Painted Keelback	*Xenochrophis cerasogaster*	Reptilia	VU	1b	 https://www.iucnredlist.org/species/127921139/219118127	The EAAA is located outside the distribution range of the species. Habitat preference of the species include freshwater marshland with abundant emergent vegetation. So, the species is screened-out as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Indian Sharpnose Ray	*Telatrygon crozieri*	Chondrichthyes	EN	1a	 https://www.iucnredlist.org/species/104087812/104087837	EAAA is located within the distribution range of the species. Considering the EAAA supports insignificant proportions of suitable habitats, the species is screened out as a critical habitat candidate species.
Whitetip Reef Shark	*Triaenodon obesus*	Chondrichthyes	VU	1b	 https://www.iucnredlist.org/species/39384/173436715	EAAA is located within the distribution range of the species. Considering the EAAA supports insignificant proportions of suitable habitats, the species is screened out as a critical habitat candidate species.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Pineapple Sea Cucumber	*Thelenota ananas*	Holothuroidea	EN	1a	 https://www.iucnredlist.org/species/180481/1636021	This species has a wide distribution range throughout the Indo-Pacific, including EAAA. They are distributed mainly in shallow coral reef areas, on reef flats, reef slopes and near passes on sandy or hard bottoms with large rubble and coral patches. It is common in shallow waters of reef bottom, at depths from 0 to 20 m. They prefer rubble and hard bottoms covered with a layer of coral sand ( ). Nearest such coral reef habitat is available at St. Martin's Island ( ) ( ), located south of the EAAA. The species is screened-out as a potential critical habitat assessment candidate
Giant Freshwater Whipray	*Urogymnus polylepis*	Chondrichthyes	EN	1b	 https://www.iucnredlist.org/species/195320/104294071	EAAA is located within the distribution range of Giant Freshwater Whipray. It is found in estuarine, freshwater, and inshore marine habitats. The EAAA offers similar habitats. The species has been screened-in as a potential critical habitat assessment candidate.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Fresh water catfish species	*Wallago attu*	Actinopterygii	VU	1b	 https://www.iucnredlist.org/species/166468/174784999	The EAAA is located within the distribution range of the species. It is usually found in freshwater and tidal waters, including large rivers, lakes, channels, reservoirs, and tanks. The species has been screened-in as a potential critical habitat assessment candidate.
Hard Coral Species	*Acropora rudis*	Anthozoa	VU	1b	 https://www.iucnredlist.org/species/132913/3490569	The EAAA is located inside the distribution range of the species. It is native to the northern Indian Ocean where it has a patchy distribution in Sri Lanka, the Seychelles, Bangladesh, Thailand and western Sumatra. It occurs on rocky fringing reefs, the edges of shallow reefs and the upper parts of submerged reefs, at depths between about 3 and 15m ( ). In Bangladesh suitable conditions for development of coral reef is available at St. Martin's Island ( ) ( ), located 250km south of EAAA. The species has been screened out considering absence of suitable habitat.

Common Name	Scientific Name	Class	IUCN Status	Criteria	Map	Screening Rationale
Blue Coral	*Heliopora coerulea*	Anthozoa	VU	1b	 https://www.iucnredlist.org/species/133193/3624060	The EAAA is located inside the distribution range of the species. It is native to the shallow reefs, usually less than 2 m, reef flats, exposed reef locations and intertidal zones. The marine EAA is located in estuary with high silt load and without any hard sea bed, not ideal condition for hard coral species. The species has been screened out considering absence of suitable habitat.

APPENDIX E GRIEVANCE MECHANISM

GRIEVANCE MECHANISM

This sub-section provides the Grievance Mechanism for internal and external grievances. The types of grievances that would be taken into consideration by the project under the ambit of this GM are as follows:

1 Grievances pertaining to any adverse impacts from project's operations on the livelihood of the local fishermen folk, local community in the project AoI, damage to access roads etc.

2 Grievances due to project activities from construction and operations phase including noise and dust complaints during the construction and project related traffic blockages, etc.

3 Conflict between any workers or labourers engaged under project operations and local community. Grievances pertaining to any misbehavior, alcohol abuse, misconduct with any community member especially women, children, the elderly and people with disabilities, etc.

4 Internal Conflicts between workers or labourers engaged under the project. Grievances pertaining to any misbehavior, misconduct with any labourer especially women.

5 Any other issues relevant to project operations.

GRIEVANCE PRINCIPLE

During the construction and operations stages, the grievance process will be actively disseminated among the fishermen groups at the four ghats through community meetings, informational flyers, and direct outreach by designated personnel. Clear contact numbers and the details of designated representatives will be provided to ensure that fishermen can easily access the grievance mechanism. In the event of valid grievances, particularly concerning damage to fishing gear, boats, or other property, the company will mobilize the Grievance Committee to conduct prompt investigations. The committee is committed to ensuring that any verified claims are addressed swiftly, with compensation paid commensurate to the losses incurred, thereby reinforcing our dedication to supporting the local fishing community throughout the project.

This Grievance Mechanism (GM) will also be accessible for addressing complaints related to gender-based violence and harassment (GBVH) for both the local community and the workers engaged with the company during the construction and operations stages. Dedicated channels will be established to report GBVH incidents confidentially, ensuring that all complaints are taken seriously and handled sensitively. The Grievance Committee will facilitate timely investigations and implement necessary measures to support affected individuals, reinforcing our zero-tolerance policy toward GBVH and promoting a culture of safety and respect.

GRIEVANCE PROCESS

SFPL is committed to establishing relevant communication tools and strategies in order to communicate with stakeholders in respect to relevant disclosures and grievances. SFPL's HSE Engineer, Contractor HSE Officer will be responsible for the implementation of the external GRM. SFPL will appoint a Grievance Coordinator at the Project level who will be responsible for undertaking verbal and written, as well as formal and informal communication to disclose the grievance mechanism. The stepwise redressal process for internal and external grievances is given below.

STEP 1: RAISING AWARENESS ABOUT THE GRIEVANCE PROCEDURE

- The Project needs to ensure disclosure and accessibility through several channels/mechanisms (e.g., post, email, telephone, in-person, etc.) of its grievance handling and redressal process to all the employees and sub-contractors.
- The HSE Engineer or a designated Grievance Coordinator at the site level to hold employee/workers level meetings or any other form of communication to disclose the grievance mechanism.
- The HSE Engineer or a designated Grievance Coordinator will undertake the sensitization of the employees for grievance redressal.

– Information on the types of complaints that fall under the ambit of this GRM;
– Who can raise complaints; and
– Where, when and how grievances can be lodged.

STEP 2: GRIEVANCE RECEIPT AND RECORD

The receipt and tracking of grievances will involve the following stages:

- Collecting and recording grievances as they come in;
- Registering them in a grievance log; and
- Tracking them to reflect their status and important details.

STEP 3: REVIEWING AND INVESTIGATING GRIEVANCES

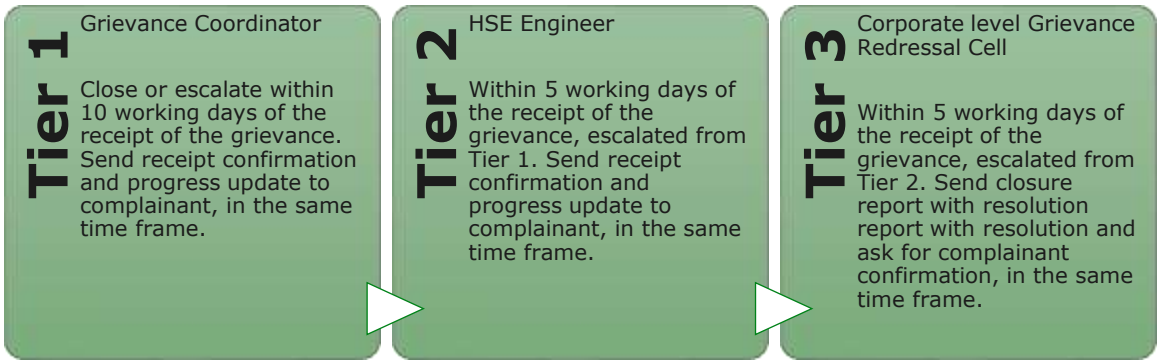
For Internal Grievance

A designated Grievance Coordinator at the site level registering the grievance shall try to assess the nature of the grievance and try to resolve the grievance at hand or immediately in case feasible, within 10 working days. For grievances like physical or verbal abuse, wage related grievances, the grievance shall be resolved within 48 hours. If the grievance is not resolved within the time period, it shall be escalated to the SFPL's HSE Engineer, who shall try to resolve grievance within 5 working days.

If the grievance is not resolved at this level, SFPL's Corporate level Grievance Redressal Cell shall try to resolve it within the next 5 working days.

The HSE Engineer or a designated Grievance Coordinator may identify the nature of the grievance and choose to resolve the grievance by linking the resolution processes adopted by the internal complaints committee (prevention of sexual harassment- POSH committee) and third-party grievances, as applicable.

FIGURE E1 INTERNAL GRIEVANCE REDRESSAL MECHANISM



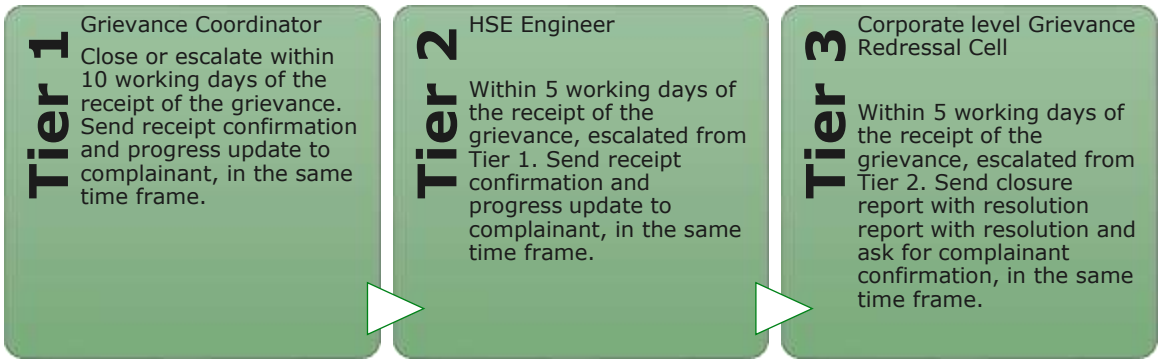
For External Grievance

The Grievance Coordinator responsible for grievance handling will organize the process to validate the complaint's legitimacy and arrange for investigation of details. To begin this process, the nature of the grievance shall be established to determine the measures needed for review and investigation. All grievances shall undergo some degree of review and investigation, depending on the type of grievance and clarity of circumstances:

- Minor, straightforward issues may only need screening before proceeding to the next step (resolution options and response). Review of minor issues, especially those related to a complainant's request for information, can generally be handled easily by providing information on the spot through the Grievance Coordinator.
- Less clear, more problematic, or repetitive issues, or group complaints may need a more detailed review prior to action. The Grievance Coordinator involved in handling grievances may need to seek advice internally, and in some cases turn to outside parties to help in the validation process, especially in cases of damage claims.

The Grievance Coordinator at the site level registering the grievance shall try to assess the nature of the grievance and try to resolve the grievance at hand or immediately in case feasible, within 10 working days. If the grievance is not resolved within the time period, it shall be escalated to the SFPL's HSE Engineer who shall try to resolve grievance within 5 days. If the grievance is not resolved at this level, SFPL's Corporate level Grievance Redressal Cell shall try to resolve it within the next 5 days.

FIGURE E1 EXTERNAL GRIEVANCE REDRESSAL MECHANISM



STEP 4: GRIEVANCE RESOLUTION

- Once a decision is reached, the same shall be communicated back to the aggrieved person through the contact information shared by the same through phone, letter or in-person, within the time frame specified at each step.
- The records within the grievance register shall also be updated and the case closed, when addressed to the satisfaction of the complainant;
- In case no decision is reached, the same shall also be communicated back to the aggrieved person;
- At all stages of the grievance process, the aggrieved person is free to approach regulatory authorities and/or the courts for redress.

STEP 5: MONITORING, REPORTING AND REVIEWING THE PROCEDURE

Monitoring and reporting can be tools for measuring the effectiveness of the grievance mechanism, and for determining broad trends and recurring problems so they can be resolved proactively before they become points of contention. Monitoring helps identify common or recurrent claims that may require structural solutions or a policy change, and it enables the project to capture any lessons learned in addressing grievances. Periodic review of internal and external grievances has to be carried out at the ESMS committee meetings.

FIGURE E3 STAGES IN GRIEVANCE REDRESSAL

HANDLING OF OTHER GRIEVANCES

Non-Project Related Complaints

It is sometimes difficult to determine which issues are related to the project and which are not. If in doubt, the Grievance Coordinator will accept the complaint and assess its nature, in consultation with the HSE Engineer.

Complaints Constituting Criminal Activity and Violence

In these cases, complainants shall be referred to the formal justice system. The Grievance Coordinator shall also record the same in the grievance register (and the database); however, in terms of action must refer it to the concerned administration for suitable legal and criminal action.

Commercial Disputes

Commercial matters will be stipulated in contractual agreements and issues shall be resolved through a variety of commercial dispute resolution mechanisms or civil courts.

GRIEVANCE REGISTRATION	
Grievance No.:	Date:
Name and Gender	
Village	
Phone no.	
Category of grievance (e.g., damage claim, physical or verbal abuse, wage related, request for information, etc.)	
Summary	
Concerned Department	
Name of person recording grievances:	
Designation of recording person:	
Proposed date of response to grievance:	
Signature of recording person	Signature of complainant
ACKNOWLEDGEMENT RECEIPT	
This receipt is acknowledgement of grievance registration by_____ _____, on date _____. His/her case number is _____ and the date for response is _____.	
Name of the person recording grievances:	
Designation of the recording person:	
GRIEVANCE REDRESSAL RESPONSE and closure	
Date of redresses:	
Decision of E&S Manager (give full details):	

Claimant accepts the outcome:	Accepted	Not accepted
If not accepted, please provide a reason		

GRIEVANCE REGISTRATION		
Grievance No.:	Date:	
Signature of claimant:		
Signature of Grievance Officer:		
Note: Please note, if at any time the grievant is unsatisfied with the resolution of the grievance, they may choose to ask for an escalation to the next level or may resort to legal redress.		

Format For Recording Grievances

S. No	Date	Individual Name	Department/ Village	Medium of Communication	Details of Issue	Grievance within Scope	Investigation Requirement	Concerned Department	Timeline for Closing Grievance	Present Status (Open, Closed, and Pending)	Remarks

FORMAT FOR REPORTING GRIEVANCES

S. No	Date	Location	Description of Grievance	Key Stakeholders present (Names, Designation/ Village Name)	Points of Discussion	Key Takeaways/ Decision points

ROLES AND RESPONSIBILITIES FOR GRM IMPLEMENTATION

Phase	Entity & Role	Details
Entire Project Cycle	SFPL will designate a Grievance Coordinator during the construction and O&M phases, to oversee implementation of GRM.	Since SFPL is responsible for the overall management of Environment, Health, Safety & Social (EHS&S) issues, legal compliance, implementation of management systems and responsibility for any issues associated with the solar plant, it is thus responsible for overseeing the implementation of the GRM, across the project cycle.

		The SFPL management will only address grievances that cannot be addressed at the level of the HSE Engineer during the construction and O&M, working in collaboration with various teams.
Construction Phase	The EPC contractor will designate a Grievance Coordinator who will oversee the redressal of grievances during construction of the plant.	The EPC contractor will be responsible for redressal of workers' grievances in relation to construction of the plant.
Operations & Maintenance Phase	The O&M contractor will designate a Grievance Coordinator who will oversee the redressal of grievances during O&M phase	The O&M contractor will be responsible for the Site-level supervisory role for EHS&S issues, capacity building and implementation of the management systems. Therefore, during the O&M phase, all internal and external grievances should be reported to the Grievance Coordinator.

APPENDIX F OFFSET FEASIBILITY ASSESSMENT

PROJECT DESCRIPTION

Samuda Food Products Limited (SFPL), is planning to set up a greenfield soybean seed crushing unit with a capacity of producing 540 MT/day CDSO and 2,370 MT/day soybean meal at Mirsarai Economic Zone. which is part of Bangabandhu Shiekh Mujib Shilpa Nagar (BSMSN) in Chittagong district of Bangladesh. The project site is located within the Mirsarai Economic Zone (MEZ)-II, developed by the Bangladesh Economic Zone Authority (BEZA).

BACKGROUND

The SFPL plant is located in an area which was previously a mudflat habitat with a significant portion covered by mangrove vegetation. Development of land and construction of the soya seed crushing plant of SFPL led to loss of about 1.198 ha. (2.961 acres) of mangrove habitat and approximately 2.954 ha (7.299 acres) of mudflat habitat. The loss of mangrove and mudflat habitat and development of the SFPL site is shown in Figure 1.

FIGURE 1 MANGROVE AREA LOST DUE TO CLEARING AT SFPL SITE

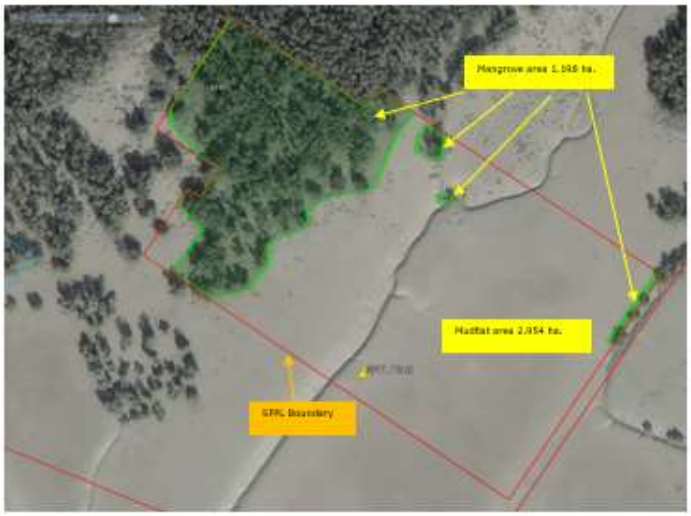


Image dated December 2016; showing 1.198 ha. mangrove areas and 2.954 ha. md flat area within SFPL site

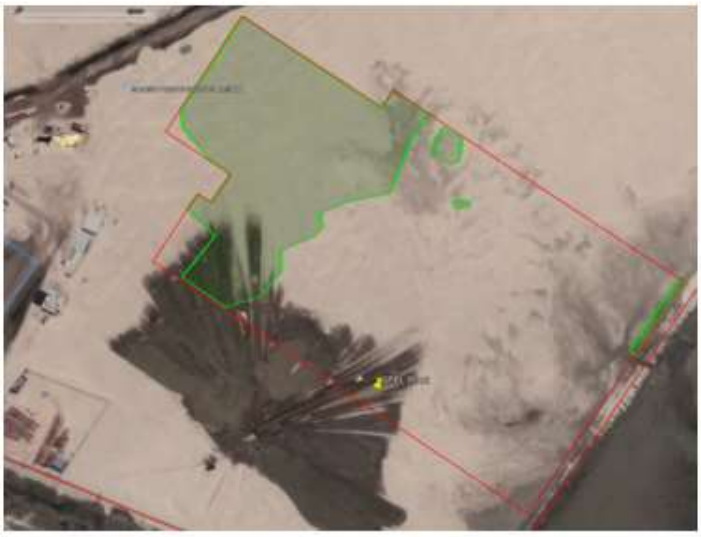


Image dated March 2024; showing clearance of 1.198 ha. mangrove areas and 2.954 ha. md flat area within SFPL site

To compensate for the loss of mangrove and mudflat habitats, an Offset Feasibility Assessment has been developed. This offset feasibility assessment will be converted into an Offset Management Plan upon discussion with the Bangladesh Coastal Forest Department.

OBJECTIVES

These assess the feasibility of implementing a plantation, protection and maintenance of existing mangrove vegetation within the Mirsharai Forest Range to compensate for the loss of mangroves and mudflats for the SFPL project site and achieving no-net loss. No net loss assessment to be conducted through habitat-hectares method. The Habitat Hectares method is designed to assess and quantify the condition of vegetation communities in terms of both their area and quality. Key variables include the baseline status, which serves as a reference for optimal habitat conditions; the offset period, which is the time required for restoration efforts to achieve desired quality levels; the offset site condition, reflecting the current quality

relative to the baseline; and the offset gains possible, estimating the improvements that restoration actions can yield.

The Habitat Hectares method evaluates habitat quality by comparing the current condition of a habitat with a baseline representing an undisturbed or minimally disturbed state. This comparison provides a quality score for the habitat. To integrate the area of the habitat into this assessment, the quality score is adjusted based on the size of the habitat being evaluated. The final measure, known as "habitat hectares," is derived by multiplying the habitat's area by its quality score. This calculation results in a metric that reflects both the extent and the condition of the habitat, offering a comprehensive view of its ecological value[7].

SCOPE OF WORK

The following sections, provide list of the activities to be performed as part of the Offset Feasibility Assessment.

ECOLOGICAL AND TECHNICAL FEASIBILITY

BASELINE INFORMATION AND EXECUTION PLAN

As a part of the ESIA scope a site assessment, through analyses of historical imagery has already been conducted. Discussion with Range Officer (RO), Mirsharai Forest Range was also conducted. It was reported by the RO that the Coastal Forest Department had carried out mangrove plantation in this region (entire BEZA area) since 1967, primarily using species like species *Avicennia marina* [LC (IUCN v2024-1)], *Sonneratia apetala* [LC (IUCN v2024-1)] and *Excoecaria agallocha* [LC (IUCN v2024-1)]. The plantation is now self-sustaining with matured mangrove forest and associated species. However, due to construction of superdyke, intertidal zone of this area does not receive much water as earlier and may not support growth of newly planted saplings. It was also reported by the RO and BEZA that the existing mangrove plantation area might get considered for future expansion of existing industries for construction of new industries that may hamper newly introduced mangrove plants.

On the contrary, area beyond the new embarkment towards Sandwip Channel, has mudflats and receives intertidal water. This area can support the sapling growth if proper management practices are adopted. This area was also found to be used for mangrove plantation by the forest department. Additionally, it was reported by the RO and BEZA that this area will not be considered for any industrial activities in future allowing the plantation to become a self-sustainable robust ecosystem that will act as a buffer zone in flooding situations.

For offset management the following options could be considered. Selection of the final option will be done upon discussion with the forest department and the same would be elaborated to develop the Offset Management Plan.

Option 1: Plantation of mangroves

Area at the eastern side of the proposed jetty approach of Samuda could be used for mangrove plantation. The area is in the intertidal zone and not envisaged to be modified for future developmental activities. Discussion with the forest department is to be conducted for

[7] Bennett, A. F., & Williams, M. S. (2000). The habitat hectares approach to vegetation assessment: An evaluation and suggestions for improvement. Ecological Management & Restoration, 1(2), 104-115.

finalization of the area. It is proposed to plant mangroves in an area of 10.3 acres to compensate for the loss of mangrove and mudflat habitats within the SFPL plant (equal area as area lost).

Option 2: Protection of existing mangrove plantation

There is existing mature mangrove plantation area at the eastern side of the Hoania khal primarily consisting of *Excoecaria agallocha* species. The plantation area could be protected with assistance from forest department and new gap plantation could also be initiated. It is proposed that an area of 21 acres (twice the area of SFPL plant) could be earmarked for protection of existing mangrove area.

The area where Option 1 and Option 2 could be implemented is shown in Figure 2.

FIGURE 2 LOCATION OF PLANTATION AND PROTECTION OF MANGROVE AND MUDFLAT AREAS

WAY FORWARD

Following tasks should be undertaken for ecological and technical assessment for both the options:

- To decide the exact offset site through a review of existing data, site visits and discussion with Forest Department.
- To evaluate main threats to the proposed offset locations
- To confirm that the proposed conservation activities can deliver the required NNL goal and that similar interventions have been successful in comparable situations and at similar scales.
- To undertake an updated loss-gains forecast to demonstrate that NNL are feasible for the mangrove ecosystem.

SOCIO-ECONOMIC FEASIBILITY

BASELINE INFORMATION AND EXECUTION PLAN

Option 1

The offset activities for plantation will be planned in the relatively small patch of coastal zone. The activities are unlikely to impact livelihoods of local fishing community.

Option 2

The offset activities for protection of existing mangrove patch and gap plantation are also located in small patch of coastal zone. The protection activities and gap plantation are unlikely to impact livelihoods of local fishing community.

WAY FORWARD

Following task should be undertaken for socio-economic feasibility assessment:

Option 1

To gather as much information on possible restriction of access to the shoreline for fishing, security of the site possible through a review of existing data, interviews with local communities and other stakeholders as appropriate.

Option 2

To gather as much information on possible security of the site, any possibility of grazing in the area, any culturally significant area, ecosystem services provided by the existing *Excoecaria agallocha* plantation area to the local community etc. as possible through a review of existing data, interviews with local communities and other stakeholders as appropriate.

INSTITUTIONAL AND LEGAL FEASIBILITY

BASELINE INFORMATION AND EXECUTION PLAN

Option 1

The entire coastal area beyond the superdyke falls under the jurisdiction of the Revenue Department. SFPL can obtain permissions for mangrove plantation activities by submitting a proper application to the concerned department. The exact coordinates of the area to be utilized for offsetting can be decided by consultation with the forest department.

Through consultation with the forest department, SFPL can implement the mangrove plantation by using saplings sourced from forest or local plant nursery. The saplings must include the species already existing in the adjoining mangrove patch namely, *Avicennia marina*, *Sonneratia apetala* and *Excoecaria agallocha*.

Protective measures to safeguard the plantation, management practices for the mangrove ecosystem and a monitoring program to regularly assess the health and growth of mangroves and their habitat can be developed by SFPL by taking expertise from the forest department or non-government implementation agency. Plantation monitoring, reporting, and adaptive management cycle is to be followed till the plantation becomes self-sustainable.

Local stakeholders can be engaged in conservation efforts and awareness can be raised about the importance of mangrove ecosystems by taking help from forest department or local NGO working for the mangrove conservation.

Option 2

The area is also under the jurisdiction of the Revenue Department. SFPL can obtain permissions for mangrove protection activities by submitting a proper application to the

concerned department. The exact coordinates of the area to be utilized for offsetting can be decided by consultation with the forest department. Protective measures to safeguard the plantation, management practices for the mangrove ecosystem and a monitoring program to regularly assess the health and growth of mangroves and their habitat can be developed by SFPL by taking expertise from the forest department or non-government implementation agency.

By consultation with the forest department, SFPL can implement the gap plantation by using saplings sourced from forest or local plant nursery. The saplings must include the species already existing in the mangrove patch namely *Excoecaria agallocha*.

Local stakeholders can be engaged in conservation efforts and awareness can be raised about the importance of mangrove ecosystems by taking help from forest department or local NGO working for the mangrove conservation.

WAY FORWARD

Option 1 and Option 2

Following tasks should be undertaken for institutional and legal feasibility assessment:

- To identify the institutional/governance and legal measures that need to be put in place to carry out the offset activities. This task will include a desktop review and interviews with relevant government authorities (Revenue Department, BEZA etc.). The assessment may also require advice from legal specialists.
- To identify a suitable implementing organization.

FINANCIAL FEASIBILITY

Option 1 and Option 2

Following tasks are to be undertaken as a part of the financial feasibility assessment:

- To prepare a budget with the detailed offset activities & duration and ensure that funds are available to plan and execute the offset program.
- To identify sources of funding that can supplement SFPL's budget to achieve the desired outcomes.
- To compare estimates with other equivalent conservation programs in similar contexts.

ASSESSMENT OF THE PROPOSED OFFSET AGAINST GOOD INTERNATIONAL INDUSTRY PRACTICE AND IFC REQUIREMENTS

The suitability of the proposed offset activities and locations will be assessed against recognized good practice offset principles, including equivalence, additionality, application of the precautionary approach, long term outcomes, transparency etc.

Since SFPL is undertaking the offset to obtain financing from IFC, the proposed offset activities will also be evaluated against IFC requirements. These requirements include PS6, relevant requirements of PS1 (e.g. stakeholder engagement), PS5 Land Acquisition and Involuntary Resettlement vis-à-vis potential livelihood impacts resulting from the implementation of offset activities.

SUMMARY ASSESSMENT AND IDENTIFICATION OF RISKS

This activity will bring together the results of all the above-mentioned activities. This will include the overall assessment of the feasibility of the implementation and the suitability of the offset activities proposed. Any red flags or risks to implementation identified through the previous activities will also be highlighted along with recommendations to address these risks.

OFFSET PLAN

An Initial Offset Plan with detailed next steps and responsibilities for implementation will be prepared. The Initial Offset Plan will cover the early phases of implementation (i.e. the set up and the first two years) and will be the basis for the development of a detailed and long-term Offset Implementation Plan.

APPENDIX G STAKEHOLDER ENGAGEMENT PLAN

Samuda has now established Samuda Food Products Ltd (SFPL), a new entity under the Samuda Group for setting up a greenfield soybean seed crushing unit with a capacity of

Samuda has now established Samuda Food Products Ltd (SFPL), a new entity under the Samuda Group for setting up a greenfield soybean seed crushing unit with a capacity of producing 540 Metric Ton (MT)/day Crude Degummed Soybean Oil (CDSO) and 2,370 MT/day soybean meal at Mirsarai Economic Zone (MEZ).

An ESIA has been prepared and this document, is a management plan for stakeholder engagement activities.

OBJECTIVE AND SCOPE OF SEP

This document presents the Stakeholder Engagement Plan (SEP), which is applicable all activities proposed to be undertaken for the Samuda greenfield soybean seed crushing unit, as well as other stakeholder engagement that is conducted by the project proponent (SFPL), that engage with the key stakeholders identified as part of this Plan.

The main objective of this document is to guide stakeholder consultations across various stages of the project, while meeting the requirements of the applicable reference framework for the Project. Overall, this SEP will enable stakeholder engagement to be undertaken in a systematic and meaningful manner, where the various stakeholder groups are able to express their individual views, opinions and concerns, while allowing the Project to appropriately respond to them.

The objective of the Stakeholder Engagement Plan are as follows:

- Identification of the stakeholder groups in the project location and analysis of their profiles, interests, issues/impacts and concerns relevant to the project;
- Identification of specific measures to allow meaningful engagement with different stakeholder groups identified in a manner that is transparent and accessible and using culturally appropriate communication methods with a specific focus on the stakeholders with high influence/impact ;
- Facilitate adequate and timely dissemination of information to the stakeholder groups in a culturally appropriate manner;
- Provide systems for prior disclosure/dissemination of information and consultation including seeking inputs from affected persons, incorporation of inputs, as applicable, providing feedback to affected persons/groups on whether and how the input has been incorporated; and
- Providing a mechanism for documentation of the activities undertaken and the reporting and monitoring of the same.

SCOPE

The SEP document applies to the entire project lifecycle (during site development and construction, jetty construction and operations phases) and shall be considered as a live document that shall be updated regularly, as required. This SEP will be used and updated by the project proponents and its various teams (internal as well as contracted), comprising ESIA processes, through interactions with various stakeholder groups like BEZA authorities, BWDB, DOE, Union Parishad officials, Fisheries Department, Forest Department etc.

METHODOLOGY

The SEP is developed to ensure consistency in the message and communication being undertaken with the identified stakeholders, by all teams that are involved in ESIA preparation.

During the environmental and social impact assessment consultations process, ERM conducted various activities as part of the development of the public consultation program to determine the relevant stakeholders. From the ESIA field-consultations, ERM has identified approximately key stakeholders groups and categorised them as Primary and Secondary stakeholders, based on the nature and extent of impact of project and influence of stakeholders on the project, as presented in **Table G1**.

APPLICABLE REFERENCE FRAMEWORK

This SEP is prepared as per the requirements of the following regulations and standards:

- Relevant environmental, land labour and other relevant policies, laws, regulations and rules of the Government of Bangladesh;
- IFC Performance Standards, 2012.

IFC PS 1 – STAKEHOLDER ENGAGEMENT

As per IFC PS, *stakeholder engagement is an ongoing process that may involve, in varying degrees, the following elements: stakeholder analysis and planning, disclosure and dissemination of information, consultation and participation, grievance mechanism, and ongoing reporting to Affected Communities.*

Accordingly, the safeguard requires the Project to develop and implement a Stakeholder Engagement Plan that is scaled to the Project risks and impacts and development stage and be tailored to the characteristics and interests of the affected communities. Moreover, the safeguard standard requires the Project to provide the affected communities with relevant information on, a. the purpose, nature and scale of the project, b. the duration of proposed project activities, c. any risks to and potential impacts on such communities and relevant mitigation measures, d. the envisaged stakeholder engagement process, and e. the grievance mechanism. Lastly, when subject to identified risks and adverse impacts, the Project will undertake a process of consultation in a manner that provides the affected communities with opportunities to express their views on project risks, impacts and mitigation measures and allows the Project to consider respond to them. In addition, the Project is required to implement and maintain a procedure for external communications that includes methods to, a. receive and register external communications from the public, b. screen and assess the issues raised and determine how to address them, c. provide, track and document responses, if any, and d. adjust the management program, as appropriate. The Project is also required to establish a grievance mechanism to receive and facilitate resolution of affected communities' concerns and grievances. Lastly, the safeguard standard requires the Project to provide periodic reports to the affected communities that describe progress with implementation of the project action plans.

STAKEHOLDER MAPPING AND CONSULTATION

A stakeholder is "a person, group, or organization that has a direct or indirect stake in a project/organization which can affect or will be affected by the Project/organization's actions, objectives, and policies". Stakeholders can thus vary in terms of the degree of interest, influence, and control they have over the project.

The stakeholders who would directly impact or are directly impacted by the project are known as Primary Stakeholders and those who have an indirect impact or are indirectly impacted are known as Secondary Stakeholders. Keeping in mind the nature of the project and its setting, the stakeholders have been identified and listed in the table below.

The significance of a stakeholder group is categorized considering the magnitude of impact of the Project on the stakeholder or degree of influence (power, proximity) of a stakeholder group on the Project functioning. The significance of the stakeholder group importance for the Project and the requirement for engaging with them is identified as an interaction of the impact and influence. The list of key stakeholders is both government and non-government, are presented below:

TABLE G1 LIST OF KEY STAKEHOLDERS

Sl. No	Stakeholder Group	Description
Primary Stakeholders		
1.	Fishermen (Permanent and Seasonal) in project AOI	This stakeholder group comprises of the fishermen who may be affected as a result of project implementation
2.	People associated with different activities related with fishing like net weaver and repair, boat repair	This stakeholder group comprises of the people in the unions like Saherkhali and Ichakhali, associated with different activities related with fishing like net weaver and repair, boat repair who may be affected as a result of project implementation due to direct impact of fishermen at 3 fishing ghats.
3.	Community Leaders and Local representatives	This stakeholder group comprises of representatives from the broader community in the project's AoI. Thei advocacy, mediation and feedback are essential for ensuring the project's acceptability and implementation.
4.	Construction Contractors, sub-contractors	This stakeholder group refers to the indirect workers (third party or contractual workers) who will be engaged in the Project.
5.	Samuda Food Products Ltd (SFPL)	This stakeholder is setting up a greenfield soybean seed crushing unit with a capacity of producing 540 Metric Ton (MT)/day Crude Degummed Soybean Oil (CDSO) and 2,370 MT/day soybean meal at Mirsarai Economic Zone (MEZ).
Secondary Stakeholders		

Sl. No	Stakeholder Group	Description
6.	Institutional Stakeholders	• MEZ Administrative office • Bangladesh Economic Zone Authority (BEZA) • Local Union Office (Saherkhali and Ichhakhali). • Department of Fisheries, Mirsharai • Roads and Highways Department (RHD), Chattogram • Department of Environment (DOE), Chattogram. • Bangladesh Water Development Board (BWDB), Chattogram and SDO office Sitakund • Bangladesh Inland Water Transport Authority (BIWTA), Chattogram • Upazila Fisheries Office, Mirsharai • Divisional Forest Office, Chattogram Coastal Forest Range and Beat Office (Bamansundar), Range Forest Officer, Mirsharai • Department Of Disaster Management, Mirsharai • Department of Public Health and Engineering • Marine Science Department, Chittagong University
Other Secondary Stakeholders		
7.	Project Financing Agencies/Institutions	• This stakeholder group includes Lenders (including DFIs)
8.	Regulatory Authorities	• This stakeholder group comprises of regulatory authorities at the district, divisional and national level that are responsible for various permits and licenses pertaining to the Project.
9.	Local Non-Government Organizations (NGOs) and Community Society Organizations (CSOs)	• This group refers to the local NGOs operating in the Project Area.

STAKEHOLDER IDENTIFICATION AND CATEGORIZATION

The Field Studies have assessed and mapped the key stakeholders of the Project and have categorised them according to primary and secondary stakeholders. Stakeholder Mapping is a process of examining the relative influence that different individuals and groups have over a project as well as the influence of the project over them. The purpose of a stakeholder mapping is to:

- Study the profile of the stakeholders identified and the nature of the stakes;
- Understand each group's specific issues, concerns as well as expectations from the project that each group retains;
- Gauge their influence on the project.

Based on such an understanding, the stakeholders have been categorized into High Influence/ Priority, Medium Influence/ Priority and Low Influence/ Priority. The stakeholders who are

categorized as high influence are those who have a high influence over the project or are likely to be heavily impacted by the project activities and are thus high up on the project proponent's priority list for engagement and consultation.

Similarly, the stakeholders categorized as medium influence are those who have a moderate influence over the project or even though they are to be impacted by the project, it is unlikely to be substantial and these stakeholders are thus neither high nor low in the project proponent's list for engagement. On the other hand, the stakeholders with low influences are those who have a minimal influence on the decision-making process or are to be minimally impacted by the project and are thus low in the project proponent's engagement list.

The significance of a stakeholder group is categorized considering the magnitude of impact (type, extent, duration, scale, frequency) or degree of influence (power, proximity) of a stakeholder group and urgency/likelihood of the impact/influence associated with the particular stakeholder group in the project context. The magnitude of stakeholder impact/influence is assessed taking the power/responsibility and proximity of the stakeholder group and is categorized as negligible, small, medium and large. The Urgency or likelihood of the impact on/influence by the stakeholder is assessed in a scale of low, medium and high. The overall significance of the stakeholder group is assessed as per the matrix provided in **Table G2**.

TABLE G2 STAKEHOLDER IMPACT MATRIX

		Sensitivity /Vulnerability / Important Resource / Receptor		
		Low	**Medium**	**High**
Magnitude of Impact	Negligible	Negligible	Negligible	Negligible
	Small	Negligible	Minor	Moderate
	Medium	Minor	Moderate	Major
	Large	Moderate	Major	Major

STAKEHOLDER CONSULTATIONS

Stakeholder consultations are an important medium to understand and communicate with the stakeholders regarding the various project related activities. ERM undertook several rounds of community consultations, FGDs, KIIs[8] to gain a deeper understanding of the environment, social, land and livelihood related issues associated with the project along with other social dimensions. The consultations were conducted with the following stakeholder groups:

- Fishermen at Bamansundar, Domkhali ghat, Saherkhali Ghat
- Samuda Food Products Ltd (SFPL) Team
- Assistant Manager, BEZA Authority
- Upazila Fishery Officer, Mirsharai

[8] KII- Key informant interviews are qualitative in-depth interviews with people who know what is going on in the community. The purpose of key informant interviews is to collect information from a wide range of people—including community leaders, professionals, or residents—who have first hand knowledge about the community.
FGD- A Focus Group Discussion (FGD) is a qualitative research method and data collection technique in which a selected group of people discusses a given topic or issue in-depth, facilitated by a professional, external moderator.

- Chairman, and Member (Ward No.4), Saherkhali Union Office
- Supervisor, Department of Disaster Management, Mirsharai
- Range Forest Officer, Mirsharai
- Divisional Forest Officer, Chattogram Coastal Forest Range
- Surveyor, Bangladesh Water Development Board, Sitakund
- Surveyor, Bangladesh Water Development Board, Chittagong
- Marine Science Department, University of Chittagong

STAKEHOLDER PROFILING AND INFLUENCE MAPPING

The table below has been used to classify the identified stakeholders (directly or indirectly impacting the project) in accordance with their levels of influence on the project. The influence and priority have both been primarily rated as:

- **High Influence:** This implies a high degree of influence of the stakeholder on the project in terms of participation and decision making or high priority to engage with the stakeholder group.
- **Medium Influence:** Which implies a moderate level of influence and participation of the stakeholder group in the project as well as a priority level to engage the stakeholder which is neither highly critical nor are insignificant in terms of influence, and
- **Low Influence:** This implies a low degree of influence of the stakeholder on the project in terms of participation and decision making or low priority to engage that stakeholder group.

The intermediary categories of low to medium or medium to high primarily imply that their influence and importance could vary in that particular range subject to context specific conditions or also based on the responses of the project towards the community.

The coverage of stakeholders as stated above includes any person, group, institution, or organization that is likely to be impacted (directly or indirectly) or may have interest/influence over project. Keeping this wide scope of inclusion in stakeholder category and the long life of project, it is difficult to identify all potential stakeholders and gauge their level of influence over project at the outset of the project. Therefore, the project proponent is advised to consider this stakeholder mapping as a live document which should be revised in a timely manner to make it comprehensive for any given period.

The triangulation of influence and priority of various stakeholder groups also guides the engagement process with each. The extent of engagement with each stakeholder shall be determined by the level of influence and priority of each group. The following figure provides an understanding of the levels of priority for stakeholder groups.

FIGURE G1 SUGGESTIVE PRIORITY FOR STAKEHOLDERS

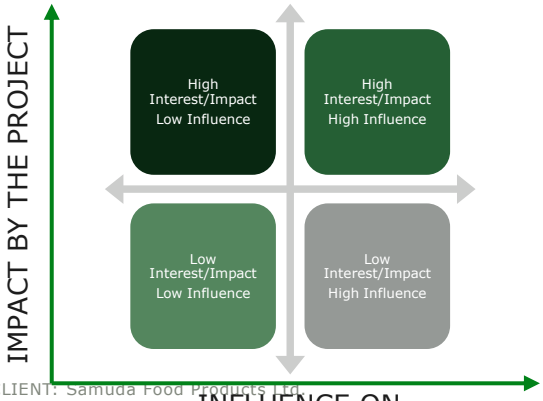


TABLE G3 STAKEHOLDER PROFILES AND INFLUENCE MAPPING

Stakeholder Group	Stakeholder Profile	Impact/Influence of the Project on this Stakeholder Group (Negligible, Small, Medium, Large)		Urgency/Likelihood of Influence of Stakeholder Group on Project (Low, Medium, High)		Stakeholder Priority
Primary Stakeholders						
Fishermen at Bamansundar ghat, Saherkhali ghat and Domkhali ghat.	In Mirsarai Upazila there are approximately 2557 registered fishermen according to the Department of Fisheries. Fishing at Sandwip channel is done from 3 fishing ghats i.e. Bamansundar ghat, Saherkhali ghat and Domkhali ghat. According to the Department of Fisheries, Mirsarai there are 1091 registered and 200 unregistered fishermen fishes at Sandwip channel belongs to four unions i.e. Saherkhali, Mayani, Maghadia and Ichakhali unions. Also, there are 150-200 number of boat owners at Saherkhali and Ichakhali union;	The operation of the jetty is expected to hinder fishing activities and potentially damage fishing nets in the area. The project will necessitate the addition of only 2 vessels per day (up and down). The operation of the vessels is expected to cause negligible damage to fishing nets in the area. The access routes as shared by SFPL indicate that most of the vessel movement is expected from southern direction. There may be an access disruption/restriction impact for fisherfolk using the ghats downstream of the project location i.e. Saherkhali and Domkhali	Negligible	The influence of this stakeholder group on the project is limited. However, engaging this stakeholder group in the project as a preference over migrant workers will help create a good reputation of the project in the study area.	Low	Negligible

Stakeholder Group	Stakeholder Profile	Impact/Influence of the Project on this Stakeholder Group (Negligible, Small, Medium, Large)		Urgency/Likelihood of Influence of Stakeholder Group on Project (Low, Medium, High)		Stakeholder Priority
		ghats which are downstream of SFPL.				
People associated with different activities related with fishing like net weaver and repair, boat repair	Approximately 10-15 people are associated with boat repairing work and approximately 10-15 people are engaged with net repair and knitting work. These people mostly stay at Borotakia Bazar area.	Boat owners enter into a contract with boat-repair workers (mistri) for repairing their boats during the 90-day furlough. They earn upto 20,000-30,000 taka per boat and 800-1000 taka per day for net repair.	Small	These net repair and boat repair workers are not solely dependent on these fishing ghats at Mirsarai Upazila. Many boat owners and fishermen from other fish landing areas like at Sitakund upazila, Banshbaria, Sandwip island and Chattogram, make contract with these boat and net repair workers.	Low	Negligible
Construction Contractors, sub-contractors	▪ This stakeholder group comprises of the contractors and other contractors/ sub-contractors involved in the Project for various tasks, like roads construction, excavation work, levelling work etc.	▪ The project will provide this group contractor-ship opportunities and steady flow of income.	Medium	▪ This stakeholder group is critical for the smooth functioning and timely implementation of the Project; ▪ This group may also play an important role in the formation of public opinion towards the project	Medium	Moderate

Stakeholder Group	Stakeholder Profile	Impact/Influence of the Project on this Stakeholder Group (Negligible, Small, Medium, Large)		Urgency/Likelihood of Influence of Stakeholder Group on Project (Low, Medium, High)		Stakeholder Priority
Community Leaders and Local representatives	▪ This stakeholder group comprises of representatives from the broader community in the project's AoI. Thei advocacy, mediation and feedback are essential for ensuring the project's acceptability and implementation.	• Community leaders and local representatives might expect positive impact from the project in the following manner: – Generation of employment opportunities at the local level. – Adequacy of the community development initiatives to be undertaken by the project; and – Timely and adequate disclosure of information throughout the life of the project. – Community leaders and local representatives will be involved in the project obtaining permissions for water requirement, impacts of localised community health and safety concerns during construction	Medium	• Community leaders and local representatives play an important role in overall mobilization and shaping the perception and opinions of the people in the project area. • They play a role even in demanding community development works for social welfare purpose as well as for the development of the villages in the project AoI by undertaking Community Development activities in collaboration with the Union Parishads,	Medium	Moderate

Stakeholder Group	Stakeholder Profile	Impact/Influence of the Project on this Stakeholder Group (Negligible, Small, Medium, Large)		Urgency/Likelihood of Influence of Stakeholder Group on Project (Low, Medium, High)		Stakeholder Priority
				especially in areas where there is a paucity of government funds • Further, any use of resources, project expansion, change in project components, use of common infrastructure, etc. will need prior permission from them.		
Primary Institutional Stakeholder						
SFPL	The project proponent	SFPL is the Project Proponent and is responsible for execution of the project.	Large	Being the Project proponent, this stakeholder group is important for the smooth functioning and implementation of the Project. This group may also play an important role in the formation of public opinion towards the Project.	High	Major
Secondary Stakeholders						

Stakeholder Group	Stakeholder Profile	Impact/Influence of the Project on this Stakeholder Group (Negligible, Small, Medium, Large)		Urgency/Likelihood of Influence of Stakeholder Group on Project (Low, Medium, High)		Stakeholder Priority
Project Workforce	This stakeholder group refers to the direct workers (payroll staff) and indirect workers (third-party or contractual workers) who will be engaged in the Project.	The Project will engage manpower for the civil construction work during the construction phase. This group will include unskilled, semi-skilled and skilled workers.	Medium	This stakeholder group is important for the smooth functioning and timely implementation of the Project.	Low	**Minor**
Project Financing Agencies/Institution	This stakeholder group includes lenders such as DFIs	The influence of the Project on the stakeholder group will primarily relate to the impact that the Project's performance will have on public opinion on the financing agency, locally, nationally and internationally.	Large	This stakeholder group's influence on the Project will primarily relate to the determination of the Project's financial feasibility. In addition to the national rules and regulations, the project is required to comply with the applicable standards and guidelines of these financing institutions.	High	**Major**
Local Union Office and ward members	This stakeholder group refers to the jurisdiction under AOI. This stakeholder group refers to the Unions at core zone i.e. Ichhakhali and	The impact of the project on this stakeholder group will be in the case of potential for social disruption between the	Medium	The impact of the stakeholder group on this Project is high as their cooperation in required especially during the mitigation of potential	Medium	**Moderate**

Stakeholder Group	Stakeholder Profile	Impact/Influence of the Project on this Stakeholder Group (Negligible, Small, Medium, Large)		Urgency/Likelihood of Influence of Stakeholder Group on Project (Low, Medium, High)		Stakeholder Priority
	Saherkhali and buffer zone i.e. Mithanala, Maghadia and Sonagazi. This group is responsible for the development of their respective ward areas.	local inhabitants and the workforce.		social impacts cause by Project activities such as addressing traffic congestion and access disruption. This group thus has the ability to influence the perception of the community in regard to the project and its activities.		
Regulatory Authorities	This stakeholder group is comprised of the central, state and district level regulatory authorities; These authorities influence the project in terms of establishing policy, granting permits and approvals for the project, monitoring and enforcing compliance with the applicable rules and regulations; These groups include the labour department, DOE, forest department, district collector office etc.	The main concerns of the Regulatory Authorities from the Project Proponents is abidance to all applicable guidelines, policies and laws.	Large	The ability of the project to comply with the various applicable rules and regulations may play a role in the timely implementation of the project.	High	**Major**

Stakeholder Group	Stakeholder Profile	Impact/Influence of the Project on this Stakeholder Group (Negligible, Small, Medium, Large)		Urgency/Likelihood of Influence of Stakeholder Group on Project (Low, Medium, High)		Stakeholder Priority
Civil Society/Local NGOs	This stakeholder group comprises of NGOs and Civil Society Organizations of a national, state and local level who may be active in the area	The level of influence of project on this stakeholder group is limited as it does not affect the functioning of this group.	Medium	The stakeholder group may play an important role in the development of public opinion for the project; This stakeholder group may also be involved in the implementation of the community development plans	Medium	**Moderate**
Institutional Stakeholders	• MEZ Administrative office Bangladesh Economic Zone Authority (BEZA) • Department of Fisheries, Mirsharai • Roads and Highways Department (RHD), Chattogram • Department of Environment (DOE), Chattogram. • Bangladesh Water Development Board (BWDB), Chattogram and SDO office Sitakund	The main concerns of the institutional stakeholders from the Project Proponents is abidance to all applicable guidelines, policies and laws.	Large	The ability of the project to comply with the various applicable rules and regulations may play a role in the timely implementation of the project.	High	**Major**

Stakeholder Group	Stakeholder Profile	Impact/Influence of the Project on this Stakeholder Group (Negligible, Small, Medium, Large)		Urgency/Likelihood of Influence of Stakeholder Group on Project (Low, Medium, High)		Stakeholder Priority
	• Bangladesh Inland Water Transport Authority (BIWTA), Chattogram • Upazila Fisheries Office, Mirsharai • Divisional Forest Office, Chattogram Coastal Forest Range and Beat Office (Bamansundar), Range Forest Officer, Mirsharai • Department Of Disaster Management, Mirsharai • Department of Public Health and Engineering • Marine Science Department, Chittagong University					

DETAILED STAKEHOLDER ENGAGEMENT PLAN

Some of the most common tools of engagement are discussions, consultations and meetings. These modes of engagement can be undertaken in the forms of groups or at individual levels. These serve the purpose of allowing the project proponents to gain an understanding of the viewpoint of the other stakeholders involved in regards to the functioning of the Unit/project, the implementation of various provisions in the Project.

Based on the stakeholder identification and analysis undertaken, a detailed plan is prepared that guides the engagement process with each stakeholder group, as identified in table below**.** The Social and Community Supervisor shall be responsible for maintenance of the records of along with the members that engage with stakeholders during construction and operations phase, along with addition of addition of any new categories identified.

TABLE G4 STAKEHOLDER ENGAGEMENT PLAN

Stakeholder Group	Objective	Disclosure Method	Frequency	Teams
Fishermen at Bamansundar ghat, Saherkhali ghat and Domkhali ghat Grazers	• To understand existing rights, dependence and use • To understand the nature and extent of impacts; • Access routes • Other sources of livelihoods, if any; • Engagement in community development activities; • Understanding of expectations from the project. • Prior information on the vessel movement during construction and operations stage. • Information regarding the buffer zone during construction stage. • Information and disclosure of the GM for the project.	• Open Meetings; • Separate discussions with women, if required	Follow-up meeting as required Prior to construction of jetty.	SFPL along with contractors and subcontractors
People associated with different activities related	• To understand the nature and extent of impacts; • Other sources of livelihoods, if any; • Engagement in community development activities;	• Open Meetings;	Follow-up meeting as required	SFPL along with contractors and subcontractors

Stakeholder Group	Objective	Disclosure Method	Frequency	Teams
with fishing like net weaver and repair, boat repair	• Understanding of expectations from the project. • Prior information on the vessel movement during construction and operations stage. • Information regarding the buffer zone during construction stage. • Information and disclosure of the GM for the project. •	• Separate discussions with women, if required •	Prior to construction of jetty.	
Construction Contractors, sub-contractors	• Information dissemination, including information regarding labour laws, local employment opportunities, safety measures and discussion on grievances; • For negotiation on contract clauses as per requirements stated in ESIA and Management plans for the project; • EHSS Audits by project proponents	• Signed contracts with requirement to implement the ESMP • Meetings and monthly reporting in the operations phase; • Documentation as agreed in the contract	Weekly or bi-weekly	SFPL
Local Union Office and ward members Unions at core zone i.e. Ichhakhali and Saherkhali and buffer zone i.e. Mithanala, Maghadia and Sonagazi	• Information given regarding the project, including the background of the project; • To understand the key concerns related to the projects; • Understand the socio-economic profile of land owners • Understanding the potential impact of the project on the stakeholder; and • Expectation from the project. • Discussion with union parishad regarding community development activities; • Engagement of union parishad & local community in identifying the much needed skills to be developed in youth and local community;	• Consultations, meetings (FGD and individual interview) and Discussions; • Sharing of documents as part of the disclosure mechanism; • Grievances Mechanism (GM); •	Follow-up meeting as required Prior to construction of jetty.	SFPL along with contractors and subcontractors

Stakeholder Group	Objective	Disclosure Method	Frequency	Teams
	• To identify the vulnerable community/ family and synchronizing their demand and need with project activities; • To seek cooperation of local community and union parishad members for smooth and timely execution of development activities; • Also, to liaison with union parishad regarding any query, grievance from then ongoing project activities and staff/ security guards.			
Local Community at core area	• Information given regarding the project, including the background of the project and capacity of the project; • To understand the key concerns related to the projects; • Understanding the potential impact of the project on the stakeholder; and • Expectation from the project; • Engagement in developmental activities • To identify the occupational pattern of the village; • Understand the role and engagement of women in the workforce; • Understanding the livelihood/ employment opportunities at village level; • To understand, if there is any need based demand from youth especially women/ girls, regarding skill development, typology of skill development etc.	• Consultation with local community especially youth; • Separate consultations with school and college going girls and adult women regarding skill development demand.	Follow-up meeting as required Prior to construction of jetty.	SFPL along with contractors and subcontractors
Regulatory Authorities / BEZA	• On land allocation for Government land by SFPL; • On understanding of land allotment process followed, by ERM ESIA Team; • On maintaining compliance to regulatory requirements;	• Face to face discussion; • Through applications, letters, etc.	Weekly or bi-weekly	SFPL along with contractors and subcontractors

Stakeholder Group	Objective	Disclosure Method	Frequency	Teams
Potential unskilled labour to be used for construction phase of the project	• Advertising of job vacancies for the project at village level; • During screening of applicants by contractors of RUMSL, in coordination with RUMSL on list of project affected households; • Induction on Code of Conduct and Grievances Redressal Mechanism (GRM)	• Through face to face discussion at the time of hiring for construction phase	Weekly or bi-weekly	SFPL along with contractors and subcontractors

xxx

INFORMATION DISCLOSURE MECHANISM

One of the most important aspects/tools of any consultation or engagement process is the process of information disclosure. The process is a requirement of the investors in the Unit. The process of information disclosure can be undertaken in two manners, either voluntary disclosure or disclosure as part of the regulatory requirements.

While regulatory disclosure involves the provisioning of information as required by the authorities and agencies involved in the Unit, voluntary disclosure refers to the process of disclosing information to the various stakeholders in a voluntary manner. The process of disclosure involves the provisioning of information in an accessible manner (a manner which allows for easy understanding, such as in the local language); to the various stakeholders in a Project. This disclosure not only allows for trust to be built amongst the stakeholders through the sharing of information but also allow for more constructive participation in the other processes of consultation and resolution of grievances due to availability of accurate and timely information.

CONTENTS OF DISCLOSURE

The disclosure of information to the stakeholders is an extremely important component of building good and stable relations with stakeholders. Furthermore, it is essential that this disclosure is for Project description, SEP, GM. An attempt shall be made to disclose all relevant information (such as plans pertaining to the community development, local employment opportunities and CSR activities) to the target stakeholders as early as possible, so as to allow for trust to be built in the relations. Information to be disclosed includes all relevant information pertaining to Project/ site activities, such as:

- Local employment opportunities;
- Stakeholder engagement activities, including the stakeholder engagement plan;
- Impact assessment studies undertaken;
- Other environmental and social management plans formulated as part of the impact assessment and mitigation process, including grievance mechanism; and
- Information on E&S performance and status of implementation of various E&S management plans developed as part of the assessment process.

Also while undertaking the process of disclosure it is important that the site shall endeavour to refrain from creating false expectations. Also, when possible, an attempt shall be made to disclose actual numbers, even estimates, wherever available. The disclosure of information shall be undertaken in a verbal and written manner through meetings and discussions as well as making copies of key reports available. This disclosure of impact assessment reports and relevant plans is to be carried out in a manner which would make the information available to the community in an accessible and timely manner. Some of the disclosure related activities proposed for the future are as follows:

REPORTING AND DOCUMENTATION PROCESS

Details of all the engagement activities shall be recorded in the form of minutes, photographs and records of verbal and written feedback received. These documents/records shall be

maintained as a stakeholder engagement database across the life cycle of the projects. In certain cases, documentation may be required by the applicable reference framework, in which case, the documentation guidelines prescribed should be followed.

Such a database would allow for regular monitoring of the efficacy of the engagement process as well as ensure that the concerns and query of the stakeholders are resolved in a timely manner. On the basis of this documentation, the Social and Community Supervisor shall consolidate the following information (on a monthly basis during construction phase and quarterly basis during operations phase):

- The stakeholder groups that have been engaged with and method of engagement;
- The results/key feedback from the engagement activities undertaken;
- Any pending issues/actions from previous engagement activities and the reason for the same; and
- Way forward

The documentation of the engagement activities undertaken is to be maintained in the format shown below.

Sample format for documentation of engagement activities

S. No.	Stakeholder Groups	Date	Location and Venue	Name of Key Representatives	Purpose of Engagement	Method of Engagement	Key outcomes and Actions	Status of actions identified in previous consultations	Reference to records

MONITORING AND EVALUATION

Like the other project components, the SEP shall be regularly monitored to ensure that the engagement with various stakeholders are getting properly documented, in order to ensure transparency in communication and decision making processes, wherever applicable.

A Social and Community Supervisor shall be appointed by SFPL, who will be responsible for implementation of the SEP, along with other related plans like Grievance Mechanism of the project, and identified roles in monitoring of labourers during construction and operations phases of the project. The Contractor Supervisor shall play a key role in implementation of the SEP and other plans in construction and operations phases of the project. The Contractor Supervisor shall coordinate with other relevant team members of SFPL on maintaining and update of documentation of stakeholder engagement details, tracking training needs, maintenance and update of documentation, reporting and monitoring requirements for the effective implementation of SEP across the construction and operations phases.

ERM HAS OVER 160 OFFICES ACROSS THE FOLLOWING COUNTRIES AND TERRITORIES WORLDWIDE

Argentina
Australia
Belgium
Brazil
Canada
China
Colombia
France
Germany
Ghana
Guyana
Hong Kong
India
Indonesia
Ireland
Italy
Japan
Kazakhstan
Kenya
Malaysia
Mexico
Mozambique
The Netherlands
New Zealand
Peru
Poland
Portugal
Puerto Rico
Romania
Senegal
Singapore
South Africa
South Korea
Spain
Switzerland
Taiwan
Tanzania
Thailand
UAE
UK
US
Vietnam

ERM's [Office name]
Add address 1
Add address 2
Add address 3
State, Zip/Post code

T: Add phone number
F: Add fax number

www.erm.com