

South Asia Co-operative Environment Programme (SACEP) Plastic free Rivers and Seas for South Asia (P171269)

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN
FOR THE PROJECT: COMMUNITY-BASED REDUCTION
OF PLASTIC POLLUTION: CASE OF CIRCULAR ECONOMY
AND BIODEGRADABLE PRODUCTS IN BANGLADESH

GRANTEE: INSTITUTE OF MARINE SCIENCES
BANGLADESH







Environmental and Social Management Plan (ESMP) for the Institute of Marine Sciences (IMS), University of Chittagong (CU)

1. Subproject Information

Subproject Title:	Community-based Reduction of Plastic Pollution: Case of Circular Economy and Biodegradable Products in Bangladesh By Institute of Marine Sciences, University of Chattogram.
Estimated Cost:	\$ 119,950
Start/Completion Date:	01/01/2025-15/05/2025

2. Site Location and Description:

Project Description:

The Institute of Marine Sciences at the University of Chittagong (IMS-CU)through this initiative aims to reduce the risk of plastic waste in rivers and seas by circulating plastic materials within the economy to maximize value recovery. The project revolves around the soft component of training and capacity building for local beneficiaries to drive behavioral change, foster business partnerships, and promote alternative livelihoods. The project will undertake the development of an inventory of plastic waste quantity and composition at Chattogram City Corporation (CCC), the development of guidelines for environmentally sound plastic waste disposal, and geospatial modeling for hotspot mapping of plastic waste.

Site Location and Description:

Chattogram City Corporation (CCC) comprises a total of 41 wards, each playing a crucial role in the city's urban landscape. To assess the prevalence of plastic waste and evaluate the efficiency of collection, processing, and recycling networks, a representative sample of 21 wards—covering more than 50% of the total—was selected. The 41 wards of CCC include South Pahartali, Jalalabad, Panchlaish, Chandgaon, Mohra, East Sholashahar, West Sholashahar, Sulakbahar, North Pahartali, North Kattali, South Kattali, Saraipara, Pahartali, Lal Khan Bazar, Bagmoniram, Chawk Bazar, West Bakalia, East Bakalia, South Bakalia, Dewan Bazar, Jamal Khan, Enayet Bazar, North Pathantooli, North Agrabad, Rampur, North Halishahar, South Agrabad, Pathantooli, West Madarbari, East Madarbari, Alkaran, Anderkilla, Firingee Bazar, Patharghata, Boxir Hat, Gosaildanga, North Middle Halishahar, South Middle Halishahar, South Patenga, and South Patenga.

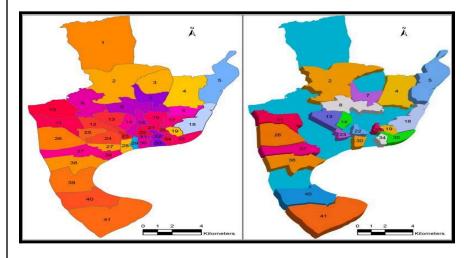
The program also includes school-based education and awareness campaigns, training sessions on health and safety, risk assessment, and hazard characterization for beneficiaries. As part of the training program, communication and outreach materials (T-shirts, notepads, paper pens, and cups) will also be distributed to influence behavior change and encourage participation in the awareness drill. The project also includes specialized training designed for marine fishers to promote recycling and upcycling of old fishing gear. The initiative also supports the production of biodegradable cutlery

sets, curd/phirni cups, and pens as alternatives to single-use plastics. The project will also have interactive discussions and consultations with government agencies, Chattogram City Corporation, Chattogram Water Supply and Sewerage Authority (CWASA), Non-government organizations, and academic institutions to explore approaches for the environmentally sound disposal of plastic waste.

The project also caters to the awareness sessions for students, via school-based education and awareness programs focused on science competitions, interactive sessions, and activities for exploring the impacts of plastic waste and discussing actionable solutions for mitigating pollution. This also includes an art competition that is planned to encourage students to visualize creative ways to minimize plastic usage, while science-based model project exhibitions, poster presentations, communication material, and campus-cleaning activities reinforce the importance of immediate action, allowing participants to directly engage in practices that contribute to a plastic-free future.

The training programs will emphasize effective waste collection, processing, health and safety protocols, and the role of public health and human rights in plastic waste management. The facilitators, including experts from academic, NGO, legal, health, and environmental sectors, will convene the sessions with active and interactive discussions and will ensure that post-training feedback is received from participants.

The proposal plans to have knowledge-sharing and awareness-building training sessions with over 100 marine fishers focusing on fishing gear types, quantity, mode of operations with geospatial locations; reuse, repair, and maintenance of old gears; location of gear dumping and disposal; evidence of threat to marine animals/ghost fishing; and responsible use of gears. The training will also focus on livelihood components, with awareness and guidance around business partnerships aimed at creating alternative livelihood opportunities, and environmental stewardship project relies on the preparation of communication materials that could be disseminated through press and electronic media as well as scientific journals and magazines ensuring the local, national, and global outreach.



Refer to the <u>Google Maps link</u> for more details attached here

3. Subproject Description and Activities

The Environmental and Social Management Plan (ESMP) developed for the project "Community-based Reduction of Plastic Pollution: Case of Circular Economy and Biodegradable Products in Bangladesh" aims to outline strategies for mitigating the environmental and social impacts. The project involves the soft component of training and capacity building for local beneficiaries to drive behavioral change, foster business partnerships, and promote alternative livelihoods whilst reducing overall plastic pollution. This ESMP provides a comprehensive framework to support the successful implementation of hotspot mapping and data collection. The activities for this ESMP are segregated into two distinctive phases:

- 1- Planning, Design and Preparatory Phase
- 2- Training Phase.

3.1Design Phase:

During the design phase, the project will focus on preparing the training modules, conducting research, and feasibility via data collection and analysis that will inform the training phase. Also, focus group discussions and key informant interviews along with analytical work and modeling will be carried out to complete the following:

- **Inventory Survey**: to identify and catalog the types and amounts of plastic waste in various areas, providing a baseline for future interventions.
- Geo-Spatial Modeling of Plastic Waste Abundance: to map the distribution of plastic waste across different regions, helping to identify hotspots where interventions will be most needed.
- Mapping of Plastic Waste Hotspots: Identify areas with the highest concentrations of plastic waste to prioritize locations for training and intervention.
- Geo-Spatial Modeling for ALDFG (Abandoned, Lost, or Discarded Fishing Gear) Disposal Hotspots: Identifying areas with high concentrations of ALDFG, which is a specific type of waste affecting marine environments, and planning interventions to reduce this type of pollution.
- **Development of Communication Materials**: Creating brochures, posters, and digital content to inform the community about proper waste management practices and the goals of the project.
- **Creation of Training Manuals**: The above activities will inform the development of specific training modules and manuals on waste management

This phase will be crucial for skills assessment, needs assessment, and provision of data to design specific waste management training for students, fishermen, waste workers, the community, etc

3.2 Training Phase:

Following the design phase, the training phase will focus on knowledge-sharing, skills-building, and practical application. This phase will equip waste collectors, local stakeholders, and the community with the necessary skills and tools for effective plastic waste management and reduction. The activities in this phase include:

- Conducting Workshops and Interactive Discussions: Facilitating sessions focused on plastic waste management, training on risk assessment, and solutions for waste reduction, using both theoretical and practical approaches.
- Training on Plastic Waste Collection and Processing: Providing hands-on training for waste collectors, focusing on best practices for collection, sorting, and processing of plastic waste, ensuring safety and efficiency.
- Training on Risk Assessment: Equipping participants with the knowledge to assess the risks associated with waste management, particularly the health and environmental hazards related to plastic waste.
- Selection of Waste Pickers and Workers: Identifying and selecting qualified individuals for waste collection tasks, ensuring inclusivity and fair representation of various community groups.
- Education Programs in Different Schools on the AIR Framework: Implementing educational outreach programs in schools to raise awareness about the importance of plastic waste reduction and the AIR (Avoid, Innovate, Recycle) framework.
- Capacity Assessment of Local Producers: Evaluating the capacity of local producers to handle or reduce plastic waste and assessing potential alternatives such as biodegradable products.
- Awareness and Knowledge-Sharing Sessions: Organizing sessions with local stakeholders, including waste workers, community leaders, and local businesses, to share knowledge on best practices for waste management.
- Training for the Production of Biodegradable Items: Offering training on producing biodegradable alternatives to single-use plastics, empowering local businesses and individuals to adopt more sustainable practices.
- **Product Innovation and Distribution**: Encouraging the development of innovative, environmentally friendly products and systems for plastic waste reduction, followed by their distribution within the community.
- Distribution of Communication Material: Ensuring that the developed communication materials reach the target audience, reinforcing key messages about plastic waste reduction and sustainable practices.

4. ESMP Matrix: Risk and Impacts, Mitigation, Monitoring

The below ESMP Tables reflect the E&S risks and impacts that are related to the design of the facilities and the operation and take into account the local specificities of the respective site.

Anticipated	Risk Mitigation and	Impact M	litigation		Monitoring		Mitigation
E&S Risks and Impacts	Management Measures	Location/Timin g/Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibilit y	and Monitoring cost
OSH risks specific to the training environment and activities for preparing waste collectors.	I. Offer training on the correct usage of PPE. II. Proper training on safe waste handling techniques. III. In case of practical demonstration on waste handling, ensure that all trainees are equipped with necessary protective gear, including gloves, masks, safety goggles, and ear protection.	Onsite at the training facility during the training period/ Monthly	Project Team Lead and Project Coordinator from IMS	Training modules and training manuals on safe waste disposal Presence of first aid and safety kits Number of OSH trainings held	Monthly site visits and reviewing of manuals, spot checks at the training site Photo Evidence	Project team Lead - IMS Technical Expert - environment) UNOPS PLEASE project - Bangladesh	100

Anticipated	Risk Mitigation and	Impact M	litigation		Monitoring		Mitigation
E&S Risks and Impacts	Management Measures	Location/Timin g/Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibilit y	and Monitoring cost
Physical injuries from improper waste-handling techniques or tools	I. Ensure the training location is accessible to all the trainees II. Ensure that the training facility or building meets OSH codes, emergency exits, fire extinguishers, etc	Bi-weekly/ On-site at the training facility during the training period	Project Team Lead and Project Coordinator from IMS	Physical observation of the training location Availability of the training facility, emergency exist and a fire extinguisher in the training location	Monthly site and regular monitoring Photo Evidence	Project team Lead - IMS Technical Expert - environment) UNOPS PLEASE project - Bangladesh	100
Risks associated with unsafe, inaccessible, and unclean training locations.	I. Provision of first aid kit at the training location II. Provision of proper sanitary facilities and safe drinking water III. Ensure emergency exit, fire extinguisher etc IV. Ensure the training area is kept clean, is ventilated, has comfortable seating, and has an adequate seating arrangement	Bi-weekly/ On-site at the training facility during the training period	Project Team Lead and Project Coordinator from IMS	Availability of first Aid kit log book and sanitation facilities Availability of training evaluation/ feedback forms	Monthly site and regular monitoring Photo Evidence	Project team Lead - IMS Technical Expert - Environment UNOPS PLEASE project - Bangladesh	150

Anticipated	Risk Mitigation and	Impact M	litigation		Monitoring		Mitigation
E&S Risks and Impacts	Management Measures	Location/Timin g/Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibilit y	and Monitoring cost
Lack of understanding of EHS risks and impacts, and mitigation measures leads to accidents and health	I. Assess the implementation partner's capacity in OHS II. Train workers/trainees on OHS through toolbox talks	Bi-weekly/ On site at the training facility during the training period	Project Team Lead and Project Coordinator from IMS	Percentage of the assessed OHS capacity of the implementation partner. Number of toolbox talks conducted	Monthly site and regular monitoring Photo Evidence	Project team Lead - IMS Technical Expert - Environment UNOPS PLEASE project - Bangladesh	100
Road Safety and Travel Risks for Participants	I. Trainees will be trained on road safety (under the HSE/ OSH training module) II. Ensure proper awareness among trainees regarding adherence to traffic laws, recognizing road hazards, and following safe driving practices.	Onsite at the training facility during the training period/ Monthly	Project Team Lead and Project Coordinator from IMS	Documentation of participant feedback on road safety-related concerns. Documentation of accident reports and tracking the timeliness of participant arrivals	Monthly site and regular monitoring Photo Evidence	Project Team Lead and Project Coordinator from IMS Technical Expert - Environment UNOPS PLEASE project - Bangladesh	100

Anticipated	Risk Mitigation and	Impact N	litigation		Monitoring		Mitigation
E&S Risks and Impacts	Management Measures	Location/Timin g/Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibilit y	and Monitoring cost
				(attendance sheets).			
Lack of Stakeholder engagement and low participation of trainees (waste workers, community members, students)	 I. Formulation of a stakeholder engagement plan to identify project trainees, including waste management workers, students, the community, and fishermen for relevant training programs. II. Define information dissemination channels for the identified stakeholders and provide training information III. Define consultation channels of the identified stakeholder, 	Prior to training, specific training on OHS/Monthly	Project Team Lead and Project Coordinator from IMS	Documents of stakeholder mapping/ needs assessment/ skills assessment Number of project information dissemination events Number of consultations/ Dialogues held with identified stakeholders (fishermen, waste workers, and students	Monthly site visits and regular monitoring of evaluation forms after consultations. Photo Evidence	Project Team Lead and Project Coordinator from IMS Technical Expert - environment) UNOPS PLEASE project - Bangladesh	150

Anticipated	Risk Mitigation and	Impact IV	litigation			Mitigation	
E&S Risks and Impacts	Management Measures	Location/Timin g/Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibilit y	and Monitoring cost
	and conduct consultations/ dialogues to ensure participation and inclusion						
Risks Associated with Sourcing and Handling Food-Grade Product Innovation	I. Source food-grade products from verified suppliers II. Conduct regular quality checks, and ensure compliance with food safety standards. III. Ensure that food-grade products are stored in clean, dry environments to prevent contamination from external factors such as chemicals, dust, or moisture	During the design phase/ sourcing	Project Team Lead and Project Coordinator from IMS	Availability of the certification status of suppliers to ensure they meet food safety and environmental standards Reports on Quality check Physical Observation on spot checks for hygiene and contamination	Monthly site visits and regular monitoring of evaluation forms after consultations. Photo Evidence	Project Team Lead and Project Coordinator from IMS Technical Expert - environment) UNOPS PLEASE project - Bangladesh	150

Anticipated	Risk Mitigation and	Impact M	litigation			Mitigation	
E&S Risks and Impacts	Management Measures	Location/Timin g/Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibilit y	and Monitoring cost
Risks of Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH) between project trainees (waste workers, fishermen, students)	I. Development of PSEA policies. II. Appoint a PSEA Focal Point at the site. III. Provide awareness training on recognizing, and preventing SEA/SH for a) Project trainees and trainers IV. Provide training on the GRM, including for SEA/SH-related grievances to trainers and trainees, both V. Project trainers and trainees are required to sign a Code of Conduct (CoC) including instructions for SEA/SH prevention VI. Provide specific SEA/SH response mechanism as part of the Project GRM,	and information session before the actual training Implementatio n of Focal Points and signing of CoC during the training	Project Lead/ University HSE officer	Number of training sessions provided to trainees and trainers. Total participation of the trainers and trainees Number of training sessions on GRM provided to communities Percentage of workers who have signed the CoC Number of SEA/SH Focal Points appointed Availability of a complaint box	Monthly site visit and review of GRM records and feedback surveys from training participants	Project Team Lead and Project Coordinator from IMS Technical Expert - environment) UNOPS PLEASE project - Bangladesh	150

Anticipated	Risk Mitigation and	Impact IV	litigation		Monitoring		Mitigation
E&S Risks and Impacts	Management Measures	Location/Timin g/Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibilit y	and Monitoring cost
	including referral to SEA/SH services VII. Conduct a track record search of the trainers during the hiring process (including records of health and safety violations, fines, GBV/SEA/SH issues, etc.)			on-site and actions taken in response to a complaint			
Lack of a Grievance Redress Mechanism (GRM)/ Lack of trust in the grievance mechanism or fear of retaliation may	Create awareness of the Project GRM and its reporting channels, implemented by the PIU Provide an additional reporting channel through complaint	Sub-Project Location/Throu ghout the operational period SEA/SH referral service mapping to be conducted prior to the	Project Lead/ University HSE officer	Number of awareness sessions held Number of complaint boxes installed Number of SEA/SH Focal Points appointed	Review of GRM records and review of feedback surveys from training participants / Spot checks to review GRM records	Project Lead/ University HSE officer Technical Expert - environment) UNOPS PLEASE project -	200

Anticipated	Risk Mitigation and	Impact M	litigation		Monitoring		Mitigation
E&S Risks and Impacts	Management Measures	Location/Timin g/Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibilit y	and Monitoring cost
deter stakeholders from reporting concerns.	boxes installed at the sub-project site. III. Ensure that the contact details of the SEA/SH Focal Point are placed on notice boards at the training location IV. Ensure that complaints received through the complaint boxes at the site are handled appropriately or transferred to the Project GRM V. Raise awareness about the GRM to ensure all stakeholders,	commencemen t of works Linkages to Project GRM established prior to works		Number of SEA/SH cases reported that receive referral services Map of local SEA/SH service providers available		Bangladesh	

Anticipated	Risk Mitigation and	Impact M	litigation		Monitoring		Mitigation
E&S Risks and Impacts	Management Measures	Location/Timin g/Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibilit y	and Monitoring cost
	including the Project staff, community, and waste workers, are informed about how to access and use it						
Risk of Child Labour (post-training)	I. The project will ensure that no minors or children are part of waste handling and recycling training in compliance with national laws and ESS2 of the World Bank) and document the age of trainees and trainers with the necessary evidence, document	Throughout the project, pre and post training.	Project Lead/ University HSE officer	Report of attendance sheets with age Availability of list of trainers and participants with age and ID details	Monthly Project site monitoring and review of the GRM register	Project Lead/ University HSE officer Technical Expert - environment) UNOPS PLEASE project - Bangladesh	150
Data-Related Risks in GIS I) Mapping	I. Ensuring proper data validation and sourcing from reputable, credible sources, such as	In the planning, design, and preparatory	GIS Expert/ Project Lead from IMS	Percentage of data sourced from trusted, reputable databases or institutions.	Monthly Site visit and regular monitoring	GIS Expert/ Project Lead from IMS Technical	150

Anticipated	Risk Mitigation and	Impact IV	litigation		Monitoring		Mitigation
E&S Risks and Impacts	Management Measures	Location/Timin g/Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibilit y	and Monitoring cost
data sourcing and procurement II) Risks from data misinterpretations/data accuracy	government databases or peer-reviewed research II. Data misinterpretation and oversimplification risks can be mitigated by ensuring thorough data analysis, cross-checking with multiple sources and expert reviews especially by interdisciplinary teams, including GIS specialists to help maintain data accuracy and reduce errors	phase/ Bi Weekly		Percentage of data that is up-to-date and relevant to the study or project Availability of Data source verification and quality assurance	Photo Evidence	Expert - environment) UNOPS PLEASE project - Bangladesh	

5. Capacity Development & Training

The Institute of Marine Sciences, University of Chattogram (IMS-CU) is committed to building the capacity of local communities, waste collectors, marine fishers, and stakeholders to promote the circular economy and biodegradable alternatives in Bangladesh. Through comprehensive training programs, workshops, and knowledge-sharing sessions, this initiative aims to reduce plastic pollution in rivers and seas while fostering business partnerships and alternative livelihoods.

The training initiatives align with the AIR (Avoid, Intercept, Redesign) framework, focusing on behavioral change, sustainable plastic waste management, and the development of biodegradable alternatives.

- In **Chattogram City Corporation (CCC)**, training will enhance waste collection, processing, and recycling efficiency among marginalized waste pickers, workers, and local producers.
- Among marine fishers, training will focus on the reuse, repair, and responsible disposal of fishing gear to prevent ghost fishing and marine pollution.
- In schools, education programs will raise awareness about plastic pollution, encourage creative solutions, and engage students in sustainability efforts.

This initiative will drive sustainable waste management practices, community engagement, and plastic-free alternatives for a cleaner riverine and marine ecosystem through skill-based training for waste collectors, facility workers, marine fishers, and local producers. The anticipated results of this outreach program are to strengthen local capacity for plastic waste prevention, collection, and processing, encouraging collaboration among government agencies, NGOs, businesses, and local communities. The training will ensure adherence to safety regulations, social safeguards, and environmental policies as identified in this ESMP to minimize the negative impacts of the risks identified. Environmental sustainability and Social safeguards will be at the core of the entire capacity-building program (the end goal of the proposal is safeguarding environmental sustainability and social safeguarding via alternative livelihoods/income-generating activities) to support the waste collectors, facility workers, marine fishers, and local producers in adopting sustainable income-generating activities and contributing towards the cleaner Chattogram City Corporation, Bay of Bengal, and surrounding marine ecosystems in Bangladesh.

5.1 Training Components

1. Capacity Building for Waste Collectors, Communities(students and fishermen) and Trainers (subject specialists)

Training will be provided to waste collectors, local communities, and relevant stakeholders to improve plastic waste collection, sorting, and safe disposal.

Key Training Areas:

- Waste Sorting and Collection Techniques Best practices for segregating plastic waste to maximize recycling and value recovery.
- Occupational Health & Safety (OHS) Training on safe waste handling, proper use of personal protective equipment (PPE), and strategies to prevent health risks.
- **Gender Inclusion & Social Safeguards** Awareness on gender-based violence (GBV), sexual exploitation, abuse, and harassment (SEA/SH) prevention, and ethical labor practices to create a safe and inclusive work environment.
- **Grievance Redress Mechanism (GRM)** Training on the transparent grievance system for ensuring accountability and conflict resolution.
- Capacity Assessment of Local Producers Identifying strengths and gaps in the local production of biodegradable products and enhancing their capabilities.

2. Training Programs for Trainees (waste workers, fishermen)

Workers engaged in waste collection, sorting, and processing will receive hands-on training to improve operational safety, efficiency, and compliance with environmental standards.

Key Training Areas:

- Standard Operating Procedures (SOPs) Guidelines for safe loading, unloading, and storage of plastic waste.
- Occupational Safety & PPE Usage Ensuring workers understand protective measures to minimize health and safety risks.
- Environmental Compliance & Risk Assessment Training on hazard characterization, risk mitigation, and adherence to environmental and social safeguards.
- Worker Rights & Ethical Practices Training on labor standards, codes of conduct (CoCs), and fair
 working conditions to promote ethical employment practices. The initiative will engage students,
 teachers, and guardians in sustainability-focused education programs and interactive activities.

6. Implementation Schedule and Cost Estimates

Mitigation Measure	Estimated Cost (USD)	Implementation Schedule
For HSE (Health, Safety & Environment) Monitoring & Compliance Tools and Training for Waste Workers and Fishermen	500	Before the commencement of the project, specialized training, i.e., January to February 2025
For the development of guidelines for environmentally sound plastic waste disposal	500	Prior to the commencement of the project, specialized training, i.e., January to February 2025
For awareness and knowledge-sharing/information sessions for local communities and waste pickers	200	Before the commencement of the project, specialized training, February-March 2025
For workplace safety, GBV and GRM training for all staff and trainees	300	Prior to and during the commencement of the project, specialized training, Jan-April 2025
Total Cost	1500	

7. Attachments

Environmental and Social Screening Report
Sub Project Activities Pictures
PSEA Documents