PLEASE Project
Plastic Free Rivers and Seas for South Asia

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

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN FOR PROJECT IMPROVED FLOOD MITIGATION AND PLASTIC WASTE MANAGEMENT IN THE KALLYANPUR AREA

GRANTEE: REDORANGE COMMUNICATIONS BANGLADESH

Implemented by: SACEP
Supported by: UNOPS
Supported by: WORLD BANK GROUP

Environmental and Social Management Plan (ESMP)

1. Subproject Information

Subproject Title:	Installation of a Floating Waste Barrier in Kallyanpur Canal Under Component 2- Kallyanpur Canal Project
Estimated Cost:	USD 25, 100 (Total project Budget-USD 1,20,000) USD
Start/Completion Date:	01/01/2025-15/05/2025

2. Site Location and Description:

Dhaka City, especially the northeastern part under the Dhaka North City Corporation (DNCC), faces frequent flooding, particularly in Kallyanpur, where around 1.5 million people live. The situation is concerning in neighborhoods of Kallyanpur, where several canals traverse the area, where they frequently become stagnant, with minimal or no water flow. This stagnancy is primarily caused by the excessive accumulation of waste, especially plastic, that has been excessively dumped into the canals over time. The waste that clogs the waterways is not only extensive in quantity but also diverse in nature, where the waste composition constitutes various materials such as plastics, organic matter, and industrial waste.

The accumulation of plastic waste, including bags, bottles, and wrappers, is a major issue in the canals. This waste clogs the waterways, obstructing proper drainage and exacerbating flooding. As a result, rainwater cannot be effectively drained, causing waterlogging that disrupts daily life, damages property, and increases the risk of waterborne diseases. The combination of flooding and pollution in Kallyanpur has severe environmental, social, and economic repercussions.

Considering the context, under Component 2, the Kollayanpur Canal project is planning to set up 4 floating barriers in the canal. A Memorandum of Understanding (MoU) was signed with United International University (UIU) to prioritize setting up barriers in strategic locations within the Kallyanpur Canal, where plastic waste accumulation is most severe. Followed by consultations with DNCC to finalize the site selection for the installation of the floating barriers. The pre-installation survey was also undertaken to assess key parameters such as canal width, depth, water flow, and expected debris types to determine the most effective locations for barrier placement. The results from preliminary studies conducted during the preparatory phase revealed high levels of Total Dissolved Solid (TDS) is 431 (mg/L), Biological oxygen Limited BOD is 140 (mg/L), Chemical oxygen Limited BOD is 255 (mg/L), Total Suspended Solid (TSS) is 143 (mg/L), indicating significant organic and chemical pollution. The findings highlighted that the water conditions are unfit for thriving aquatic life, with minimal to no presence of any aquatic species or local wildlife to be impacted or disrupted by floating barriers, especially to any sort of fish migration pathways.

The four newly installed barriers will be expected to capture most of the waste, later to be sorted and collected for proper and safe disposal and recycling. Ensuring that the canal remains unclogged, clean, and free of waste pollution.

The barriers will prevent floating waste from reaching the pump station and blocking its fences. This will keep the fences and waterways clear, allowing water to flow freely to the pump station. With no blockages, the pump station will operate more efficiently, helping to reduce the risk of flooding in the surrounding areas. The waste trapped by the barriers will be removed by workers and machines, depending on the waste quantity and composition. Recyclable materials, such as plastic bottles and cans, will be collected and sent to a sorting center for recycling. The remaining non-recyclable waste will be removed by DNCC trucks and disposed of in a landfill.

In order to effectively capture the floating wastes from the canals and prevent them from reaching the downstream pumping station, plastic interception barriers will be provided at the four locations along the Kallyanpur Canal and Ramchandrapur Canal. It can be noted that the Buriganga river is flowing around 500 meters away from Barrier-1 1, Barrier-2 2 is 100 feet away from Barrier-1 1, and Barrier-4 4 is 500 feet away from Barrier-3.

All barriers are in similar geographical conditions. Barrier number 1 will be placed in Ward No. 9, while barriers 2, 3, and 4 will be located in Ward No. 30 under Dhaka North City Corporation (DNCC). Two of the four barriers will cover half of the canal width, facilitating easy boat navigation and waste collection. With multiple barriers in place, any waste not captured by an upstream barrier will eventually be stopped downstream. The downstream barrier will cover the entire canal width to ensure that no waste reaches the pumping station.

Discussions with DNCC and the local community revealed that the width of the canal during the rainy season is estimated to be approximately 70 feet, due to increased water flow. The depth of the canal typically doubles or triples during this period, depending on rainfall and upstream inflow. The unique feature of the floating barriers is their adaptability; as they float, they can adjust to variations in both depth and width. Based on the canal's width, individual modules can be added or removed to accommodate changes in the canal’s size.

Refer to Kallayanpur Canal map of the location

3. Subproject Description and Activities

Floating Barrier

The Kallyanpur Canal, originating near Mazar Road in Mirpur and ending at the Kallyanpur Pump Station, is crucial for Dhaka's drainage system. However, it faces severe plastic pollution, with 12 metric tons of waste collected daily, 8% of which is plastic. To combat this, floating barriers will be installed to intercept plastic waste, reduce pollution, improve water flow, and minimize flooding, ultimately enhancing waste management efficiency and environmental sustainability.

Installation Phase:

- **Planning & Design:** Conduct a location assessment to determine optimal installation points, collaborating with Dhaka North City Corporation (DNCC) and local stakeholders.
- **Site Assessment:** Measure water body dimensions, assess water flow, and analyze soil conditions.
- **Design Finalization:** Select suitable designs and material specifications for the barriers.
- **Material Collection:** Gather required materials, including 2'x1' stainless steel barriers, PVC pipes (4" dia, 2' length), anchors, screws, metal chains, Styrofoam, and three MS poles.
- **Installation:** The installation of floating barriers in the Kallyanpur Canal will be carried out in stages, ensuring safety at each step. First, reinforced concrete poles will be securely placed in the canal. Then, barrier sections will be assembled on land for stability before being installed across the water. This structured approach will effectively intercept plastic waste, improve water flow, and help reduce flooding in the area.

Operational Phase:

- **Operation and Monitoring:** Conduct weekly inspections to assess barrier effectiveness, focusing on real-time tracking, performance reviews, and integrating waste collection with DNCC's schedule
- **Data Collection:** Evaluate barrier feasibility through regular monitoring, tracking key indicators such as waste reduction and community involvement, with periodic reporting to stakeholders
- **Community Engagement:** Train waste pickers, connect sorting centers with recycling companies, and raise awareness to minimize waste dumping. Ensure regular waste collection, sorting, and transportation to recycling centers.

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 E&S Risks and Impacts	**Risk Mitigation and Management Measures**	**Impact Mitigation**		**Monitoring**			**Mitigation and Monitoring cost (USD)**
		Location/Timing/ Frequency	**Responsibility**	**Indicators to be monitored**	**Methodology, including Location and Frequency**	**Responsibility**	
Disturbance to aquatic ecosystems and alteration of natural water flow	I. Use non-toxic recyclable materials. II. Regular inspection and cleaning of the barrier to prevent blockages. III. Engage environmental specialists to assess the impact on water flow. IV. Install barriers during the dry season when water levels are relatively low to minimize disturbances during floods and reduce the risk of plastic overflow V. Position barriers to allow natural water flow and	Weekly monitoring for the first month, followed by monthly checks at the Kallyanpur Canal site throughout the project period	External contractor for barrier installation and Project Manger from Red Orange	Barrier materials maintenance record Availability of the barrier cleaning records Physical observation of the natural water flow of the canal	Monthly site Visit/Photo evidence Regular Monitoring	Environmental Expert - Red Orange Technical Expert - environment UNOPS PLEASE project - Bangladesh	200

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Monitoring			Mitigation and Monitoring cost (USD)
		Location/Timing/ Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibility	
	avoid aquatic habitat disruption						
Potential Disruption to Aquatic Flora and Fauna with the installation of a barrier	I. Conduct environmental and technical study prior to installation to identify any sensitive species or habitats in the area II. The project will ensure that the floating barriers are designed and positioned to minimally affect the water flow and prevent any unforeseen impacts on the local flora and fauna. III. Regular monitoring of water quality, aquatic	Bi-weekly monitoring of the project site throughout the project period	Project Manager from Red Orange	Documentation of identified sensitive species and habitats. Physical observation of water flow patterns. Measurement of water quality (pH and dissolved oxygen).	Monthly site Visit/Photo evidence Regular Monitoring	Environmental Expert - Red Orange Technical Expert - environment UNOPS PLEASE project - Bangladesh	200

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Monitoring			Mitigation and Monitoring cost (USD)
		Location/Timing/ Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibility	
	life, and the effectiveness of the barriers will be carried out to assess any changes in the ecosystem.						
Inconsistent placement of barriers due to varying water depths.	I. Regular collection of debris/plastic from the barrier is required to avoid overflow	During the project period and after the project timeline, throughout the entire site where the barriers are installed.	Project Manager from Red Orange	Physical observation of debris/plastic accumulation levels. Frequency of debris/plastic collection activities.	Monthly site Visit/Photo evidence Regular Monitoring	Project Manager and Environmental Expert - Red Orange Technical Expert - environment UNOPS PLEASE project - Bangladesh	100
Improper Barrier Segment Placement Due to	I. Measurement of the water depth during placement of the barrier segments	During the Installation of the barrier	External contractor for barrier installation and Project	Physical observation of water depth	Physical observation during installation of the barrier in the	Project Manager - Red Orange Technical Expert - environment,	100

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Monitoring			Mitigation and Monitoring cost (USD)
		Location/Timing/ Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibility	
Varying Water Depths	II. Careful and proper placement of the diving pole with a tie for pole stability, especially in the rainy season III. careful placement of the barrier to minimize disturbances during floods, and its floating ability/mechanical design, will adjust itself during high water level to avoid the risk of plastic overflow		Manger from Red Orange	during barrier placement. Availability of stable and properly tied diving poles. Physical observation of barrier adjustment during high water levels.	Kallayanpur Canal and the Ramchandrapur Canal Monthly site Visit/Photo evidence	UNOPS PLEASE project - Bangladesh	
Navigation gaps for boats	I. Ensure appropriate spacing between barriers for boat movement.	During the project period and after the project timeline, throughout the entire site where the barriers are installed.	Project manager from Red Orange	Physical observation and field supervision, measurement of the minimum navigable width	Monthly site Visit/Photo evidence Regular Monitoring	Project Manager - Red Orange Technical Expert - environment UNOPS PLEASE project - Bangladesh	100

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Monitoring			Mitigation and Monitoring cost (USD)
		Location/Timing/ Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibility	
Risks of OHS arise from working at height and hygienic concerns to workers during receiving and sorting of plastic waste	I. Ensure that all workers are equipped with appropriate PPE such as helmets, gloves, safety boots, goggles, and high-visibility vests to minimize physical injuries. II. Implement strict safety protocols for electrical wiring activities. II. Provide accessible first aid kits on-site V. Provision of proper sanitary facilities and safe drinking water V. Provision of workers with adequate and well-ventilated working areas, clean eating areas, and separate sleeping (if necessary	On-site during the Installation of the Barrier	External contractor for installation and Project Manager from Red Orange	Availability of PPE used by workers during construction and operation activities Availability of a first aid box and accident register. Availability of daily records for checking and cleaning water-accumulated areas.	Daily records documenting discussions and site examination activities Monthly health reports	Project Manager and MEL Manager- Red Orange Technical Expert - Environment UNOPS PLEASE project - Bangladesh	150
Risks to	I. Provision of PPEs and boat safety material	During the project period and after	Project Manager and	Physical observation of	Monthly site Visit/Photo	Project Manager and MEL	100

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Monitoring			Mitigation and Monitoring cost (USD)
		Location/Timing/ Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibility	
waste collectors on boat (drowning, injury, exposure to hazardous material, water-borne diseases, equipment failure)	(Life jackets, waterproof gloves, visibility vests, waterproof boots, protective clothing, face shields and safety goggles, respirators, or facemasks). II. Provide specialized equipment for waste collections (collection bins, long-handled tools) to avoid human contact and exposure to hazardous waste.	the project timeline, throughout the entire site where the barriers are installed.	MEL Manager from Red Orange	PPE usage during operations and availability of PPE and boat safety materials. Availability of specialized waste collection equipment.	evidence Regular Monitoring	Manager- Red Orange Technical Expert - Environment UNOPS PLEASE project - Bangladesh	
Potential water contamination from barrier blockage and leakage.	I. Ensure stable installation and regular maintenance to prevent clogging, leaching, or deterioration. II. Use strong, corrosion-resistant materials for the barriers.	Bi-weekly at the barrier site	Project Manager and Environmental Expert from Red Orange	Physical observation of barrier stability and maintenance. Availability of strong,	Monthly site visit/ Photo evidence Regular Monitoring	Project Manager and Environmental Expert- Red Orange Technical Expert - environment) UNOPS PLEASE project -	150

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Monitoring			Mitigation and Monitoring cost (USD)
		Location/Timing/ Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibility	
				corrosion-resistant materials.		Bangladesh	
Ineffective and inefficient waste management	I. Establish a waste collection and segregation system. II. Collaborate with Dhaka North City Corporation (DNCC) waste management services for proper disposal. II. Train workers on efficient waste handling and sorting. V. Ensure all collected waste is transported to designated facilities. V. Conduct regular audits of waste handling and disposal procedures.	Bi-weekly at the barrier site throughout the project Period	Project Manager and MEL Manager from Red Orange	Availability of waste collection and segregation system. Physical observation of collaboration with DNCC for waste disposal. Documentation of worker training on waste handling and sorting. Regular audit reports of waste handling and disposal procedures.	Monthly site visit/ Photo evidence Regular Monitoring	Project Manager and MEL Manager- Red Orange Technical Expert - environment UNOPS PLEASE project - Bangladesh	200

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Monitoring			Mitigation and Monitoring cost (USD)
		Location/Timing/ Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibility	
Disruption to local community road access near the canal during installation and upgrade.	I. Conduct community consultations before installation. II. Develop alternative access points if needed. II. Provide regular project updates to community leaders. V. Create clear signage indicating project purpose and community benefits. V. Ensure that disruptions are minimal and temporary	During installation and upgrading at the barrier site.	Project Manager and MEL Manager from Red Orange	Physical observation and monitoring for road disruptions during floating barrier installation (no anticipated traffic disruptions as installation will take one day and installation and material storage will be off the road Availability of the signage at the project site	Regular Monitoring Monthly site visits and photo evidence	Project Manager and MEL Manager from Red Orange Technical Expert - Environment UNOPS PLEASE project - Bangladesh	50

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Monitoring			Mitigation and Monitoring cost (USD)
		Location/Timing/ Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibility	
Leakage of plastic waste into water bodies.	I. Waste workers will regularly collect plastic waste using small boats to prevent it from entering water bodies. II. Frequent waste collection using boat facilities to promptly remove any waste materials.	Weekly at Barrier site	Project Manager from Red Orange	Percentage reduction in visible plastic waste in the canal over time. Frequency of reported blockages or obstructions.	Site inspections, incident reports, Health incidents, safety compliance	Project Manager and MEL Manager from Red Orange Technical Expert - environment UNOPS PLEASE project - Bangladesh	250
Barrier safety and security, along with delays in waste collection.	I. Collaborate with DNCC (Dhaka North City Corporation) and engage with the local community to ensure barrier safety at the site. II. Install CCTV cameras at the nearest site location and provide monitoring access to DNCC	Weekly/on-site	Project Manager and MEL Manager from Red Orange	Awareness sessions and meeting records with the local community and DNCC for barrier safety. Availability and monitoring of	Monthly site visit/ Photo evidence Regular Monitoring	Project Manager and MEL Manager from Red Orange Technical Expert - Environment UNOPS PLEASE project - Bangladesh	200

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Monitoring			Mitigation and Monitoring cost (USD)
		Location/Timing/ Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibility	
	authorities for continuous surveillance. II. Utilize local weather forecasts and heavy rain alerts to plan waste collection and prevent issues.			CCTV cameras at the site. Documentation of weather forecasts and heavy rain alerts for waste collection planning.			
Risks of Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH) between Project workers, and between Project	I. Development of PSEA policies. II. Appoint a PSEA Focal Point at the site. III. Conduct awareness training on recognizing, and preventing SEA/SH for a) Project workers, and b) affected communities IV. Provide training on the GRM, including for SEA/SH-related	Training and awareness are conducted before the commencement of work. Implementation of Focal Points and signing of CoC at the site during the project period	MEL Manager and Gender specialist from Red Orange	Number of training sessions provided to workers Number of awareness sessions provided to communities Number of training sessions	Monthly site visit and review of GRM records and review of feedback from workers and communities.	MEL Manager and Gender specialist from Red Orange Technical Expert - Environment UNOPS PLEASE project - Bangladesh	100

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Monitoring			Mitigation and Monitoring cost (USD)
		Location/Timing/ Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibility	
workers and local community members	grievances to a) Project workers, and b) affected communities V. Request all Project workers 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, including referral to SEA/SH services			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 on-site and actions taken in response to a complaint			
Lack of understanding of EHS risks and impacts, and mitigation measures,	I. Assess the implementation partner's capacity in OHS II. Train workers on OHS through toolbox talks	Sub-Project barrier Location/Throughout the operational period	MEL Manager and Project Manager from Red Orange	Percentage of the partners whose OHS capacity has been assessed	Monthly site visit and interviews with the waste workers Photo Evidence	MEL Manager and Project Manager from Red Orange Technical Expert	100

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Monitoring			Mitigation and Monitoring cost (USD)
		Location/Timing/ Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibility	
leads to accidents and health impacts				Number of toolbox talks conducted		- Environment UNOPS PLEASE project - Bangladesh	
Lack of a Grievance Redress Mechanism (GRM)	I. Create awareness of the Project GRM and its reporting channels, implemented by the PIU II. Provide an additional reporting channel through complaint boxes installed at the sub-project site. III. Ensure that the contact details of the SEA/SH Focal Point are placed on notice boards in the project location. IV. Ensure that complaints received through the complaint boxes at the site are handled appropriately or transferred to the Project GRM	Sub-Project Location/Throughout the operational period SEA/SH referral service mapping to be conducted prior to the commencement of works Linkages to the Project GRM established prior to works	MEL Manager and Project Manager from Red Orange	Number of awareness sessions held Number of complaint boxes installed Number of SEA/SH Focal Points appointed Number of SEA/SH cases reported that receive referral services Map of local SEA/SH service providers	Monthly site visit and Review of GRM records and review of feedback either from interviews or site spot checks.	MEL Manager and Project Manager from Red Orange Technical Expert - Environment UNOPS PLEASE project - Bangladesh	150

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Monitoring			Mitigation and Monitoring cost (USD)
		Location/Timing/ Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibility	
	V. Ensure that complaints received through additional complaint boxes or the SEA/SH Focal Point in relation to SEA/SH are handled with strict confidentiality and in a survivor-centered manner. VI. Establish a map of local SEA/SH service providers and ensure every case reported is provided with referrals, if the survivor wishes that.			available			
Lack of compliance with labor laws and labor management procedures	I. Waste workers will be trained and made aware of the (GRM). II. A complaint box and the contact numbers of both construction contractors and the RedOrange site	Sub-Project barrier Location/Throughout the installation and operational period	MEL Manager and Project Manager from Red Orange	Number of workers' grievances filed. Availability and implementation of the Code of Conduct.	Review of GRM registry or complaint box for any labor-related issues reported	MEL Manager and Project Manager from Red Orange Technical Expert - Environment UNOPS PLEASE	100

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Monitoring			Mitigation and Monitoring cost (USD)
		Location/Timing/ Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibility	
	engineer will be visibly displayed on-site. II. Workers will have the option to raise concerns anonymously, either by phone or through the complaint box V. Development and implementation of a code of conduct in line with national labor laws and ESF of the PLEASE Project V. Wages will be paid in accordance with Labor Management Procedures (LMP)			Availability of payrolls. Site visits and review of received complaints	Random interviews and spot checks during installation and maintenance.	project - Bangladesh	
Risk of child labor	I. Comply with minimum age requirements of the Project (in compliance with national laws and ESS2 of the World Bank) and document the age of workers upon hiring	On-site/ Monthly Throughout the operational period	MEL Manager and Project Manager from Red Orange	Number of workers' grievances filed Number of track record searches conducted	Monthly site visit/ Photo evidence Regular Monitoring	MEL Manager and Project Manager from Red Orange Technical Expert - Environment UNOPS PLEASE	100

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Monitoring			Mitigation and Monitoring cost (USD)
		Location/Timing/ Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibility	
	with necessary evidence, document II. Verify the age of workers with the communities where required III. conduct a track record search of the contractors during the bidding process (including records of health and safety violations, fines, consult public documents related to workers' rights violations, GBV/SEA/SH issues, etc.)					project - Bangladesh	
Risk of forced labor	I. Establish a confidential and accessible Grievance Redress Mechanism (GRM) for workers to report concerns.	Monthly on site/ Throughout the operational period	MEL Manager and Project Manager from Red Orange	Number of grievances filed in workers' GRM	Monthly Site visit and Review of GRM registers or complaints	MEL Manager and Project Manager from Red Orange Technical Expert	100

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Monitoring			Mitigation and Monitoring cost (USD)
		Location/Timing/ Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibility	
	II. Raise awareness within communities.					- Environment UNOPS PLEASE project - Bangladesh	
Inadequate Community Engagement and Stakeholder Involvement	I. Establish a site-specific stakeholder map that includes vulnerable groups, project-affected parties, and other interested parties (based on the Project Stakeholder Engagement Plan - SEP) II. Define information dissemination channels for the identified stakeholders and provide sub-project-related information II. Define consultation channels of the mapped stakeholders and conduct consultations with all stakeholders,	Monthly on site/ Throughout the operational period and prior to installation	MEL Manager and Project Manager from Red Orange	Availability of stakeholder mapping Number of project information dissemination events Number of consultations with identified stakeholders Number of consultations with identified members of vulnerable groups	Monthly Site visit and regular monitoring Photo evidence	MEL Manager and Project Manager from Red Orange Technical Expert - Environment UNOPS PLEASE project - Bangladesh	50

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Monitoring			Mitigation and Monitoring cost (USD)
		Location/Timing/ Frequency	Responsibility	Indicators to be monitored	Methodology, including Location and Frequency	Responsibility	
	including on environmental and social risks and mitigation measures						

Training Plan for Kallyanpur Canal Waste Management Project

Objective:

Red Orange is dedicated to developing a sustainable plastic waste management system by combining long-term waste collection strategies with community-driven behavior change initiatives. In collaboration with local organizations and institutions, the project aims to prevent plastic pollution in rivers, enhance recycling efficiency, and create financial incentives for sustainability. Through awareness, education, and practical waste management solutions, Red Orange promotes responsible environmental practices. This training plan will support the efficient installation and operation of cost-effective floating barriers in the Kallyanpur Canal, helping to reduce plastic waste pollution, improve water flow, prevent flooding, and enhance waste management. Covering key areas such as Occupational Health and Safety (OHS), waste handling, emergency response, and community engagement, training will be conducted throughout the project to ensure compliance with environmental regulations and active stakeholder participation. By working with Dhaka North City Corporation (DNCC) and other partners, Red Orange aims to establish a long-term, scalable solution for managing plastic waste in urban waterways.

1. Comprehensive Occupational Health and Safety (OHS) Training
Target Audience: Workers, Contractors, and Facility Personnel

- Red Orange is committed to ensuring proper safety for all the management and employees. To make sure this is happening, there will be proper training on the selection, use, and maintenance of PPE to ensure worker safety during the installation, maintenance, and operation of the floating barriers.
- The Environmental, Health, and Safety (EHS) Manager will oversee training programs to enhance waste management practices and ensure effective project execution. Training will cover waste segregation, plastic pollution mitigation, environmental regulations, and best practices for floating barriers and sorting centers.
- Workers will receive training on waste handling, recycling, and community engagement. Special focus will be given to waste pickers and sorting center workers to improve working conditions and strengthen the recycling value chain.
- Key safety training will include proper PPE use, emergency response, and adherence to health and safety protocols. Injury prevention measures will address common risks, particularly in hazardous canal environments.
- Capacity-building efforts will extend to contractors, staff, and surrounding communities, ensuring compliance with environmental and social sustainability standards. Training will include proper hygiene and safety protocols for handling waste, responsible disposal of packaging materials, and strategies to minimize plastic pollution. Ethical labor practices, workplace safety, and prevention of Sexual Exploitation, Abuse, and Harassment (SEA/SH) will also be emphasized, along with training on the Code of Conduct and Grievance Redress Mechanism (GRM) to ensure transparency and accountability. Gender-Based Violence (GBV) and Social Safeguarding training will further contribute to fostering an inclusive and respectful work environment.
- Regular training sessions will cover hygiene, waste management, and safety protocols, with expert-led modules ensuring sustainability and social inclusivity remain central to the project.

- United International University (UIU) will provide technical support in designing and monitoring floating barriers, expected to collect 15–18 tons of plastic waste monthly. Waste pickers and sorting centers will integrate collected plastic into the recycling value chain, promoting economic and environmental sustainability.

Responsible Parties: Project Manager, MEL Manager

2. Waste Segregation and Hazardous Waste Handling
Target Audience: Waste Workers, and Contractors

- The Waste Segregation and Hazardous Waste Handling training is designed for waste workers to promote efficient waste management practices. Participants will learn effective waste sorting methods to separate plastic waste, organic matter, and other pollutants from water bodies, improving recycling efficiency and ensuring proper disposal.
- The training will also focus on the safe handling of hazardous waste, providing guidelines on managing materials such as chemicals and sharp objects collected from the canal. Additionally, strategies for detecting and removing harmful plastics, including microplastics, will be covered to help minimize environmental damage.
- Led by the Environmental Manager and Waste Management Expert, this training will ensure that all responsible parties follow best practices in waste management, contributing to a cleaner and more sustainable environment.
- Support to establish networks and explore service providers to securely dispose of hazardous waste.

Responsible Parties: Environmental Expert, Waste Management Expert

3. Community Awareness of Plastic Waste Management and Floating Barriers
Target Audience: Local Communities, waste workers, and Stakeholders

- The Community Awareness on Plastic Waste Management and Floating Barriers training aims to educate local communities and stakeholders on sustainable waste management practices. It will emphasize the importance of sorting waste, reducing single-use plastics, and promoting recycling to minimize environmental impact. By fostering responsible waste disposal habits, the training seeks to encourage long-term community involvement in keeping their surroundings clean.
- A key focus will be on the role of floating barriers in controlling plastic waste. Participants will learn how these barriers capture plastic waste, improve water flow, and help prevent flooding by reducing debris buildup in the canal. This awareness is essential for ensuring community support and cooperation in maintaining the barriers' effectiveness.
- The training will highlight the importance of community participation in waste management initiatives. Residents will be encouraged to take an active role in keeping canal areas clean and supporting broader environmental sustainability efforts. This program will be led by the Community Outreach Coordinator and Environmental Awareness Specialist, ensuring effective engagement and knowledge-sharing within the community.

Responsible Parties: Community Outreach Coordinator, Environmental Expert and Project Manager

4. Project Benefits, Grievance Redressal, and SEA/SH Prevention
Target Audience: Workers, Contractors, and Local Communities

The Project Benefits, Grievance Redressal, and SEA/SH Prevention training aims to educate workers, contractors, and local communities on key aspects of the project's social and environmental impact. Participants will gain a clear understanding of the project's long-term benefits, including cleaner water, reduced flooding, and improved living conditions. This awareness will help foster a sense of ownership and collaboration among stakeholders, ensuring the project's success and sustainability.

A crucial component of the training is the Grievance Redressal Mechanism (GRM), which provides a structured process for workers and community members to raise concerns, report issues, or offer suggestions. By promoting open and transparent communication, the GRM ensures that all voices are heard and addressed in a fair and timely manner.

The training will cover Sexual Exploitation, Abuse, and Harassment (SEA/SH) prevention, equipping participants with the knowledge to recognize, prevent, and respond to such incidents. This initiative aims to create a safe and respectful working and community environment. The Code of Conduct will also be introduced, outlining ethical guidelines and expected behavior to promote professionalism, respect, and accountability. Led by the Project Manager, Social Safeguarding Specialist, and HR Manager, this training will play a vital role in ensuring a responsible and inclusive approach to project implementation.

Responsible Parties: Project Manager, Social Safeguarding Specialist, HR Manager

5. Emergency Response Procedures and First Aid Training
Target Audience: All Personnel (especially those working directly with floating barriers)

- The Emergency Response Procedures and First Aid Training will equip all personnel, especially those working directly with floating barriers, with the necessary skills to handle critical situations. This training will focus on responding to emergencies such as injuries, chemical spills, and environmental incidents, with particular emphasis on challenges in water-based project areas.
- Participants will also receive First Aid Essentials training, covering fundamental lifesaving skills such as CPR, wound care, and trauma management. These skills will help workers respond effectively to common injuries that may occur during canal operations.
- Additionally, the training will include Rescue Training, providing instruction on safe water rescue techniques. Workers will learn proper methods for assisting individuals in distress and ensuring their safety during emergencies. This training is essential for maintaining a secure working environment and minimizing risks in hazardous canal conditions.

Responsible Parties: First Aid Trainer, MEL Manager

Training Delivery Schedule and Frequency:

- **Regular Workshops (Monthly/Quarterly):** Sessions on health and safety, emergency response, waste management, and community awareness.
- **Expert-Led Training (Every 6 Months):** Specialized sessions with external experts on SEA/SH prevention, grievance handling, and advanced environmental protection.

- **Hands-On Training:** Practical guidance for workers on operating and maintaining floating barriers to apply their training effectively.

Monitoring and Evaluation:

The Monitoring and Evaluation process will ensure the effectiveness of training programs and identify areas for improvement. This will include before and after training tests to assess trainees' knowledge and measure the impact of the sessions. These evaluations will help refine the training approach for better outcomes. Additionally, ongoing feedback will be collected from trainees to understand their level of comprehension and how well they apply the knowledge in real scenarios. This continuous input will allow for adjustments to enhance learning experiences. To maintain high safety standards, routine safety checks will be conducted to ensure compliance with regulations and training protocols. These regular assessments will help uphold workplace safety and reinforce best practices across the project

5. Capacity Development & Training

ESMP Schedule:

Months		
	Jan-Feb	**Mar-Apr**
Planning and Development (Ensure that contractors adhere to NEQ, **OSH standards** and international safety standards, provide of Personal Protective Equipment (PPE), helmets, gloves, safety boots, goggles, and high-visibility vests, provide health and safety training for workers, and enforce the proper use of personal protective equipment (PPE) and other safety measures. Design the Labor Management Plan (LMP) and establish a Grievance Redress Mechanism (GRM) to ensure worker welfare and compliance.		
Operations and Post Installation Monitoring: Continuous monitoring and ensuring efficient operation, conducting weekly inspections to assess barrier effectiveness, real-time tracking, performance reviews, and integrating waste collection with DNCC's schedule. Evaluate barrier feasibility through regular monitoring, tracking key indicators such as waste reduction and community involvement, with periodic reporting to stakeholders. Train waste pickers, connect sorting centers with recycling companies, and raise awareness to minimize waste dumping. Ensure regular waste collection, sorting, and transportation to recycling center**s.** Uphold the Labor Management Plan (LMP) and Grievance Redress Mechanism (GRM) to address worker concerns		

6. Implementation Schedule and Cost Estimates

Mitigation Measure	Estimated Cost (USD)	Implementation Schedule
Social Safeguards Training & capacity building (workplace safety, labor laws, child labor, GBV and GRM training for all staff and trainees)	500	Before and During Installing the Floating Barrier Jan to April 2025
Occupational Health and Safety (OHS) Training	500	Before and During Installing the Floating Barrier January to May 2025
Waste Management & Sorting Techniques Training	500	Before Installing the Floating Barrier Jan to May 2025
Community Campaigns, Engagement and Awareness	500	Before and during Installing the Floating Barrier Jan- Mar 2025
Regular Waste Collection Monitoring (including monitoring for waste leakages and Maintenance)	500	Throughout the operational phase and the entire project duration March May 2025
Total Cost	2500 USD	

7. Attachments

1. **Environmental and Social Screening Report**
2. **Project Site and Surroundings Pictures**
3. **Technical Study Report**
4. **MOU with UIU**