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 REFILL STATIONS AND SANITARY NAPKIN TO INCULCATE CONSUMER BEHAVIOR CHANGE TOWARDS REUSE IN KARACHI

GRANTEE: DAVAAM LIFE PRIVATE LIMITED - PAKISTAN

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

Environmental and Social Management Plan (ESMP)

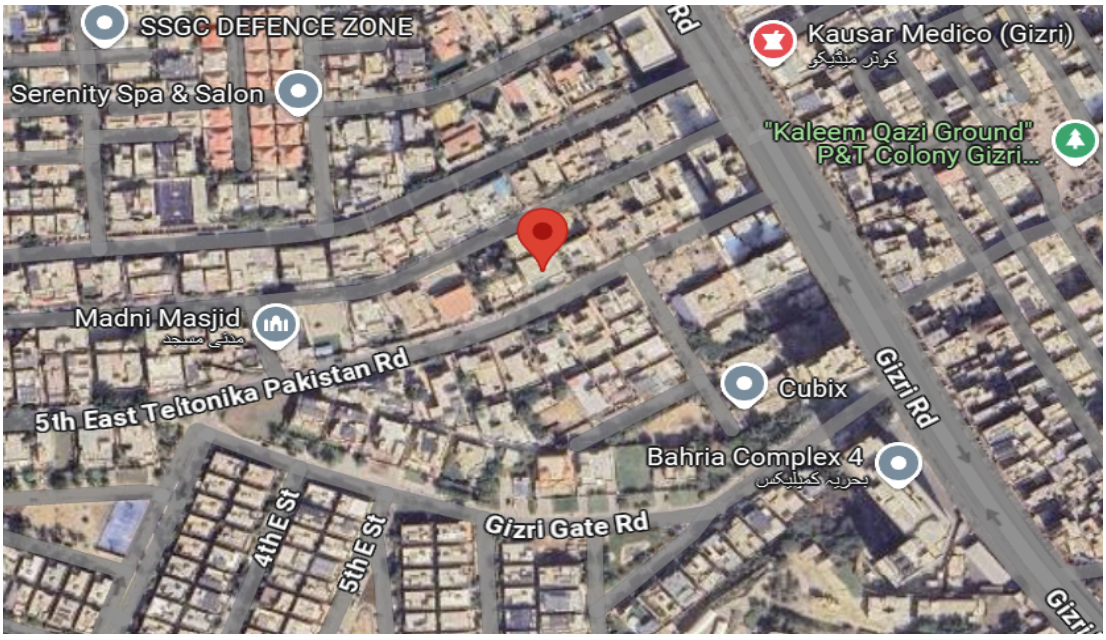
1. Subproject Information

Subproject Title:	Davaam Life Refill Stations by Davaam Life
Estimated Cost:	120,000 USD
Start/Completion Date:	1st July 2024 – 31st March 2025

2. Site/Location Description

The Davaam Life office and machine assembly, workshop, and office is located at D71/1 Clifton Block 9, Karachi, Pakistan. The office is located in a semi-commercial area and ensures operational efficiency and minimal environmental and social impact.

The site has been secured through a rental/lease agreement with the original owners, which is provided in **Annex C**



https://www.google.com/maps?q=24.8258667,67.041625&z=17&hl=en

Davaam's head office and small workshop/assembly area is located in Clifton, Karachi, which is a semi-commercial area with multiple complexes and commercial facilities surrounding it. The Davaam facility is enclosed and all assembly and engineering happen within enclosed rooms within the facility. The premises are accessible through paved roads and a gate where vehicles can park inside to load/unload any equipment.

Site Climate Condition:

The project site, located in Clifton Block 9, Karachi, experiences a tropical maritime climate with the following characteristics:

- Summer (April–October): Hot and humid, with temperatures ranging from 30°C to 38°C (86°F to 100°F), occasionally exceeding 40°C (104°F) during heatwaves.
- Monsoon (July–September): Moderate to heavy rainfall, often accompanied by thunderstorms, causing temporary urban flooding.
- Winter (December–February): Mild and dry, with temperatures between 10°C and 20°C (50°F to 68°F).
- Spring and Autumn: Subtle transitional periods with generally warm temperatures.
- Humidity: High year-round due to proximity to the Arabian Sea, often exceeding 70% in summer.
- Coastal Influence: Karachi's coastal location moderates extreme temperature fluctuations but contributes to sea breeze effects and occasional cyclonic activity.
- Air Pollution: Smog and haze can occur, particularly in winter, due to vehicular and industrial emissions.

The approximate coordinates of the site are 24° 48' 20.3" N latitude and 67° 01' 40.1"E longitude.

3. Subproject Description and Activities

Davaam Life is a sustainable technology company that manufactures and assembles smart dispensing machines to advance circularity and other sustainability-related objectives.

3.1 Objectives of the Project

Davaam Life, through this project, is to innovate and deploy two types of machines:

1. **Setting up and operationalization of the refill stations** that enable consumers to reuse existing packaging and refill consumer products, which are generally available off-the-shelf in single-use plastic, such as dishwashing liquids, shampoos, handwash, cooking oil, etc. This method of retailing enables consumers to avoid single-use plastic by using and refilling existing packaging multiple times, thereby avoiding plastic waste.
2. **Setting up and operationalization of Sanitary Napkin Vending** machines that promote gender inclusion by tackling a very taboo topic in Pakistan and creating access to menstrual hygiene products for women in public and workplaces. This machine network will also enable single napkins to be dispensed where extra multi-layered plastic packaging can be avoided.

The project aims to manufacture and deploy **60 refill stations** and **30 sanitary napkin machines** across various locations (Karachi, Lahore, Islamabad, and Rawalpindi) in Pakistan.

3.2 The project aims to achieve the above objectives through the following key project outputs and activities in the design/ assembly, installation, operation, and maintenance(refilling) stages of the project:

1) Deployment and installation of 60 Refill Stations for liquid products like cooking oil, handwash, shampoo, surface cleaner, etc.
2) Product Sourcing by partnering with local producers and suppliers to source high-quality, eco-friendly liquid products for the refill stations.
3) Community Engagement by organizing community workshops and awareness campaigns to educate residents on the benefits of using refill stations.
4) Collaboration with local businesses and entrepreneurs to distribute their products through refill stations.
5) Data collection on refill station usage, plastic savings, and community feedback.
6) Installation of 30 sanitary napkin machines in corporate offices, universities, and public spaces.
7) Targeting of offices, hostels, and communities with a focus on addressing gender-specific needs and promoting women's empowerment.
8) Partnership with multinational corporations to expand the reach of sustainable retail solutions.
9) Establishment of a system for regular maintenance, monitoring, and gathering feedback from the community.
10) Quantify the environmental impact by tracking plastic bottles saved, climate footprint reduced, and cost savings for consumers.

3.3 Some activities during the manufacturing assembly phase, operation, and maintenance phase to meet the outputs are:

3.3.1 Manufacturing and Assembly Phase:

During the manufacturing and assembly phase, the refill stations and sanitary napkin machines shall be assembled in an in-house workshop where most of the parts shall be installed in the machines. Most of the assembling is done in pre-fabricated structures, which does not require major cutting and mechanical work. Minor mechanical work requires drilling, minor welding, soldering, and fitting in the parts such as motors, circuits, springs, communication equipment, tablets, and CPUs. The machines are engineered with locally

produced software and calibration of equipment for accurate dispensing, testing the integration of software, and connecting them to Davaam's online dashboard/backend systems wherever required. This process covers both the refill stations and sanitary napkin vending machines.

3.3.2 Operational Phase (Refilling and Consumer Use) phase:

Once the machines are ready for deployment, they are transported to the locations for installation and deployment. During the installation of the refill stations and the sanitary napkin machines, some level of site preparation will take place, unlike traditional site preparation will not require excavation or leveling floors but will only require modification of the existing structures such as drilling of holes in the walls to hang the sanitary napkin machines and, in the case of refill stations, just providing a space to place the machines. Any civil and electrical works at the customer site, such as drilling holes in the walls and/or providing electrical connections to the machine, are generally carried out by the owners of the locations. In some cases, a local internet connection is provided by the location owners; in the absence of this provision, Davaam arranges its wifi internet connections.

Once the machines are installed, connected, and tested by Davaam, the products are also stocked and restocked by Davaam's teams, which requires transportation and delivery of the said products along with the machines.

The operational phase of the project will involve the following activities that include:

- Safe transportation of the machines to the end locations; inter-city transport through third-party logistics companies.
- Sourcing the products from the local suppliers of the liquid products to refill the stations and the sanitary napkin vending machines.
- Routine inspection and maintenance of refill stations as well as the sanitary napkin vending machines to ensure functionality and cleanliness will also take place. These inspections may involve any calibration, connectivity, and replenishing product stock.
- Community awareness campaigns to educate customers on the benefits of using refill stations and monitoring/collecting feedback from users regarding their experience with refill stations will also be part of this phase.

ESMP Matrix: Risk and Impacts, Mitigation, Monitoring

The ESMP Risks, Impact, Mitigation, and Monitoring Matrix below covers both the Manufacturing/ Assembly and the Operational Phase

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			
		Location/Timing/Frequency	Responsibility	Parameter to be monitored	Methodology, including Location and Frequency	Responsibility	Cost (USD)
1)Occupational Health, Safety, & Environment (HSE) 1.1)Inadequate safety measures, lack of PPE and usage of PPE, which could result in minor injury e.g., from manual cutting/grinder.	1)To ensure the OSH, the following mitigation measures will be considered: 1.1a)Provide all workers with appropriate PPE (gloves, masks, Earplugs, safety goggles etc -1.1b)Conduct regular safety training and machine inspections. -1.1c)Train workers in assembly and on	Workshop/ Monthly	Admin Manager (designated as HSE)	Use of PPE, safety incidents (Gloves, masks, safety goggles, etc.) OSHA standards of General PPE Requirements	Safety inspections, incident reports – monthly	Admin/HSE Manager - Davaam Life Environmental specialist - UNOPS country team for PLEASE project	1.1a)300 for PPEs 1.1b)100 for safety training 1.1b to 1.1c) 1500 for HSE staff and monitoring/inspection cost

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		Location/Timing/Frequency	Responsibility	Parameter to be monitored	Methodology, including Location and Frequency	Responsibility	Cost (USD)
	proper machine handling and use. -1.1d)Demarcation of risk areas, and displaying necessary signage at the site, including in areas where work is in progress.						
1.2)Fire, short-circuiting, where electrical work/assembly is done	1.2) A fire extinguisher to be placed	Workshop / Monthly	Admin / HSE	Fire extinguisher with a record of filling and tags	Checklist/admin records	Admin / HSE Environment rental specialist - UNOPS country team for PLEASE project	1.2)200 for fire extinguishers

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		Location/Timing/Frequency	Responsibility	Parameter to be monitored	Methodology, including Location and Frequency	Responsibility	Cost (USD)
1.3)Power Supply and Cable safety in the machines	1.3) Safety circuits and breakers are installed in all the machines	On-site / machine manufacturing	Head of Engineering	Quality Assurance	Random Spot Checks	Environmental specialist - UNOPS country team for PLEASE project	
2)Noise Pollution: Machine Assembly can produce noise.	Use of PPEs especially Ear Muffs for workshop staff doing drilling/grinding for up to 5 minutes	Workshop/ Monthly	Admin / HSE	Noise levels Use of PPEs by workers	Noise level monitoring and Monthly site visit	Operations/HSE Manager - Davaam Life Environmental specialist - UNOPS country team for PLEASE project	300 (Repetitive cost)

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		Location/Timing/Frequency	Responsibility	Parameter to be monitored	Methodology, including Location and Frequency	Responsibility	Cost (USD)
3)Improper Disposal of Solid Waste: 3.1)Inefficient waste management practices can lead to the accumulation of Solid waste at the site during operations. ~**20 Kg/day** of municipal solid waste such as office paper, packaging waste (cartons) etc. would be generated. 3.2)Waste Management and Improper Disposal of Solvent Residue from Refill Stations	3.1a)Waste segregation on site and disposal of waste (packaging material) to local municipal authorities (CBC) 3.1b)Selling of recyclables to vendors 3.2)Any residue from the machines is collected in the 'collection trays' of the machines and discarded as per norms. Collection trays are washed.	Workshop/ Office Daily On-Site / Monthly	Admin manager Maintenance personnel	Waste segregation records - weekly Monthly records	Waste audits, inspection of disposal practices - Weekly Waste weighing records	Operations Manager - Davaam Life Environmental specialist - UNOPS country team for PLEASE project Admin / HSE Environmental specialist - UNOPS country team for PLEASE project	3.1) 200 3.2) 100 (out of 1500 reserved for inspection and monitoring and HSE cost)

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		Location/Timing/Frequency	Responsibility	Parameter to be monitored	Methodology, including Location and Frequency	Responsibility	Cost (USD)
Inefficient resource consumption, including high energy use in machines/ equipment	Track and document energy usage to ensure efficient resource consumption	Weekly	Project Engineer	Energy efficiency	Davaam's own built software	Project Engineer Environmental specialist - UNOPS country team for PLEASE project	embedded in the monitoring cost (i.e 1500)
Consumer Behavior, including lack of knowledge, literacy, and awareness	Provision of awareness training to the local community and the interested parties (in this case women) Provide awareness training on recognizing, and preventing health	Monthly Monthly	Project Manager Project Manager	Awareness g awareness	Awareness training will be done through our Program Manager at the time of installation, and quarterly checks/retraining Same as above	Project Manager Project Manager	250 250

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			
		Location/Timing/Frequency	Responsibility	Parameter to be monitored	Methodology, including Location and Frequency	Responsibility	Cost (USD)
	and social issues in communities						
Risks of Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH) between Project Workers and local community members.	Appoint a PSEA Focal Point on site. Provide awareness training on recognizing, and preventing SEA/SH for a) Project workers, and b) affected communities Making GRM available and accessible to all workers, and providing training on the GRM,	Training to be conducted for all employees (once in the program) One training	Program Manager /PSEA focal point Program Manager /PSEA focal point	Number of training sessions provided to workers SEA/SH Focal Points appointed GRM circulated Awareness	Real-time incident report Awareness training will be done through our Program Manager	Program Manager /PSEA focal point Environment rental specialist - UNOPS country team for PLEASE project Program Manager /PSEA focal point	500 0

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			
		Location/Timing/Frequency	Responsibility	Parameter to be monitored	Methodology, including Location and Frequency	Responsibility	Cost (USD)
	including for SEA/SH-related grievances to the project workers Request all Project workers to sign a Code of Conduct (CoC) including instructions for SEA/SH prevention Provide specific SEA/SH response mechanism as part of the Project GRM.	one time/year	Program Manager /PSEA focal point	No of signed	Circulate the CoC form among the employees - once/year	Program Manager /PSEA focal point	0

5. Capacity Development & Training

Based on the identified risks, the following capacity development and training shall be provided:

1. SEA / SH policy/gender policy to be made and circulated with gender sensitization training to be provided to all Davaam staff. These shall be conducted by an outside consultant and expert.
2. Grievance Redressal Mechanism to be made and circulated amongst all staff members (CEO of Davaam)
3. Public campaigns and training to educate customers on the machines (both refill and sanitary napkins). These shall be conducted by relevant Program Managers
4. Installation procedures to be followed, including informing the facilities on the installation date and process, and any requirements on civil and electrical works to ensure proper procedures. This shall be ensured by the relevant Program Manager
5. Community engagements on issues such as menstrual hygiene shall be facilitated through program partners in communities where sanitary napkin machines are installed. To be facilitated by the Program Manager through the partner organizations
6. Basic safety training for all workers, especially the workshop staff, is to be conducted by the Admin/EHS officer.

6. Implementation Schedule and Cost Estimates

Project Schedule for Manufacturing/ Assembly and Operational Phase:

Months					
	Jan	**Feb**	**Mar**	**Apr**	**May**
Planning: Plan OSH and HSE, safety training modules, GRM plan, procure relevant PPEs, and create monitoring checklists.					

Development (Provision of Personal Protective Equipment (PPE) (N-95 masks, earmuffs, gloves, and safety shoes to workers during assembly. Develop project Grievance Redress Mechanism (GRM) to ensure worker welfare and compliance. Ensure that contractors adhere to PEQS and international safety standards, provide health and safety training for workers, and enforce the proper use of personal protective equipment (PPE) and other safety measures.					
Operations Inspection and monitoring of machines for any safety risks and waste to ensure compliance with PEQS. Enforce the use of PPE, conduct safety drills, and provide safety training and emergency response. Uphold the Grievance Redress Mechanism (GRM) to address worker concerns, and ensure community awareness training is held on DAWAAM utilities and benefits to its consumers					

Cost Estimates

The following is a breakdown of the cost estimate for implementing the mitigation and capacity development measures during both the assembly and operational phase

Mitigation Measure	**Estimated Cost (USD)**	**Implementation Schedule**
Provision of PPEs and Basic Safety Gear	300	During the manufacturing and assembly phase
HSE and OSH Management Admin/HSE manager/ Monitoring and spot checks cost (for waste disposal, cleaning of refilling trays/ tracking energy consumption/usage/ spot checks and OSH applicability)	1500	Assembly and Operational phase throughout the project

Waste Management	200	Throughout the project
Fire Extinguishers	200	During the manufacturing, assembly, and operation phase
Safety Trainings	100	During the manufacturing and assembly phase
Community Campaigns and Awareness Sessions	500	During the assembly and operational phase
Gender Policy and Gender Training	500	During the operational phase
total cost	**3300**	

7. Attachments

E&S screening form
Sanitary Napkin Machines Pictures
Refill Machines-Pictures
Machine List details