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 RESOURCE RECOVERY CENTER - MALVANA

GRANTEE: INSEE ECOCYCLE LANKA (PRIVATE) LIMITED - SRI LANKA

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

Environmental and Social Management Plan

INSEE Ecocycle

1 Subproject Information

Subproject Title:	Resource recovery center at Malvana
Estimated Cost:	34,206 USD
Start/Completion Date:	Start: - 15th August 2024 - 30th April 2025

2 Site/Location Description

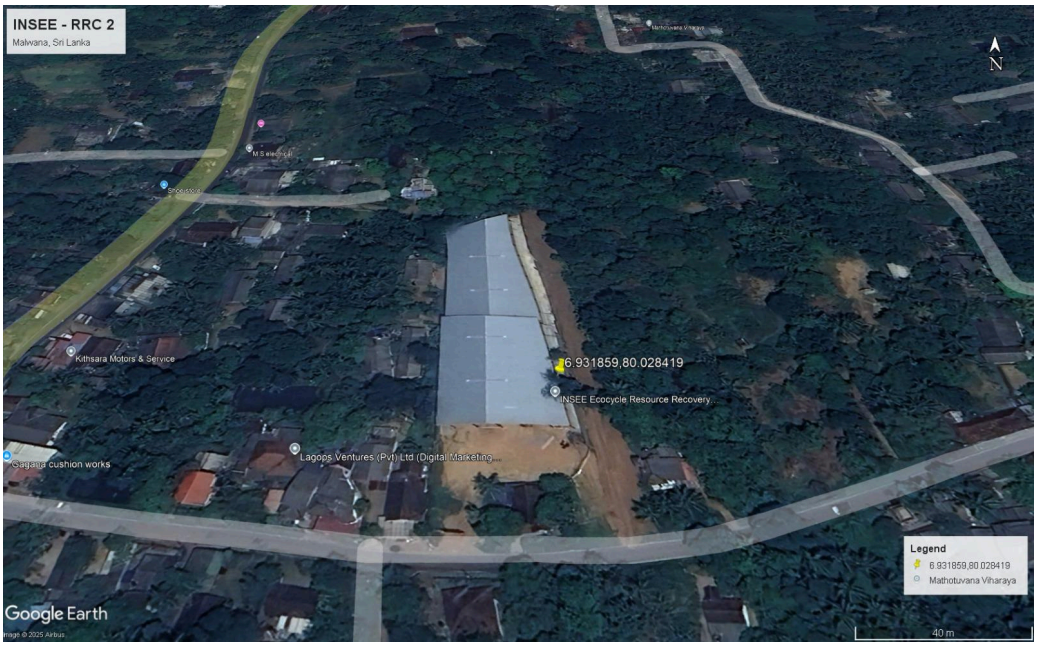
This sub-project aims to produce high-quality plastic pellets from segregated hard plastics sourced from the MRF facility in Puttalam and other suppliers. These pellets will then be used in packaging product development, replacing 20% of virgin plastic with recycled material.

It supports circular economy practices by recycling and repurposing plastic waste, reintegrating it into the production cycle to minimize environmental impact. By combining sustainable waste management with social impact, the project serves as a model for inclusive growth and environmental stewardship in Sri Lanka.

The project site is at 27/1, Morahena, Pahala Mapitigama, Malwana. (Sub road connected to Hanwella, Malvana Rd). It is approximately 1.5 kilometers from the Kelani River. The industrial nature of the site ensures minimal ecological disruption, with no significant flora, fauna, or protected species in the vicinity.

The project will be housed in the existing Resource Recovery facility operating by INSEE Eco cycle, eliminating the need for new construction or rebuilding. This approach minimizes environmental disruption and expedites the project timeline. The building occupies 25,000 square feet (including 13000 square feet for plastic recycling operation) and has the required infrastructure to ensure the health and safety requirements of the workers.

INSEE Ecocycle Resource Recovery Center 2 (GPS Location: 6.931859,80.028419)



3. Subproject Description and Activities

This subproject focuses on research and development (R&D) to incorporate recycled plastic into packaging manufacturing. At the INSEE Resource Recovery Center, plastic pallets will be produced, and R&D activities will be carried out in collaboration with a packaging manufacturer to test and refine new product developments.

The selected site at the INSEE Resource Recovery Center will facilitate the process, from material reception to palletizing. High-Density Polyethylene (HDPE) plastic flakes, sourced from the INSEE Material Recovery Facility (MRF) in Puttalam, will serve as the primary raw material for this initiative. Additionally, other mixed plastics will be sorted and crushed into flakes in the RRC itself. These flakes will then undergo a thorough washing process before being sun-dried. Once cleaned and dried, the plastic flakes will be used to produce plastic pallets.

As part of the PLEASE project, a plastic pelletizer with a 100 kg/h capacity is planned to be installed to complete the pellet-making process. Initially, production will be conducted at a research scale to ensure the development of high-quality recycled pallets. Then the discussion will be started with the packing material manufacturers to integrate the recycled plastic pallets into their production process.

In addition to these activities, the project will focus on developing and implementing standard operating procedures (SOPs) and work instructions for key processes, including reception of waste, sorting, crushing, washing, dewatering, drying, pelletizing, and final dispatch.

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

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring Cost USD
		Location/Timing/Frequency	Responsibility	Parameter to be monitored	Methodology, including Location and Frequency	Responsibility *	
Scattering of waste during transportation can lead to contamination and create a public nuisance	1. Using covered and enclosed transport vehicles 2. Ensure proper loading and unloading, securing of waste to avoid displacement 3. Train transport personnel	on the route during transportation	Drivers Site coordinator	Records of training	Monthly site visit throughout the project period	E & S officer INSEE, Tech Ex (Envt) Technical Expert-UNOPS Sri Lanka Country team	Training -300 Vehicle Covers - 50
Property damage, Accident, or incident during transportation and operations	1. Training on personal safety, defensive driving, 2. On-time maintenance and preventive maintenance of vehicles 3. Inspection of vehicles before transportation	Resource recovery center, during	INSEE Ecocycle E & S Officer	Records of training Maintenance records	Monthly site visit throughout the project period	E & S officer INSEE, Tech Ex (Envt) Technical Expert-UNOPS Sri Lanka Country team	Training 300 - (Repeating cost 1.3) PPE- 300
Exposure to dust levels can have bad health implications for the workers during the loading, unloading, sorting, and shredding process	1. Providing required PPE, 2. Preparation of Guidelines on safety, SOP, and work instructions 3. Daily safety briefing to the workers	At the site RRC and on routes, during the transportation, loading, unloading, and sorting process	INSEE Ecocycle E & S Officer	Use of PPE Availability of SOP/ work instructions Records of medical check-ups	Monthly site visit throughout the project period	E & S officer INSEE, Tech Ex (Envt) Technical Expert-UNOPS Sri Lanka Country team	PPE - 300 (Repeating cost2.2) SOP development and related training - 50

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring Cost USD
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	4. Conducting frequent medical check-ups for employees						Medical check-ups - 200
Exposure to the hazardous waste and chemical containers can cause a health risk to the workers	1. Segregation to prevent contamination and ensure safe handling. 2. Provide proper personal protective equipment (PPE). 3. Implement safe handling procedures and train workers on hazard awareness. 4. Ensure adequate ventilation in storage and handling areas. 5. Conduct regular health and safety training for workers.	RRC2, During the sorting	Chemist/ Safety Officer	Waste processing records Hazardous waste/chemical container disposal records	Monthly site visit throughout the project period	E & S officer INSEE, Tech Ex (Envt) Technical Expert-UNOPS Sri Lanka Country team	PPE - 300 (Repeating cost2.2) Training and awareness - 300
Noise generation during the machine's operations may cause public nuisance and health implications to Workers	1. Install the crusher in a separately enclosed area 2. Limit machinery operations to daytime hours to reduce noise	At the RRC during the machine operations	E & S officer	Noise Records Use of PPEs Schedule of work	Monthly site visit throughout the project period	E & S officer INSEE, Tech Ex (Envt) Technical Expert-UNOPS	Installation of crusher - 250

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	disturbances 3. Maintaining noise level at the boundary limit as per the National Standards 4. Providing appropriate PPEs for the workers 5. Selection of machines with less noise 6. Timely maintenance			Machine maintenance records		Sri Lanka Country team	200 - Noise Measurements PPE - 300 -(Repeating cost2.2) 800
Soil contamination due to discharge of liquid, if any, and collected from the waste sorting process	1. Provide designated areas with a paved floor for waste sorting to prevent soil contamination 2. Install spill kits at sorting locations and train workers on proper spill response	At the RRC 2	Chemist/ E & S office / Plant Engineer	Availability of designated sorting area Availability of spill kits	Monthly site visit throughout the project period	E & S officer INSEE, Tech Ex (Envt) Technical Expert-UNOPS Sri Lanka Country team	Spill Kits - 100 Training 300 (Repeating cost - 4.5)

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring Cost USD
		Location/Timing/Frequency	Responsibility	Parameter to be monitored	Methodology, including Location and Frequency	Responsibility *	
Solid waste generation during the operations	1. Segregation of waste 2. Selective purchasing of material (Nonrecyclable waste will not be accepted) 3. Directing recyclable waste to the recyclers 4. Directing non-recyclable waste to the co-processing	At the RRC 2/ daily Monthly	E & S office	Records of Waste Generations	Monthly site visit throughout the project period	E & S officer INSEE, Tech Ex (Envt) Technical Expert-UNOPS Sri Lanka Country team	300
Wastewater generated through the washing process may lead to soil and water contaminations if it is not properly managed	1. Collecting the wastewater after the washing cycles separately 2. Directing the wastewater to the co-processing facility for proper treatment and disposal.	At RRC 2 after the washing	E & S office	Wastewater handover records	Monthly site visit throughout the project period	E & S officer INSEE, Tech Ex (Envt) Technical Expert-UNOPS Sri Lanka Country team	300
Occupational Health and Safety (OHS) Risks	1. Providing sanitary facilities, access to safe drinking water, and a clean dining area 2. Training on safety and proper use of personal protective equipment (PPE), and a Daily safety briefing will be conducted	At the RRC2 during the operations	Plant Engineer, E & S officer	Availability of adequate sanitary facilities, The practice of wearing PPE during operational activities	Monthly site visit throughout the project period	E & S officer INSEE, Tech Ex (Envt) Technical Expert-UNOPS Sri Lanka Country team	Training - 300 (Repeating cost 4.5)

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring Cost USD
		Location/Timing/Frequency	Responsibility	Parameter to be monitored	Methodology, including Location and Frequency	Responsibility *	
	3. Provision of a First aid box 4. Installation of fire extinguisher/ Fire hydrant 5. Emergency Preparedness plan and awareness on responding. 6. Maintaining accident registry 7. Perform medical check-ups for workers 8. Displaying Instruction Boards			Availability of the First Aid box, Availability of valid Fire extinguishers, Emergency Preparedness plan and Training record Accident records and follow-up actions Medical check-up records Availability of instruction boards			First Aid box 100 Fire extinguishers 500 Medical checkups- 200 (repeating cost 3.4)
Potential for social issues related to labor	1. Worker grievance meetings and awareness of communicable diseases	At RRC2 during the operations	Plant Engineer	Availability of meeting and training records	Monthly site visit throughout the project period	E & S officer INSEE, Tech Ex (Envt)	Awareness - 100

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring Cost USD
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influx	2. Establishment of GRM for the community			Availability of GRM		Technical Expert-UNOPS Sri Lanka Country team	
Lack of a Grievance Redress Mechanism	1. Create awareness of the Project GRM and its reporting channels, implemented by the PIU. 2. Provide an additional reporting channel through complaint boxes/ Hotline numbers installed at the sub-project site. 3. Ensure that the contact details of the SEA/SH Focal Point are placed on notice boards in the project location. 4. Ensure that complaints received through the Subproject GRM at the site are handled appropriately or transferred to the Project GRM.	At the RRC2	Plant Engineer	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	Monthly site visit throughout the project period	E & S officer INSEE, Tech Ex (Envt) Technical Expert-UNOPS Sri Lanka Country team	GRM implementation -100

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring Cost USD
		Location/Timing/Frequency	Responsibility	Parameter to be monitored	Methodology, including Location and Frequency	Responsibility *	
Noncompliance with the local regulatory requirements and workers' dissatisfaction due to extensive work requirements	1. Development and implementation of a code of conduct in line with national labor laws and ESF of the PLEASE Project 2. Pay wages in accordance with national laws 3. Prevents the use of all forms of forced labor and child labor	At the RRC2	INSEE Ecocycle	Availability and implementation of the code of conduct Payrolls Site visit and reviewing received complaints	Monthly site visit throughout the project period	E & S officer INSEE, Tech Ex (Envt) Technical Expert-UNOPS Sri Lanka Country team	No additional cost involved
Socialriskdueto Sexualexploitationand abuse(SEA)and sexual harassment(SH)	1. Workergrievance addressingmethodology 2. Appointing a Focal point of Complaints 3. Provide training on recognizing,preventing, andrespondingtoSEA andSHorcontractors and communities	RRC2	INSEE Ecocycle Project Manager	Participation of stakeholders	Monthly site visits throughout the project period.	E & S officer INSEE, Tech Ex (Envt) Technical Expert-UNOPS Sri Lanka Country team	RRC2
Limited support from the Government and other stakeholders	1. Identify Stakeholders and communities 2. Conduct awareness programmes/consultations as appropriate	RRC2	INSEE Ecocycle Project Manager	Participation of stakeholders	Monthly site visits throughout the project period.	E & S officer INSEE, Tech Ex (Envt) Technical Expert-UNOPS	200

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring Cost USD
		Location/Timing/Frequency	Responsibility	Parameter to be monitored	Methodology, including Location and Frequency	Responsibility *	
						Sri Lanka Country team	

★ **All these mitigation measures are carried out at INSEE Ecocycle's expense and are not part of the PLEASE Project budget.**

3 Capacity Development & Training

Capacity-building and training programs will focus on

1. Knowledge and skills in Plastic identification, and the recycling process, to the staff
2. Waste management and environmental awareness for staff
3. Occupational health and safety to staff (This includes Safety working practices training, which will cover the use of PPE, emergency response, machine safety, and first aid.)
4. Good hygiene practices to staff (Hygiene practices training will promote personal hygiene, sanitation, and prevention of communicable and non-communicable diseases.)
5. Driver Safety and Emergency Preparedness: Providing training on safe driving practices, emergency response procedures, and defensive driving techniques.

6.3 Cost Breakdown

Item	**Cost in USD**
Solid waste management	300
Training and Awareness	650
PPEs	300
Medical checkups	200
Fire Extinguishers, First aid & spill kits, and Other Safety Equipment	750
Handling wastewater	300
Noise measurements, Machine maintenance, and crusher installment	1250
Stakeholder consultation	200
GRM Implementation and training	200
Total	4150

7. Attachments

Environmental and Social screening report

Photographs at the site

Environmental Protection License