THE GHANA CLEAN-up Project

River Recycle, in collaboration with Beach Clean-up Ghana Ltd and Ambitious. Africa, is implementing river cleaning technology to collect plastic waste in the Kpeshi Lagoon, engaging the local community in a land-based collection system and creating value for the plastic waste collected by utilising the waste as feedstock for mechanical and chemical recycling.

SMEP | Sustainable Manufacturing and Environmental Pollution

RiverRecycle
River cleaning as a free service™

UKaid
from the British people

The end products of the process are plastic flakes, plastic boards and pyrolysis oil that will replace virgin materials in the manufacturing process. The Ghana Clean-up project supports the transition to the circular economy, ensuring the recovery of existing plastic waste and allowing future plastic to remain in circulation for longer.

The project prevents plastic flow into the oceans by recovering plastics from coastal areas and water bodies. This action helps reduce Ocean plastic pollution and directly improves the biodiversity and the health of the water. A paired land-based collection established through a community engagement program offers a free-of-charge waste management service to prevent plastic waste from getting into the environment in the first place. The project provides alternative plastic waste management methods for the local community, avoiding the plastics being burned, leaked into the environment or discarded in dumpsites and unhygienic landfills without a proper landfill gas capture system. Embedding the community engagement program in the community will build urban symbiosis with businesses along the beach, e.g., restaurants and bars.

Selection for SMEP funding

The project was selected for SMEP funding because it offers alternative environmentally friendly waste management methods and supports collection points at the source. The model is based on establishing a free service to build capacity among the riverside communities to improve their waste management practices at the source so that no material is wasted or leaks into the river. The project expects interest from different agencies and governments and is set up to transfer solutions to other countries that share the same challenges with their rivers/waterways.

Operating Model

The project model is modular and scalable, where each intervention component can operate separately or simultaneously. One of the primary beneficiaries of the solution is the municipalities affected by plastic waste pollution. RiverRecycle model offers local community river cleaning as a free service in return for access to the local plastic waste stream. Consumer brands and NGOs consider RiverRecycle intervention to be a corporate social responsibility service and extended producer responsibility recycling solutions. In this spectrum, plastic credit is also considered a financial incentive for the project. In the long term, the project is sustained by the revenue generated from selling recycled end products, i.e., plastic boards, plastic flakes, pyrolysis oil and other petrochemical products.

Progress to date (May 2022)

The Ghana Clean-up Project completed the Beach Clean-up Ghana upgrade, including purchasing a truck and shredder and improving their centre. In addition, the project acquired permits and support from the municipality and engaged them in the project deployment. Community engagement activities were initiated with the target community along Labadi beach. These activities will enable the establishment of a land-based collection system and continuous expansion of this system among the coastal communities. Hydrologic data was acquired, and sampling booms were installed in the water to test the volume and components of waste presented in Kpeshi Lagoon. Feedstock testing for plastic board production is being carried out. Testing for chemical recycling was commissioned to evaluate the polymers present in the local waste stream and examine the quality of the end products that the project may produce. The project also identified an additional business opportunity to generate revenue to sustain the project.

Anticipated benefits

RiverRecycle and its partners commit to Gender Equality, Social Inclusion, and benefits are fairly distributed to stakeholders. The project is expected to create employment and livelihood opportunities in Ghana in the waste management sector while establishing a new plastic value chain where plastic waste is considered a resource. GHG emissions reduction will be realised by displacing demand for virgin feedstock; substituting pyrolysis oil for naphtha; recycling PET waste into PET flakes; replacing demand for imported gypsum board made from virgin feedstock in the market, and reducing waste incineration and landfilling.

Solutions can include (but are not limited to) the following:

- Collection (e.g., river-based collection through river cleaning technology and land-based collection through community engagement program)
- Virgin materials displacement (e.g., the use of recycled feedstock instead of virgin materials)
- Recycling (e.g., solutions to enable waste materials to be recycled for other uses). End products of the recycling process may include plastic flakes, plastic boards, pyrolysis oil and other refined petrochemical products. This can also include technology solutions that connect waste providers with waste collectors and recycling companies, allowing transparency along the value chain.

SMEP is funded by UKAid and is implemented in partnership with the United Nations Conference on Trade and Development (UNCTAD), providing Technical Assistance to the programme.

Project Details

Project Name	The Ghana Clean-up Project
Lead implementor	Riverrecycle Oy
Consortium members and sub-contractors	Beach Clean-up Ghana Ltd. Ambitious.Africa
Project Partners	La Municipal Assembly (LADMA), Ghana Tourism Authority (GTA), African Circular Economy Network (ACEN), Evergreen Labs, ReForm Plastic,
Countries	Ghana is the initial place for implementation. The model will be replicated in other SMEP target countries and beyond.
Plastics Pollution mitigation category	Remanufacture: including feedstock Plastic waste leakages collection and prevention
Market segment	Plastic boards for applications in the local furniture making and construction industry PET flakes as recycled feedstock with various applications such as clothing fibre. Pyrolysis oil and further refined petrochemical products as recycled feedstock for plastic manufacturing in place of virgin material
Project duration	Phase 1: January 2022 to March 2022 Phase 2: May 2022 March 2023 Phase 3: April 2023 to June 2024
Project size	GBP 1 308 707 1 306 310.5 (2022-2024) * This sum is a tentative investment from FCDO, pending ongoing project performance and funding availability.

Contacts

- RiverRecycle: John Adelegan – Project Manager Email: john.adelegan@riverrecycle.com
- SMEP Programme: Ms. Faith Gara info@smepprogramme.org

Media links

- https://www.riverrecycle.com/kpeshi-lagoon-accra-ghana-cleanup/