

Towards a Circular Economy: Insights from the SMEP Programme

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United Nations Conference on Trade and Development (UNCTAD)



SMEP Programme



Sustainable Manufacturing and
Environmental Pollution Programme



**UK International
Development**

Partnership | Progress | Prosperity

- <https://smepprogramme.org/>
- GBP 26.000.000 – focus on Sub-Saharan Africa and South Asia

Two work fronts:

- Projects
 - Plastic Pollution (8 projects in 5 countries)
 - Industrial Pollution (Recently started & some to be initiated)
 - Textiles (Final selection), (Call closed) Leather, 5 Food & Beverages, 1 Used Lead Acid Batteries
- UNCTAD – connection to multilateral processes (WTO, Basel Convention, INC Plastics Negotiations)



Tannery, outskirts of Nairobi, Kenya. Photo H. Pacini



Tannery in
Sheikhpura,
Pakistan
Photo H.
Pacini



Photo
H. Pacini



Photo
H. Pacini



UNITED NATIONS
UNCTAD

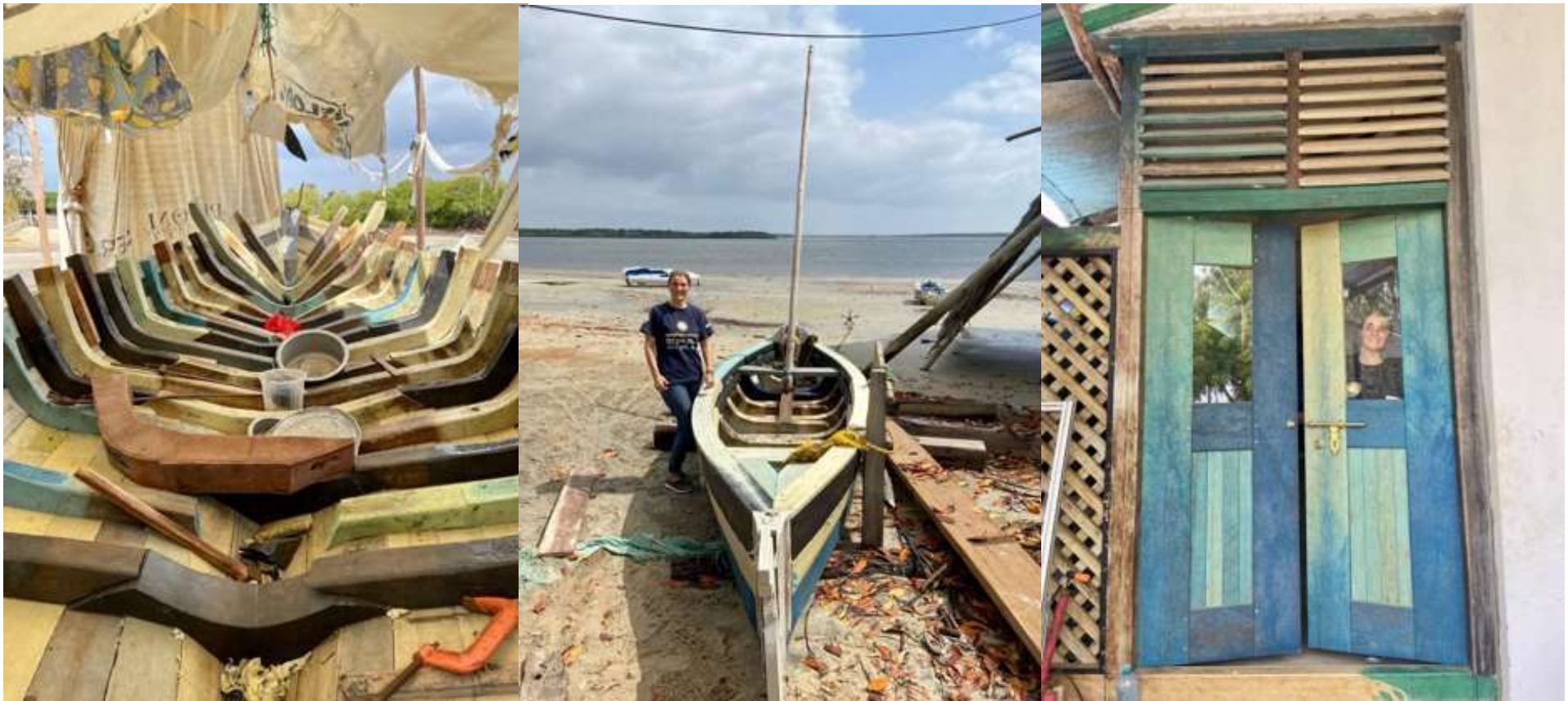


Photo: H. Pacini
Accra,
Ghana



Photo: H.
Pacini
Accra,
Ghana

FlipFlopi Project, Lamu, Kenya



Photos:
G. Wilson



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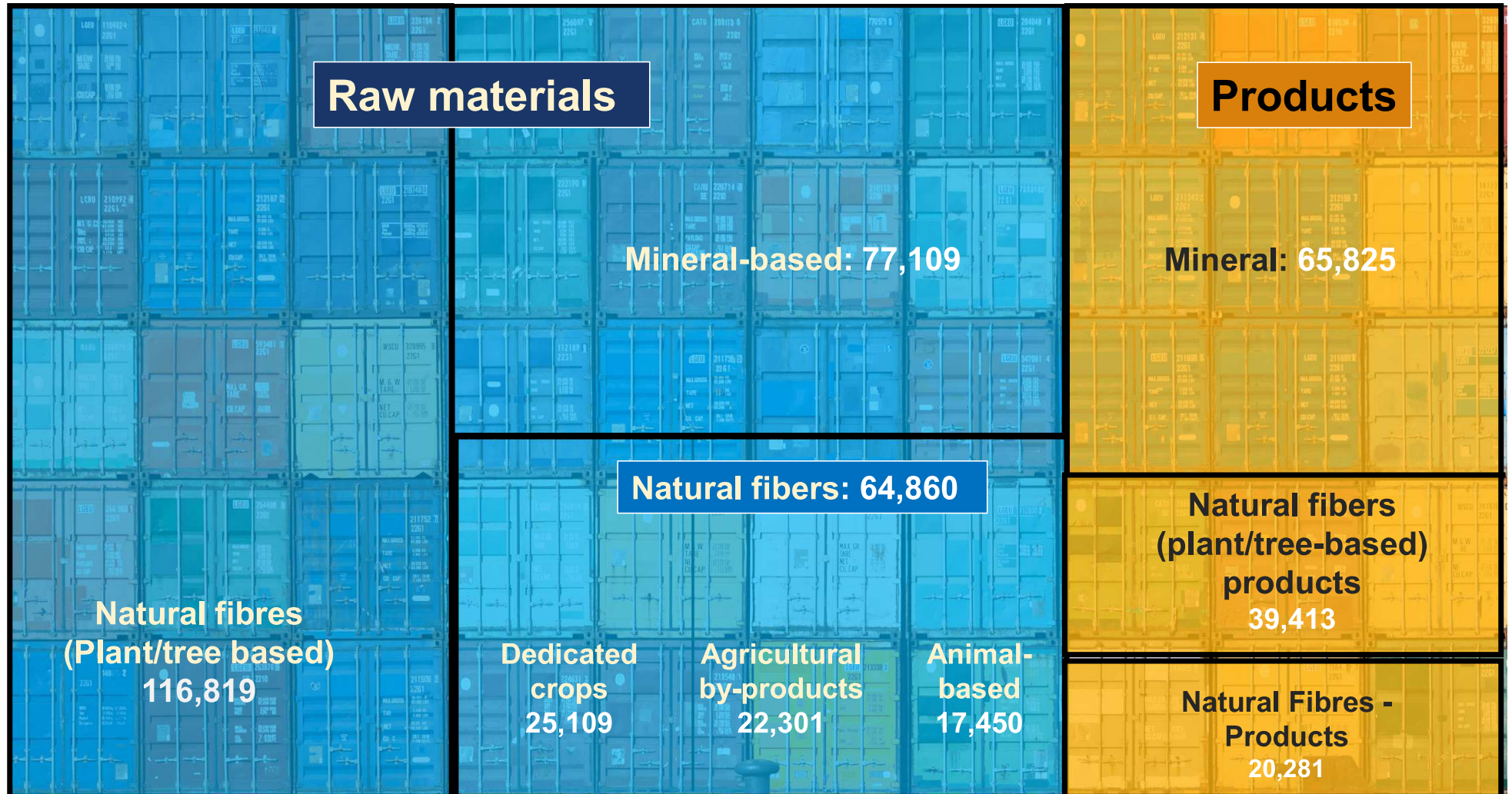




Photo
H. Pacini

Trade value of plastics substitutes

Export represented \$388 billion, approximately 2/3 represents exports of raw materials (\$258 billion)





Notpla

Making packaging disappear

An all-natural packaging solution made from seaweed and plants that is naturally biodegradable and home-compostable, just like a piece of fruit.

One innovation is a takeaway food container coated with seaweed, a revolutionary move for the takeaway industry that has traditionally relied on plastic or chemicals to hold food.

Image source, NotPla: <https://www.notpla.com/products/>

BIO-LUTIONS Fibre Based Solutions

Bio-Lutions converts agricultural residues into self-binding, durable natural fibres to make biodegradable and compostable single-use disposables and packaging.

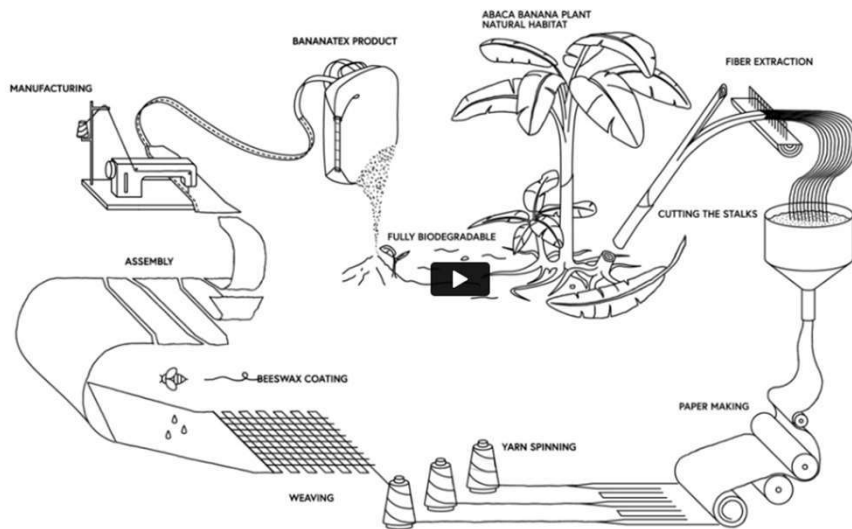
The process uses a wide range of agricultural residues such as wheat straw, hemp shives, nettle, reed, banana stems, vine shoots and more.



Image source, Bio-Lutions: <https://www.bio-lutions.com/>

Bananatex

The world's first durable, technical fabric made purely from the naturally grown Abacá banana plants is Cultivated in the Philippine highlands.





Gaia Biomaterials /Catchgreen

Biodegradable
fishing nets

(alternative plastic)

UNCTAD-SMEP
project developing
renewable-based,
biodegradable and
compostable fishing
nets.

Based on PBAT, PLA
and Calcium
Carbonate.
(Biodolomer®) →



Images source: UNCTAD

Food & Beverages Projects in Kenya

Piloting Biochar production from Food & Beverage Waste

Sanergy aims to establish a first-of-its-kind biochar production facility in Kenya to combat organic waste from the food and beverage sector. SMEP is funding the feasibility study which precedes the establishment of this pilot plant.

Advanced wastewater treatment technology for the plastics recycling industry.

This project is geared towards microplastic pollution mitigation through treating the wastewater produced through the plastic recycling process. That is, an innovative solution that will isolate and separate the pollutants from the water and ensure that the refuse is within the acceptable standards of purity that will not cause any

The pilot will have the capacity to deal with over 1000 tonnes of organic waste per month and promises considerable cost-saving benefits to manufacturers by offering low-cost collection and year-round waste management.

Mr Green Africa will pilot the treatment of the wastewater :

- Treating wastewater from the plastic recycling processes to meet the appropriate reuse standards, that are in compliance with requirements of ISO certification.
- The pilot will reduce microplastics, heavy metals (such as lead) and other process chemicals from detergents and solvents which are released in the process wastewater. The intervention enables 80% of the treated water to be reused.
- Reducing cost of water in the long-term and reducing cost of sludge disposal; and using this resource and cost-saving information to demonstrate the case for water treatment technologies in the plastics recycling industry.

Multi-technology industrial organic waste solution

The pilot project will prevent the release of diverse organic waste into the environment when dumped in landfills and create valuable by-products from this waste.

Pilot for on-site sorting and collection of organic waste from various manufacturers and process into products such as commercial feed and organic fertilizer with market in food & beverages value chain.

- Input as feed for black soldier fly larvae, which are in turn processed into high-protein animal feed,
- Input to a pyrolysis process for conversion into biochar which in turn has value as a stand-alone product, as an input to the BSF production to control ammonia content, and combined with frass from the BSF comprises a high value product marketed to agricultural companies for carbon sequestering, nitrogen rich, soil improving
- Composting for output into affordable, environmentally friendly fertilizer for local agriculture.

Food processing facilities face high disposal costs or fines for illegally dumping of organic wastes. The pilot offers affordable and responsible alternatives to the conventional disposal of organic waste.

The value added by-products from this project are expected to be of high value and significantly cheaper than currently used alternatives.

Assessing the Feasibility of a Biogas and Wastewater Treatment plant for a Fish Farm

SMEP is funding Victory Farms (VF) and the Kenya Private Sector Alliance (KEPSA) to conduct a feasibility study to pilot the i) production of biogas (energy) by utilising fish waste and ii) the treatment of the wastewater from the production process.

SMEP is funding Victory Farms (VF) and the Kenya Private Sector Alliance (KEPSA) to conduct a feasibility study with the objectives of piloting the production of biogas (energy) through fish waste utilization and treating wastewater from the production process.

Furthermore, appropriately treated wastewater can serve as a nutrient-rich water source for farming irrigation, fish growth, and production. This is crucial not only for safeguarding the environment but also for enhancing fish health and the overall efficiency and productivity of fish farms.

Complete pineapple waste solution, including decortication for textile production

The Chequered Flag in partnership with Ananat Anam UK Limited and Mananasi Fibre Limited will pilot the decortication of pineapple waste for a) the recovery of fibres that can be used in the textiles value chain; and b) producing organic compost. Decortication of pineapple fibre is a relatively new technology

The pilot project will be led by Chequered Flag in partnership with and Mananasi Fibre and aims to intercept approximately 4 000 tonnes of organic pineapple waste per annum produced from plantations owned by Del Monte Foods.

The pilot will drive the following outcomes:

- The removal of fibre (decortication) of pineapple waste for the recovery of fibres that will be used in the textiles value chain.
- Producing 5,000 tonnes of organic compost from pineapple waste per annum.

[SMEP – Sustainable Manufacturing and Environmental Pollution Programme \(smepprogramme.org\)](http://smepprogramme.org)

Used Lead Acid Batteries Project in Bangladesh

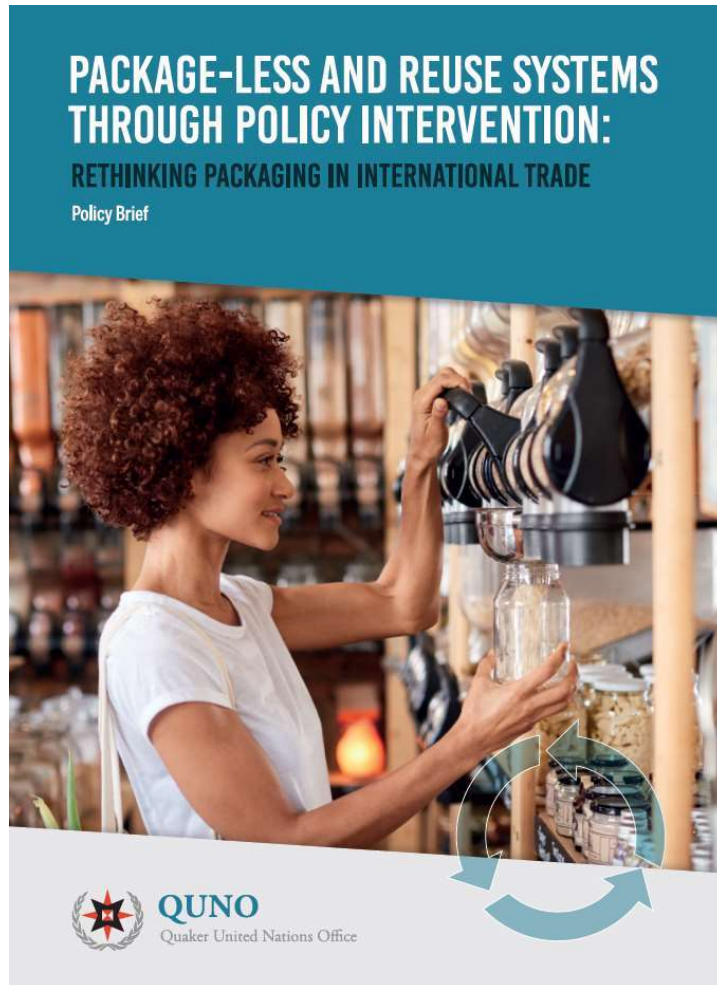


Solutions to informal recycling of Used Lead Acid Batteries

Pure Earth, working in close collaboration with Georgetown University, is contracted to develop business models and policy interventions to deduce informal recycling of lead acid batteries in Bangladesh.

Given the nature of the informal sector and the unsuitability of the practice of lead recycling in uncontrolled environments, the objective of the research is ultimately to divert battery recycling from the informal to the formal sector.

Reduce and/or Reuse



Competitively priced replacements essential.

Conclusions

- **Plastics (followed by other products) will face global regulations soon**
 - Controls on the production, trade and sale of single-use plastics, especially in countries whose waste management is fragile
 - Health and social aspects of plastics & other industries circularity under limelight
- **Business opportunities (and international trade)**
 - In substitute materials (especially agricultural waste)
 - In prevention and depollution services
 - Staff training and capacity building
 - Reuse systems and services
 - Water treatment and decontamination systems

What can journalists do to help?



Thank You

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