

# OPPORTUNITIES FOR BUSINESSES TO COLLABORATE WITH THE FCDO-UNCTAD SUSTAINABLE MANUFACTURING ENVIRONMENTAL POLLUTION (SMEP) PROGRAMME

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Sustainable Manufacturing and  
Environmental Pollution Programme



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- Recording of this session will be made available after the Webinar, together with other relevant materials
- Please use the Q&A box for questions

# SMEP will support the adoption of pollution mitigation technologies across two key themes in Kenya and Uganda

Growth across manufacturing sectors in Kenya and Uganda has been driven by increased trade and consumer demand, however, investment into pollution mitigation technologies remains low; following a comprehensive market assessment SMEP is prioritizing support to technologies that can demonstrate high-potential to scale and realize impact across two thematic areas in Kenya and Uganda

	Waste-to-energy inputs for industry	Recycling industry inputs for industrial processes
Example prioritized solutions	<ul style="list-style-type: none"> <li>Anaerobic digesters for biogas and bio-fertilizer production</li> <li>Organic pyrolysis to produce bioethanol and biodiesel</li> </ul>	<ul style="list-style-type: none"> <li>Wastewater treatment through a variety of technologies like ultra, nano and micro-filtration</li> </ul>
Sector focus	Food & Beverage, Pulp, paper & packaging and Textiles, clothing, leather and footwear	Textiles, clothing, leather and, footwear, Chemicals and chemical, products, Basic and fabricated metals etc.
Pollutants addressed	Organic waste: Food bits, blood, fat, skins, bone, pulp, husks and other agro-processing residues	Water pollutants: heavy metals such as lead, mercury, chromium and chemical residues (from textile dyes and pharmaceuticals)
Impact and co-benefits	Prevents organic waste from water and land that would create eco-toxicity leading to a disturbance in land and aquatic ecosystems	Prevents leakage of heavy metals and undesirable chemicals into the aquatic environment and eventual entry into human food chain with adverse impacts on human health

# An upcoming call for concepts will seek to identify pilot opportunities for new technologies

We are seeking to identify and engage manufacturers, solution providers and other relevant stakeholders for piloting technologies across the two thematic areas in Kenya and Uganda; SMEP pilots provide a platform to de-risk technology adoption in the market, through demonstrating key technology, financial and / or impact proof points



**SMEP is following a multi-step process to engage stakeholders, build awareness, and develop pilot projects to demonstrate technologies across the two thematic areas**

1

Market landscaping of manufacturers and solution providers across the thematic areas; develop market assessments of key technologies

2

Build awareness through conversations with manufacturers and solution providers, including one-on-one calls and workshops

3

Publish a call for concepts across the two thematic areas (TOR expected mid-July); anchored on the three solutions identified and open to other technologies

4

Develop detailed pilot proposals and subsequently provide grant financing to establish the pilot projects



# The SMEP Programme: Programme in brief

- Research to develop the evidence to support practical solutions with a high chance of uptake and impact.
- Developing and testing innovative technology-based solutions that improve the environmental impacts of manufacturing.
- Identifying and developing suitable business models and policies that drive the adoption of innovative technology-based solutions.
  - GBP 20 million over a 5-year period
  - Sub-Saharan Africa and South Asia
  - Implementation led by a programme management agent (PMA) Pegasys and SouthSouthNorth
  - UNCTAD bring strategic technical assistance





# SMEP Plastic Pollution Mitigation – Projects under funding

- In 2021, the SMEP Programme designated £5 million to address plastics pollution in the target regions. An open procurement process followed.
- Categories: Material substitution, accelerated biodegradation and remanufacturing processes
- 10 Projects were contracted and commenced delivery in January 2022 1<sup>st</sup> phase focused on showing feasibility.
- All projects showed strong potential to deliver plastics pollution mitigation impact (and ancillary co-benefits). 9 of the projects have advanced for full implementation. On the basis of effective delivery and compelling case for impact, the programme spend on plastics has increased to £10 million
- Projects under funding: [www.smepprogramme.org](http://www.smepprogramme.org) – Plastics Intervention

# Projects Under Funding

## End-of-life solutions (incorporating re-manufacturing)

- Chinhoyi University, **Kudiwa Waste and Energy Solutions**, Zimbabwe
- Flipflopi: **Heritage Boat Building**, Lamu Kenya
- University of Warwick GIVO - **Garbage in Value Out**, Lagos Nigeria
- RiverRecycle, **Ghana Clean Up Project**, Accra, Ghana

## Biodegradation

- Gaia Kompost – **Biodegradable Fishing Nets**, Global application, initial testing and piloting in South Africa and Tanzania
- CSIR, **Biodegradable Mulch Films with Customised degradation Rates in Natural Soil Conditions**, Initial testing and piloting Nigeria

- PA Consultants, **Biodegradable lateral flow test kits**, Bangladesh evaluated for initial manufacturing potential

## Research and Innovation Hubs

- BlueSkies; FRESHPPACT, initial piloting in Ghana
- University of Cambridge: **P2G: Plastic Waste Remanufacturing for Innovative Local Housing Solutions in Nepal**, Nepal
- ISL, **Bangladesh-Plastic Pollution Reduction through Industrial Symbiosis Matching (B-PRISM)**



# FRESHPPACT HUB

- The project is led by Blue Skies
- The FRESHPPACT HUB is a collaborative platform that facilitates research and development into the shared environmental challenges facing the fresh produce industry.
- Designed to meet the needs of retailers, manufacturers, and agribusinesses.
- Initial Pilot: Plastic agricultural mulch, workwear and packaging used in the fresh produce industry in Ghana.
- Three Research Funds are to be launched in the next month. Promising concepts will be selected for funding, with in-situ testing facilitated by the Hub partners
- <https://www.freshppact.org> to register interest





# Ghana clean-up project

- The project is led by **River Recycle**, which is based in Helsinki but operates projects in 9 countries.
- Waste management systems are installed on the shores of polluted rivers (litter booms) to collect waste, which is cleaned, sorted into material types and directed for recycling. Low-value wastes are feedstock for pyrolysis
- Work to date: Beach Clean Up Ghana upgrade, offtake agreements secured for pyrolysis oils, recycled materials into boards for building purposes, new markets for PET flakes, community outreach and youth involvement ...
- 2000 tones of avoided plastic wastes annually
- Co-benefit: waste management systems, creating or stimulating the market for waste plastics, income and small business opportunities, environmental and marine clean-up benefits, carbon credits





# Cooperation Opportunities on Plastic Pollution Mitigation

1. Project implementation: Co-finance towards the SMEP grant for scaling
2. Corporate Social Investment into bespoke aspects (for example scaling the Beach Clean Up Centre in Accra, Heritage Boat Building Academy)
3. Specific Interests for uptake of solutions (e.g. biodegradable fishing nets, mulches, solutions for fresh produce value chains)

# Questions

Visit: [www.smepprogramme.org](http://www.smepprogramme.org)

Email: [info@smepprogrammes.org](mailto:info@smepprogrammes.org)

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## Upcoming procurement

- Manufacturing pollution
- A budget of up to GBP 9million will be available
- 3 separate calls will be launched from July 2022 to September 2022
- Aim to contract in Q1 2023
- It is anticipated that between 10 to 15 projects will be funded per sector on interest, with budgets of between GBP 250 000.00 to GBP1million each.



## Upcoming procurement

- Nature of Opportunities
  - Please engage proactively if you are aware of opportunities that align with the SMEP scope – SMEP PMA is open to discussion
  - Consortiums are invited to submit concepts once calls open
  - SMEP has an interest in developing projects that have a market led demand. Please engage if you are a buyer in the textiles or tanneries sector, or if you are active in value chain in East Africa





# Piloting Technical solutions to address manufacturing pollution in East Africa:

- **Piloting Technologies in East Africa:**
- Target countries Uganda and Kenya
- July launch for call for concepts that lead to the testing and piloting of solutions that address manufacturing pollution in the following categories:
  - ***Waste-to-energy inputs for industry***, with a focus on biogas production from anaerobic digesters and organic pyrolysis
  - ***Recycling industry inputs for industrial processes***, with a focus on wastewater treatment. Solutions will be evaluated according to the ease of integration, the extent of resource efficiency and pollution mitigation.



## SMEP Textiles Procurement

- Target countries are Bangladesh, Pakistan, Nepal, Ethiopia, Kenya, Tanzania, Ghana, and Uganda.
- Projects should bring together the following parties:
  - Retailers and other textile buyers (demand side parties) and
  - The manufacturers operating in the textiles value chain (supply-side parties)
  - Solution providers, including technology providers and research institutions in the pollution-control & circularity areas

# SMEP Textiles Procurement

	Category / Theme Area	Example of activities
Area A	Data Production Systems for improvements in quality control of processes and for enabling product passports	<ul style="list-style-type: none"> <li>• Piloting data management technologies that improve traceability of pollution data in the value chain, including "sensors packages" and secure data storage solutions</li> <li>• Improvements in quality control of processes and creating metrics on manufacturing-input-output pollution metabolism</li> <li>• Development of Resource Efficient Cleaner Production (RECP) practices</li> </ul>
Area B	Increased Efficiency in Wet processes	<ul style="list-style-type: none"> <li>• Water-saving processes such as water de-pollution &amp; reuse</li> <li>• Improvements in dyeing techniques, e.g. waterless dyeing technologies</li> <li>• Dyes that produced from environmentally friendly materials such as plant-based dyes and technologies, which consumes less energy and water as well as viable alternatives technique that are less harmful to the environment, such as spray dyeing.</li> </ul>
Area C	Recovery & upcycling of textile residues to address the excessive amount of second-hand garments adversely impacting local brands and going to landfills	<ul style="list-style-type: none"> <li>• Avenues to utilise pre-and post-production textile waste, e.g. used clothing and different types of solid wastes, including trimmings, packaging materials and used chemical containers, and examining how waste can regain economic value.</li> <li>• Advancing technology to separate fibres (polyester, cotton, etc.) to reuse the fibres.</li> <li>• Producing waste-based energy to enable heat /power processes behind recycling &amp; circularity.</li> </ul>
Area D	Development and upscaling of more environmentally-friendly fibres	<ul style="list-style-type: none"> <li>• Innovative ideas to use a variety of fibres that can be produced from by-products of plants or marine products (such as but not limited to pineapples, banana peels, bamboo, and coconuts, which are locally grown in SA and SSA)</li> <li>• Explore the use of cotton by-products to create new income streams for added domestic value, diversify exports, and reduce waste in cotton value chains</li> </ul>



# SMEP Tanneries Procurement

- Target countries: Geography: Bangladesh, Pakistan, Ethiopia, Kenya, Tanzania
- This call is expected to launch in August / September 2022).
- Challenges flagged in the sector:
  - Limited research into the impacts of hazardous tannery conditions and compounds/chemicals on occupational health impacts
  - Weak enforcement of pollution regulations and operating environments that do not facilitate worker rights
  - Manufacturers have limited capacity in managing solid waste and wastewater generated from the tannery processes, especially chromium\*
  - Absence of tertiary academic programs contributing to human capital formation. This compounds the problem of largely non-existent, publicly available data/information and local research on the tanning sectors.
  - Structural challenges, including the bifurcated nature of the sector and microeconomics of the value chain (e.g. sub-contracted employees and prevalence of informal and unregulated operations)



# SMEP Tanneries Procurement

- Opportunities:
  - A range of simple physical and technical interventions have been proven to deliver pollution mitigation and worker occupational health and safety benefits
  - In many SMEP target countries, there is a strong engagement between governments and leather industry stakeholders.
  - Value chain opportunities: Adjustment of tariffs and other economic and trade instruments may hold an opportunity to improve returns and investment in cleaner production. Sustainable production is emerging as a market requirement in developed markets, such as through the SPI process in the EU.
  - In several of the SMEP target countries, tanneries are clustered in designated industrial parks, which presents an opportunity for centralised interventions with the potential to benefit many producers.
  - Markets signal an interest and demand for improved OHS and environmental controls in the value chain.
- Concepts will be sought that address one or more of the themes below, with the requirement that these are **framed for the local context**.
  - Improving access to evidence and enhancing knowledge and understanding.
  - Process interventions (physical, biological and chemical).
  - Regulatory controls and enhanced regulatory capacity.
  - The commercial value proposition for cleaner production within the value chain.
- It is anticipated that concept proposals will address physical, biological, and chemical interventions as well as circularity and symbiotic solutions.



## Upcoming procurement: Questions

- Register interest at [www.smeppprogramme.org](http://www.smeppprogramme.org)