



PROJECT SUMMARY

Ref No.: MRIC/PCS-2206	Title: Smart Agricultural Nutrients- Bio-Innovative Co-Composting of Seaweed and Fish waste
Local Company: Nature Technics Ltd	
Collaborating Institution: (1) Association of Women Engineers (2) Fondation Ressources et Nature (FORENA)	
Project Leader	
Mr Oudesh Bapoo	Nature Technics Ltd
Research Collaborators	
Name	Organisation
Dr Geeta Somaroo	Association of Women Engineers
Mr. Manoj Vaghjee	Fondation Ressources et Nature (FORENA)
TECHNICAL ABSTRACT	
<p>The total amount of solid waste landfilled at Mare Chicose in 2019 was 537,147 tonnes¹. Government spends around Rs1.5 billion annually on waste management, including waste collection (on some housing estates, coastal villages, traffic centres and public beaches), operation and maintenance of transfer stations and transportation of wastes to landfill, and, operation and maintenance of the landfill site. Local Authorities spend around Rs 990 million annually on waste collection services². 60 to 75 % of the types of waste generated in Mauritius is organic. Seaweed is a highly valuable product which is currently being used around the world in the production of numerous products from food, animal feed, cosmetics, bioplastics, and organic fertilisers. 435 species are present in the ocean around Mauritius³. Around 20 tonnes of seaweed wash on our shores each year. They are scrapped from beaches, carted away, and dumped at Mare Chicose, thus losing valuable raw material, and increasing GHG emissions. Seaweed composting has been researched in Mauritius. Similarly, fish waste, a by-product from Ferme Marine De Mahebourg is carted away and dumped. An enhanced seaweed-fish waste compost for agricultural crop production has not been commercially established. The proposed research project aims to investigate the potential use of shore-washed seaweed into production of enhanced high-nutrient seaweed compost for commercial applications. The research will investigate addition of fish waste to seaweed as bio-inputs (bio-bulking agents and bio-enhancers) and different production protocols. Fish waste contains large amounts of nutrients, such</p>	



as N, P and Ca (Illera et al., 2010). Commercial growers as well as backyard gardeners who are more and more interested in producing and consuming chemicals-free produce will be target users. Limited imported seaweed-based fertilisers are available at high cost on the market. Through this innovative endeavour, Nature Technics Ltd is committed to bring to growers locally made, chemical-free fertilisers and safe plant nutrients. Nature Technics Ltd plans to set up the composting facility at the CIEL Agrihub at Ferney Valley. Partnerships are established with Association of Women Engineers and FORENA to collaborate on the pilot research work. Competent authorities will be contacted to deliver permits to collect the seaweed on a large scale. For the proof of concept, Ferme Marine de Mahebourg has already agreed to provide seaweed, which populates its nets, and fish waste, 4 tons of which is produced per week.

Key Words: Seaweed, compost, bio-enhancers, fish wastes, greenhouse gases, organic agriculture, climate resilience, circular economy