

Food produce that is lost along the supply chain before it reaches the consumer as well as food that is thrown away by consumers is a global challenge. Thirty per-cent of the food produced globally is ending up as food waste, thereby impacting the environmental, social and economic dimension. In developed countries food waste generally takes place on the consumer side, while in developing countries food waste arises largely along the supply chain due to constraint in technologies such as storage and cooling, but also due to logistics.

Food waste is problematic on many levels. Firstly, a lot of discarded food is still good for consumption. Secondly, food waste ending up in landfills is creating greenhouse gases, thus contributing to climate change. At the same time food needs water, nutrients, energy and other resources to be produced, thereby wasting embedded resources when wasted. On the other side, every night many people go hungry to bed. In South Africa, nearly 20% of the households are not food secure and experience hunger, mainly in urban areas. Households with many children experience more food insecurity compared to South African households with few or no children, which makes children especially vulnerable.

On an economic scale, the South African agricultural sector, contributes 2.2% to the Gross Domestic Product, while nearly the same value is lost as food waste (R61.5 billion annually), excluding resource utilisation for food production. The areas that need improvement are the meat and fruit & vegetable sector, mainly in the processing, packaging and distribution stage.

ECO SOLUTION

Together with the use of solar power and green packaging of the dried products, Food Masters and UJ-PEETS seek to aiding development of a green economy and decrease food waste in the Waste and Energy fields.

Linda Manyeza graduated in the Small Business Enterprise Program (SBEP) at the University of Johannesburg Centre for Entrepreneurship in Soweto. Linda's passion for food preservation began when she lost her house, businesses and other possessions. Unable to put food on the table with children out of school, Linda realised that poverty can affect anyone and that she was fortunate to have access to information, unlike many women who were in under-privileged communities, but going through similar challenges as hers.

Being widowed during this difficult period of Linda's life further worsened her situation, but she refused to be defined by circumstances. This prompted her to look deeper into food security in South Africa. Her research revealed the extent of food wastage annually while millions of people go to bed hungry daily. Most of the food which ends up in landfills can be preserved. She decided to fight against food waste through food dehydration and train women in rural and peri-urban communities how to dehydrate food so that they too could fight against food waste, increase food security, earn sustainable income, provide nutritious food to their families, gain skills and be empowered to run a profitable business while contributing meaningfully to the economy.

This project which fights against food waste is Linda's brainchild. Says Linda: "As Food Masters SA, we believe that women in rural and peri-urban communities can be empowered to bloom where they were planted". Food Masters and Ladies in Power dedicated a whole year to product development and finding markets for their dried food.

Linda received training in food dehydration and preservation and entered into a strategic partnership with Lurco Foundation which funded the set-up of the pilot project in support of Food Masters' vision, as well as to empower women of Ladies in Power co-operative who live in Lindokuhle, an informal settlement in VanDykstrif, Witbank, which is also Lurco's host

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community. Jointly Linda and Zandile Gcabashe, the then CSI and Community Development Manager of Lurco Foundation, worked tirelessly to shape the project.

The pilot project trained 10 women who did not have the necessary qualifications. The ten women have a total of 48 dependants. Comments Linda: "Our pilot project uses an electrical dryer which is not a sustainable solution. Food Masters is working towards dehydrating nutritious food using an off the grid solution."

COLLABORATION

Linda explored other technologies which could benefit those in remote areas and a collaboration with University of Johannesburg Process, Energy & Environmental Technology Station (UJ PEETS) was formed. UJ PEETS, in line with its mandate, saw a means to reduce the reliance on electricity to increase profit and reduce food waste through renewable technology intervention and support. This was achieved through applied research, prototyping and participation from mechanical science student to test and optimize use of a solar powered dryer.

TECHNOLOGY

UJ-PEETS supplied an initial small solar dryer acquired from BioMed to test the performance for quality and output to assist with increased production and decreased outlay of expenses. Food Masters SA provided produce for testing. These samples were prepared in the same manner as for the electric dryer. The solar dryer takes a maximum of 36.557 m² trays and power solely by a flat plate solar collector. After the initial testing and optimization a larger modified solar dryer will be developed considering the lessons learned.

"Through applied research, student participation and renewable technology intervention, UJ-PEETS is able to support SMES in the green economy to grow their business and support the energy food nexus" says Zeldia Rasmeni, engineer at UJ-PEETS.

"As an entrepreneur I realised that we cannot fight against food waste in isolation. We have to collaborate with big Companies, Universities, Research and Technology stations, Markets and Farmers to repair the food system. When we each do our part we achieve more. 'Remember, rivers are filled by tributaries' - Margaret Chikukwa (Linda's mum).

We are happy to be working towards drying food with solar energy and technologies which are eco-friendly. We are packing our sample solar dried vegetables in bio-degradable packaging."

Linda Manyeza: Food Masters SA
<http://www.foodmasterssa.co.za/>

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