Project Title: Piloting Farming – Integrated Waste – To – Energy Domestic Biogas Technology with Youth Capacity Building in Blouberg Local Municipality of Capricorn District Municipality.

The University of Venda is working in collaboration with, and funded by Capricorn District Municipality and United Nations Industrial Development Organization (UNIDO), in the implementation of farming integrated waste-to-energy technology in the villages of Avon-Ines and Indermark under Blouberg local municipality of Capricorn District Municipality in Limpopo province. The project is one of the pilot projects meant to demonstrate how local challenges can be solved using locally available resources creating opportunities for growth and development through appropriate application of science and technology, "*Making it possible through science*".

The project has seen multiple benefits as demonstration of application of science at grassroots, allowing rural households to enhance their resource utilization efficiency, localizing circular economy to household level, through the generation of clean and cheaper cooking energy from what would otherwise waste and a menace, improvement of food production and youth empowerment through knowledge and skills development. The project also demonstrates the need for a nexus approach when planning resource utilization and the need to enhance inter-department collaboration among the different government entities from planning and policy development. Involved in the project are the Department of Environment, Forestry and Fisheries (DEFF), the Department of Economic Development, Environment and Tourism (LEDET), Vhembe Technical and Vocational Education and Training (TVET), Department of Energy's South African National Energy Development Institute (SANEDI) and other entities in implementing projects on renewable energy and energy efficiency in communities in the province of Limpopo focusing on promoting integrated farming - organic waste-to-energy and other low carbon technologies in small, medium and micro enterprises (SMMEs) scale in order to promote the acceleration of biogas market development in South Africa. The project seeks to promote market based adoption of integrated biogas technologies in small, medium and micro-scale enterprises in South Africa in line with the country drive to promote the development of the renewable energy and energy efficiency sector and the green economy.

Project Outcomes

Technology awareness

The communities of Avon, Ines and Indermark were introduced to the technology through a series of awareness workshops, trainings on the theory of the science and technology of anaerobic digestion process that converts organic waste to energy and fertilizer. Seventeen youths (eight females and nine males) went through a thorough training on both theory and practical on sizing digester systems, construction and operation and maintenance of the digester systems.

Employment opportunities

Over 9300 man-hours of EPWP rate (R21,69 / hour) were created in the on-work training of the youth in the project.

Replacement of electric and wood fuel for cooking

With an average of two hour of cooking a day household, over 26 hour of cooking energy is replaced from the conventional to biogas cooking a day.

So, this achievement is worth disseminating to the nation to show what science can do to our communities and thus the developed documentary seeks to capture views of the critical stakeholders in this project interviewing, filming and photographing.