

## Factsheet final findings Applied Research Fund Call 1



### Utilization of Organic Waste to Improve Agricultural Productivity in Ghana

#### Summary

This action-oriented applied research project (UOWIAP) aimed to improve environmental sanitation and promote agricultural productivity in the GA West Municipality of the Greater Accra Region of Ghana. This has been achieved by engaging unemployed youth in organic waste collection from local markets, providing them with skills for compost production, and farmer sensitization on compost utilization and soil conservation. Building and sustaining youth-operated waste collection and compost production to promote economic development is possible when in the initial stage you provide a basic salary for the participating youth. Further, treat them as employees who are receiving training to enable them to do their work well. This takes away the dependency syndrome of demanding for sitting allowances and per diems before participating in a (training) program that will benefit oneself. In order to sustain this concept, a linkage has been made with an anchor business, a waste to value company ([Green Energy Ghana](#)), which will take up this responsibility as part of its business model.

#### Research Findings

##### Waste collection

- The enthusiasm of market traders to have their waste collected is overwhelming, indicating the potential to promote waste segregation at no financial cost.
- The project did not have enough capacity in terms of vehicle to collect waste. The tricycle volumes are too small.
- Mass education on waste segregation is needed to change the behaviour in local markets and establish the needed segregation at source.

##### Composting

- Compost production is a plausible small-scale business venture but external support is needed to create demand for compost.
- Current research needs identified application levels for soil and crop types and compost formulations for specific crops.
- Farmer schools for compost production are needed to further educate farmers.

##### Field experimentation

Results of field experiments showed that the application of compost increased plants growth compared to those without compost application. The application of 6000kg compost increased total biomass by 28% compared to treatment without compost application. In addition, compost significantly increased total nitrogen uptake. The major conclusion was that compost significantly improved nutrient uptake by plants. Green Energy Ghana will continue with the production of the compost.

##### Opportunities

The major opportunity for the sustainability of the project is the dire need for a sustainable waste management approach and the appreciation of the organic waste value chain among stakeholders. For the first time and as confirmed by feedback from trainees; the value of organic waste has been brought to attention. Once demand is created for compost utilization, it will naturally result in organic waste removal from the waste stream and divert them from the landfills.

<b>Outcomes achieved</b>	<p><b>Story 1: Starting small and being absorbed by an anchor business</b></p> <p>A small scale compost production business venture has been set up by a group of trainees who have taken it up as an income generating activity. From October 2017 till December 2017, the group has produced and sold about 30 tons of compost. Major clients for the group are HortServe, the Church of Jesus Christ of Latter Day Saints, and the University of Ghana Sports Directorate. During several fairs the product was showcased, which increased the number of potential customers. The group is furthermore in discussions with Green Energy Ghana to be absorbed by the company; this to sustain their income, but also to provide a larger market and to scale their concept. Within a 2-year period, the trainees have transformed from unskilled and unemployed young people, to skilled young experts, negotiating with a big company for a partnership.</p> <p><b>Story 2: Scaling up blended learning approach</b></p> <p>As a result of the positive impact of the e-learning app and after a demonstration training on how the training app works, the University of Winneba embarked on a joint implementation of a blended learning concept to increase the skills of around 1,000 graduating students and peri-urban professionals. The scaling up of the e-learning app will enable teachers to provide better hands-on practical training to students and increase the outreach and impact of vocational training programs, making it accessible for large groups of underprivileged young people looking for jobs, and improving accessibility for the entire vocational training value chain in Ghana. The teachers who participated in the training programme are now capable of attending to a large number of students and provide a higher quality of education and skills development. Additional funding has been raised to further develop and test the concept of blended learning.</p>
<b>Project messages to</b>	<p><b>A) Actors from private sector:</b></p> <ul style="list-style-type: none"> <li>• Integrated market approach combined with coordinated efforts makes it possible to have a commercialized business around organic waste in major cities in Ghana.</li> </ul> <p><b>B) Civil society and practitioners organizations:</b></p> <ul style="list-style-type: none"> <li>• Teaming up with private sector organisations at the beginning of any project intervention or research project will help in the results uptake by the private sector.</li> </ul> <p><b>C) Policy makers:</b></p> <ul style="list-style-type: none"> <li>• Make use of results from research as part of an evidence based local decision-making process.</li> </ul>
<b>Knowledge products</b>	<ul style="list-style-type: none"> <li>• <a href="#">Building your Business Model</a>, e-learning app.</li> <li>• Newsletters and videos can be found on the <a href="#">Project page</a>.</li> <li>• Several articles have been written and are awaiting publication.</li> </ul>
<b>Knowledge networks</b>	<p>The project has become part of the compost producing network, which has been set up with support from the Ghana Wash Window programme.</p>
<b>Knowledge co-creation</b>	<p>Clear understanding gotten out of this project is the need for integration of policy interventions, government programs and private sector initiatives and the need to share results of studies. Due to the engagement of 3 partners (Ga West, IESS and MDF) in another project, the results and challenges of this project were linked to the other project. Therefore, the other project was able to solve the challenge of the sustainability of the project results. This ARF project enabled the 3 partners to strengthen the partnership and has ensured cooperation in other projects. This has helped in appreciating the added value of each partner. Now that each organization's strength is known, there is being called upon each other more.</p>
<b>Consortium Partners</b>	<ul style="list-style-type: none"> <li style="width: 50%;"><a href="#">Institute for environment and Sanitation Studies, University of Ghana (IESS)</a></li> <li style="width: 50%;"><a href="#">Ministry of Food and Agriculture – GA West Municipality</a></li> <li style="width: 50%;"><a href="#">MDF Training &amp; Consultancy BV / MDF West Africa</a></li> <li style="width: 50%;"><a href="#">Environmental Unit – GA West Municipality</a></li> </ul>
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