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CASE 5: GHANA

Communities pilot chemical free agriculture

GRANTEE
Abrono Organic Farming Project

COUNTRY
Ghana

LOCATION
Forikrom-Techiman

SGP CONTRIBUTION
US$42,700

IN-CASH CO-FINANCING
US$20,400

IN-KIND CO-FINANCING
US$30,400

START DATE
August 2013

END DATE
July 2015

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PROJECT CONTEXT

The population in Techiman municipality relies on agriculture and approximately half of the households are involved in some form of agricultural activity. Pests and disease are a severe problem for agriculture in Ghana, and it is estimated that 45 percent of annual crops get destroyed because of this (National Development Planning Commission, 2010). Consequently, pesticides and herbicides are heavily used to control and eradicate crop pests. Organochlorine pesticides, such as DDT, lindane, and endosulfan are used due to their low cost, high efficacy, and suitability for a broad range of different crops despite harmful effects. Intense agriculture and extensive chemicals use have led to soil depletion in Techiman and the declining soil nutrient levels provide less than ideal conditions for good crop yields.

In Techiman municipal district, only about 10 percent of solid waste is properly disposed of and about half of the generated waste is dumped in open spaces, posing grave risks to human health and the environment. An average of 0.40-0.45kg of waste is generated per capita in Ghana annually, which adds up to about three million tonnes of waste across the country (Environmental Protection Agency of Ghana, 2012). Faced with these challenges, local NGO Abrono Organic Farming Project (ABOFAP) took the initiative to develop and promote waste processing systems that required minimal mechanical equipment. Their goal was to effectively manage community waste and to utilise organic manure as fertiliser to reduce the presence of POPs in the environment while securing higher crop yields for a growing population.

PROJECT IMPLEMENTATION

With involvement of an initial group of 50 people, ABOFAP started collecting and processing domestic solid waste, which they processed in a facility in Forikrom. The goal was to use organic manure as fertilizer and replace agrochemicals. Two plastic bins were distributed to each participating household so that they could sort their waste at the source, based on dry waste or wet waste. ABOFAP also engaged in public awareness efforts and educated the stakeholders and the community in waste management techniques with an emphasis on reducing, reusing, and recycling waste.

A one-hectare demonstration farm operated by fifteen trained farmers was established to showcase the efficacy of using organic fertilizer, neem oil pesticide, and rainwater irrigation. The wet waste was taken to composting sites via an established collection system, and a simple aerobic vermicomposting process was used to turn the degradable waste into compost. A local social enterprise

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was established to manage the financial resources, provide technical supervision, and manage the project. The project also introduced integrated pest management system where Neem leaves and seeds are processed (using pepper and soap) to produce Neem pesticides to control pests on the farms.

RESULTS AND SCALING UP

Since the start of the project 126 tonnes of solid waste have been biologically decomposed under controlled conditions by microorganisms, using primarily bacteria and fungi. This waste would, otherwise, have been burnt or dumped in local wetlands. The project has replaced 162,000 kilograms of chemical fertilizers with organic compost. The project has replaced 67,500 liters of agrochemicals used in agriculture with organic pesticides, mainly neem extracts.

The facility holds quarterly hands-on training workshops on composting and pesticides preparation. This training has benefitted 35 farmer groups (with 20 member each) selected from the nearby communities so that they may replicate the project in their own communities. The processing facility produced 440 bags, weighing 25 kg each, of organic fertilizer every 40 days for sale and distribution. In addition, 1,350 liters of Neem pesticides and 320 liters of liquid organic fertilizers were produced every quarter. The revenue generated by the sale covered the upfront expenses and operating cost.

Techiman municipality is home to two inland shallow marsh wetlands covering a total of 4.5 hectares. These wetlands perform a range of important ecosystem services and served as the dumping ground for the local community's solid waste. Virtually no waste is now deposited in the wetlands and they have been protected from pollution by local bylaws and restored.

The project business strategy has been replicated in Osaekrodua, in the Central Region. The Techiman Municipality has adopted the strategy and will support farmer groups within the rural municipality to replicate.

EXPERIENCES AND LESSONS LEARNT

ABOFAP emphasizes the importance of community stakeholders involvement to ensure that the project stays relevant and serves the community in the best possible way. The long-term sustainability of the project is contingent on effective communication with the relevant stakeholders and their continued support. Local bylaws are also helpful in encouraging waste segregation and collection at the household level.

The project's emphasis on promoting reuse, recycling, and recovery of solid waste helped facilitate a paradigm shift, from the current use and throw away mentality to being able to use the waste productively and minimise reliance on agrochemicals. Establishing a social enterprise to manage the processing facility and organic compost production has proven effective. The management of a revenue stream for the local community, and training of new environmental entrepreneurs has been essential for the long-term success of the project.