

Vermin compost: a sustainable, climate smart technique creating opportunities for increased household income in south west Bangladesh

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Busy filling soil mixed with earth worms and cow dung into two big containers, Kajol prepares vermin compost, an organic fertilizer, in a corner of her courtyard. Kajol concentrates on the soil to ascertain how much time it could take to become mature enough to be separated and dried in the sun to make vermin compost.

Kajol Rani lives with her husband Ashok Kumar, Akash, her seven year old son and mother-in-law in a village in Shyamnagar, a remote sub district in south west Bangladesh. Being a day laborer, Ashok Kumar, finds it difficult to find regular work and earn enough to support the household. Kajol, therefore, struggles to maintain family expenses including her child's tuition fees and the family live hand to mouth. Though she wants to do something for the family, there are limited opportunities for income generation, particularly for women in south west Bangladesh. Also, prevalent cultural norms inhibit women's participation in paid work.



Local communities in south west Bangladesh struggle with recurrent natural disasters like cyclones, tidal surges and scarcity of safe drinking water. Household well-being¹ is affected by shocks and stresses directly related to these disasters. Moreover, yields from rice cultivation have substantially reduced due to the shortage of cultivable lands caused by high levels of salinity² intrusion from frequent inundation. Extensive shrimp farming that requires salt water in *Ghers*³

also harms the soil making it less productive.

To meet increasing demand, local farmers have been using chemical fertilizers to grow crops faster and increase production. However, excessive use of chemical fertilizers, in the long run, destroys soil productivity by depleting organic materials and hampers sustainability of yields⁴. The nitrogen in these fertilizers contributes to global warming⁵, too. It contaminates the nearby water sources and disrupts the ecosystem of water bodies.

Last year Ashok Kumar, Kajol's husband, received a loan from one of his rich neighbors. He took it at a high interest rate to repair the family home. Ashok thought that he could repay the loan without any problem - but in reality, he could not repay the installments of the loan because of irregular income. Instead, Ashok agreed to work for free in the rich neighbor's *Gher* until the loan was repaid. Naturally, these exploitative conditions further reduced Kajol and Ashok's resilience capacities and Kajol struggled to balance family expenses.

¹ In studying resilience, household well-being refer to food security (i.e. hunger, dietary diversity, and food consumption)

²<http://www.students-waterdiplomacy.org/blog/2015/4/8/salinity-in-the-south-west-region-of-bangladesh-and-impact-of-climate-change>

³ a large water body for hatching and raising fish or shrimp

⁴ <https://e360.yale.edu/features/why-its-time-to-stop-punishing-our-soils-with-fertilizers-and-chemicals>

⁵ <https://www.realnatural.org/chemical-fertilizers-adding-to-greenhouse-gases-scientists-find/>

Under these difficult circumstances, Kajol managed to join an Alternative Income Generating Activities (AIGA) group formed by the USAID funded ‘Nobo Jatra – new beginning’ project led by World Vision Bangladesh. The project seeks to engage both men and women in sustainable and market driven activities to increase household income. It was, in fact, a new beginning in Kajol’s life when she enrolled herself in a two days’ training on **vermin compost production and marketing**. Kajol gained practical knowledge and skills on vermin compost production and sales, market linkages, quality and income expenditure analysis. She also received some inputs – two mangers⁶ and 300 grams of live earth worms. The benefits of using Vermin Compost include reduction in soil erosion and soil run-off. Also, the vegetables and crops produced by using compost in the soil are more nutritious than the food crops produced by using chemical fertilizers⁷.



Given that traditional livelihoods are compromised due to climate challenges, Nobo Jatra used the findings of a deeply contextualised market assessment to identify appropriate alternative livelihoods for 18,000 poor beneficiaries, about 60% of whom are ultra-poor women living on less than \$1.90 per day⁸. Women are being trained in diverse categories

of alternative livelihood activities that include livestock rearing, jute handicrafts, embroidery, bamboo products manufacturing, and vermin compost production. The training varies in duration from two days to two weeks depending on the categories of trade. Resource persons from relevant government department such as the Department of Agricultural Extension are usually hired as trainers to conduct these trainings. Hundreds of ultra-poor women like Kajol attend to develop their skills in different trades. The project also facilitates to connect the producers with buyers so that they can sell their products in the local market.

By leveraging the skills and input provided by the project, Kajol started producing vermin compost in her small yard and has gradually been earning income since June 2018 by selling the compost to local *Gher* owners and farmers. This income is building the household’s adaptive capacity in the face of shocks like getting into debt and slowly improving their living conditions.

Significantly, Kajol has completely stopped using chemical fertilizers in favour of vermin compost

⁶ Containers where compost is prepared

⁷ <https://eonline.com/articles/2017/12/07/the-hidden-dangers-of-chemical-fertilizers.aspx>

⁸ Nobo Jatra baseline study, October 2016

There are other women like Kajol who are increasingly embracing this business as an alternative source of income. “One of my neighbors has learned the techniques and skills from me. She has already bought two mangers and started producing vermin compost to use in her land” –. Such bonding social capital consistently contributes to better outcomes of poor households¹⁰. Kajols neighbors, Rafiqul and Nazma, used chemical fertilizers in the past and now recognize that vermin compost has been much more effective for the steady growth of their plants. The compost also saved them a lot of money as they themselves could produce it with little efforts.

Building upon the linkage with buyers and experts, **421** households in four southern sub-districts have been running this small business. The number is expected to rise after the pilot phase. In its strategic partnership with the Government of Bangladesh (GOB), USAID¹¹ prioritizes projects that work to improve productivity and agricultural diversity by promoting climate smart technologies, supporting diversified sources of income including off-farm incomes, facilitating greater functionality of market system and improving private sector competitiveness leading to sustainable agricultural development. The trade also enabled women’s mobility and access to resources – the two driving forces of women empowerment.



What is Vermin Compost?

¹⁰ Bangladesh Resilience Research Report, August 15, 2017

¹¹ <https://www.usaid.gov/bangladesh/agriculture-and-food-security>

The organic vermin compost, used for fertilizing the soil, is made up of soil, cow dung and live earth worms. Organic materials such as decomposed leaves, straws, water hyacinth, vegetable waste, excreta from chicken, etc. can also be added to the cow dung before mixing it with soil. It is considered highly effective for soil fertility compared to the chemical fertilizers¹².

¹² <https://www.fao.org/3/a/10707en.pdf>