SeedChange



2018

CASE STUDY 1

Women are harvesting the benefits of vermi-composting in Bangladesh

In northern Bangladesh, women are using earthworms to create valuable organic matter, enhance soils, boost agricultural production, feed families and provide income. This agroecological practice, vermi-composting, has been implemented by more than 6,000 households. Women are developing a local market for the compost they produce.

WOMEN IN BANGLADESHI SOCIETY

Often characterized as hidden away, lacking agency or skills, and removed from farming and commercial life, women's roles in rural Bangladeshi society have shifted significantly in recent decades. The availability of cell phones and internet access in small village tea shops has opened up a host of cultural change, while the advent of the garment industry created new urban and peri-urban employment and drew women out into the public sphere. Efforts by large NGOs and the government to provide education and basic health care for girls have also improved the situation for many women.

Women who live in the more remote rural areas, such as the SeedChange program area in the northwest, still have very few options. Many end up marrying young and maintain precarious lives trying to provide food, earn money and manage the costs of their children's health and schooling. Their families often have long term leases on very small pieces of land, but the men primarily work growing field crops on lands owned by absentee landlords.

Vermi-composting is emerging as a proven strategy to build economic security for rural women and youth.

GROWING GARDENS IN BANGLADESH

In this rural Bangladesh context, domestic food production is essential to family resilience. Most rural households have small kitchen gardens on their homesteads. However, high traffic of people, animals, and farm equipment leads to soil compaction on these small garden plots. Combined with heavy use of chemical fertilizers and pesticides on neighbouring fields, soil quality is poor and leads to low yields. In order to have a productive garden space of even a few square metres, soil fertility must be increased and soil structure rehabilitated.

Adding compost to the soil is a very effective solution to this issue. As a nutrient rich, water-soluble fertiliser and soil conditioner, compost is a key ingredient in all organic farming. Compared to other compost production methods, vermi-compost has demonstrated advantages. It can be produced with minimal labour and expense on the homestead. It has been shown to have lower levels of contaminants and a higher concentration of nutrients. It is also an effective means to remove animal waste from next to houses and on roads, thus removing disease vectors and improving quality of life for households.

VERMI-COMPOSTING AND WOMEN'S ECONOMIC EMPOWERMENT

Most farming households have a pit or covered *quick compost area*, where general green residues, kitchen waste, animal manure and threshing wastes are discarded. These piles seldom produce quality compost that can be used in a garden because they do not compost thoroughly or evenly. They serve more as waste piles, rather than as productive input to a small homestead garden or farming operation. For families who have experience with this pit form of composting, vermi-composting is easily adopted and its benefits quickly attained.

The cement barrels commonly used for vermi-composting cost about $5 CAD and can be purchased locally. Worms were originally sourced from southern Bangladesh, but now women can buy from each other.

The barrel is filled with one part aged (10-15 days) cow dung, one part kitchen waste (green/wet waste), and one part dry/brown waste (dry leaves, coconut husk, etc.). Worms (1kg, about 1000 worms) are released on the top of the material where they will immediately get to work.



WHO WE ARE

SeedChange, formerly USC Canada, is a nonprofit founded in 1945 by Dr. Lotta Hitschmanova, rooted in the notions of human dignity and equality. Today, we are part of a global movement fighting for justice, health and sustainability by shifting the way our food is grown. We work with farmers in 12 countries around the world, including Canada, to strengthen their ability to grow food sustainably, using locally adapted seeds. By harnessing the power of good seeds, farmers' leadership and global solidarity, we help communities thrive.

In Bangladesh we partner with Samajik Kollan Songstha (SKS) and Udayankur Seba Sangstha (USS), working in the Northern regions of the country to promote agricultural biodiversity activities with 10,000 young women, ages 15 to 30.



The barrel is covered to prevent rain or moisture drowning the worms, and direct sunlight generating too much heat. Left alone in the barrel, the worms feed and process the waste. After 30 days the barrel needs to be gently turned for even decomposition and aeration. The first cycle of vermi-composting takes 45 to 50 days.

Harvesting is done by gently moving all the contents to one side of the ring, then placing new decomposed cow dung on the other side, covering and letting it sit for half a day. The worms will be attracted to the new food sources, and move out of the finished materials.

Sieving the finished compost adds a level of uniformity and assists in the length of storage time. Finished compost may be stored in a gunny sack or poly bag for many weeks without deterioration.

Gradually as worms and bacteria multiply, the production time can be reduced by 10 days with each cycle, eventually reaching about 10 to 15 days for one cement barrel.

Inexpensive and locally available technologies and materials have made vermi-composting a successful endeavour with multiple benefits for women. Many begin with one barrel and soon establish several more around their household. The finished compost is used to enrich the home gardens, and many have also started using it on field crops such as potatoes. Over half the women in the program, have started to sell surplus vermi-compost to neighbours who are not in the program. Women who sell compost earn between 12$ and 15$ CAD a month from the sales. Given that most rural households make approximately $100 CAD per month, this extra income is an important addition. A few women have formed collective businesses and sell large amounts of vermi-compost, usually 40kg bags, to local farmers, earning significant income which is distributed over the group.

THE FUTURE POTENTIAL OF VERMI-COMPOSTING

Very soon after the women began selling small amounts of vermi-compost, farmers began to try it on their field as a cheaper alternative to commercial urea feritilizers. Users responded that they found vermi-compost to be especially effective for potatoes and yielded better results than conventional fertilizers. Users also felt that vermi-compost was safer to use and had fewer associated health hazards. Increasingly, farmers are buying bulk orders of vermi-compost for application on large commercial vegetables fields, with some using it on maize and rice fields as well.

Although their product is less expensive than chemical fertilizers, women owned vermi-composting businesses still face several challenges. It can be time-consuming to become licensed to sell vermi-compost in Bangladesh, creating a barrier to entry to the commercial market. In addition, while vermi-compost is better for long-term soil health, in the short term inorganic fertilizers often result in higher yields, making them a more attractive option for some farmers. Finally, some women continue to face resistance from their families, who are worried that these businesses will take up too much time or space and interfere with family routines.

Climate change remains a concern, since flooding has resulted in the drowning of many worms. This meant that women had to re-establish their vermi-compost pits — a slow process that can have a significant impact on their sales. Recent periods of unusually cold weather in northwest Bangladesh have also slowed worm production. These unpredictable weather patterns are likely the result of climatic changes and make it more challenging to maintain the vermi-composting systems. As a result, the women are constantly having to adapt and learn as conditions change.

It should be noted, however, that these same climatic changes that impacted on the vermi-compost producers have similar effects on agricultural production generally. For example, in recent years unprecedented rains have flooded many areas in the north. Most of the areas supported by SeedChange were under a meter of water for more than 10 days – resulting in the loss of almost all the gardens. This was followed by an unusually cold period which caused significant losses of winter vegetable seedlings. While not solving for these extreme events, producing vermi-compost for home and for sale increases food production and diversifies family income, and as a result makes households less vulnerable to these climatic challenges.

Learn more: weseedchange.org/honduras

Canada's Feminist International Assistance Policy

This case study exemplifies how SeedChange's work addresses Canada's Feminist International Assistance Policy as well as many of the Sustainable Development Goals.

GROWTH THAT WORKS FOR EVERYONE
SeedChange is improving economic opportunities for and the resilience of rural women in Bangladesh.

GENDER EQUALITY AND THE EMPOWERMENT OF WOMEN AND GIRLS
By working with our partners in Bangladesh, USS and SKS, SeedChange is supporting local women's organizations and movements.

PROGRAM UNDERTAKEN WITH THE FINANCIAL SUPPORT OF THE GOVERNMENT OF CANADA PROVIDED THROUGH GLOBAL AFFAIRS CANADA.

Canada

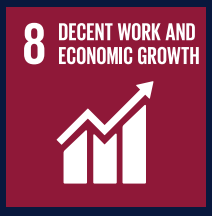
Sustainable Development Goals

SeedChange's work in ecological agriculture helps meet 14 of the 17 SDGs.





By supporting vermi-composting in Bangladesh, SeedChange is building the resilience of the poor and reducing their exposure and vulnerability to climate-related extreme events.



Vermi-composting is part of a sustainable food production system that increases productivity and production, while maintaining ecosystems.



By working primarily with women, SeedChange and our partners USS and SKS are empowering and promoting the social, economic, and political inclusion of women in Bangladesh.



Vermi-composting is a strategy for the sustainable management and efficient use of natural resources, and the environment.