

Rubbish to Rupees: The story of Bishanpur Jichho Panchayat, Bhagalpur district

Bishanpur Jichho Panchayat presents exemplary evidence of community efforts backed by convergent action with support from the District Water and Sanitation Committee in management of solid waste enhancing prosperity in the area and improvement in the quality of life. Bishanpur Jichho is a Panchayat of Goradih Block of Bhagalpur district, the silk city of Bihar. The Panchayat has 11 stand posts (1 stand post covers 40 households) built under *Swajaldhara* in 2005-06 and are still functional. Panchayat with community contribution is managing these water supply points successfully since more than six years. The village is covered with good quality drains covering 70% of village area. Out of 2,386 households, 1,861 have toilets.



Bishanpur Jichho Panchayat faced a major problem of waste management with garbage and cow dung piling up in public places leading to protests by the residents. To address this problem, the District Agriculture Officer, the DWSC and communities collaborated with the Bihar Agriculture University, Sabour, *Krishi Vigyan Kendra* to adopt vermicomposting to get rid of the menace. Today, Bishanpur is largely garbage free, as the people realize the value of waste and its contribution to their prosperity and well-being. The people of the Panchayat have demonstrated that waste is a resource.

BishanpurJichho Panchayat

Block: Goradih,
District: Bhagalpur
Total HH: 2,386
BPL: 1,222
APL: 1,164
Total wards: 13
AW centres: 10
Schools: 06
Primary Schools: 01
Middle Schools: 05

Solid waste has become one of the biggest problems and its management is one of the major issues now days for our environment. In a typical rural setting, solid waste comprises of cow dung, agriculture and kitchen wastes, which to a very large extent are biodegradable and can be recycled. Several methods including traditional as well as vermicomposting are adopted in rural areas to treat cowdung, which constitutes large proportion of the rural solid waste. Vermicomposting is a

well-known technology, as a

process for handling organic residues. It represents a better approach for solid waste management as it is compatible with sound environmental principles that

value conservation of resources and sustainable practices. Vermicomposting is the technique for converting the solid organic waste into compost. An innovative discipline of

Vermicompost is the product or process of composting organic residues using earthworms. Earthworms can consume practically all kinds of organic matter. Earthworms have the capacity to eat as much matter as their own weight and produce the same amount of manure per day in the form of castings. Vermicompost contributes in sustainable agricultural production and economic prosperity of the farmers.

vermin culture technology, the breeding and propagation of earthworms and the use of its castings has become an important tool of waste recycling the world over. Essentially, the vermin culture provides for the use of earthworms as natural bioreactors for cost effective and environmentally sound waste management.

Vermicomposting has not only solved the problem of cow dung piling up in village streets but also generated source of income for farmers of Bishanpur Jichho Panchayat using vermicomposting for solid waste management. *Mukhiya*, Ms. Vina Singh and her husband Mr. Rajeev Kumar Singh, ex-*Mukhiya* of

Advantages of Vermi-compost:

- Can convert 1000 tonnes of moist organic matter into 400 tons of high value compost
- Castings or excreta of earthworms are rich in nutrients and bacterial and actinomycetes population
- Reduction of noxious qualities of a wide variety of organic waste, elimination of smell, reduction of harmful microorganisms
- Production of marketable organic manure
- Increases soil fertility and bacterial activity in the soil
- Increases micro grains in the soil and enhances water absorption capacity
- Helps the plant root get air easily
- Increases plant resistance to pests, fungus and other deceases.

Bishanpur Jichho Panchayat has been instrumental in mobilizing the farmers to adopt vermicomposting for safe treatment and disposal of the animal waste as well as get quality manure for the fields.

About 60% of the households in the Bishanpur Jichho Panchayat rear 2 -3 animals (mostly Jersey cows), in addition to farming as their livelihood. The Panchayat has more than 1,200 cattle, mostly cows. At a conservative average of 20 kilograms per cattle, the daily cow dung production totals about 24,000 kilograms. Imagine the plight of residents where 20% of the total cow dung was littered the streets of the Panchayats. Rest of the cow dung was used by the families for their agriculture and energy needs.

Mr. Vinod Kumar, the district coordinator for Swachh Bharat Mission (Gramin), informed that the farmers, who showed interest in vermicomposting were capacitated through training programme by the *Krishi Vigyan Kendra*. The training mobilized the farmers and they adopted vermicomposting which has resulted in controlling fertilizer-based agriculture and average use of fertilizers in the fields has reduced nearly to one fifth, paving the way for organic

farming. Realizing the potential of solid waste management contributing to the achievement of clean villages, Mr. Vinod Kumar suggested to the DWSC to include the District Agriculture Officer as a special invitee to the DWSC meetings.

Prior to adoption of solid waste management through vermicomposting, the farmerson an average invested INR 2,500 per acre on chemical fertilizers for their crops. Chemical fertilizers, to the extent of 80%, have been replaced by organic compost saving about INR 2,000 per crop per acre. Farmers here, usually take 2 crops meaning more savings per year. Use of vermi-compost has enhanced farm productivity and average crop yield has increased by 20%. In addition, to economic benefits, organic farming has improved the soil texture and water retention capacity resulting in increased productivity.

“One pit of 10’ x 3’ x 2 ½’ filled with cow dung, agriculture and kitchen waste gives 7-8 quintals of vermicompostThe farmers, traditionally used cow dung to meet their energy requirements is now shifting to substitute cow dung with other energy sources such as LPG, coal and wood, as they realize that vermi-compost yields better rewards., This being the prime motivating factor, the families now value cow dung and will immediately collect it from the streets, knowing that it is a source of their prosperity”, says Mr. Ajay Singh, the block coordinator.



The households, who have adopted Vermicomposting as a means to manage their waste, also take advantage of Vermiwash for pest control and as an insecticide. Those, who have fewer animals or are still

Vermiwash

- Liquid fertilizer collected over passage of water through a column of worms in action useful as foliar spray
- Collection of excretory products and mucus secretion of earthworms along with micro nutrients from solid organic molecules

not comfortable with worms have started traditional composting by digging a pit and composting their cow dung by covering it with soil, Whatever the method adopted, is contributing in solid waste management in the Panchayat. Farmers are also using cow urine. Cow urine is collected (4-5 litres per day per cow) and is used for seed treatment and kitchen gardening after dilution.

Chadrashekhar Singh, a farmer and a milkman, aged 37 years saw a business opportunity in vermicomposting. He says "I started vermicomposting almost two and half years ago with the support of agriculture department and since then I have not looked back." Today, he owns three adult cows and two calves. He sells around 100 litres of milk to the neighbouring district headquarter every day to earn an additional income other than the farm produce. He even sells worms to the farmers. He has sold more than one quintal of worms to the other farmers @ INR 400 per kilogram. One vermi pit is usually introduced 3-4 Kgs of worms (*Esicena Fetida*). His farm produce has increased by 1.5 times, meaning an additional income of INR 20,000 per year. With the increase in income, he has constructed two toilets for his family.



Sarita Devi, a middle aged woman belonging to BPL category struggled to make ends meet for her family's survival. She was quick to realize that vermicompost is proving a boon for Mr. Chandrashekhar's crops, "why I can't also adopt it?" she thought. She requested Mr. Ajay Singh, the SBM (G) block coordinator for the guidance. Ajay Singh explained the process and the financial implications. He guided her in setting up vermi pits and also encouraged her to construct toilet. Sarita Devi arranged a loan of INR 10,000 and started vermicomposting. She has also constructed a toilet from the incentives received under NBA and her own resources; neither she nor her family members

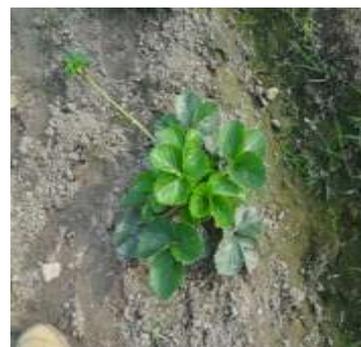


defecate in open anymore.

The Panchayat Mukhiya, happy with the result oriented initiative says,"the community's decision to adopt vermicomposting has solved the problem of managing solid waste in the Panchayat as well as in

improving the soil quality, controlling pest and checking fungal infections in the crops, so crucial for peasant community." The benefits, which vermicomposting has brought to the villagers include:

- Steep increase in family income due to increase in farm productivity almost by 20%
- Strawberry cultivation, unknown to the area, is being experimented in few fields with the help of *Krishi Vigyan Kendra*
- Cow dung, littering village streets is now almost extinct



37 families in the Panchayat have adopted vermicomposting and many more are planning and busy arranging funds to follow suit. Executive Engineer and district coordinator of SBM-G are working towards linking the ongoing programme with renewable energy department for setting up bio gas plants, which will take care of farmers need for manure as well as meet their energy needs. DWSC has also mobilized the families for adoption of improved hygiene practices and as a result 77% households have functional toilets.



Residents of the Panchayat understand the benefits of leach pit toilet. Pushpdev singh, a village resident constructed a leach pit toilet in 2005. One pit was full so he opened it in 2007 and used as manure in his field and was astonished to see the bumper crop of eggplant, which was twice than the normal yield. People understand the importance of sanitation and are working towards attainment of open defecation free environment. The Executive Engineer, Mr. Ramanji Jha is confident that in next 3 months the Panchayat will be free from open defecation.

The major contributory factor, which paved the way for successful solid waste management leading to open defecation free environment in Bishanpur Jichho is the partnership between Bihar Agriculture University, Sabour, *Krishi Vigyan Kendra*, and the district agriculture department fostered by DWSC, Bhagalpur. The partnership developed because, the DWSC realized the potential benefits of the initiative and made district agriculture officer an invitee member to DWSC for coordination with different stakeholders. *The partnership built the foundation for the initiative, whereas it was income augmentation and improvement in the farm productivity, which were the key motivating factors for the communities to adopt vermicomposting and safe sanitary practices.*

Contrary to the established belief and practice that once an area is open defecation free, solid waste management should follow, it has happened the other way round in Bishanpur Jichho. Here, families adopted solid waste management first and once their income increased, they started construction of toilets and are using these too.

Bishanpur Jichho has demonstrated successful convergent action for improved sanitation and hygiene practices. The time is ripe for the DWSC, Bhagalpur to replicate and scale up the initiative in other Panchayats. Other districts can also take a cue from here and explore possibilities of similar initiatives, develop new partnerships and consider innovative ways of achieving the goals of Swachh Bharat Mission in totality.

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