

## Wealth from waste

During his budget speech on February 1, the finance minister announced the launch of “GOBAR-Dhan” (Galvanising Organic Bio-Agro Resources-Dhan). The initiative has two objectives: To make villages clean and generate wealth and energy from cattle and other waste. The 19th Livestock Census (2012) estimates India’s cattle population at 300 million, putting the production of dung at about 3 million tonnes per day. Some European countries and China use animal dung and other organic waste to generate energy. But India has yet to tap the full economic potential of such waste. The Swachh Bharat Mission-Gramin will pilot this initiative.

While the core mission of Swachh Bharat is to make India open defecation free (ODF), it also aims to make the country clean, both its urban and rural areas. Good progress has been made on the ODF front through massive behaviour change mobilisation, with rural sanitation coverage increasing from 39 per cent in October 2014 to over 78 per cent today, and about 3,20,000 villages becoming ODF. Usage of toilets has also been found through third party surveys to be over 90 per cent. A major thrust is now underway to promote general cleanliness and effective solid and liquid waste management in rural India.

With the largest cattle population in the world, rural India has the potential to leverage huge quantities of gobar into wealth and energy. The challenge is adding value to the utilisation of gobar and incentivising farmers to think of their cattle waste as a source of income and, in the process, also keep their communities swachh. Cattle dung, kitchen waste and agricultural waste can be tapped to create biogas-based energy.

According to a 2014 ILO study, the productive use of dung could support 1.5 million jobs nationally. For the farmer, there is a significant potential of greater income from the sale of cow dung. The study also reports that the value of one kg of cow dung multiplies over 10 times, depending on whether the end product is fresh dung (sale price of Rs 0.13) or as input for a one megawatt biogas plant along with compost output (Rs 1.6).

One of the challenges for operating biogas plants, and even related higher value chain operations like bio-CNG plants, is the aggregation of cattle waste and maintaining a regular supply to plant operators. Much can be learned from rural communities who have aggregated cattle dung to operate biogas plants. These plants which typically supply cooking gas at a cost lower than the conventional LPG gas cylinder. The Lambra Kangri Multipurpose Cooperative Service Society in Hoshiarpur, Punjab, does this by aggregating cattle dung and other organic waste to run the biogas plant and providing metered cooking gas to members. Likewise, the Gram Vikas Trust started the Gobar Bank initiative in Surat, Gujarat, where members bring fresh cow dung to the community biogas plant. The dung is weighed and accounted for in their passbooks. In return, they get cheap cooking gas as well as bio-slurry, the residue from the biogas plant, which is used for vermicomposting and organic farming.

The GOBAR-Dhan initiative is expected to pilot similar opportunities to convert cattle dung and other organic waste to compost, biogas and even larger scale bio-CNG units. This programme, expected to be launched in April, aims at the collection and aggregation of cattle dung and solid waste across clusters of villages for sale to entrepreneurs to produce organic manure, biogas/bio-CNG. The current thinking is to take up about 700 clusters, ideally one in each district. Different business models are being developed, incorporating both small and large-scale operations at all ranges of the bio-energy value chain.

Generating wealth from waste in rural areas will require the involvement of all actors and sectors. Investments from the private sector and local entrepreneurs will be needed. Panchayats and

village communities will have to play key roles to leverage the animal and organic waste that goes into water bodies, dumping sites and

landfills. Informal sanitation service providers can be integrated into the system by training and licencing them. With appropriate policies and practices, the sector can be scaled up into opportunities for growth, leading to increased incomes, long-term livelihoods and, of course, more Swachh villages. The GOBAR-Dhan initiative is intended to be a concrete step in this direction.

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