



राष्ट्रीय ग्रामीण विकास एवं  
पंचायती राज संस्थान  
NATIONAL INSTITUTE OF RURAL  
DEVELOPMENT AND PANCHAYATI RAJ  
Ministry of Rural Development, Government of India



www.nird.org.in

No: 281

# PRAGATI

Newsletter  
October 2018



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## A tentative end to the debate on 'Waste to Wealth'



### 3 | A tentative end to the debate on 'Waste to Wealth'

## CONTENTS

**7**  
Improving quality of education in public schools through Little Leaders - Little Teachers concept : A model by Vandemataram Foundation

**12**  
Strengthening decentralised democracy - Interview with Prof. M.A. Oommen, Honorary Fellow, Centre for Development Studies, Trivandrum

**13**  
Prof. Umesh Arya delivers lecture on neuro-linguistic programming

**15**  
Regional ToT programme on Strategies for E-Governance for Better Service Delivery

**16**  
Exposure-cum-training visit by delegation from the Northern Provincial Council, Sri Lanka

**17**  
Off-campus training programme on ICT Applications for Implementation of Rural Development Programmes

**18**  
NIRDPR to introduce a diploma programme on Panchayati Raj Governance and Rural Development

**19**  
Dr. P. R. Ghanate delivers lecture on Shri Munshi Premchand's novel 'Godaan'

**19**  
NIRDPR Events



## A tentative end to the debate on 'Waste to Wealth'

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**T**he Government of India provides capital cost to set up Solid Waste Management (SWM) units in Gram Panchayats (GPs). The GPs have to generate own revenue sources to be able to meet the operational expenses. The logic put forth by some of the SWM consultants is that it is possible to generate sufficient income, converting 'waste into wealth'. This has sparked off a debate on the grounds that the idea of converting waste into wealth has many serious limitations to overcome. Moreover, even if a Gram Panchayat managed converting all the garbage collected into usable/saleable items, does it offer a breakeven? A series of case studies [of SWM units across States]conducted by the NIRDPR has come out with a tentative conclusion to this debate.

When toilet coverage in rural areas is crossing well over 96 per cent, the next big thing coming up in rural areas under Swachh Bharat Mission (G) is Solid Waste Management (SWM). The SWM component has been designed in a specific way in the guidelines of SBM-G is which the government shall provide capital cost for setting up the SWM units – ranging from ₹ 7 lakh to ₹ 20 lakh, based on the size of the Gram

Panchayat. The onus of finding funds for operational expenses (such as salary of garbage collectors, maintenance of waste collection vehicles, etc.), shall rest with the Gram Panchayat, except that there are IEC funds in order to educate and prepare communities for household level waste segregation. There shall be no funds made available from the government's side for meeting the actual operational expenses of the SWM units.

One argument is, waste is not waste and it's only a perception, meaning it's possible to convert waste into usable compost, reusable and recyclable items which can become a source of income for Gram Panchayats to meet their operational expenses. This has sparked off a debate that first of all, the idea of converting waste into wealth has many serious physical and technical limitations to overcome, and hurdles that put you [a Gram Panchayat] off. Secondly, even if the Gram Panchayat managed to convert all the garbage collected into usable/saleable items, does it offer a breakeven?

The debate goes like this. While it is true that kitchen waste can be composted, or converted into bio-methane gas for cooking and items

such as plastics, bottles, cardboards and papers can be sold out to recyclers, do all these hand enough money to meet the operational expenses? Waste collection and processing is a labour-intensive proposition. Once it starts and a system is put in place, it has to go on regularly. There is a lot of physical work, logistics and coordination to be done. It involves supervision, planning, execution, monitoring and so on, which involve wages/salaries. Some enthusiastic Elected Representatives (ERs) started off waste management units in their Gram Panchayats, fascinated by the idea of converting waste into wealth - passed on by some experts in a training hall - gave up no sooner than they started because they found expenses are far more than income they could generate from such units. Such examples scare away others from making any such attempts.

How do we end this debate? Waste management has to take place for it is becoming a medical emergency from the point of view of health. Further, it is more an expression of cultural practice and quality of mindset, than a matter of visual aesthetics. Our perspective and reasoning may differ, but the fact remains

that none of us want to live on a pile of garbage. Garbage must be collected regularly and disposed scientifically, regardless of it being understood as wealth or waste or for-profit or as a civic duty of a Gram Panchayat. The point is, a waste management system introduced must be sustainable in the long run. Waste management cannot be a project with an end-date. Case studies conducted by NIRDPR across States offer a tentative answer to this debate on wealth to waste. Four brief case studies are presented below to unfold and find out what insights these stories can reveal.

**Case – 1:** Mudichur Gram Panchayat (near Chennai), Tamil Nadu: This is almost at the outer ring of Chennai. Total population is 15,000 (2011) and the number of households is 5326 (2012). There are 12 wards with 209 streets and lanes. There are more than 520 shops and two marriage halls. SWM system here has been put in place about 7–8 years ago by the Gram Panchayat with the help of an NGO called Hand-in-Hand in Kancheepuram with the support of DRDA. The NGO played an instrumental role in initial setting up and evolving a management model. The NGO trained 26 sanitation workers [‘Green Friends’, as they are locally known], including one supervisor, and one person taking care of the vermi-compost unit. The total average monthly operational expenditure reported is ₹ 1.6 lakh and the average expenditure reported is ₹ 1.3 lakh. Major portion of the incomes comes from households and shops that pay monthly user fees. Income from the sale of vermicompost is hardly ₹ 3000 per month, and the GP has the practice of bestowing the Green Friends with incentives by giving back whatever sale proceeds they get after the sale of dry wastes such as plastics and bottles. A point to note here is, a considerable number of shops and households do not pay. The GP does not insist on their paying. In Mudichur, the

GP runs an RO plant for drinking water supply. This was set up by the Gram Panchayat and is operated by the local SHG women. The commission (share from the profit) that the GP gets from the SHGs helps the GP to compensate the loss incurred in running the solid waste management unit. Thus, the SWM unit is running successfully through a cross-subsidy model like this.

**Case–2:** Kurudampalayam Gram Panchayat (near Coimbatore), Tamil Nadu: This GP is located very close to Coimbatore city in Tamil Nadu. It has 14 wards with a population of about 33,000 people which would amount to 11,360 households. There are marriage halls, restaurants, shops and other establishments. SWM unit here was set up in the year 2013. The amount of waste generated (in eight of the wards) is 800 kgs per day. The GP had covered only eight wards at the time of conducting this case study.

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**The message should not be: You create waste, we are here to manage, rather it must be to move towards progressive reduction of waste from being generated in the first place**  
”

The basic approach at Kurudampalayam SWM unit is that any waste can be converted into wealth. The GP is very liberal about collecting user charges. The GP president, who is the torchbearer of this effort, believes that waste to wealth shall pay off the entire expenditure incurred in due course. There are many products produced from waste. They include vermicompost, vermiwash, ordinary compost, earthworms, panchakayam, cleaning powder from orange peels, eggshell powder, eggs from ducks, and biogas generated for cooking food to the workers, etc. The expenditure incurred in the last six

months was ₹ 35.28 lakh, and the income from converted wealth, including the user fees collected add up to ₹ 12 lakh. There is a big gap between income and expenditure. The loss incurred is recouped by the respective chairpersons/ members of Board of various companies in Coimbatore, who are friends of the GP president (a local politician). At times, the DRDA also helps through some funding to uphold the name DRDA Coimbatore has earned because of this SWM unit.

**Case–3:** Brahmanagar Samabay Krishi Unnayan Samity Ltd., Ruipukur, Nadia, West Bengal: This is a multi-purpose cooperative society in Krishnanagar-Block 1 of Nadia district, West Bengal. The secretary of this society took up the lead to set up solid waste management unit in Ruipukur GP. Ruipukur has 21 Sansads, whereas SWM activity was taken up only in three Sansads covering 400 households. The main activity undertaken is making vermicompost from kitchen waste and sale of earthworms. They do not look for recyclable items from dry waste because of the culture in most West Bengal villages where the households preserve the recyclables to be sold to *kabadiwalas*, who visit them once in a fortnight or so. The dry wastes that the waste collectors of SWM unit get are all residual waste that cannot be put to any use. There is no income that can be counted on from such dry wastes.

The main sources of income are sale of vermicompost and earthworms. There are nine workers and three tricycles involved. The workers are engaged in door-to-door waste collection and vermicompost. The workers are trained in making vermicompost by Bidhan Chandra Krishi Viswavidyalaya (BCKV). The total annual expenditure reported is ₹ 5.4 lakh and the income reported is ₹ 2.05 lakh. Since this is managed by a cooperative society, they have not given a thought about collecting user charges, meaning no user charge is collected. The

cooperative society is incurring a big loss due to SWM activity. Yet, it is running because of the interest the secretary of the society has in producing and selling vermicompost, in the interest of organic farming. This is again a cross-subsidy model. The loss incurred is made good by the surplus earned by the cooperative, otherwise.

**Case – 4:** Pratapadityanagar Eco Park in South 24 Parganas District, West Bengal. This is a large Panchayat with a population of about 33,000 (7500 households). This Eco Park is close to Kakdwip and so is almost a Town Panchayat. It has 21 Gram Sansads, several shops and market areas. A local burial ground has been converted as the location for waste segregation and processing unit. The initiative came from the vice-president of the Panchayat.

This SWM unit was started in 2016 with technical assistance from a local NGO called: Amara Sushama Jalaprapat from Tamluk, East Midnapore. There are 40 workers and a supervisor. There are 11 tricycles and three mini vans involved in waste collection. Two of the mini vans are regularly hired and paid monthly on the basis of trips made. Kitchen waste collected from households and restaurants are composted (both vermicompost and ordinary compost). They sell a killogram at ₹ 10 and ₹ 6, respectively. The dry wastes (such as plastics, bottles, cardboards) are sold to recyclers. As per the Panchayat's resolution, all the households, shops, restaurants, marriage halls, vegetable and petal leaf markets, etc., pay monthly user charges at different rates as decided by the Gram Sabha. Payment from the entire category of service-users is regular. There are destitute households that live on government pension. They have been exempted from paying the user fee.

The total monthly income reported (for September, 2018) is ₹ 2.84 lakh. The expenditure incurred for September is ₹ 2.97 lakh. The contribution from the sale of vermicompost and other dry wastes is

₹ 44,161, which is hardly 15 per cent of the total income. The remaining 85 per cent has come from user charges collected from households, shops and restaurants. Yet, there has been a small gap between income and expenditure, which is being met out of the own funds of the Gram Panchayat. The GP vice-president and the staff appointed by the West Bengal State Government in the Gram Panchayat office are confident that a strict follow-up of user charge collection can help achieve breakeven and it can also help expand SWM activities to other wards of the GP too.

Pratapadityanagar Gram Panchayat in South 24 Parganas in West Bengal stands as a proof in support of the statement that it's possible to meet the expenditure incurred in solid waste management by proper collection of user charges regularly; and that converting waste into wealth can contribute only a small portion of the expenditure, which is 15 per cent in the case of Pratapadityanagar Gram Panchayat.

#### Let's get back to our debate

Waste collection from the point of view of doing 'good' to the environment or as a medical necessity is admirable. However, the debate here is about financial sustainability of these units in the long run, especially when it is pretty clear that operational expenses have to be met by the Gram Panchayats through own revenue sources, be it from converting waste to wealth or any other means.

Some of the commonalities and insights we draw from all the four cases we studied above are:



- (i) Three of the four GPs studied are located close to cities, which are almost like town Panchayats. Village at the vicinity of cities and towns tend to generate more waste compared to the ones that are remote and interior.
- (ii) All the four SWM units studied have the backing of not only BDO or DRDA, but also NGOs/Societies/ (Corporates) CSRs, who are willing to offer technical guidance and at times, financial support as well.
- (iii) Three of the GPs collect user charges, whereas the one located in a typical Indian village setting (Ruipukur, Naida, WB), does not collect user charges. Even in GPs where user charges are collected, not all the households pay user charges.
- (iv) In all the three GPs where waste to wealth is attempted, the highest contribution to SWM unit's kitty comes from user charges and hardly 15–20 per cent comes from the 'waste to wealth' activities, be it from the sale of vermicompost or sale of recyclable items. The payment from waste to wealth efforts is very minimal.
- (v) The idea of making products from waste materials, beyond vermicompost and ordinary compost

for instance, washing powder from orange peels or eggshell powder from eggshells, etc., are good, but there is a need for additional expenditure, even if we play down the issue of the efforts required to market such products (eg., Case Study 2). At Pratapadityanagar (WB), they do only vermicomposting and ordinary composting; and the recyclable items are sold to the recyclers. They largely depend on user charges, which is forthcoming. The gap perhaps, is because nearly 104 destitute families and small shopkeepers have been exempted from paying user charges, which is a conscious decision by the Gram Panchayat. Otherwise, Pratapadityanagar GP proves that it's possible to breakeven if we properly collect user charges at differential rates from different categories of service users. Perhaps, this is possible in all the other three GPs also, provided the ERs are willing to charge the users. Secondly, the GPs need to pay attention on reducing the expenses by prudent waste collection arrangement and simplify rather than complicate the ideas of waste to wealth.

(vi) Finally and most importantly, one needs to take note of the fact that a GP exists not only to manage waste or keep the village clean, but there are several other socio-economic development functions a GP has to take up and implement. Waste management should not overshadow the other development works a GP is supposed to take up.

#### **Tentative conclusion to the debate**

As a matter of fact, operational expenses need not scare away Gram Panchayats from taking up waste management. All that is required is a pragmatic understanding of waste to wealth - not an overstated one, neither a fantasised one. Gram Panchayats should follow a no-nonsense approach when it comes to estimating where income flows

from; and what kind of expenses are inevitable at all. A very crucial question that every GP functionary who is about to take-up waste management activity should ask himself/herself is: What is my take on clean village? In other words, is my purpose, a clean village or reorienting my village to get involved in waste management business, keeping all other works of a GP in a cold storage.

'Solid waste management' is an important component that must go into the Gram Panchayat Development Plan (GPDP). It's good and it is prepared in the form of a viable business model, meaning it must pay for itself, at least within a period of 2 to 3 years. Therefore, whatever perspective a Gram Panchayat can adopt on generating a business model with regard to waste management, it should be a model that creates value to the citizens and something that people are willing to pay for. Waste management at the GP level must be viewed like a social enterprise. The intent is not profit, but common good at an economic breakeven. Thus, the insights we get from case studies across States are illuminating to unpack and end this debate.

I don't get into answering if there is enough wealth in waste or not. After studying so many cases on the ground, my humble interpretation of 'waste into wealth' is that it is an overstatement. I shall get into a limitless experimentation of waste into wealth if someone, other than the Gram Panchayat, is ready to foot the bill. What is clear as of now, not very innovative though, is the possibility to meet the operational expenses, provided the ERs are willing to charge the users for the service – every household, every shop, every restaurant, etc., must pay user charge. Two cases (case – 1 & 2) indicated it, and the last one (case - 4) emphatically put it. A corollary to this is that the users are willing to pay, provided GPs are able to demonstrate at least in a few wards, to begin with, by putting in place a functional waste management system. Something that works, is regular and reliable.

Some lessons we can distil from these case studies are presented for easy grasp.

1. Let's begin in villages that are close to cities and towns, where people strongly feel waste as a real problem. The chances of gaining firm grounding is high in villages where people already feel that it's a problem.
2. A budgeting exercise at the GP level seems to be a must. It allows a mental dry run of how much is likely to be the expenditure, to determine which category of users shall pay how much user charge so that up to 80-85 per cent of the expenditure incurred is collected through user charges. Many SWM units were closed down after a short stint, especially because the GPs functionaries were drawn into it with the idea of waste-to-wealth, without having done any exercise on the likely operational expenditure.
3. Determine differential rates for different categories of users of waste collection service (households, shops, restaurants, marriage halls, and other establishments) and have it approved by the Gram Sabha.
4. Identify an NGO or an institution with experience/expertise in waste management to mentor/guide the GPs.
5. Realise that waste management is more a socio-psychological problem, rather than a problem that technologies can solve. Simplify and build a strong management system.
6. There must be IEC activities taking place for household level waste segregation. Let them take responsibility. Consider seriously the possibility of preparing the households towards home composting. Let them manage the kitchen waste and the dry waste can be collected once a week by our sanitation workers.

**Dr. R Ramesh**

Associate Professor, CRI  
&

**Prof. P SivaRam**

Head, CRI

**Cover Page Illustration:**

Shri V G Bhat