

## Cluster Approach to Solid Waste Management

The Rurban Mission of the Ministry of Rural Development, Government of India is a unique programme that aims at developing infrastructure and livelihood opportunities in cluster of Gram Panchayats that demonstrate economic growth potentials. This is being executed by converging schemes from the Central and various State government departments, coupled with a critical gap fund provided by the Rurban Mission. One of the components many of the ICAPs (Integrated Cluster Action Plans) have is solid waste management in rurban clusters.

We have in India some Gram Panchayats that manage solid waste successfully. However, a cluster of GPs together managing solid waste is rare to find, if one wanted to pay a visit and learn. In order to facilitate the state and district level government officials in-charge of Rurban Mission, the NIRD&PR conducted a 3-day (15 – 17 September, 2020) on-line training programme on ‘Cluster Approach to Solid Waste Management’. Garbologists and development professionals involved in solid waste management shared their knowledge on this subject. The main lessons that emerged from the various sessions conducted are as follows:

- Wherever Rurban Cluster-based waste management units are set up, the team involved may consider (i) banning all single use plastics as part of the campaign; and (ii) implementing ‘Green Protocol’ in local schools, public functions, training / IEC campaigns, local marriages, sports events, annual temple festivals and other celebrations. A one-pager Green Protocol may be prepared for use by GPs.
- The GPs in every Rurban cluster has a Cluster Development Management Unit (CDMUs), which is a representative body of all the GPs in the cluster. The same CDMU can sign an MoU amongst themselves detailing out the waste management arrangement in the cluster, unless the CDMU members decided otherwise such as a new body such as Cluster Waste Reduction & Management Committee (VWSC) may assume such role. The MoU, thus prepared shall clarify the powers and functions of every participating GP, the role of households, the role of sanitation workers, and other provisions that a waste management system may entail. This document [MoU] will be the reference point for obtaining clarification in case there is a dispute, misunderstanding or non-participation, non-cooperation, non-compliance to any aspect of the waste management chain / system.

- GPs in a cluster, managing waste does not necessarily always mean GPs directly managing waste. The GPs together or the CDMU can decide contracting out waste management services to an outside agency or trained SHGs. This outside agency may be a professional NGO, or a Private Waste Management agency, or agency that the CDMU or the GPs together may decide to engage for this purpose on payment. The terms and conditions of waste management service, and the payment for services etc. shall be written down clearly in stamp papers for signing a contract / agreement. This will be equally binding for both the parties involved.
- It's possible some Gram Panchayats (GPs) in some of the Rurban clusters have already established solid waste management systems. Our attempt to implement cluster-approach should make it a point not to disturb the existing system, if it's found to be conceptually sound, and practically workable / working. We need to give shape to our approach in alignment with the existing system, unless the existing system requires revamping for lack of scientificity or for other reasons.
- As far as possible GPs in waste management clusters should encourage households to do 'home-composting'. Do the required campaign, impart training and demonstrate and show in some houses. If the decision is door to door collection of waste, then it's intelligible to collect only the dry and plastic wastes. If dry and plastic wastes only are collected from households, then collection frequency may be alternate days or weekly twice. This helps reduce the number of trips, and the labour required. If the arrangement is for collection of wet waste from households it has to be necessarily collected daily, and treated / processed to convert to compost or bio-gas daily.
- Respective GPs can take responsibility for door to door collection of segregated waste. The processing of wet waste through some composting techniques can be done at central processing unit (CPU) meant for the cluster. Gram Panchayats concerned should take responsibility to transport the segregated waste (collected door to door) to the CPU. If required one or two transfer stations may be set up. At the CPU receiving the segregated waste by weight, and processing them using appropriate treatment method may be as per arrangement agreeable to all the GPs involved.
- Since handling the quantum of waste to be handled from multiple GPs obviously will be more, the processing facilities have to be set up accordingly. This may

spell economic viability. It's possible the quality of wet waste received from all the GPs may not be of the same quality. Therefore, both windrow composting and vermi-composting may be set up for processing wet waste. Dry waste (plastics, bottles, card boards, tetrapacks, Multi-Layered Packaging etc.) can be classified and sent to scrap dealers or recyclers or to the Plastic Waste Management Unit proposed to be set up at every block under the SBM-G. The CDMU should collect the list of scrap dealers / recyclers (and also EPR agencies in each block / district) in order see that waste plastics, bottles, and other recyclable items get sold periodically. For otherwise, they tend to get accumulated in the Material Recovery Centre (or at storage places in CPUs) occupying space discouraging the sanitation workers.

- The idea of waste to wealth is fascinating. But, all said and done, case studies of successful SWM Units as well as experience show that resource recovery / converting waste into cash is insufficient to meet the Operation and Maintenance expenses of SWM Units. Therefore, every GP has to generate own source revenue through collection of user charges, besides setting apart a portion of XV FC funds for the purpose of meeting the wages of sanitation workers (or O & M expenses). This looks a pragmatic approach to be able to run the SWM Unit sustainably – especially financially by paying for the services rendered by the service providers if CDMU appointed one. Even otherwise meeting the wages of sanitation workers, vehicle maintenance etc. require funds, which cannot be met if the source of income is assumed to be ‘resource recovery alone’.
- The next important point is it is good to keep the investment in infrastructure and machinery less. Waste management must be viewed more as a socio-psychological problem. It requires to be solved more through well-designed Behaviour Change Communication (BCC) techniques. Machineries and technologies must be viewed as attendant to it. In other words, technology must be viewed as an aid to reduce drudgery involved in the waste management process. Technology per se does not solve the problem of waste. Therefore, our aim should be towards progressive reduction of waste, and not to send across a signal that ‘*you generate waste, we are here to clean up*’.

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