



D.O. No. DR/SBM/05/2016



Date: 28th December, 2016

Sub: Advisory on establishment of Gobar Banks for management of cattle waste in cities

Dear Sir/Ma'am,

As you are aware, one of the major components of the Swachh Bharat Mission-Urban (SBM-U) is the management of solid waste generated within city limits.

2. In this regard, the generation of animal waste/excreta, specifically that of cattle, is a phenomena that compounds the issue of uncharted waste in cities and town. According to the All India Report on the 19th Livestock Census-2012, released by the Department of Animal Husbandry, Dairying and Fisheries in the Ministry of Agriculture, cattle in urban areas in that year amounted to 71.68 lakhs. While this is much lower than the 18.37 crore cattle in rural areas recorded in the same census, it is still a significant amount.

3. Various cities have reached out to the SBM Mission Directorate for support with managing this cattle waste, and identifying a productive manner of disposal for the same.

4. In view of this, the SBM-U Mission Directorate has developed a concept note on the establishment of manure or *gobar* banks, that will, among other uses, serve as supply centres for biogas plants. The note addresses the issues of stray cattle, the supply chain and process flow, sources of funding as well as case studies on existing manure banks in India.

5. You may utilise the note and develop a plan for incorporating the management of cattle waste into your SWM activities. The SBM-U Mission Directorate will be happy to provide further support in terms of case-based advisory.

6. You are further requested to inform the Directorate when you undertake such initiatives in your city. You may send your queries or details of implementation to sbmurban.moud@gmail.com.

I look forward to your continued support in Swachh Bharat Mission (Urban).

With regards,

Yours sincerely,



(Praveen Prakash)

To:

Municipal Commissioners, 500 cities
Mission Directors, all States/UTs

Copy to:

Addl. Mission Director (SBM), DS(SBM)
CPHEEO
Section (SBM I & III)



Concept Note

on

**Gobar Bank and Promotion of Ancillaries
Swachh Bharat Mission (Urban)**



1. Introduction

According to the All India Report on the 19th Livestock Census-2012, released by the Department of Animal Husbandry, Dairying and Fisheries in the Ministry of Agriculture, cattle in urban areas in that year amounted to 71.68 lakhs. While this is much lower than the 18.37 crore cattle in rural areas recorded in the same census, it is still a significant amount. These cattle are usually kept by urban inhabitants in slums or peri-urban areas surrounding cities and towns. The presence of these cattle accounts for the generation of animal waste in cities, as well as a limited source of income for their owners.

A major activity for sustainable income and employment generation can be the establishment of manure bank clusters around urban areas, say around 10 banks per city. The national potential is about 12 million household level Gobar gas plants, based on the estimated availability of cattle dung in the country.

The availability of space for storage of the **digested slurry** is an important aspect to consider when setting up Gobar gas plants. In an ideal low maintenance set-up, the effluent is led into pits where it dries out to be used as manure. Compost material added to this is converted quickly to a **rich organic manure**.

The management of **Stall Feeding** shall play a significant role in **enhancing the sustainability** of any Gobar gas plant. As a practice, home-grown fodder is fed to cattle for increasing the profitability, or procure concentrates from the market at high prices. This would play an important role in promoting fodder cultivation and also improving the quality of feed for the Gobar gas plant.

Hygiene Factors: The approach shall be towards scientific handling of cattle faeces, such that the workers involved in the collection are not exposed to ill effects of the gaseous emissions from the same. The focus shall, therefore, be on providing a systematic process for collection and transportation of the manure to the designated Gobar Banks. The use of automated technologies to improve the overall efficiency in cleanliness and collection shall be leveraged upon.

2. Addressing the issue of Stray Cattle in Urban Areas

The issue of cattle waste visible in urban areas falls under the purview of the solid waste management aspect of the responsibilities of a ULB.

In order to contain stray cattle in the cities, it shall be attempted to transport them to the nearest **gaushalas** (protective cow shelters) that shall be mapped by the ULB. The responsibility for cattle transportation shall be undertaken by the ULB. This activity would provide the **gaushalas** with ready potential for manure creation and, consequently, allow them to establish Gobar gas plants in their premises.

3. The Prospects

The average production of cattle urine/day/cow is 5-6 liters and of cattle faeces/day/cow is 10-12 kilograms. In total, approximately 95-102 crore liters of cattle urine and 170-204 crore kilograms of cattle faeces are produced every day. Further, the scope can be broadly classified as:

- Establishment of Gobar Banks for a cluster of 10 households.
- Construction of 4 M3 biogas plants in each established dairy
- Provision of Capacity Building and marketing support
- Promotion of organic farming and waste land development
- Estimation of the number of Gobar Banks to be created, by the ULB
- Consultation with State Animal Husbandry Department

4. An Integrated Impact on Swachh Bharat Mission (Urban)

- Integrated cycle of Gobar products and its backward-forward linkages for income and employment generation in the identified cities
- Self-reliant local energy generation from manure (biogas for cooking, lighting and electricity generation)
- Encouraging shifting from chemical agriculture towards organic agriculture
- Growing medicinal plants and herbs for local health care
- Waste land development (otherwise used for garbage dumping etc.) for food, fodder, fiber and employment generation
- Vermi compost, pesticides and herbicides can be prepared by cattle excreta and neem leaves formulations in large quantity

5. Responsibilities of the Urban Local Body: Identification of Opportunities

- The ULB will be responsible for preliminary identification of the locations for setting up the Gobar gas plants for assistance under the scheme.
- Department of Animal Husbandry of state to provide statistical inputs on cattle in the locations identified by the ULB
- ULB shall arrange for public announcement for invite PPP for setting up Gobar gas plants
- Market linkages for compost (from dried slurry) and supply of biogas particularly in the vicinity of the said plant
- The application will have to be recommended and verified by an Inspector/Officer of Animal Husbandry Department or equivalent at the ULB.

6. Capital Expenditure towards setting up of Gobar Gas Plant

The capital expenditure for setting up the biogas plant can be met out from the assistance being provided by the Government of India under Solid Waste Management Component of the Swachh Bharat Mission (Urban) which is in the form of a maximum of 35 percent grant/VGF for each project. The remaining funds can also be arranged from Private Sector Participation, additional resources from State Government, Corporate Social Responsibility funds.

Other available sources of funding are as follows:

1. Subsidy for setting up of Biogas Plants under National Biogas and Manure Management Programme of the Ministry of New and Renewable Energy*

S. No.	Particulars of Central Financial Assistance (CFA) & States / Regions and Categories	Family Type Biogas Plants under NBMMP (1 to 6 cubic meter capacity per day)	
		1 Cubic Meter	2- 6 Cubic Meter
A.	Central Subsidy Rates Applicable (In Rs.)		
1.	NER States, Sikkim (except plain areas of Assam) and including SC & ST Categories of NE Region States.	15,000	17,000
2.	Plain areas of Assam.	10,000	11,000
3.	Jammu & Kashmir, Himachal Pradesh, Uttrakhand, Niligiri of Tamil Nadu, Sadar Kurseong & Kalimpong Sub-Divisions of Darjeeling, Sunderbans (W.B.) and Andaman & Nicobar Islands.	7,000	11,000
4.	Scheduled castes / Scheduled Tribes of all other States except NE Region States (including Sikkim).	7,000	11,000
5.	All Others	5,500	9,000
B.	Turn-Key Job Fee including warranty for five years and quality control (in Rs. per plant).	Rs.1500/- per plant for fixed dome Deenbandhu type and floating gasholder KVIC type brick masonry models. Turn Key Job Fee also provided for biogas plants with prefabricated material involving part construction work	

		either for digester or dome. No fee is provided for completely prefabricated / manufactured plants such as Bag type plants with rubberized material or plants made of HDPE / PVC / fabric materials, as and when approved.
C.	Additional subsidy (CFA) for toilet linked Biogas Plants (in Rs. per plant).	1,200/-

*ULBs are requested to ascertain the exact applicability of the scheme in their case by contacting the relevant authority

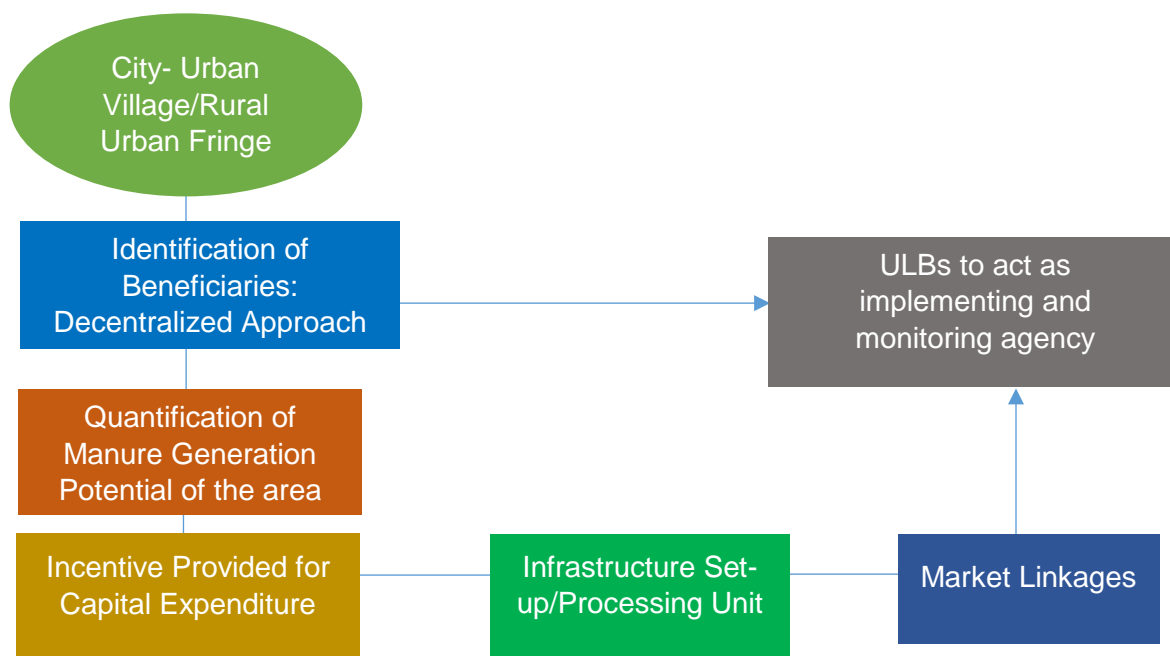
2. A credit based scheme for which Commercial banks under Agriculture Finance would finance these units. The marketing facility of Gobar can be done Department of Animal Husbandry of the state along with

2.1 In order to help the beneficiary to set-up the facility, the Financing Banks will release loan amount to the beneficiaries by transferring the amount to his saving bank account. Subsidy @ 25% (50% in case of indigenous units) will be provided after establishment of unit to the beneficiaries' saving bank account.

7. Land Identification

The land identification would be done by the ULB of respective city in consultation with the State Nodal Departments/State Nodal Agencies/Animal Husbandry Department, Biogas Development and Training Centers (BDTCs).

8. Process Flow



9. Case Study: Bhintbudrak in Surat District, Gujarat

Recently, Gram Vikas Trust, introduced GOBAR BANK concept and has manufactured, installed and commissioned 2 Gobar Gas Plants in Bhintbudrak village in Uchhal Taluka, Dist. Surat. The plants are of 85 cubic meter capacity, each totaling to 170 M3 of biogas generation per day.

Costs Involved:-

- 1 Non recurring
 - A. Plant Cost – Rs 4,50,000
 - B. Electricity distribution cost – Rs 2,00,000/-
 - C. Generator Set Cost – 15 kW – Rs 1,00,000
 - D. **Sum - Rs 7,50,000**

- 2 Recurring
 - A. Manpower (Mechanic and Helper)- Rs 90,000
 - B. Raw Material – Rs 1,62,000
 - C. Miscellaneous – Rs 50,000
 - D. Depreciation – Rs 85,000
 - E. **Sum = Rs 3,87,000**

10. Case Study: Junagadh, Gujarat

In Amarpur village of Junagadh, biogas plants built in 1987 by AKRSP (I) are still in good working condition and are expected to work for at least another ten years. The introduction of biogas has brought about positive changes in the lives of women as well as being a long term solution to the problem of depleting natural energy sources. The life of a biogas plant can be up to 20-25 years, and only requires minor maintenance regularly, such as the replacement of valves and the cleaning of pipes. The biogas programme embodies the environmental conservation notions of reduce, reuse and recycle. The biomass required for the efficient functioning of a biogas plant and its output, serve numerous functions inexpensively.

The beneficiaries on an average sell one truck load of compost for Rs.600 every fortnight.