

## DEVELOPMENT OF A WASTE MANAGEMENT MODEL FOR LUCKNOW CITY

### Silent Features

1. Date of Start : Ist July 2001
2. Date of Completion : 31st Dec. 2002
3. Total Cost of project : Rs. 9,59,000.00
4. Staff Sectioned & in position :

Project Coordinator	1
Supervisor	4
Rickshaw Pullers	20
5. Equipments Acquired, if any : 20 Rickshaw Trolley
6. Summary of Progress made so far:
  - \* Total Number of persons in direct employment = 24
  - \* Total number of families covered so far = 2045
  - \* Population covered so far = 9,930
  - \* Total number of colonies covered so far = 14
  - \* Two marketing boys are being given part-time employment for selling of compost
  - \* As per the demand compost is packed in 10, 5 & 2 kg packaging.
  - \* Apart from residential colonies waste is being collected from 5 prominent temples which generate lots of flowers and leaves on various occasions.
  - \* The Lucknow Municipal Corporation (LMC) has provided around 3000 sq ft of land for waste collection & composting purpose.
  - \* IISD has started one '**Demonstration & Training Centre**' at Boat Club situated near the River Gomti in collaboration with Shivgarh Resort and Tourism Department where people are being made aware about the domestic waste management and the vermi-compost was made available to them at the rate of Rs. 4 per kgs. Visitors are also distributed pamphlets generated for the purpose.

## 1. INTRODUCTION :

Lucknow with an overall population of 32 Lakhs, which includes a floating population of about 2 lakhs, occupying an area of about 300 sq kms. is generating around 1600 tones of solid waste every day, with an average generation of about .5 kgs. per capita/day. Waste disposal is an essential civic service that must be carried out as economically as possible with out disfiguring the landscape, contaminating the water resources, or becoming a potential ozone-depleting agent. The ever growing population and industrialization has resulted in generation of more and more households, commercial and municipal waste whose management becomes increasingly difficult, as it is increasing year after year.

Waste disposal is an immediate, critical problem for all the cities, which are under tremendous pressure, owing to the growth of population, mechanization and urbanization. The civic authorities have already realized the importance of the proper disposal of waste which should be environmental-friendly. Composting is one of the environmental- friendly ways of handling municipal solid waste. Through this technique some of the domestic waste can be treated and the ultimate load to main MSW stream can be reduced.

If domestic garbage and industrial organic waste are considered, the manurial value of total waste bio-mass in terms of nitrogen can meet about 90% nitrogen fertilizer requirement of our country.

Therefore, it was planned to develop a model for waste management in the city of Lucknow with the help of scavengers which would in trun can also supplement their income and improve their living conditions too.

## 2. Objectives of the project

The general aim of the present demonstration project is to generate income through waste management in the emarked area and develop a success model for local administration for replication in other places. The women & youth from scavenger community were also trained in vermi-composting techniques which in turn would help in supplementing their income. The emphasis would be given on following objectives:

- \* To generate income for scavenger families through waste management;
- \* To develop the model for waste management in the city of Lucknow;
- \* To train the men & women of scavenger family in microbial composting technique;

- \* To train them in segregation of garbage for microbial composting;
- \* To train them for commercial production of compost;
- \* To create market support for the sale of produced organic compost;
- \* To promote youth for establishing their own composting unit by facilitating soft bank loans;

### **3. PROJECT AREA (Block, village total coverage area)**

The project was implemented in the city premises of Lucknow, capital of Uttar Pradesh covering number of colonies catered in the radius of 10 to 12 kms.

### **4. COMMUNITY BACKGROUND (Caste, occupation etc.)**

The peoples engaged belonged to Scheduled Caste Community (Balmikies) doing family business by involving themselves in waste collection system with nagar nigam.

### **5. METHODOLOGY & SYSTEM APPROACH**

\* During the initial 2 months i.e. from July 2001 to August 2001, various articles of use and infrastructure was created viz. two vermi-composting pits were constructed, rearing of earthworms were started, procurement of other composting articles were made and identification / survey of areas were conducted and appointment of staff was done;

\* The local authorities viz. Lucknow Municipal Corporation, Corporate and Sector Wardens of the selected areas were taken into confidence;

\* Staff was selected from the Balmiki's Clusters located in various points in the city. The selected boys were given outlines of the programme and each 'Kanchan Karmi' was provided with the list of residents and the area was shown to them for collection of waste;

\* To introduce ourselves in the area, meetings were organized with local Corporate and Sector Wardens and prominent residents of that area. They were given details sketches of the programme to be implemented and a brochure / pamphlets were also given to them for distribution;

\* With the help of Sector Warden our Kanchan Karmi was introduced in the area and the pamphlets were distributed among the residents. They were

shown the sample of 'Identity Cards' of the Karmi and the field Supervisors whom they are going to interact in the near future;

\* The kanchan karmi were given freedom to sell the non-biodegradable items with value (plastic, metals, glass etc.) in the market and keep the money with them for their snacks;

\* The Lucknow Municipal Corporation has provided 3000 sq ft of land near Gomti River where site was developed and 2 pits of 20ftx15 ft x 3ft were constructed for the composting purpose. The whole area was covered nicely;

\* In the first pit the waste was predigested with the help of mixing of cow dung and then it was transferred to second pit for vermi-composting. Because the fresh organic waste generates heat and the earthworms die in excess heat;

\* As the composting site was near the public park so IISD tries to develop the site beautifully. The outer walls were painted with slogans promoting people to adopt organic composting;

\* In the every composting cycle normally 12 to 15 mt. tones of compost is being produced which is sold at the rate of Rs. 4 per kgms;

\* Each day around 100 kgms of bio-degradable waste is presently being collected and is recycled for composting;

\* The pamphlets describing about vermi-composting techniques and uses was also distributed to all visitors of the site;

## **6. TECHNICAL BACK-UP SUPPORT & LINKAGES ESTABLISHED WITH S&T INSTITUTIONS:**

IISD has established contact with one central govt. institution 'Central Institute for subtropical Plant Research' situated at Rehman Kheda, in Block Kakori of District Lucknow where Dr. R.K.Pathak, Director of the institute takes keen interest in providing all types of technical support for the programme.

Further IISD is also having contacts with other institutions like ITRC, NBRAI and CDRI for better support and outcome. Each institution has environment unit headed by one scientist.

IISD has also developed contacts with local NGO's who are doing some work related to waste management or working on environmental issues.

## **7. SCIENCE & TECHNOLOGY COMPONENT (Technology package developed / new innovations / observations) :**

As the project is emphasized on development of model for waste management in Lucknow city, so it seems that now people are recognizing the importance of the private waste collectors. Each day in the morning kanchan karmi bells the door and take away the waste from each house. The residents feel that no govt. institution can provide better services than this system.

People are also very happy and do not hesitate to pay Rs. 15 to 20 per family per month. Now the organization is withdrawing itself from the chain and would handover all the assts to the group of scavengers who are being engaged in collecting and supervising the system.

Now onwards they would manage and control over the system. IISD would only provide logistic support or in case any dispute it would intervene.

## **8. PEOPLE'S PARTICIPATION FROM PLANNING TO IMPLEMENTATION**

The participation of local people was always there as the responses were good and encouraging. The residents of the colonies where waste collection is being taken initially are giving better but slow response. The contribution decided from the local residents is also not coming up regularly but now they are tuned to some extent to give the garbage in two packs to the kanchan karmi. One is biodegradable and in other non-biodegradable material. And the cleanliness on the roads of the colonies are also towards improvement, Less amount of garbage is also seen on the lanes of the selected colonies and they have become free from roaming animals like pigs and cows.

## **9. INDICATORS APPLIED FOR MONITORING**

Till date 14 colonies had been taken up and people are satisfied with the services provided to them as per our commitment. It seems that their level of satisfaction is high and nearly all kanchan karmi's are getting good response from their assigned area.

It also has been experienced that many people are trying to learn the details of vermi-composting for practicing at home. This number is also increasing day-by-day.

## 10. OBJECTIVES ACHIEVED SO FAR

- \* Total number of persons given direct employment = 24
- \* Total number of families covered so far = 2,045
- \* Population covered so far = 9,930
- \* Total number of colonies covered so far = 14
- \* Awareness material has been produced and distributed among the residents.

- \* Two marketing boys are being given part-time employment for selling of compost

- \* As per the demand compost is packed in 10,5 & 2 kgms packaging.

- \* As a service provider people are accepting us and putting faith on us.

- \* Apart from residential colonies waste is being collected from 5 prominent temples which generate lots of flowers and leaves on various occasions.

- \* All the staff employed for collection of garbage is now in a position to collect around Rs. 1200-1500 per month from the residents of the colony where they are being employed and it seems that it would become a regular feature as the response from the people is encouraging.

- \* IISD is in a view that the Trolley rickshaw should be given to these kanchan karmies and they would earn their own livelihood and the activity would automatically become sustainable and IISD would slowly with draw it self from the system.

- \* The land which has been provided by Lucknow Municipal Corporation (LMC) for waste collection & composting purpose and the assets erected at the site would be handed over to the group of scavengers associated with IISD in this programme.

- \* Taking lesson from the existing network many more peoples from slum basties have started collecting the garbage from other colonies and it seems that people have accepted the system because LMC is unable to provide services to large section of the society.

## 12. CONSTRAINTS, IF ANY.

In the early stages of the programme it was really difficult to create interest among the community regarding this programme because as the people were suspicious that in spite of huge infrastructure LMC is unable to provide better services then how IISD can be able to provide such services. It took good time to motivate them and off course number of meeting were organized in various colonies with sector wardens and local leaders.

In the given period it seems that IISD has tried to do some tangible job where Lucknow Municipal Corporation was failure to some extend.