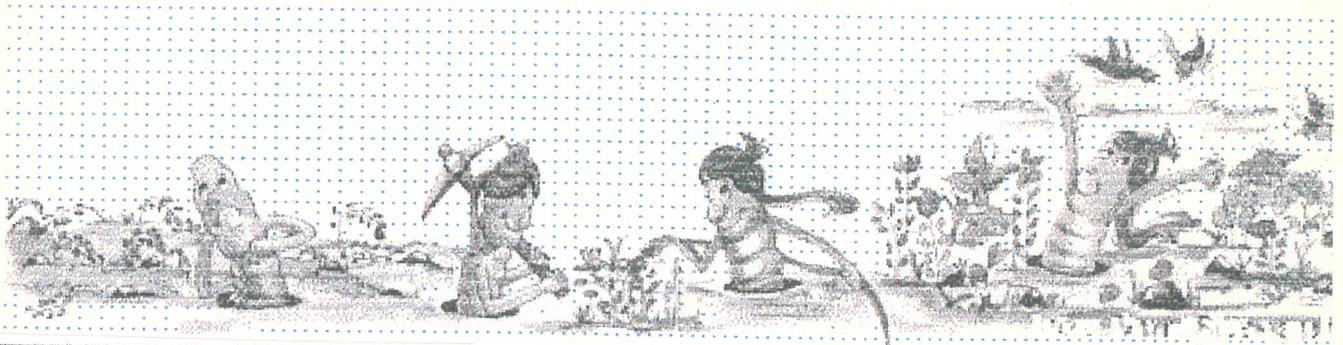


# Project Report

## Vermi-Processing Technology For Decentralized Management Of Organic Waste

A Project by MUKTA

Funded by  
MMR-Environment Improvement Society  
Dec 1998- May 2001  
Mumbai



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## **Mukta-EIS Vermiculture Project Report Dec.1998-May 2001**

In the last week of Nov. 1998, we received the first installment of the grant from EIS society to implement the project titled: **Vermiprocessing Technology For Decentralised Management Of Organic Waste**. This project was over on 31st May 2001. The following is the final report of the activities during this period.

### **Highlights of the Project**

**Project Period: 1st Dec. 1998 to 31st May 2001**

**Team Leaders: 1. Ms. Archana Joshi  
2. Dr. Neela Dabir**

**Consultant: Ms. Aparna Inamdar**

**Coordinators: 1. Ms. Urmila Nyalkalkar  
2. Ms. Ruchi Bhatnagar  
3. Ms. Sunita Mallapurkar**

The turn over in the coordinators was unavoidable but fortunately we could get a new person immediately and so it did not affect the working of the project. Ms. Urmila Nyalkalkar shifted to Hyderabad, Ms Ruchi Bhatnagar got a better job and Ms. Sunita Mallapurkar continued till the end

**Junior Assistant/ Asst. Coordinator: Ms. Meena Walanjkar**

### **Main Activities under the project :**

50 Awareness generation programmes and 15 Vermiculture projects in different housing societies situated in the central suburbs from Ghtakopar to Mulund.

### **Coverage :**

**A) Awareness Programmes:** Through the awareness programmes, we could reach out to 4593 persons from different age groups. This includes members from housing societies, school and college students, teachers, community leaders, and general public.

**B) Vermiculture projects:** We started Vermiculture projects in 15 housing societies. It covered a total of **921 families**. In four societies the projects had to be closed due to reasons beyond our control. In these societies, the project was continued for a period of 2 months to 1 year and so we feel that these families are definitely aware of the importance of Vermiculture.

For all the projects, the Vermiculture was bought from Bhawalkar Earthworm Research Institute, Poona. In the Vermiculture projects, which were monitored by Mukta for one year, it was possible to harvest the culture and a new cycle was started again. Now these projects are handed over to the societies and we visit once in two weeks. The projects, which were problematic, continue to be so. We tried very hard to restart these projects but could not succeed. As of today, 11 projects are in working condition. Some of them have not completed one year as yet.

The list of the projects along with the present status and the list of the awareness programmes are attached with this report.

### **Experiences gained**

We are happy that we could achieve the target as per our plan. The societies have given a positive feedback about our work and most of them have shown the willingness to continue the project after the withdrawal of Mukta team. The report of the feedback received from all the 15 societies is attached for information. It is quite evident that all the committee members have acknowledged the efforts of Mukta members and staff. Even the societies where the projects were unsuccessful have not put any blame on Mukta for the failure. The societies have also requested Mukta to continue giving periodic inputs in order to ensure smooth functioning of the projects. We have managed the whole project with judicious use of financial resources. Even after getting an extension of 6 months, we have not spent all the sanctioned money.

The newspapers also took notice of our efforts and gave publicity in their supplements. This gave us an opportunity to get other contacts. At present Mukta is managing five large-scale projects at the following sites

1. Johnson and Johnson company Mulund (500kg waste per day)
2. Maritime Shipping Institute , Powai (500kg waste per day)
3. Beggar's Home , Chembur ( 300 Kg. Waste per day)
4. Bal Kalyan Nagari , Mankhurd (300 kg. Waste per day)
5. Shraddhanand Mahilashram (50 Kg. Waste per day)

There are some more projects which are likely to be started at RCF Chembur, SAMEER- Powai and FDA- Bandra. Mukta received monitoring charges for Johnson and Maritime Institute but the other three projects have been managed

free of charge. We feel that this is the positive outcome of work in the project undertaken with the help of Environment Improvement Society.

The attitude of Mukta members and staff has never been towards profit making but towards popularizing the use Vermiculture technology for proper management of organic waste in urban areas. Even the projects at Johnson and Maritime Training Institute are managed on no profit no loss basis.

However, it is necessary to understand the constraints faced by us during this period. It will help in planning of similar projects in future. When we designed this project it was expected that the educated people residing in housing societies would understand the need of the proper management of waste and be ready to accept their social responsibility. So we expected least resistance from this group. But in reality the task was quite difficult. Most of the people still believe that garbage is the responsibility of the BMC and we are paying taxes for the same. There was tremendous resistance from some of the women for segregation of waste at source. They were not ready to change their habit of putting all the domestic waste in a plastic bag before handing it over to the sweeper.

When we approached the housing societies for finding out their interest in starting the project in their society, most people would agreed in principle that it was a very good project and such projects were necessary for the city of Mumbai but in practice, very few people were ready to experiment. Even after giving them an offer to visit some well managed projects, very few were willing to do so. Out of the 200 odd societies whom we tried to contact through phone calls, appeals and other methods, hardly 20 societies agreed to have Vermiculture project in their compound. In five societies after a lot of groundwork and initial preparation, the committee changed the decision at the last moment. The reasons are listed below-

1. Promise by BMC to start Vermiculture through ALM and Dignity foundation. But in reality it never took off and our efforts were also wasted
2. The conflict between the society members over the site of the vermibin. This issue could not be resolved for long time and finally we had to close the chapter.

In 15 projects which were initiated, we had to invest a lot of put is a lot of efforts to sustain the project. The various types of inputs given by Mukta staff and members are listed below.

1. Door to door visits to explain how to segregate the wet and dry waste. This had to be done several times as after some period, people would start giving mixed garbage for loading.

2. Daily visits by Mukta staff in the initial period and then weekly visit on a regular basis.
3. Meetings with the sweepers to explain how to load the vermibin
4. Supervision of the sweeper while loading the vermibin
5. Monitoring of the temperature and ph of the contents of the bin
6. Taking necessary precautions for maintaining the right ph.
7. Employing a special person periodically on daily wages to pick up the plastic and other inorganic waste from the bin.
8. Helping in harvesting the manure at the end of one year.

It was a difficult task and the response from the society members would be negative at times. Thus just getting cooperation from the committee members is not enough. Repeated inputs were necessary to keep the project going. In spite of all these efforts, we had to discontinue 4 projects for various reasons. The reasons for discontinuation of the projects in these four societies are listed below

#### **Reasons for discontinuation of the project in 4 Societies**

1. Construction work in the societies that went on for several months destroyed the vermibins. After the repair work was over, the committee changed and the new committee did not cooperate even after a lot of persuasion by Mukta Staff.
2. In one society, a panther and a wild fox was seen near the bin and the members believed that they came because of the smell of food waste in the bin. They closed the bin immediately without even informing Mukta staff and then refused to restart the project.
3. In another society, some miscreants from the neighboring slum pour some kerosene in the bin and set fire. The bin was naturally destroyed and then the secretary of the society did not cooperate to start the project at another site.

#### **Other Problems**

Sometimes we experienced difficulties because the messages given by the BMC were not consistent. There was a lot of propoganda about the ALM but the action towards forming ALMs was quite slow. The ward officers were not ready to give any letter to societies for taking up a Vermiculture project through Mukta. Till today it is not compulsory to segregate the dry and wet waste although it has been discussed several times in the newspaper. In some areas, ALMs were formed but the Vermiculture was not successful. Because of this negative experience the societies were reluctant to take a project through Mukta.

## Lessons learnt

We would like to say that it was a very good learning experience for Mukta. We are quite satisfied with the success. The project clearly demonstrates the feasibility of setting up Vermi bins in housing societies and the management is quite simple after some training of the society members and the sweepers.

Vermiculture technology and its use for waste management has received enough publicity through different media and most of the educated people are now aware of the use of Vermiculture technology for management of organic waste. However they are not willing to take up the responsibility on their own. It has something to do with the lack of civic responsibility, which we experience in all walks of life. If BMC makes it compulsory for each society to manage their organic waste within the compound, they would definitely do it. The response of most of the society members was similar. The resistance of the housewives, the domestic servants and the sweepers towards segregation of dry and wet waste can only be overcome if BMC workers refuse to clear mixed garbage. This fact is also evident from the responses received from the committee members of the societies.

The last project was initiated in Feb 2001. As of today, Mukta is regularly monitoring these projects. We will be happy if the E.I. society grants us some money (Rs. 18, 000/- @ Rs. 2000/-p.m. for the period June 2001 to Feb 2002) for monitoring the ongoing projects till Feb. 2002. It will cover the expenses for travel and part time salary of the assistant coordinator.

## Future Plans

We are convinced about the importance and utility of Vermicomposting. But we have also realized the difficulties in managing the projects at society level. In future we would venture into Vermiculture projects in the housing societies only when the residents approach us on their own. In such cases we are sure about their motivation and we do not have to waste our energy in convincing each and every member of the society. In absence of a clear policy from BMC, it is difficult to duplicate such projects for the housing societies. We would like to take up large-scale projects in companies and industries where the management is relatively easier and results are quite rewarding.

## Cost Benefit Analysis of the Project:

It should be noted that this project had two parts and the projects expenses were incurred for **awareness generation** as well as for installation and supervision, monitoring and training for the **vermiculture projects in different societies**. We have already mentioned that the project team reached out to **4593 persons** of different age groups through the awareness generation programmes and **921 families** participated in the Vermiculture projects in the housing societies. Thus

every day an average of 450/- kg. of organic waste is processed through this project. In a few societies which completed the first project cycle of 12-15 months, the culture was harvested and the next cycle was started. Because of these two types of activities, it is difficult to work out the cost benefit analysis.

### **Attachments**

1. Photographic report of the projects
2. List of projects
3. List of awareness programmes
4. Report of feedback form the societies
5. Copy of the letters to society
6. Pamphlet for Vermiculture

### Explanation of the queries

This is with reference to your letter dated 12 th Nov.2001. We wish to provide information regarding the queries raised by Prof. Soli. J. Arcevala.

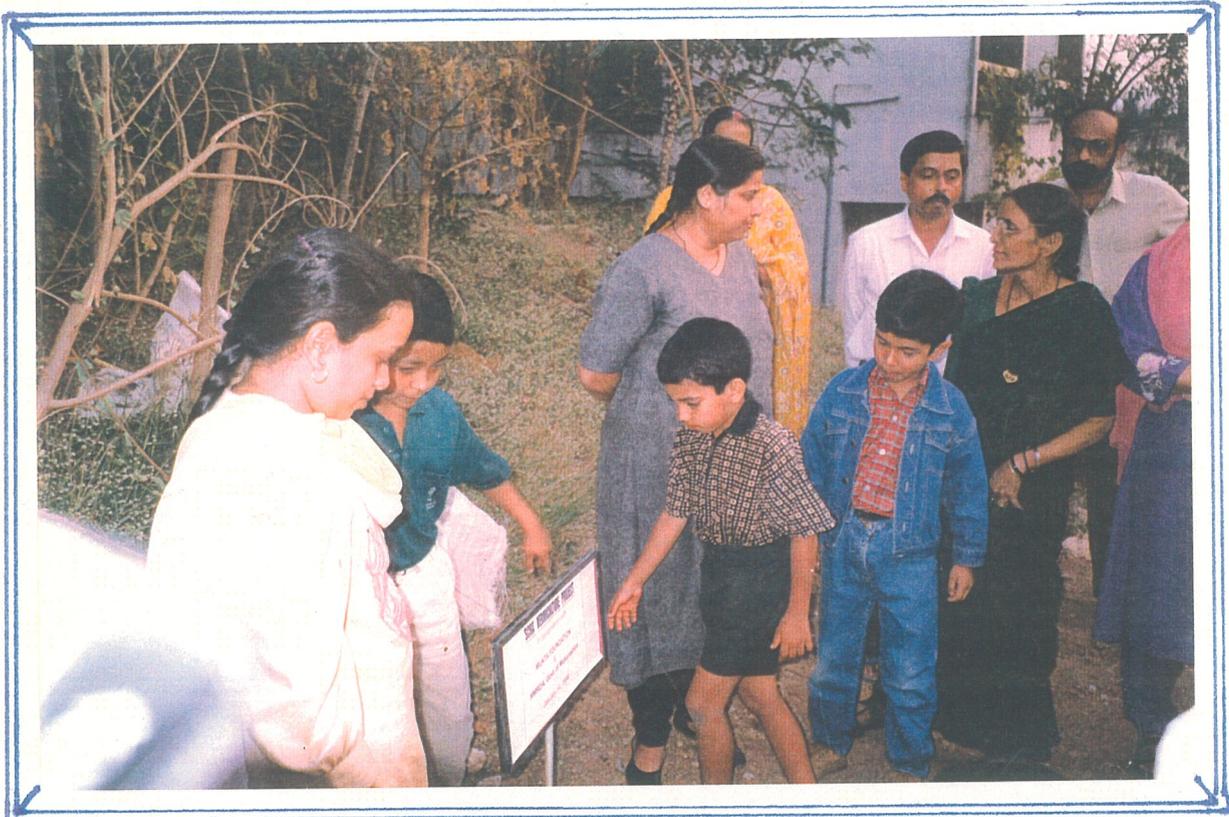
1. Area required for one family: 0.25 sq. meter per family or one sq.meter for four families
2. We do not need to add vermipowder per month. We are using the deep burrowing type of worms and the culture for this is added only in the beginning of the project. Thereafter there is no need to add the culture again. The cost of the culture for one family is approx. Rs.25/-
3. The compost is harvested after a year and the weight of the compost is approx. 15 to 20% of the waste loaded.
4. We did not experience any problems in the monsoon period as the sites for the projects were chosen in such a way that there was no water logging. In exceptional cases when there were heavy rains for two or three days, we had to stop loading for a week. The main problem was due to non-segregation of dry and wet waste by the residents.



**Shraddhamata Society, Powai**



**SAMEER Staff Quarters Powai ( 14<sup>th</sup> Jan. 1999)**  
**Families 35**

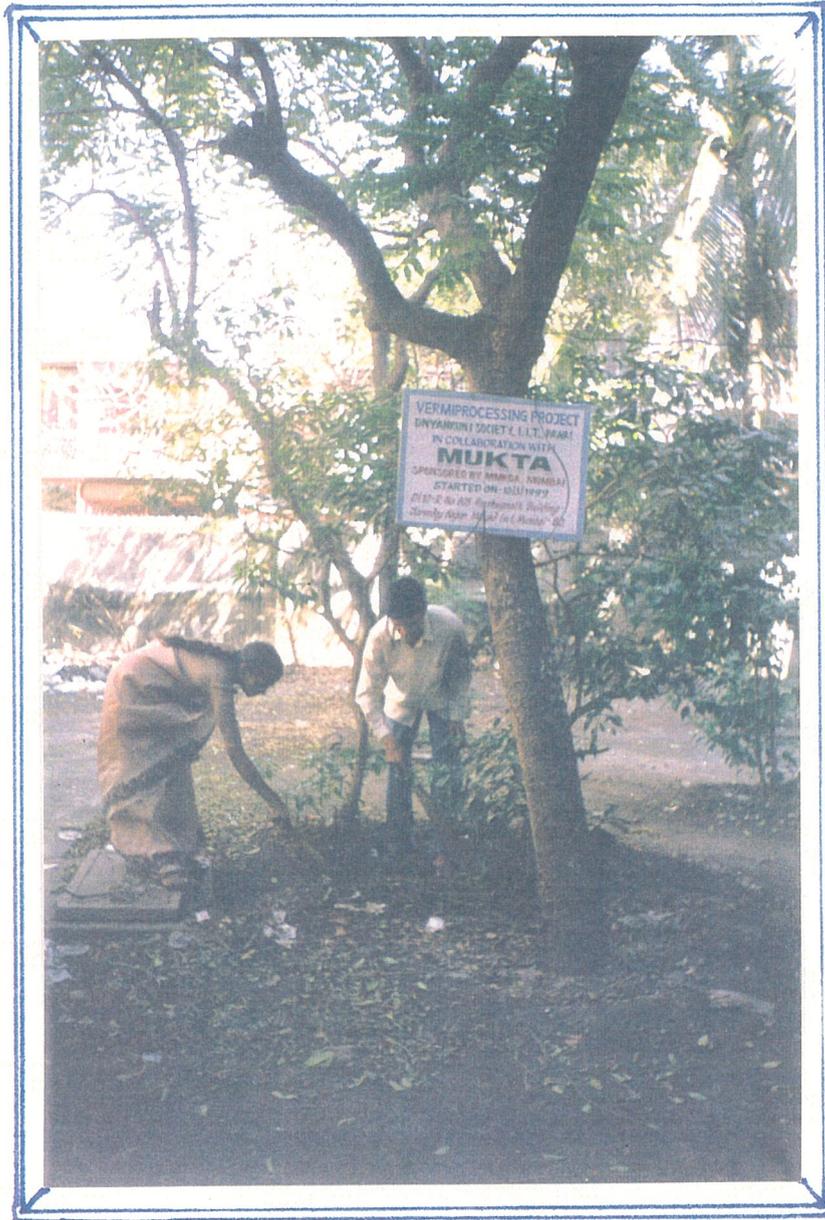


**SAMEER Staff Quarters Powai**



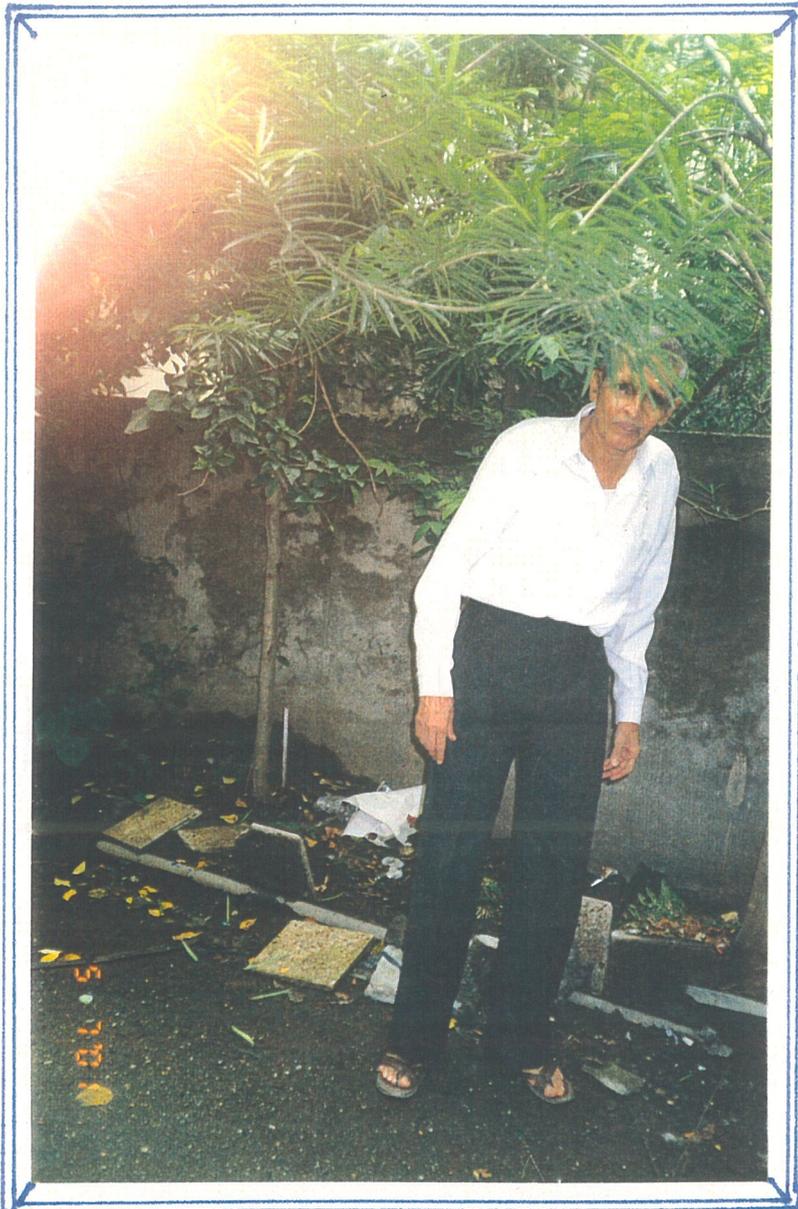


**Chotalal Villa Ghatkopar (26 Jan.1999)  
Families-60**



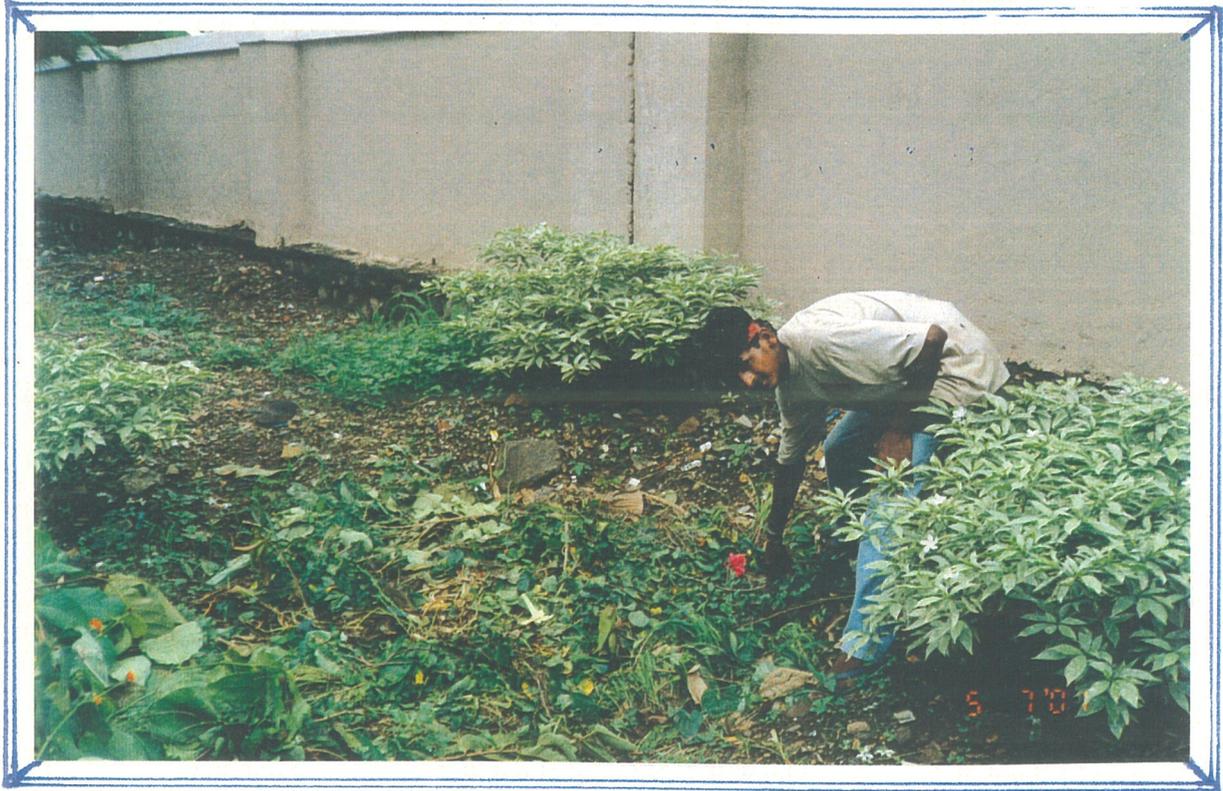
**Dnyankunj Society, Powai (10<sup>th</sup> March 1999)  
Families 22**

Dnyankunj Society, Powai





**Jal Vayu Vihar Powai (12 June 1999)**  
**Families 126**



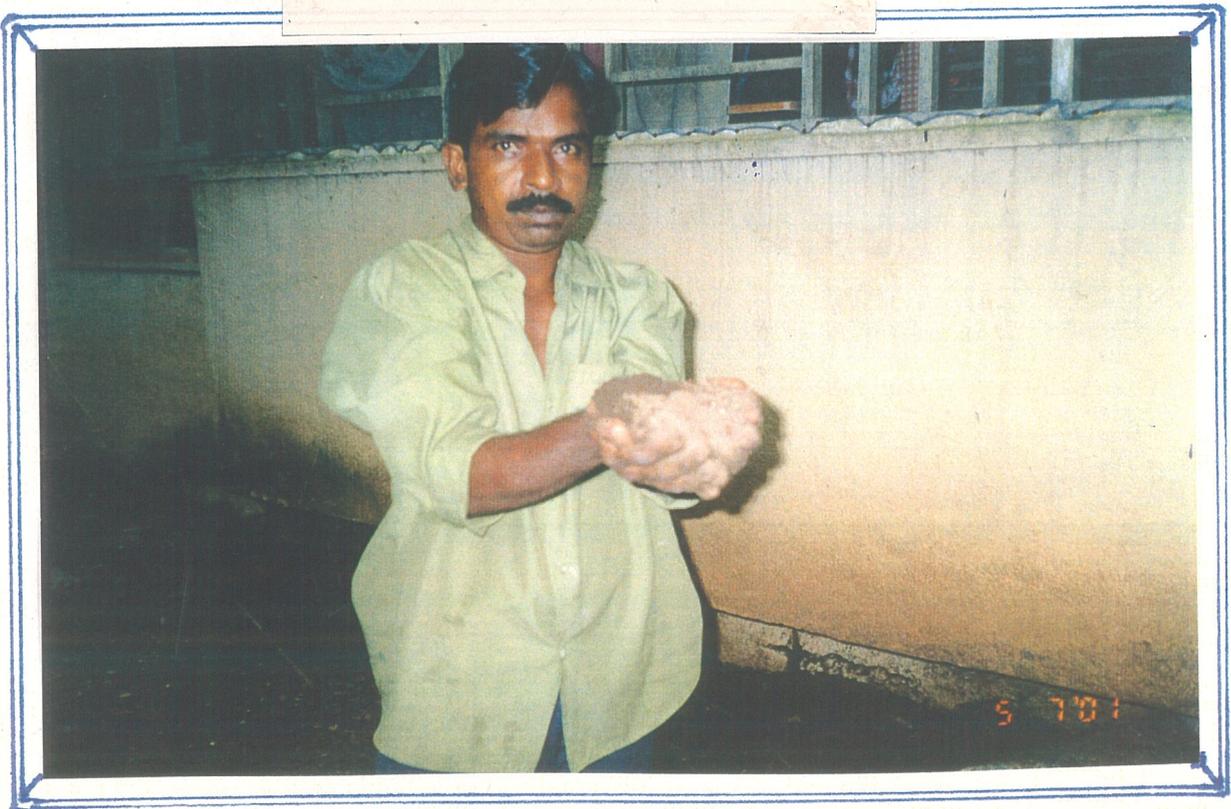
**Jal Vayu Vihar Powai**



IIT Staff Quarters (15<sup>th</sup> Dec. 1999)  
Families- 6



IIT Staff Quarters, Powai





I I T staff Quarters, Powai ( 7<sup>th</sup> Jan. 2001)  
Families 216



5



IIT Staff Quarters, Powai



**Deeplakshmi Society Mulund (11<sup>th</sup> Oct 2000)**  
**Families 48**



**Tridal Society, Mulund ( 18<sup>th</sup> Oct. 2000 )  
Families 48**



**Tridal Society, Mulund**





**Palm Acre Society, Mulund (8<sup>th</sup> Dec. 2000)**  
**Families 116**



**Vrindavan Dham, Mulund (21<sup>st</sup> feb. 2001)**  
**Families 48**



**Vrindavan Dham, Mulund**



**C.K.P. Mahila mandal Exhibition Mulund  
22<sup>nd</sup> Oct.2000**



**Awareness Programme**

**Vrindavan Dham Mulund  
21<sup>st</sup> Jan. 2001**



**Rotary Club of Mulund West**  
**19<sup>th</sup> Nov. 2000**

## List Of Vermiculture Projects In Housing Societies

Total No. Of Families Involved - 921

Sr. No.	Location	Date of starting	No. Of Families	Present status
1	Shraddhamata Society, Pawai	1 <sup>st</sup> Dec. 1998	33	Working well, culture was removed in Jan.2000.They have taken over the responsibility to keep the project working.
2.	Sameer Society, Powai.	14 <sup>th</sup> Jan. 1999	35	Working well, the responsibility is taken by the residents. They want to expand the project to include Canteen waste as well.
3.	Chhotalal Vila, Ghatkopar.	26 <sup>th</sup> Jan.1999.	60	The building repair work was started in March 1999. and the bin could not function because of the debris. The work is still not over. The committee members have changed and they are not willing to start the project again.
4.	Kanta Apartments, Mulund	4 <sup>th</sup> March 1999	90	We tried our best for one year. Some residents are ready to cooperate but some have taken objection to this activity. Likely to be discontinued if they do not agree to cooperate.
5.	Dnyankunj Society, Pawai	10 March 1999	22	No problems, Culture was taken out in Feb. 2000. The project is continued.
6.	Jal-Vayu Vihar, Pawai.	12 June,1999.	126	No problems . The culture was removed and the responsibility is handed over to the society.

7.	Vaishakh Society, Mulund	7 Aug. 1999	13	No problems. Culture was removed in Sept. 2000. The project continues
8	IIT Staff quarters, C-11.	15 <sup>th</sup> Dec. 1999	6	Working well, no problems. Culture removed in Jan. 2001. The project continues.
9	IIT Staff quarters, near Hiranandani Gardens.	7 <sup>th</sup> Jan. 2000	216	Working well, no problems.
10	White House, IIT Pawai.	24 Jan. 2000	10	Initially there were no problems but once a leopard came and sat on the pit so the members closed the pit and now are not willing to restart.
11.	Mukund Iron Employees Society, Mulund east	March 2000	50	The project was started and was working fine but some unknown persons set it on fire and so the project was discontinued.
12	Deep-Laxmi Society, Mulund	11th Oct. 2000	48	Working well. Society has to make extra payment for picking up plastic from the bin.
13	Tridal Society, Mulund.	18th Oct. 2000	48	Working well. No problems
14	Palm Acre Society, Mulund	8th Dec. 2000	116	Working well. Right now there are snakes in the compound. So only garden waste is loaded.
15	Vrindavan Dham Mulund.	21st Feb. 2001	48	Working fine. People are quite cooperative.

## List of Awareness Programmes

**Total No. of people covered through the awareness programmes- 4593**  
(This included school and college students, housing society committee members, school teachers, community leaders and general population.)

Sr. No.	Name of the Society	Date and time of the programme	Attendance	Resource person	Follow up Action
1.	Lewis Wadi, Thane (30 families)	2 <sup>nd</sup> Jan. 1999.	20	Dr. Neela Dabir	-
2.	SAMEER staff quarters, I.I.T. Pawai (30 families)	14 <sup>th</sup> Jan. 1999	40	Mrs. Aparna Inamdar	The project was started on the same day
3	Kanta Apartment, Opp. Sarvodaya Nagar, Mulund West (90 families)	24 <sup>th</sup> Jan. 1999	60	Dr. Neela Dabir	They are keen on starting the project. The project started on 6 <sup>th</sup> March 1999
4	Chhotalal Vila, Amrut Nagar, Ghatkopar West. (60 families)	26 <sup>th</sup> Jan. 1999	25	Dr. Neela Dabir	Started project on the same day.
5	Dnyankunja, Opp. I.I.T. main gate, Pawai. (20 families)	30 <sup>th</sup> Jan. 1999	20	Dr. Neela Dabir	The project started on 10 <sup>th</sup> March 1999
6	Konark Indraprastha, Sarvodaya Nagar (200 families)	14 <sup>th</sup> Feb. 1999	25	Dr. Neela Dabir	The women were keen on starting the project but the management had some differences
7	O. N. G. C. Colony, Amrut Nagar, Ghatkopar West. 80 Families	21 <sup>st</sup> Feb. 1999	2	Dr. Neela Dabir	Keen on starting the project. They want to do it on their own without the sponsorship of MMRDA

8	Tej apartment Opp. IIT main gate, Pawai.	10 <sup>th</sup> March 1999	10	Ms. Archana Joshi	Not much interest in starting the project.
9	Shrirang Society, Thane (west),	13 <sup>th</sup> March 1999.	15	Dr. Neela Dabir	Some of them are interested in starting in their own bungalows
10	Jal Vayu Vihar, Near Hiranandani Gardens, Pawai.	16 <sup>th</sup> May 1999	4 committe e members of the society	Ms. Archana Joshi	Very keen on starting the project and the project was initiated on 12/6/99
11	Hanuman Nagar, Opp. I.I.T. Main gate. Slum community having 300 houses	23 <sup>rd</sup> May 1999	25	Dr. Neela Dabir.	The corporator is keen to start the project on a small scale but is too busy and so it is delayed
12	Alpino Summits Barve Nagar A Trekking group Ghatkopar west	13 <sup>th</sup> June	20	Ms. Archana Joshi	The members are interested but there is a need to follow up.
13	Tridal Society Mithagar Road, Mulund East	31 <sup>st</sup> July	21	Ms. Urmila Nyalkalkar	Interested in starting the project
14.	Vaishakh, P.K. Road, Mulund West	31 <sup>st</sup> July	23	Ms. Sunita Mallapurkar	Have agreed to start the project in first week of August.
15	Rashtra Sarathi Bldg, Mulund West	4 <sup>th</sup> Aug. 1999	8	Mrs. Sadhana Gupte	Not interested in starting the project
16	Michael Apartments, P.K. Road, Mulund West	26 <sup>th</sup> Sept. 1999	14	Ms. Urmila Nyalkalkar	They want to start the project after the repair works is over
17	Girls High School, Andheri, West	12 Oct. 1999	400 girls 6 classes	Ms. Sadhana Gupte	They are interested in starting the project for the school

18	I.I.T. Staff society, Near Hiranandani garden	27 <sup>th</sup> Nov. 1999	25	Ms. Archana Joshi	Started the project on 7 <sup>th</sup> Jan. 1999
19	IIT Quarters, Pawai.	1 <sup>st</sup> Dec.1999	12	Ms. Archana Joshi	The project started on 15 Dec. 1999.
20	White House, IIT Pawai.	19 <sup>th</sup> Dec.1999	10	Ms. Archana Joshi	The project started in Jan. 2000.
21	Mukund Employee's Society, Mulund east	6 <sup>th</sup> Feb.2000	25	Ms. Aparna Inamdar	The project will start in March 2000.
22	Rotary Club of Chembur	23 <sup>rd</sup> Feb.2000	30	Dr. Neela Dabir	Two three members have shown interest in starting a project in their societies. With the help of this club we started the project at Bal Kalyan Nagari
23	Beggar's Home, Chembur	24 <sup>th</sup> Feb.2000	7 Officers from social welfare Board	Ms. Archana Joshi	They want to start it for the mess and garden waste. The project started in first week of March 2000
24	Indian Education Society School, Mulund	29 <sup>th</sup> Feb. 2000	70 Students from 7 <sup>th</sup> Std.	Ruchi Bhatnagar	They are interested in starting some activity for the school students
25	Sarvoday Nagar, Mulund	29th April 2000	20	Sadhana Gupte	Not interested. Most of them are Jain.
26	Rotary Club Mulund Hills	15th May 2000	20	Aparna Inamdar	They promised to contact us but no response so far.

27.	Garden Estate Thane	3rd June 2000	25	Archana Joshi	Some members were interested but did not show much interest later.
28.	Purandare High school, Mulund.	22nd June 2000	45	Archana Joshi Sunita Mallapurkar	Few students took the culture to start it in their house.
29.	Purandare School, Mulund	26th June 2000	50	Archana Joshi, Sunita Mallapurkar	Few students took the culture to start it in their house.
30	Brindavan Society, Mulund	21st July 2000	30	Archana Joshi Sunita Mallapurkar	Committee showed interest but 70% of the residents are not willing to cooperate.
31	Kendriya Vidyalaya, Powai	24th July 2000	1535	Archana Joshi Sunita Mallapurkar	Few students took the culture to start it in their house.
32	Shiv Darshan Society, Mulund	27th July 2000	10	Archana Joshi Sunita Mallapurkar	Not interested
33	Kundalini Society, Powai	3rd August, 2000	40	Archana Joshi Sunita Mallapurkar	Not interested
34	Pinakin Society, Mulund	23rd Aug. 2000	20	Archana Joshi Sunita Mallapurkar	They do not have much open space in the society. Few residents have started it in their house.
35.	Deep Laxmi Society, Mulund	20th Sept. 2000	20	Archana Joshi Sunita Mallapurkar	Project started in Oct. 2000. and is working well.

36	Sachin Society, Mulund	29th Sept. 2000	19	Archana Joshi Sunita Mallapurkar	This is a very big society of Govt. Servants with large open space. We followed up for many days but ultimately could not start the project.
37.	Shambhu Niwas, Mulund	30th Sept. 2000	20	Archana Joshi Sunita Mallapurkar	Repair work is going on. They would be interested in starting the project after May 2000
38.	Tridal Society, Mulund	14th Oct. 2000	100	Archana Joshi Sunita Mallapurkar	The project started on 18th Oct. and is working well.
39.	Sarva Seva Trust, Mulund	20th Oct. 2000	25	Archana Joshi Sunita Mallapurkar	The trust is working for environment improvement. They would give information about Vermiculture through their activities.
40.	C.K.P. Mahila Mandal exhibition	22nd Oct. 2000	Nearly 1000 during the whole day	Archana Joshi Sunita Mallapurkar	During this programme, a demonstration of preparation of vermibin was given, handbills were distributed.
41.	Palm Acre Society, Mulund	3rd Nov. 2000	20	Archana Joshi Sunita Mallapurkar	Project is started for three buildings in Dec. 2000

42	Palm Acre Society, Mulund	12 th Nov. 2000	150	Archana Joshi Sunita Mallapurkar	This is a very big society of 525 families and we were invited in the general body meeting to explain the project to members from other buildings. They would like to include all families in a phased manner.
43.	Rotary club Mulund west	19th Nov. 2000	30	Archana Joshi Sunita Mallapurkar	Few Rotarians have started Vermiculture at individual level.
44	Om Mayuresh Society, Mulund	3rd Dec.	21	Archana Joshi Sunita Mallapurkar	They were quite interested and we paid many visits to select the site for the bin. There were lot of disputes over the site and no one wanted it to be near their house. As a result, we could not start a project.
45.	Vikas College of Arts, Vikhroli	19th Jan. 2001	150	Archana Joshi Sunita Mallapurkar	These are NSS students who are interested in getting information on environmental issues.
46.	Vrindavan Dham, Mulund	21st Jan. 2001	20	Archana Joshi Sunita Mallapurkar	Project started on 21st Feb. 2001 and is working well.
47.	New Prerana Society, Mulund	7th March 2001	12	Sunita Mallapurkar	3-4 families started at individual level

48	Parshwanath society, Mulund	19th March 2001	20	Sunita Mallapurkar	Not interested
49	Saraswati Vidyalaya, Bhandup	8th April 2001	155	Sunita Mallapurkar	Program was attended by students, teachers and slum leaders.
50	Hindu Bhagini Mandal, Thane	17th April 2001	125	Sunita Mallapurkar	5-6 families have started at individual level.

## **Feedback from Societies**

### **Evaluation of Mukta- Environment Improvement Society Vermiculture Project**

In the last week of Nov. 1998, Mukta received the first installment of the grant for the project " Vermiculture Technology for Decentralized Management of Organic Solid Waste." It was possible to initiate the project from 1<sup>st</sup> Dec. 1998. After a review of the project, in March 2000, Mukta members requested EIS- MMRDA authorities for the extension of the project by 6 months without any extra expenditure, in order to achieve the required target. The request was granted and thus the project was extended upto May 2001.

During this period of two and half years, it was possible to take 50 awareness generation programmes and initiate 15 projects of Vermiculture. Of these 15 projects, 11 projects are working fine but 4 projects had to be closed for various reasons. Mukta conducted a survey to get a feedback from office bearers of all the housing societies where the Vermiculture projects are initiated. The purpose of this survey was to understand their experiences and opinions about the whole process.

The following is a report of this feed back exercise.

#### **1. Date Of Starting The Projects:**

The first project was started on 14th Jan 1999 and the last project was started on 21st Feb.2001

#### **2.Number Of Families Involved In The Project**

In the initial period it was quite difficult to convince people to start a Vermiculture project within their compound. Many office bearers of housing societies agreed that it was a good project but could not convince their members to start one. It was easier to convince some of the smaller societies to initiate a project. As a practical solution we decided that we would take up the smaller societies and also some big ones in order to complete the desired number of families. ( Average of 50 families )

Through these 15 projects, we have covered a total of 815 families. The smallest society has 6 families and the largest one has 217 families. Eight projects have less than 50 families, three projects consist of 50-100 families and in four projects there are more than 100 families.

### 3. Information About The Project

Mukta members and staff tried to contact many societies situated from Ghatkopar to Mulund. It was through appeals to society members, phone calls, personal contacts etc. We must have contacted more than 200 societies but the response was very luck warm. Even to fix awareness programmes was quite difficult. More than 5-6 contacts were necessary to initiate the discussion.

All the respondents reported that Mukta members and staff informed them about the project.

### 4. Details Of The Process Of Starting The Project

The first step in the project was to organize an awareness program for the members of the society. Here again a lot of time had to be spent to find a convenient date and time. Many times this meeting was along with some other function of the society or on Saturday evening or Sunday morning. We used to carry an exhibition of posters and give a lecture explaining the importance of Vermiculture and the process of Vermiculture. Members had many queries regarding the foul smell, menace of rats, flies etc.

The second step was to organize a series of meetings with the office bearers to decide the sight of the project, and guidance for making the pit. Selection of site was another issues no member would approve of a site near his/her flat. A visit by the consultant was arranged for approval of the site and size of the pit.

Mukta staff used to conduct a door-to door campaign to explain how to segregate dry and wet waste. It was also necessary to motivate and train sweepers for loading the pit. The sweeper was also given information about the importance of the project.

After the pit was prepared by the society, Mukta staff would get the culture, cow dung and rock-dust for setting up the Vermi-bin. The bin was monitored properly and the loading was started after a period of 15 days to one month. During the initial period, Mukta staff had to visit every day and once the project was started properly, the staff paid weekly visits. In the initial period, Mukta staff used to visit at the time when sweeper is available and train him/her for loading. The temperature and ph of the waste loaded in the pit was measured and whenever, there were problems of higher temperature or acidic ph, corrective steps were taken. Sometimes, a visit by the consultant was also arranged for managing the problem.

After implementation of the project for one year, the visit of the consultant was arranged and suggestions for harvesting the culture were sought.

This was the general strategy of Mukta in case of most of the projects. But in case of four projects, which were discontinued after some time, a lot of efforts were taken to restart the projects. Innumerable phone calls, personal visits were made to persuade the authorities to restart the project. The reasons for discontinuation are listed separately.

All the respondents have acknowledged the efforts put in by Mukta staff. However they have not specified the number of meetings or visits.

#### **5. Number Of Days Taken To Start The Actual Project**

The time taken by the societies to make the pit ready was the crucial element. In some societies, it was within a week whereas some took more than two months to prepare the pit. The delay was due to non-cooperation by the sweepers, members as well as some of the committee members.

#### **6. Efforts For Convincing The Society Members**

The success of the project depends mainly on the cooperation by the families for segregation of wet and dry waste. It was not an easy task. The committee members and Mukta staff had to adopt a variety of strategies to achieve cooperation from the members. The committee members have specified the efforts required to do this. They issued circulars, displayed newspaper cuttings on the notice board, arranged meetings and awareness program by Mukta staff, meeting with Swachhata Abhiyan committee, approached personally and tried to persuade the members to keep the project going. In some places, earlier ALM had started a project but it failed. This helped in creating awareness. In one society, two buckets to keep dry and wet waste were distributed by the society. Mukta members also approached by visiting house to house. In spite of all these efforts 25% to 50% percent members are cooperative.

#### **7. Role Of Mukta**

Everyone agreed that Mukta played an important role in the project. Right from awareness generation to guidance in starting and monitoring the project regularly Mukta was involved at each stage. Some people feel that because of the meetings and discussions by Mukta members, anxiety of the members was reduced. The multiple tasks by Mukta members such as demonstration, giving information, explaining, paying weekly visits, guidance in digging the pit, providing culture & rock dust are found to be important by the respondents.

#### **8. No. Of Contacts By Mukta For This Work**

Most of the respondents have reported that Mukta members have contacted several times for the project.

## **9 Present Status Of The Project**

Out of the 15 projects, 11 are working fine and 4 are discontinued because of various reasons

## **10. Amount Of Waste Loaded**

The number of families in the society and the number of families participating in the project decided the amount of waste. In some societies, only kitchen waste is available whereas in others a mixture of kitchen waste and garden waste is loaded in the vermibin

The response from the members indicated that in 6 societies the amount of waste was upto 25 kgs, in two societies it was between 25-50 kgs and in three societies it was more than 50 kgs.

## **12. Participaton Of Families In The Project**

In two societies all the families are involved in the project. In 6 societies, more than 50% of the families are participating in the project whereas in 3 societies less than 50% of the families are regularly participating in the project

## **13. Cooperation By The Sweeper**

The sweeper is expected to collect the garbage separately and load the wet waste in the bin. Somehow it was not possible to convince the sweeper for this task in most of the societies. The society members also found it difficult to get the cooperation by the sweeper. In some societies, the sweeper was given an additional payment for this job, and in some cases an additional person had to be employed periodically on daily wage basis to take out the plastic that was mixed with the organic waste.

## **14. Interest By The Members**

Most of the respondents reported that only committee members take interest in the project. Only in two societies all the members took interest.. In one case only one members was keen so the project was moving.

## **15. Problems Faced**

The nature of the project is such that problems can occur due to many reasons, e.g mixing of organic and inorganic waste, excess moisture, improper loading of waste, overloading of the bin, etc. It leads to foul smell, flies, rats etc. All these problems are reported by the respondents. In addition, they feel that it is a time consuming job to convince everybody and supervise the sweeper. They had to

spend extra money for the sweeper. Some have reported the problem of foul smell.

#### **16. Action Taken For The Problems Faced**

The respondents have reported that for the complaints like foul smell, excess moisture etc. action was taken by Mukta staff to rectify the problems. In some societies, to overcome the problem of non-cooperation by the sweeper, in some societies, he/she was given an additional payment. Some committee members put the pamphlets of B.M.C. about segregation and ALM were put up on the notice board.

#### **17. Frequency Of Visits By Mukta Staff**

Mukta staff visited the project at least once in a week for the first year and then once in a month after the first cycle is over. The respondents have reported that visits by Mukta staff were regular.

#### **18. Satisfaction About The Project**

It is heartening to see that all the 15 respondents have expressed their satisfaction over the efforts put in by Mukta members and staff. Even where the projects were discontinued, there is no complaint about the work done by Mukta.

#### **19. Continuation Of The Vermiculture Project After Completion Of The Project By Mukta And Reasons For Discontinuation**

Out of the 11 projects that are in working condition, respondents from 8 societies are willing to continue after the withdrawal of Mukta team. But five of them want continued in puts from Mukta. Respondent from one society has expressed his inability to continue as the members from his society are very reluctant to segregate the waste and so it will be difficult to manage without assistance from Mukta. In another society, there was some money available for extra payment of the sweeper. They had collected this money for Swachhata Abhiyan . They feel that it may be difficult to continue when the money is over. Some respondents feel that as BMC is not giving specific orders for segregation, it would be difficult to continue the project without Mukta's help.

#### **Information About The Projects, Which Are Not Functioning**

A total of 4 projects had to be discontinued for various reasons. These projects continued to function for a period of 2-3 months to one year. The responses from the societies regarding the reasons for discontinuation are listed below.

1. In one society in IIT the residents noticed a wild fox and a panther wandering around the pit. They believed that it was because of the

- presence of food waste in the bin. For the safety purpose they decided to close the pit and not to have the project.
2. In two societies the repair work of the society was started and it continued for a long period. During this time all the debris and waste was deposited all the around the compound and this affected the working of the bin. After the repairs, the committee changed and the new committee refused to take any interest in restarting the project
  3. In Mukund society, the pit was destroyed by some miscreants staying in the neighbouring slum. They put some kerosene on the waste in the pit and set fire. After this incidence the members lost interest in the project.

### **Efforts By Mukta To Restart The Project**

All the four respondents have reported that Mukta staff tried a lot to restart the project but non-cooperation by the members is the reason for failure. All of them have expressed satisfaction over the efforts put in by Mukta.

### **Benefits From The Project**

All the respondents are convinced about the benefits of the project. Most members reported that the manure generated through the project will be useful for the society garden. They have enumerated many other benefits such as no need to burn leaves, saving on manure, reduce pollution, to maintain city clean, prevention of health hazards, reduction in load of BMC garbage bin, use of waste for good purpose, environment friendly method of waste management, etc. One respondent has quoted that it is yearly saving of Rs. 4000/- for the manure. One respondent feels that it helps in saving of taxpayer's money

### **Suggestions For Improvement**

The most common suggestions (more than 50%) has been regarding the need for BMC to issue orders in this matter and make it obligatory to separate waste and arrangement for treatment of waste within the society premises. Five respondents feel that there is a need to educate the people and motivate housewives to maintain vermibins. There is also a suggestion that there should be a penalty for non-cooperation and incentive for management of vermibin by societies. It can be in the form of concession in taxes (up to 20%). BMC should stop picking up wet garbage.

## Mukta

Sample of the letter to Societies

Date:

To,  
The President/ Secretary,

Dear Sir,

Mukta is a voluntary organisation engaged in different activities related to women and environmental awareness. Improper management of domestic waste is one of major problems faced by all of us. Use of vermiculture is a simple technique which can help in reducing this problem to a great extent. We are having expertise in management of vermiculture projects. We are trying to popularise this technique at the household level as well as at the housing society level. We are implementing this Vermiculture project with the sponsorship received from MMRDA..

The basic information about vermiculture is given in the pamphlet.

We will be very happy if you cooperate with us in this venture. Kindly arrange for a meeting of the residents in your society. The members of Mukta will explain them the importance and use of vermiculture. Then if you decide to start the use of vermiculture in your house or society, we will be available for further guidance.

Kindly contact our social worker for further details on Mon., Wed. and Fri. between 10a.m. to 4p.m.

Thanking you,

Yours sincerely,

Dr. Neela Dabir.  
Treasurer.

## Mukta - EIS Vermiculture Project

### Feedback from the Societies

Date:

Name of the interviewer:

1. Name of the Society
2. Address: -----
3. No of families:
4. Name and Tel No. of the Respondent:
5. Date of starting the Project:
6. How did you get the information about the project?
  - a. From Mukta staff or office bearers
  - b. From other sources (specify)
7. Details of the process of starting the project
  - a. Awareness programme-
  - b. Meetings with the office bearers -
  - c. Making the pit
  - d. Informing the society members
  - e. Informing the sweeper
  - f. Getting the materials
  - g. Starting the loading of the organic waste-
  - h. Expenses for the society-
8. How many days did it take to start the project after getting the approval from the society members?
9. If it was more than a month, what were the reasons for this delay?

15. If the project is closed,

a. How many days did you continue the project?

b. What were the reasons for closing the project?

c. What efforts were made by Mukta to restart the project?

d. Are satisfied with these efforts? Yes/no

If no, why?

16 .What do you think are the benefits of this project?

17. What are your suggestions for making this type of projects successful?

**Pamphlet For Distribution**  
**Vermiprocessing Technology For Waste Management**  
**A project by MUKTA**

**Vermiprocessing** - An Eco friendly option for Organic waste management

**What is Waste?** - A misplaced Resource

**Garbage generation per day in Mumbai** - About 6000 tonnes

**Present methods of garbage disposal:**

- a) Dumping in land fill sites
- b) Incineration
- c) Palletisation
- d) Recycling

**Disadvantages of present methods:**

- Unhygienic
- Rise in pollution
- Wastage of recyclable material
- Spoils the beauty of the city
- Limited space available for land fills
- Tremendous burden on B.M.C.

**B.M.C. Budget for Solid Waste Management : 220 crores per year**

**Advantages of proper waste management:**

- Organic manure by composting or vermi composting
- Recycling of the metal, paper and glass materials
- Proper disposal of hazardous waste.

**Constituents of waste in Mumbai:**

<b>Biodegradable -</b>	<b>42%</b>
<b>Recyclable -</b>	<b>13%</b>
<b>Debris and other</b>	<b>45%</b>

**What is Vermiprocessing ?**

**It is a process of converting organic waste into stabilised organic matter using the Earthworms**

## **Why Vermiprocessing?**

1. Eco friendly method of waste management
2. User friendly
3. Complete degradation of organic matter
4. No mosquitoes, flies, rodents
5. Suitable for housing societies, individual households in urban areas
6. Cost effective
7. Gives useful manure and culture for continued use
8. No odour

### **Preparation of a Vermi bed: (Size will depend on the quantity of waste)**

1. Lower layer of lime stones or broken bricks
2. Second thick layer of soil
3. Third thin layer of Vermiculture
4. Fourth layer of cow dung
5. Uppermost layer of leaf litter
6. Keep the bed moist for six weeks till the worms come out.
7. It will now be ready for loading the organic waste

### **Vermibin can be prepared at :**

1. Household level
2. Society level
3. Community level

### **Types of Vermibins:**

- In an earthen pot with a plant
- Around the trees or plants in the compound
- Specially prepared bin

### **Important Steps to be followed**

1. Prepare a Vermi bed
2. Separate organic and inorganic waste at source
3. Collection of organic and inorganic waste in separate containers
4. Load the Vermibin with organic waste at regular interval
5. Add rock dust whenever necessary
6. Harvest the manure once in a year
7. Consult the experts in case of problems

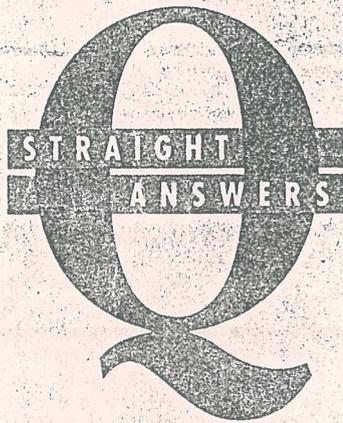
**For Further contact: Dr. Neela Dabir, Tel. 5180606  
Ms. Archana Joshi, Tel 578 4242.**



THE TIMES OF INDIA

SATURDAY

AUGUST 21, 1999



**Archana Joshi**

President of 'Mukta'

**On various activities related to the welfare of women and on the vermi-processing project undertaken by their organisation**

**W**hat are the objectives of your trust?

Our organisation was formed in 1988 by seven members. 'Mukta' symbolises the 'free woman', who can stand on her own feet. A few women, who worked in social organisations, came together to form Mukta, for the welfare of the women. Initially, we taught women to work on sweater knitting machines. The proceeds from the sales of these sweaters were distributed among the women. Later, we started with the vermiculture project.



**W**hy did you deviate from your earlier objectives?

The response that we received from the women was very poor so we took on the vermiculture project. Women expected a fixed salary for their work in the absence of which the response declined. However, the project is still on. We prepare various items like sambhar masala, curry powder and the like, enabling needy women to earn a certain remuneration.

**W**here do you plan to implement the vermiculture project?

The project has been started in a small way in Thane and Mumbai for which we have obtained financial aid from the MMRDA. Our member in Thane is taking the lead along with other residents. We want to spread awareness about this project among the slum dwellers but lack of space in these areas has restrained us from doing so.

**T**ell us something about vermi-processing?

It is an eco-friendly and a user-friendly option of waste management. The process involves converting organic waste into stabilised organic matter using earthworms. It is cost effective, and yields manure for continued use. The present method of garbage disposal is unhygienic and spoils the beauty of the city, besides burdening the corporation.

**H**ow do your activities benefit the residents of Thane?

We plan to offer them guidance either through mail or through official visits. However, if any woman is in distress, she can call us up. We will then direct them to the appropriate agencies. Since we have to spend money for these activities, we charge a nominal fee for our services.

**D**o you have plans to approach the Thane municipal corporation? What is your appeal to the citizens?

Yes, we do have plans to approach the TMC for financial support. Our appeal to the public is to avoid using plastic bags, etc.

Srinivas Iyer

TUESDAY

APRIL 24, 2001

Q  
STRAIGHT ANSWERS

**Archana Joshi**

President, MUKTA, an organisation dedicated to spreading awareness about solid waste management and spearheading the implementation of vermiculture projects in Mumbai  
Ph: 578 4242

**What was the response to your campaign in Mumbai for the vermiculture project segregation of garbage at source?**

The response has been very good from the industries as well as the residential localities. In case of residential localities, we believe that if BMC makes the segregation of garbage at source mandatory then it would be much better. Segregation of garbage at source is the long-



term solution to the Mumbai's mounting problem of handling garbage. Mukta motivates women and now the corporate houses too are taking up vermiculture projects.

**Have the industries taken a lead in these areas?**

Leading corporate houses such as Johnson and Johnson, Shipping Corporation of India have adopted vermiculture and they are happy about it. These companies are in reality doing something for the environment. If the corporate houses take the lead and the residential colonies take initiative in this project, then the city can be transformed.

**For every NGO funding is a major cause of concern.**

True, financial strength plays a major role. We had received some funding from MMRDA for a period of two years which is coming to an end. Now we are looking out for some funding partners to carry on our work in the coming few years.

Srinivas Iyer

SATURDAY

FEBRUARY 19, 2000

Q  
STRAIGHT ANSWERS

**Dr. Neela Dabir**

Treasurer and spokesperson, MUKTA, a NGO

**On various issues related to their activities in Ghatkopar**

**T**ell us briefly about Mukta and the projects it has undertaken.

We are engaged in environmental issues. Some of us experimented with vermiculture at home, and as the results were successful we decided to implement it on a large scale. We were awarded the project by MMRDA, to popularise the concept of vermiculture in residential areas as it's the decentralised way of managing organic waste.

**What is the gravity of the situation?**

Over 6000 tonnes of garbage is generated every day in Mumbai, and it is a major challenge for BMC to handle this volume. Even the dumping grounds are getting scarcer. Organic waste need to be treated locally and be converted into manure.

**What are your plans?**

Our plan is that the residents



DUTTA KUMBHAR

must take care of the garbage themselves, so that the municipality has lesser responsibilities. If vermiculture is implemented domestic waste can be separated and recycled leaving less volumes of garbage for the corporation to handle. Segregation at source is the main idea.

**Any hurdles you've come across?**

Though people accept the concept, but implementation is a problem. We monitor our activities every week and have attempted to address the concern of the local residents.

Srinivas Iyer