Evaluation Study of Low Cost Sanitation Programme in the State of Maharashtra

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JPS Associates
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Bombay

CHAPTER : 1

BACKGROUND

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EVALUATION STUDY OF LOW COST SANITATION PROGRAMME

CHAPTER - 1

BACKGROUND

Owing to the fast expansion of the larger and metropolitan cities and because of previous neglect of the sector, the current shortage of urban sanitation units in the country exceeds 120 million. However, with recent Government emphasis on the subject, there is a spurt in sanitation provision. Various ministries of the Central Government, International Institutions, Public Sector Organisations and prominent NGOs are involved in sanitation provision schemes in the country.

In this fast expanding scene, new provision receives over-riding attention, with relatively little attention paid to already provided and ageing facilities. Amongst the existing stock a number of facilities have already reached a stage of major overhaul or even renewal. Therefore, next to the concern for new construction, maintenance of existing stock is already commanding increasing attention and at some stage in the future will unavoidably become the major issue. Although the ratio of existing versus newly developed is increasing, the interest still tends to be less on operation, maintenance and other post installation issues since they are unglamorous tasks.

Many of the schemes referred to above deal with the field of Low Cost Sanitation. It has increasingly been realised that due to financial and other constraints the coverage of all human settlements with conventional sanitation technologies will prove to be an impossible task at least in the foreseeable future. India has proved itself to be a pioneer in the global search for nnovative low cos solutions to sanitation issues rough the development of two-pit, pour flush latrine which has now become legendary. Many of these solutions are being implemented in the field.

The question of Post Installation Management is also becoming an increasingly important issue, with rapidly growing number of facilities installed. Especially when one looks at the long term perspective does one realise that the ultimate concern may be shifting from new provision to the management of the existing stock.

To overcome the present shortage of sanitation units and to abolish " Scavenging", the Government of India is presently implementing a Low Cost Sanitation Programme in Urban and Rural India. Under this programme, the present dry latrines (scavenger serviced units) are "converted" into pour-flush latrines. The sewer treatment and disposal which is required after such a conversion is achieved by using 'pit technology' or through

'septic tanks'. In towns where there are no sanitation units, pit latrines are constructed under various programmes such as slum improvement, slum upgradation, basic sanitation, sites and services schemes, etc.

Under the Low Cost Sanitation programme, the conversion of 'Dry Latrines' into 'Pou: . sh Latrines' is done by keeping the external structure of the toilet as it is and carrying out internal work by installing a toilet pan, redoing the plumbing and constructing underground pits or septic tanks.

Housing and Urban Development Corporation (HUDCO) is financing Low Cost Sanitation Schemes under its own 'Basic Sanitation Programme' in rural and urban India. Recently, HUDCO has taken an initiative to finance and provide technical assistance in this field on a large scale. For this purpose, HUDCO decided to evaluate the performance of Low Cost Sanitation (LCS) Schemes which are being implemented. The objective of the evaluation study was to find practical solutions to the existing problems and to formulate a policy for the implementation of the LCS schemes on a large scale.

For the evaluation of select schemes in the State of Maharashtra, HUDCO appointed JPS Associates, Management Consultancy Division, Bombay. The Terms of Reference for the Study were :

A. FINANCIAL AND ADMINISTRATION:

1. Implementing Agency's Performance
2. Project Management
3. Administration
4. Funding
5. Utilisation of Funds
6. Loan Recovery
7. Legal measures taken to support the programme
8. Long term institutional and investment requirements for the operation and maintenance of sanitation systems.

B. SOCIO-ECONOMIC;

1. Affordability of beneficiary to pay for pour flush latrines
2. Knowledge of the beneficiary about the scheme
3. Constraints in adoption of schemes
4. Use and Maintenance of pour flush latrines
5. User assessment of design, construction, performance and maintenance of latrines.

C. TECHNICAL:

Quality of construction and degree to which the pour flush latrines constructed meet the design specifications and requirements including pollution aspects.

D. COMMUNITY LATRINES:

1. Design, construction and functioning
2. Operations and Maintenance
3. Cost of Administration (Unit cost, Service and Maintenance, Operating Cost etc.)
4. Utilisation (type of user, time of use, number of users etc.)

E. Study some of the NGOs role and financing in the implementation of LCS Schemes.

F. Formulation of a strategy which would aim to abolish scavenging including rehabilitation of scavengers.

In the State of Maharashtra, the Maharashtra Water Supply and Sewerage Board (MWS&SB) has been appointed as the nodal agency by the State Government for the implementation of the LCS programme.

Presently, MWS&SB is implementing LCS schemes in 155 towns through the respective Municipal Councils . The details of these schemes are as under:

Position as on 30.06.1990

Number of Towns	:	155
Number of Latrines to be converted		
Private	:	80675
Community	:	3385
Total Project Cost (approximately)	:	Rs.26.55 Crores (Project Funding Rs.16.70 Crores)
HUDCO loan sought	:	Rs.8.34 Crores
HUDCO loan sanctioned	:	Rs.4.37 Crores

For the purposes of evaluating the implementation of the LCS schemes, four towns were to be selected in consultation with HUDCO. For this purpose, MWS&SB provided JPS with a progress statement of units converted in each town. Based on the percentage of completion and the number of units for conversion, top four towns were selected for site visits, survey and detailed evaluation. The four towns selected were:

	Town	No.of Units to be converted	Completed Units (Feb.1990)	(June,1990)
1.	Vasai	282	212	238
2.	Kopargaon	289	289	289
3.	Sangamner	467	325	345
4.	Parbhani	5700	1061	1300

JPS consultants undertook these visits, carried out the necessary surveys and held extensive discussions with the officials of the Municipal Councils. Our observations and comments/suggestions on each aspect of the study are given in the pages that follow in separate chapters. These observations are based on the information provided by the Municipal Councils, interviews with beneficiaries and discussions with MWS&SB, NGOs, HUDCO, etc.

CHAPTER : II

FINANCIAL AND ADMINISTRATION ASPECTS

CHAPTER - II

FINANCIAL AND ADMINISTRATION ASPECTS

Operational aspects of the Low Cost Sanitation programme implemented in the towns were assessed with particular emphasis on the relationship of unit cost to contractor performance and on the relationship between programme administration, management and performance.

GENERAL:

The Government of Maharashtra under the directives of the Central Government, decided to implement a Low Cost Sanitation programme in the State of Maharashtra. For this purpose, Maharashtra Water Supply and Sewerage Board (MWS&SB) was appointed as the nodal agency. On 30th May, 1989, the Directorate of Municipalities, Maharashtra State, issued an order on this subject to all the municipal councils. The main points of this order and subsequent instructions issued from time to time were as follows:

i) All the municipal councils are appointed as 'executing' agencies for LCS programme implementation.

ii) The Councils will implement the schemes under the programme on their own or with the help of the Non-Government Organisations (NGO's).

iii) LCS programme would include conversion of all dry latrines (both private and community) into pour flush latrines. This will automatically stop scavenger system.

iv) Conversion should be done by Twin-leach Pit System. For use of an alternative system, i.e. septic tank, special permission of the State Government is necessary. Mini septic tank should not be used.

v) Per unit conversion assistance shall be Rs.2000/- . State government will give Rs.1000/- as grant and HUDCO will provide Rs.1000/- as loan per unit.

vi) MWS&SB shall charge 5% of the project funded as administration charges to the councils.

vii) Councils will rehabilitate the scavengers after the implementation of this programme.

We have evaluated the financial and administration aspects of the LCS programme in the following broad categories:

1) Implementing Agencies Performance
2) Project Management
3) Administration
4) Funding

5) Utilisation of Funds

6) Loan Recovery

7) Legal measures taken to support the programme

8) Long term Institutional and Investment requirements for the operations and maintenance of sanitation system.

1. Implementing Agencies Performance:

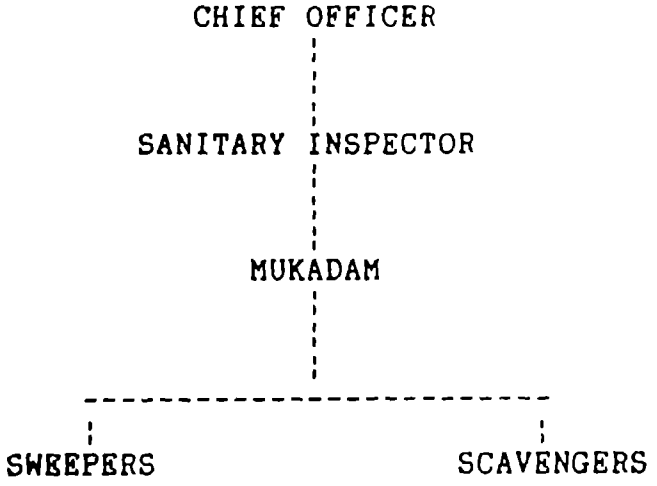
There are about 217 municipal councils in the State of Maharashtra, out of which 155 towns had dry latrines and have submitted their proposals to MWS&SB for the LCS programme. Regarding balance 62 towns, it was not known whether they had no latrines for conversion or proposal preparation is pending.

For the purposes of our evaluation of the LCS programme, 4 Municipal Councils in the towns of Vasai, Kopargaon, Sangamner and Parbhani were studied by us and our observations and comments thereon are given below:

Organisation Structure of the Councils

We give below a typical structure of the Councils and their Sanitary Departments.

ORGANISATION CHART OF SANITATION DEPARTMENT



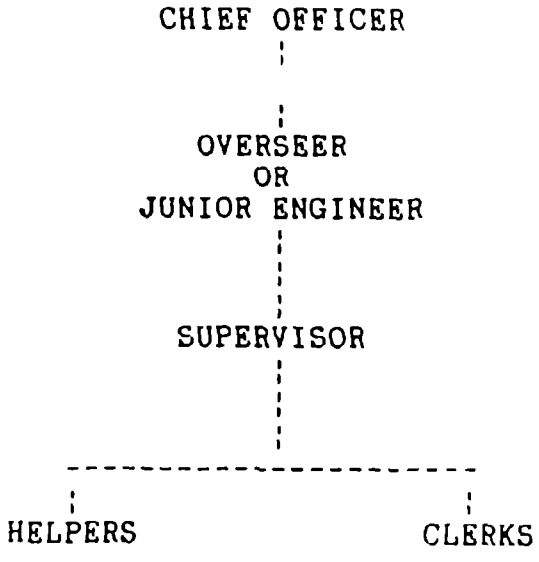
Towns	Total Staff	Sanitation Staff										
		Chief S.I.	S.I.	Section Inspector	Mukadam	Head Peon	Peon	Watchman	Driver	Sweeper	Scavenger	Total Sanitation Staff
Vasai	188	-	1	-	3	-	-	-	-	70	16	90
Kopargaon	358	1	1	-	6	-	-	-	-	115	12	135
Sanganner	296	-	1	4	1	-	20	-	3	49	18	96
Parbhani	625	-	4			1	19	1		172	[illegible]	224

Note

In Sanganner, out of 20 peons, 19 work as labourers and only one works as a peon.

In Vasai, out of 70 Sweepers, 6 work on tankers and other 6 as cleaners.

ORGANISATION CHART OF PWD DEPARTMENT



STATISTICAL AND FINANCIAL DETAILS.

	VASAI	KOPARGAON	SANGAMNER	PARBHANI
Population of Town (present)	40,000	55,000	75,000	2,00,000
Staff strength of Council	188	358	296	625
Sanitation Department strength	90	135	96	224
1990-91 (Rs.in lacs)				
Budgeted Receipts	174.88	283.42	N.A.	477.22
Budgeted Payments	197.82	283.80	N.A.	475.82
Recovery Performance	88%	64%	N.A.	37%
Loans obtained	27.00	56.50	30.07	191.70
Loans Outstanding as on 31.3.1990	25.35	52.42	26.48	168.22
Previous Expenditure on conversion	---- NIL----			
Present Sanitary conditions	---Septic Tanks and Pits---			

Note:

(Night soil/silt in septic tank is dumped in a river/nallah without treatment. In Vasai town it is dumped in a creek). Though the budgeted payments are more than budgeted receipts, (in Vasai and Kopargaon) the shortfall is met by the opening balance of Cash at the beginning of the year.

N A. - Figures not available.

LIST OF SELECT CAPITAL PROJECTS UNDERTAKEN BY MUNICIPAL COUNCILS IN THE YEAR 1990-91

Town	Name of the Project	Project Cost (Rs.)
VASAI	Sports equipments and Club house for employees	1,50,000
	Borewells	20, 00
	Tree plantation	1,50,000
		3,20,000
KOPARGAON	PWD Project with HUDCO Assistance	15,00,000
	Tree plantation	50,000
	New shopping centres	5,00,000
	Bore-wells	25,000
	New pipelines	10,000
	Balancing tank	1,50,000
		22,35,000
SANGAMNER	Details not available	-
PARBHANI	Development Expenditure	40,00,000
	Slum area development	7,00,000
	Toilet/ latrines	1,50,000
		48,50,000

STATEMENT SHOWING PROGRESS BEFORE AND UNDER THE LCS SCHEME

Name of Town	Total number of units as on 31.3.1986	Conversion prior to programme	Conversion under the programme	Pending completion as on 30.6.1990
Vasai	415	133	238	44
Kopargaon	314	25	289	-
Sangamner	583	176	[illegible]	62
Parbhani	5860	160	1300	4400

PRESENT STATUS OF SANITATION FACILITIES

Name of the Town	Present population (approx.)	Population not covered by sanitation facility	Percentage	Reasons
Vasai	40,000	5000	12.50	Fisherman prefer to use seashore
Kopargaon	55,000	2000	3.63	-
Sangamner	75,000	1500	2.00	-
Parbhani	2,00,000	21000	10.50	Adequate latrines are not provided in Muslim localities.

The residents of the towns visited by us are using the following areas due to lack of sanitation facility:

Vasai	:	Seashore and creek side
Kopargaon & Sangamner	:	River side and open land
Parbhani	:	Road side and open land

The councils are maintaining the community latrines in the crowded areas such as market places, railway stations, bus stand and in thickly populated areas where the users are unable to construct their own private latrines. The number of community latrine seats provided in the four cities as per the survey was:

Vasai	:	60 seats
Kopargaon	:	263 seats
Sangamner	:	60 seats
Parbhani	:	126 seats (approximately 50% are defunct)

At all the above places community latrines are constructed and maintained by the council. Our survey revealed that they are less in number and are poorly maintained. Basic facilities such as water, electricity, and cleanliness of area etc. are not adequately provided.

Except Parbhani, the other three councils were providing scavenging services to the citizens who were using basket type latrines before the conversion of these latrines . The position of conversion is as follows:

Town	Number of Basket type latrines in use prior to conversion	Number of latrines converted upto June, 1990
Vasai	282	238
Kopargaon	289	289
Sangamner	412 and 60 community latrines	285 60
Parbhani	5700*	1300

* Private scavenging resorted to in the city.

Due to continuous efforts by the Government and social awareness, preference for clean and hygienic surrounding, led some of the citizens to convert their basket type latrines into pour flush latrines (mainly septic type latrines)on their own before the commencement of this Government conversion programme.

These citizens carried out the conversion at their own cost. The city-wise position is as follows:

Vasai	:	33 Units
Sangamner	:	32 Units
Kopargaon	:	25 Units
Parbhani	:	-

The own conversion done by the individuals is less in number due to the finance problem faced by the beneficiaries. Hence, to speed up the conversion process, the Government took the initiative and induced the people by providing partial financial support.

The scavenger services rendered by the council to the citizens till the time of conversion of dry latrines, included following services, such as :

- Collection of night-soil from each unit once in a day
- Carrying of night-soil on hand carts
- Dumping of such collected soil in river/nallah/ or at dumping post

There was no system to treat the soil. Wherever dumping posts were provided the soil was then converted into compost

fertilizer/ manure. In Parbhani the council has submitted a proposal to construct a Sewerage Treatment Plant. However, other cities surveyed (i.e. Vasai, Kopargaon and Sangamner) have no plans to collect and treat the sewer by using better techniques. Sanitary Inspectors and Mukadams working under them supervise the day-to-day work of the scavengers. The government had long ago appointed two committees to study the scavenging system and to recommend various alternatives, standard working norms for scavenging work in India. The Barve Committee and Malkani Committee submitted their reports in 1949 and 1964 respectively.

In all the municipal councils visited by us the community latrines are maintained by the councils. Most of these latrines are not in a working condition and are themselves inadequate in number. Due to this, and also due to illiteracy , the citizens use open spaces or nallah/ river sides for sanitation. The approximate population not covered under any sanitation system is:

Town	Population
Vasai	5000
Kopargaon	2000
Sangamner	1500
Parbhani	21000

In Parbhani town, particularly in Muslim area, the ladies in the house use a corner of their house for sanitation. No toilets are provided in such earmarked places. They simply dump the night soil outside their houses in the open space or nallah. Some dump the night soil in mud pots which are collected by the scavengers. Such type of latrines are expected to be around 3500 in number.

In short, it can be concluded that, the community latrines are not maintained properly. There is no system to treat the sewer collected by the scavengers. Few individual beneficiaries took initiative to convert basket type latrines at their own cost prior to the implementation of low cost sanitation programme.

2. PROJECT MANAGEMENT:

As regards the low cost sanitation programme, the councils have played a major role in conversion of latrines. We studied various aspects of the programme in the places we visited. Our observations are divided into the following segments.

a) Basic data available with the agency
b) Project formulation
c) Project Funding
d) Technical aspects

e) Method of implementation

f) Time schedule

g) Administrative sanction

h) Departments involved in execution

i) Execution of work

j) Cost and time overruns

k) Handing over of Project.

a) Basic data available with agency:

Most of the councils are levying sanitary tax on the citizens where the scavenger services are provided. From these tax records the municipal councils have identified the number and the units to be converted under the low cost sanitation programme. However, in Parbhani town these details were not available as no tax was levied due to non-rendering of scavenging services. In this town the scavenging is done by private scavengers. For implementation of the scheme municipal council of Parbhani had to carry out a door-to-door survey and identified 5700 cases where conversion was needed. More citizens approached the council with complaints that their names were not included when the survey was carried out and requested to include their names in the list. The council refused their requests and instructed them to convert their latrines at their own cost.

In Sangamner city as per tax records only 407 cases are to be converted. However in actual, the number has gone upto 412.

Both the systems mentioned above are defective to some extent as listed below:

When data compiled through survey:

1) Fictitious cases may get added for the advantage of grant/loan

2) Genuine cases may get omitted intentionally or unintentionally.

When data compiled from tax records:

1) The number of units(latrines) closed by the users but not reported to the councils may get added for the advantage of grant/ loan.

2) The units (latrines) constructed by the users but not informed to council may get excluded.

In our opinion to overcome this, a thorough exercise should be undertaken by the councils and after that, no claim should be entertained.

The data in respect of units to be converted in each council was then forwarded to MWS&SB for finalising project financing. MWS&SB has relied upon the details sent by each council and they have not carried out any separate exercise.

b) Project Formulation:

The councils have prepared the project reports for the number of units to be converted based on tax records or survey. Only one project was formulated for each town as the number of units to be converted were small in number and no need was felt to project the implementation in a phased manner. Even within the city the area that shall be covered first for conversion was not decided while formulating the project.

For the implementation of the scheme the councils made financial provisions in their yearly budgets which are as follows:

Town		Budget Provision(Rs.in lacs)
Vasai	:	3.50 (1989-90)
Kopargaon	:	4.00 (1990-91)
Sangamner	:	Not available
Parbhani	:	10.00 (1990-91)

Kopargaon, Sangamner and Parbhani municipal councils decided to provide Rs.2000/- (in the form of grant of Rs.1000/- and loan Rs.1000/-) to the individual beneficiaries who have already completed the conversion. However the Vasai municipal council passed a resolution to pay an additional amount of Rs.225/- apart from the above Rs.2000/- to those who convert latrines individually.

The summarised position of actual conversion as against the expected conversion in the four towns is given below:

STATEMENT OF EXPECTED CONVERSION AND ACTUAL CONVERSION:

Town	Expected conversion as per proposal			Actual conversion upto June 1990		
	Pit	Septic	Total	Pit	Septic	Total
Vasai	282	-	282	151	87	238
Kopargaon	212	77	289	-	289	289*
Sangamner	-	467	467	-	345	345
Parbhani	5700	-	5700	1300	-	1300

* In Kopargaon, work in 5 to 6 cases was found to be incomplete in a survey of 50 cases, whereas the council reported 100% completion of the scheme.

The cost of conversion anticipated by the councils on the basis of District Schedule of Rates (DSR) is given below.

STATEMENT OF COMPARATIVE COST OF CONVERSION :

(Conversion of basket type latrines in Pit type latrines)

Name of Town	Capacity of the latrine in terms of users			Remarks
	upto 6 users (Rs.)	upto 10 users (Rs.)	upto 15 users (Rs.)	
Vasai	-	-	3995	-
Kopargaon	-	3725	-	Cost of septic tank conversion was not worked out for 77 units
Sangamner	3277	3546	4302	-
Parbhani	2230	2515	-	-

Lack of a uniform design and different D.S.R. are the main reasons for wide variation in the proposed conversion cost of each unit.

While calculating the above rates the councils considered 21% administrative overheads including 5% for MWS&SB. In Vasai, contract for conversion was awarded to Sulabh International, where it agreed to construct the latrines of 5 users capacity for Rs.2225/- per unit. As far as Kopargaon is concerned the council prepared the proposal for pit type conversion but actually septic type conversion was undertaken.

The project report submitted by the councils for obtaining finance in the form of grant and loan from Maharashtra Government and HUDCO respectively through MWS&SB did not highlight :

- Anticipated time required for conversion
- The method of conversion that shall be used
- The areas of town which shall be undertaken on a priority basis
- The financing pattern, i.e. component of loan, grant, council's contribution, beneficiaries' contribution, etc.
- The mode of repayment of loan and cost of funds.

Due to absence of above details, the project report is merely a cost estimate statement rather than a proposal. The council officials informed us that the above details were supposed to be completed by MWS&SB while finalising the proposal for obtaining necessary funds.

c. Project Funding:

While formulating the scheme, the Government decided to provide a maximum of Rs.2000/- in the following manner for conversion of one unit irrespective of the actual cost of conversion:

Type of funding	Amount (Rs.)	Remarks
1. Grant-in-aid	50% of actual cost of conversion subject to maximum of Rs.1000/-	Government grant
2. Loan component	- do -	HUDCO loan @6% p.a. with a repayment period of 12 years.

The Government grant and HUDCO loan were routed through MWS&SB to the councils. The councils are to distribute the same to the beneficiaries where the conversion is done by the individual himself from their own funds. If the actual cost of conversion exceeds Rs.2000/- the excess is to be paid for by the councils or the beneficiaries.

To facilitate the implementation of the scheme and knowing that in some of the places the actual cost may exceed Rs.2000/- the government has permitted the councils to utilise the '5% grant' meant for SC/ST welfare, for this purpose. Amount utilised from this grant for LCS Programme is to be treated as the proper use of these funds. However excluding Vasai council, one of the remaining three councils (viz. Kopargaon, Sangamner and Parbhani) have not even taken cognizance of this provision.

None of the councils were aware of the procedure to be followed for obtaining loan/ grant and timing of funds expected from the Government and HUDCO. Due to this, the aspect of financing was excluded from the project formulation. Similarly, the manner in which funds shall be distributed to the beneficiaries, security to be obtained from them and the other related procedures were not finalised while formulating the propos

(d) Technical :

In the proposal, the councils have not commented on the technical aspects of the scheme in detail. Effect of conversion with regard to the following :

- availability of water
- hydraulic pressure
- pollution, etc.

were not considered. Similarly, the norms to be followed by the council with regards to size, capacity, quality of material and craftsmanship etc. were not specified. Our observations in detail are given in the Technical Aspects Chapter.

(e) Type of Implementation:

None of the councils visited by us stated the details of the way they proposed to undertake project implementation. It has not been decided whether the work shall be entrusted to contractors

or the non-government organisations (NGOs) or to the beneficiaries, what norms should be fixed and how the scheduling of work, labour, material, supervision, funds etc. should be done.

(f) Time Schedule:

In any project, the time required for completion is an important factor. If the project is not undertaken on a time bound basis, the cost and other estimates may change adversely which may affect the project execution. While presenting the project report the councils did not consider this fact and no time schedules have been prepared.

(g) Administrative Sanction:

The nodal agency MWS&SB, in its guidelines has specified that the proposals of the councils shall not be accepted by their office, if they are not backed by administrative sanctions. At the council level, delays were observed in obtaining the

administrative sanctions which are illustrated in below mentioned table:

Town	Date of Administrative sanction	Time taken for sanction from 30.5.89*
Vasai	09.08.1989	69 days
Kopargaon	14.08.1989	74 days
Sangamner	03.08.1989	63 days
Parbhani	28.07.1989	58 days

* In the Government of Maharashtra Circular dated 30.05.1989 the Government has instructed the councils to execute the programme on a time-bound basis.

The above table reveals that on an average 2 months were required for formulating the scheme and for obtaining necessary sanction.

(h) Departments involved in execution:

The primary responsibility for the execution of the LCS programme was delegated to the councils by the Government. The councils formulated the schemes, submitted proposals for obtaining

finance, allotted work to contractors, supervised their work, released the funds and rehabilitated the scavengers during the execution of the programme. For carrying out these various activities the following departments of the council played respective roles:

1) Sanitation
2) Recovery
3) Engineering (PWD)
4) Cash and Accounts

The functions of these departments relating to LCS programme are :

1) Sanitation:

Where the number of units to be converted could not be ascertained from tax (recovery) records, employees of this department carried out a survey of beneficiaries who shall be benefited under this programme. Scavenging services were withdrawn after the conversion and the liberated staff now provides other services like sweeping, cleaning, in lieu of scavenging. In Vasai and Kopargaon the task of inspection of converted latrines was entrusted to the Sanitary Inspector even though they are not technically capable. The sanitation department also submits information relating to the scavengers and their rehabilitation to the Government on a periodic basis.

2) Recovery:

The recovery department maintains records for sanitation tax and is responsible for its recovery. Where the survey was not carried out for deciding the number of units to be converted under this programme, the departmental records were assumed to be correct for deciding the units to be converted.

3) Engineering:

Based on the information provided by the Sanitation and Recovery departments, the engineering department prepared the designs, estimates and proposal for the LCS programme. Selection of contractors, checking and passing contractor's bills, supervision of the work, granting permissions for conversion etc. were the additional functions which were carried out by this department. No documents or records were however maintained in respect of the supervision work carried out by them. The Engineering department also submits periodic information about the progress of work to the Government and lending institutions.

4) Cash and Accounts:

This department is involved in the LCS programme only to the extent of receipt and disbursement of funds and maintenance of necessary records as laid down in the Municipality Act.

(i) Work Execution:

As mentioned earlier, the elements of work execution were not pre-decided by the council while submitting the proposal. The council informed the beneficiaries about the scheme through circulars. In Vasai and Parbhani towns the work was allotted to an NGO viz. Sulabh International. In Parbhani, the council had appoin contractors before appointing Sulabh International . Sangamne and Kopargaon cities, work was done by private contractors appointed by individual beneficiaries. The normal procedure for appointment of contractor, supervision ~~togetherwith JPS observations on performance in the surveyed cities~~ are as follows:

- Normally before appointing the contractor the council prepares the estimates based on survey and proposed plans, depending on the availability of funds. After obtaining administrative sanction, the tenders are called for by giving advertisements in two local newspapers. The offer of the lowest bidder is usually accepted and the contract is awarded. The engineering department of the council supervises the work of contractor so appointed on periodic basis, to ensure that the work is carried out according to the time schedule and required quality standards are maintained by the contractor. For this

purpose, samples are to be taken and forwarded to the government district laboratory at the cost of the contractor The passing of bills and adjustments thereof, is also supervised by them The project is handed over on completion to the beneficiaries/ users. The contractors give guarantee of the work which is normally for less than a year.

About Vasai Council:

The Vasai Council opted for a particular provision of the Municipal Act which permits the council to appoint the contractor without calling for tenders if the District Collector permits to do so. The Council thus appointed Sulabh International without calling for the tenders. The supervision of work was done by the Council's Sanitation department. Sulabh International was compensated at Rs.2,225/- per unit and payment was made on the following terms:

50% advance : On signing agreement
40% : after completion of 50% work
10% : after completion of 80% work

Sulabh International has collected advance payments but have not submitted the bills to council. Sulabh International gives a guarantee of work for 5 years.

About Parbhani Council:

Initially the Parbhani council appointed 19 contractors by following normal procedure to whom 10/20 units were given at a time for conversion. Total units converted by these contractors were 410. As the number of latrines to be converted was large, the Parbhani Council appointed Sulabh International without calling for tenders and even the permission of collector was not obtained for awarding work to contractors on a single tender basis. Separate agreement was made by council with Sulabh per work order of 200 Units at each time. The supervision work was carried out by engineering department. Sulabh International collected advance payments but have not submitted the bills.

About Kopargaon and Sangamner:

In ~~these~~ Kopargaon and Sangamner councils the work was carried out by contractors appointed by individual beneficiaries. For monitoring the work carried out by individuals, the councils insisted that the beneficiary should approach the council for obtaining prior permission. The engineering department gave permission for conversion. After completion, this was informed to the council and an inspection was carried out by the nominated department. The completion certificate was issued to the beneficiary based on

which he claimed grant/loan amount from the council. Before releasing the grant/loan, council decided to route the papers through recovery department for collection of tax arrears, if any. The supervision work was carried out by Sanitation department and Engineering department in Kopargaon and Sangamner town respectively.

In both Vasai and Parbhani towns Sulabh International agreed to convert the latrines suitable for 5 users only. While submitting the proposal of conversion the council assumed the users to be more than 5 and prepared the estimates accordingly. In both these towns fresh estimates for 5 users units based on DSR rates were not worked out before allotting the work to Sulabh International, due to which the rates quoted by Sulabh International could not be checked. Like Kopargaon and Sangamner where individuals appointed the contractors, the quality, cost and efficiency in execution differs from contractor to contractor. If the council had appointed contractors this could have been achieved. Where the work was allotted to NGO such as Sulabh International, advance paid it for execution of work is disproportionate to the work actually executed by them, due to which council has to bear the risk of delays, non-completion and blocking of own money. In none of the towns, samples were taken and forwarded to the laboratory for checking the quality of construction.

(J) Cost and Time Overrun:

As far as procedure for dealing with the cost and time overruns is concerned, the contractor is not penalised only if the cost escalation and time extension clauses are incorporated in the contract

With regard to programme, no such clauses were incorporated by the council while allotting the work to contractors. As per the terms of agreement, the NGO viz. Sulabh International is entitled to claim additional amount if cost exceeds the estimates. However no such claims have been lodged so far.

The councils have explained that they decided to execute the work within a short period of six months and hence cost and time overruns were not considered by them. While appointing the contractors/ NGOs, time limit of six months was specified for completion of work, but no penalty was specified for non-completion of work in time. Where the work was carried out by the individual beneficiaries viz. in Kopargaon, Sangamner and Vasai, the councils clarified that the work should be completed in the time of six months and irrespective of completion of work, the council would discontinue the scavenging services assuming that the work is completed in time.

None of the councils have the practice to submit periodic reports to higher authorities and to the Government indicating therein the progress of work and particularly the time and cost overruns. They only furnish the information as and when asked for.

(k) Project handover:

While handing over the completed units to beneficiaries only the NGO viz. Sulabh International gives a performance guarantee for five years. No training or information was provided either by council or by contractor (including NGO) regarding the utilisation and maintenance procedures of the unit. In our opinion, initiative should be taken to train the people regarding use and maintenance and for that, Brochures shall be circulated and stickers giving information could be affixed on doors of units, and video films may be screened on this subject. Similarly periodic surveys may be undertaken to ascertain whether the system is in operation and to recommend corrective action wherever necessary.

3. ADMINISTRATION:

On receipt of the Government Circular regarding the implementation of the scheme, the councils passed the necessary resolution and compiled details of the units to be converted The proposal was then submitted to MWS&SB for securing necessary finance. Simultaneously, the council issued a circular to the beneficiaries and/ or released the news in the local paper giving details of the scheme and the role they were supposed to play. In Vasai, they arranged for the screening of a video film through NGO so that people understand the scheme in proper manner.

In Kopargaon and Sangamner, the councils formulated a policy for the implementation of the scheme as detailed hereinbelow. In this, the beneficiary shall apply for permission for converting the existing unit. The engineering department shall scrutinise the application and shall release the permission for conversion. After the completion of work, inspection shall be carried out and completion certificate shall be issued. On the basis of this certificate the beneficiaries are entitled to claim loan/ grant amount. For recovery of outstanding taxes, if any, the councils decided that clearance be given by the tax department before releasing the funds to the beneficiaries

Responsibility for supervision was taken by the councils and was entrusted to either the sanitation department or the engineering department. No records were maintained at any of the councils in respect of site inspections, quality of construction, time taken for construction etc..

For timely completion of the scheme certain decisions were taken by the councils which are normally not taken. These includes:

- permitting tenants to convert the latrines if the landlord/ owner is not co-operating

- allowing the construction of the pit/tank near the roads or under the roads

- granting permission to construct the pit/ tank in the adjoining plot/ land which is not owned by the beneficiary, and other landlord permitting such use.

- permitting beneficiaries to construct lesser capacity tank/ pit due to non-availability of the space.

- permitting septic tank construction due to non-availability of space or due to nearness of water source.

- allowing beneficiaries to attach the outlet of the septic tank to the nallah or drainage line due to non-availability of space required for soak pit.

- allowing lesser height for the vent pipe which is open to sky if the adjoining buildings are tall.

- permitting conversion of only lower portion of the latrine even if the super structure is not constructed as per rules.

In Vasai, Kopargaon and Sangamner, the councils did not decide the strategy to be followed for disbursement of loan and grant to the beneficiaries, how loans should be recovered, whether the yearly sanitation tax levied in advance should be refunded to them, whether for new facilities sanitation tax should be recovered or not. However, in Parbhani the loan component was given to the beneficiaries who executed the scheme with own funds and council made an agreement, which states that loan shall be recovered as per HUDCO rules. In all councils the executing department (sanitary or engineering) did not develop any system of reporting the converted units to recovery department for proper accounting of taxes.

Except Parbhani, where the beneficiaries did not cooperate in execution of scheme either the services of scavengers were discontinued or the council closed/ demolished the units This step was initiated to force the people (who are non-co-operative) to follow the scheme.

4. FUNDING:

For implementing the low cost sanitation programme, huge amount of funds are required. In the State of Maharashtra, out of 217 Councils, 155 Councils submitted project reports for funding worth Rs.2654.90 lacs to MWS&SB . These 155 councils proposed to convert 84,060 basket type latrines into pit/ septic type. As per the government directives for each converted unit, the municipal council shall get a grant equivalent to 50% of the cost or maximum of Rs.1000/- and also HUDCO loan on the same basis. In other words each of the councils shall be receiving Rs.2000/- (i.e. Rs.1000/-loan and Rs.1000/- grant) for each converted unit. Thus for 84,060 units, the outlay of funds in the form of grant and loan shall be Rs.16.70 Crores.

The fund requirements of each of the council visited by us are as follows:

PROJECT FUNDING AT A GLANCE:

(Rs. in lacs)

Name of Town	No. of units	Total project cost as per proposal (Rs.)	Grant from Govt. (Rs.)	Loan from HUDCO (Rs)	Excess/ (Shortage) (Rs.)	Remark
Vasai	282	11.26	2.82	2 82	(5.62) 50%	10% contingencies considered
Kopargaon	289	13.16	2.89	2 89	(7.38) 56%	in proposal alongwith 21%
Sangamner	467	23 05	4.67	4 67	(13.71) 59%	Administration Cost (which includes
Parbhani	5700	173 36	57.00	57 00	(59.36) 34%	5% service charge of MWS&SB)

The above table reveals that even after getting grant and loan, the resource crunch will be still faced by the council. To overcome this, the Government of Maharashtra instructed the councils to utilise the 5 percent grant received by them for the welfare of SC/ST. Utilisation of this grant for the LCS programme is to be treated as proper utilisation of funds Expect Vasai municipal council, other council has so far not decided to use this grant. Ultimately the shortfall of funds was required to be met by contribution from the beneficiaries.

As mentioned earlier, the councils submitted their proposals to MWS&SB. MWS&SB then scrutinised the proposals so received and submitted combined proposals for a number of towns to HUDCO for availing of the loan . HUDCO grants soft loans for this programme. The rate of interest is 6 percent per annum and the repayment period is decided as 12 years. As per HUDCO procedures,HUDCO releases 50 per cent of the loan amount on signing of the documents. The balance is disbursed on the basis of progress. Further, HUDCO requires a Government Guarantee for this loan. MWS&SB deducts 5 percent from the amount disbursed (loans as well as grant) to the councils towards service charges. Apart from this 5 per cent, the MWS&SB proposes to recover 1 percent guarantee charges paid by them to the Government from the various councils. The councils are of the opinion that this

component of 6 percent service charge is a burden on them and either it should not be charged or if at all, should be charged at much lesser rate.

Neither the councils nor MWS&SB have planned in advance for monthly or quarterly requirement of funds and their utilisation. It was observed that adequate efforts were not made by the borrowing as well as lending agencies for timely release of funds to help in an early implementation of scheme. Clear guidelines regarding the information to be submitted alongwith the proposal, its format and content etc. were not issued, due to which even though MWS&SB submitted its first proposal to HUDCO in September/October 1989, the actual release of funds from HUDCO took place only in March/April 1990. The proposal submitted by MWS&SB was delayed at HUDCO level due to non submission of information /documents such as

- Government Guarantee
- Map of the city highlighting the locations where actual conversion is to be carried out (subsequently this requirement was deleted by HUDCO)
- Audited Balance sheets of MWS&SB
- Three years financial performance of MWS&SB in the format of HUDCO

- Certificate of councils that pollution control norms and hydraulic pressure stipulations shall be followed,

- Number of SC/ST beneficiaries covered under the scheme.

In our opinion, each council should be instructed to follow the required procedure and submit full details alongwith the proposal to avoid subsequent correspondence and delay thereon.

As far as individual beneficiaries are concerned, if the conversion is undertaken by them they have to arrange their own funds. Irrespective of actual cost of conversion the council promised to disburse maximum grant of Rs.1000/- and a loan of Rs.1000/-. Only Vasai council decided to pay Rs.225/- out of their own funds for such conversion. In case where conversion is undertaken by council itself, through NGO / contractors, the council saw that the actual cost of conversion is around Rs.2000/- so that they do not have to contribute more than what they receive.

5. UTILISATION OF FUNDS

For the implementation of scheme, funds are generated mainly from two sources i.e. Government Grant and HUDCO loan. Being the nodal agency, MWS&SB receives these funds and disburse the same to the councils. On the basis of the proposals submitted by the councils, the grant and loan amount was claimed from the Government and HUDCO respectively.

The grant received by MWS&SB is disbursed to the councils on the basis of their claims and amounts received by MWS&SB. The following table indicates that upto June 1990, MWS&SB received grant amounting to Rs.478.35 lacs and disbursed Rs.410.16 lacs to various councils and the balance amount is still pending with them. It also highlights the delay observed in disbursement of grant.

RECEIPT AND DISBURSEMENT OF GRANT BY MWS&SB

(Rs in lacs)

Government Grant Received	Grant Disbursed on	Delay in Disbursement	Amount of Grant Received (Rs.)	Gross Amount of Grant Disbursed (Rs.)	Balance with MWS&SB (Rs.)	Remarks
15 5.1989	2.8.1989	48 days	100.00	98 32	1.68	Grant from Government 5 percent not deducted for 17 councils
9.11 1989	19.12.1989	40 days	50 00	47.24	2.76	Grant from Government 5 percent deducted (Rs.2 36 lacs) (35 councils)
18.12 1989	9.01.1990	21 days	40.00	36.00	4.00	Grant from Government 5 percent deducted (Rs.1.80 lacs) (20 councils)
15.3.1990	2.4.1990	18 days	10.00	10.00	-	Grant from Government 5 percent deducted (Rs.0.50 lacs) (9 councils)
16 3 1990	25.4.1990	40 days	33 35	30.80	2.55	Grant from Government 5 percent deducted (Rs 1.54 lacs) (3 Councils)
29.3 1990	3.5.1990	35 days	200 00	187.80	12 20	Grant from Government 5 perce t deducted (Rs 9 39 lacs) (92 councils)

(Rs in lacs)

Government Grant Received	Grant Disbursed on	Delay in Disbursement	Amount of Grant Received (Rs.)	Gross Amount of Grant Disbursed (Rs.)	Balance with HWS&SB (Rs)	Remarks
15.6.1990		-	45.00	-	45.00	Amount of subsidy received from HUDCO and the details of this are not known to HWS&SB
	Total		478 35	410.16	68.19	

As per the Government instructions, the councils commenced the work of conversion in August 1989. The grant component was first received by them. On commencing the conversion process the council utilised their own funds for the implementation of the scheme. The grant received in four quarters commencing from September 1989 to June 1990 by the councils visited by us and its utilisation in these quarter highlighted in the following table.

UTILIZATION OF FUNDS

Table showing receipt and disbursement of grant by Councils in selected towns.

(Rs.in Lacs)

Quarter Ended		Towns			
		Vasai	Kopergaon	Sangamner	Parbhani
I Sept..1989	Receipt	-	-	-	-
	Payment	3.14	0.20	-	-
	Excess +/ Shortfall (-)	(3 14)	(0 20)	-	-
II Dec.1989	Receipt	2.07	-	3.00	-
	Payment	-	1.30	-	7.13
	Cumulative Excess+/ Shortfall (-)	(1.07)	(1.50)	3.00	(7.13)
III Mar.1990	Receipt	-	1.00	-	12.00
	Payment	-	0.40	2.43	9 35
	Cumulative Excess +/ Shortfall (-)	(1 07)	(0.90)	0.57	(4.48)
IV June 1990	Receipt	-	1.89	-	13 00
	Payment	0 72	0.40	0.42	6 04
	Cumulative Excess +/ Shortfall (-)	(1 79)*	0.59	0.15	(0.48)

*Payment includes grant/ loan portion

The grant received was used for making payments to NGO, Contractors and the beneficiaries. AT MWS&SB level, the grant was released on an ad hoc basis and release of grant was not linked to the actual performance. However, at council level where the beneficiaries undertook conversion,the grant was disbur .. to them o .ly after completion and where the work s allott. · co contractor or NGO, the council used the grant amount for paying their bills as the loan component was not received by them. In Parbhani the grant amount was used to disburse the loan to individual beneficiaries.

At the end of June 1990, MWS&SB received Rs.87.72 lacs from HUDCO in the form of loan. As mentioned earlier the processing of loan application and the disbursement of funds was delayed due to non-submission of various details. MWS&SB had submitted 7 schemes upto April, 1990 to HUDCO. The position of the schemes so submitted for availing of Rs.834.45 lacs loan and the position of its sanction and amount disbursed is given below:

STATEMENT OF HUDCO LOAN SANCTION AND RELEASE

(Rs.in lacs)

Number of Towns	Total Loan amount applied (Rs.)	Date of Submission of loan proposal to HUDCO	Loan Amount sanctioned (Rs)	Date of Sanction by HUDCO	Loan Amount released (Rs)	Date of Loan released by HUDCO	Remarks
17	1'4 '5	29.09.89	'14.75	17.01'90	57.40	27.06.90	Out of released amou Rs.2.67 lacs is dedu HUDCO towards first instalment (due date as per repayment schedule was 31.03.1990)
21	60.32	26.10.89	60 32	07.02 90	30.32	30.07 90	Out of released amount Rs.1.38 lacs is deducted by HUDCO towards first instalment (due as per repayment schedule is 30 06 1990)
61	370.37	26.11.89	213 44	01 03.90	-	-	) Applied for government) guarantee on 26 07.1990
20	100.38	30.12.89	48 21	01.03.90	-	-	)
11	29.46	02.03.90	-	-	-	-	))
17	111.17	11.04.90	-	-	-	-	)Not sanctioned till)June, 1990
8	48.00	-	-	-	-	-	Loan application is being submitted
Total	834 45		43E 72		87 72		

Note HWS&SB has not released any loan to any of the councils as of June 1990

The MWS&SB was unable to disburse the loan so received to the councils for whom it was sanctioned mainly due to non-finalisation of the agreement between MWS&SB and councils. MWS&SB has already forwarded a draft copy of the agreement along with related repayment schedule to the councils for their approval. The councils were supposed to submit the duly signed agreement to MWS&SB for availing the loan. MWS&SB proposes to release the loan only on completion of these formalities.

6) LOAN RECOVERY:

The primary responsibility for repayment of HUDCO loan and interest thereon lies with MWS&SB. MWS&SB proposes to recover the loan instalment with interest from councils. Councils have therefore decided to also recover the loan with interest from the beneficiaries. HUDCO loan bears an interest of 6 1/4 % per annum and is repayable in 12 years on a quarterly basis. HUDCO offers 1/4% rebate in interest if the repayment is made in time. To avail of this benefit, MWS&SB in its proposed agreement indicated that, it will be levying penalty @ 2.5% per month on defaulted payments to the councils

The information relating to the period of loan repayment and the instalment amount decided by HUDCO for the loans sanctioned so far is given below:

(Rs.in lacs)

Sr.No.	Amount of loan (Rs.)	No. of quarterly instalments towards repayment	Amount per instalment (Rs	Due date of first instalment
1.	114.75	37 6	2.67 2.66	31.Ø3.9Ø
2.	6Ø.32	4 4Ø	1.38 1.37	3Ø.Ø6.9Ø
3.	261.65	1 44	1.Ø1 5.67	Not decided as Government Guarantee is not yet released

Due to non-finalisation of agreement, MWS&SB has not released loans to any of the councils upto June 199Ø. At councils' level except Parbhani, they have not decided about the method/ system to be adopted for release of loan to the beneficiaries. In Parbhani, the council has made an agreement with the beneficiaries (who availed the loan) that the same terms and conditions laid down by HUDCO/ MWS&SB shall be applicable to them.

While granting the loan, affordability aspects of beneficiaries were not considered. Where the conversion is done by council through NGO's / contractors, how the council proposes to recover the amount is not yet finalised. In this case actual loan is not given but the benefits of converted units are enjoyed by the beneficiaries. In such case whether the council should go for an agreement with beneficiary for loan or to bill them normal manner is yet to be decided. None of the councils has obtained any security from beneficiaries.

The capacity of the councils to repay the loan could not be ascertained due to non-availability of necessary details. It is reported that the councils always have problems in fund generation. The position of loans obtained by the councils and the outstanding thereof is as under:

(Rs.in lacs)

Town	Loan taken (Rs.)	Outstanding loan as on 31.03.1990 (Rs.)
Vasai	27.00	25.35
Kopargaon	56.50	52.42
Sangamner	30.07	26.48
Parbhani	191.70	168.22

All the four councils visited by us opined that they shall be recovering the loan amount along with the annual assessment No separate records are proposed to be maintained. Present books of accounts and other related records maintained as per Municipal Act are upto date and sufficient.

Presentl recovery aspect, no reports are generated at coun and MWS&SB level.

Recovery performance of each council

TAX

DEMAND & RECOVERY STATEMENT

(Rs in lacs)

YEAR	TOWNS											
	Vasai			Kopargaon			Sangamner			Parbhani		
	Demand	Recovery	%	Demand	Recovery	%	Demand	Recovery	%	Demand	Recovery	%
1987-88	11.59	10.89	93.96	28.72	18 76	65.32	N.A.	N.A.	N A.	69.26	42 89	61.93
1988-89	13.40	12.82	95.67	29.98	19.57	65.28	N.A.	N.A.	N A.	69 26	19.42	28.03
1989-90	14.26	12.49	87.59	35.71	22.73	63.65	N.A.	N.A.	N.A	70.05	25.70	36.69

N.A. - Figures not available.

The tax recovery performance of Vasai is good whereas it is bad and poor in case of Kopargaon and Parbhani respectively. Sangamner Council officials reported that their recovery performance is around 50% For the purpose of recovery of HUDCO Loan, all the councils will have to improve their recovery of taxes and loan instalment with interest. Heavy penalties should be levied for non/ delayed payments by the beneficiaries.

7) LEGAL MEASURES TAKEN TO SUPPORT THE PROGRAMME:

As informed to us, the councils increased the sanitation tax levied on beneficiaries using basket type latrines (from the year 1988-89 Rs.60/- to Rs.300/-) to recover the overheads and to force the people to convert the unit. Necessary amendment was made in the bye-laws of councils to this effect.

Further they decided to discontinue the services of scavengers after declared dates of conversion. However no rules were passed for this. As per the bye-laws, the councils are not permitting the construction of basket type latrines.

For the implementation of scheme, councils have not passed any bye-law relating to .

- non-appointment of new scavengers when existing scavengers are released from the present service and absorbed in other services

- to demolish basket type latrine structure, if constructed after the execution of programme

- to levy penalty on use of basket type latrines to refrain the users

- to provide places to beneficiaries for construction pit/ septic latrines, owned by councils (such as roads, gutters) where the space is insufficient

- to initiate legal action in case of default in carrying out conversion or loan repayment

- to finalise and earmark the place/ area (where the converted unit is to be constructed) if it is not done due to dispute

- to force / instruct tenant or owner if there is a dispute between tenant and owner regarding who has to bear the cost.

- to prohibit private scavenging

Presently, where the tenants/ owners do not co-operate in conversion, pressure tactics are used by the officials/ ward members to create the awareness of the people. No legal action is reported to be taken in this regard. Even for arrears of

recovery of property and other taxes, rarely legal action is initiated against the defaulters. For the efficient implementation of programme, we are of the opinion that suitable amendments must be made in the bye-laws as given above and legal actions may be initiated against those who do not co-operate.

8) LONG TERM INSTITUTIONAL AND INVESTMENT REQUIREMENTS FOR OPERATIONS AND MAINTENANCE OF SANITATION SYSTEM:

The c..rted sanitation system prevailing in towns can e divided in two broad categories, i.e.

a) sanitation system related to individual beneficiary and

b) sanitation system available to public i.e. community latrines.

a) In case of individual latrines, the operations, running and maintenance cost includes expenditure on water, electricity, cleaning material and repairs of minor nature. The beneficiaries are supposed to maintain them at their own cost. The cost of such maintenance is not much. No separate funds are required except the initial investment towards the conversion/ construction. However after a lapse of time, the units constructed may become unserviceable due to :

- old aged structure
- misuse of the latrines by users
- non-maintenance of latrines
- inadequate capacity, etc.

Presently, no survey is undertaken nor any records maintained in this regard. For proper maintenance of the system provision should be made to demolish such structures if required and/ or to repair them so that they can re-function again It is assumed that the cost of rebuilding the structure should be paid by the beneficiaries only.

b) Mostly, community latrines are run by the councils. Council incurs expenditure on salary of sweepers, water, electricity and cleaning material, major and minor repairs to units and other administrative overheads. The community latrines are not maintained in a proper manner. Beneficiaries are not using the latrines as they are inconvenient, unclean and insufficient. The views of the beneficiaries arising out of our surveys are given below:

REASONS FOR NOT USING COMMUNITY LATRINES:

Name of Town	Inconvenient (%)	Unclean (%)	Insufficient units (%)
Vasai	(19%)	(100%)	(100%)
Kopargaon	(25%)	(85%)	(65%)
Sangamner	(45%)	(85%)	(65%)
Parbhani	(18%)	(76%)	(81%)
Average percentage	26.75	86.5	77.75

Institutional Requirements

The councils will have to undertake a survey for

- carrying out major repair work to existing community latrines for its optimum utilisation

- to identify the number of additional latrines required, its location and capacity

- to decide the quantum of funds required for maintaining the system i.e. purchase of required machinery such as trucks, tractors, tankers, vacuum cleaning pumps, etc. and

- number of additional staff for upkeeping of the facility and to carry out survey work of sanitation system so that expected failure can be identified in advance.

Similarly, for creating the awareness of people regarding sanitation, hygiene and how to use the public as well as private sanitation system training, education, publicity is required. Thus the funds which shall be required can be quantified only after carrying out a detailed survey. These funds shall be mainly required for upkeeping the facility. For operations and maintenance less amount of funds are required, if it is

maintained on regular basis Further if systems like pay and use are introduced in near future, it will help councils to .

- recover the capital invested (to some extent),
- it can generate its own funds for mainter[illegible],
- misuse of the facilities can be curtailed
- more employment can be generated,
- awareness of user can be increased (as they are liable to pay for misuse).

As a long term policy matter, concept of preventive maintenance and regular maintenance will have to be introduced. On the basis of technical survey, the life of structure (whether pit or septic) should be decided so that for reconstruction of such system proper steps can be undertaken. A separate fund may be created for such purpose. Similarly, a team of surveyors can visit each unit on periodic basis and should guide and instruct the council/ beneficiaries regarding periodical maintenance, hygiene etc. to increase the life of structure and system and to control the pollution.

Investment Requirements

In the long term, funds shall be required for the purposes of

- major repairs to the existing structure
- replacement of machinery, vehicles, etc.
- training cost of sanitation department
- publicity cost.

At this stage, the quantum of funds required cannot be estimated as the programme results are yet to be seen.

CHAPTER : III

SOCIO-ECONOMIC ASPECTS

CHAPTER III

SOCIO - ECONOMIC ASPECTS

Organised disposal of human excreta has undergone a qualitative change over the centuries from bucket latrines to full fledged sewerage treatment plants. However, due to investment constraints, such schemes involving huge funds could not be undertaken in each town. As a via-media, the Government decided to implement low cost sanitation programmes for effective disposal of human excreta as LCS requires much less investment as compared to an elaborate sewerage system. On an all India level, it is expected that the government may have to incur an expenditure exceeding Rs.400 crores over a period of time, to overcome the existing deficient sanitation system through LCS Programme. It is therefore utmost necessary to evaluate the effects of implementation of such Low Cost Sanitation programmes on the life style of the beneficiaries, their responses, problems faced in execution of the scheme, social awareness, cost of maintenance of the unit, affordability of the beneficiaries, etc.

For this purpose, JPS selected four towns in Maharashtra viz, Vasai, Kopargaon, Sangamner and Parbhani and carried out a Socio-Economic survey of the beneficiaries. In each of the above towns the list of beneficiaries was collected from the respective

Municipal Councils before commencement of the survey work The geographic spread of the survey in each town was selected on the basis of municipal wards and the number of beneficiaries covered under that particular ward. While selecting the wards, consideration was given to old and developing areas slums and middle income group localities, conversion done by individual beneficiaries, and by NGO's, type of conversions carried out in each area and the reasons for selection of a particular type of conversion, localities dominated by particular class of people, etc. The views of the beneficiaries were gathered during personal interviews held by the survey team. Here, the issues raised were on various social and economic aspects such as awareness about the scheme, affordability, type of construction, problems faced by them during and after conversion, and maintenance.

PUBLICITY TO THE SCHEME

The Government of India has initiated steps for implementation of the scheme in various states. For this purpose, the Government decided to provide a maximum grant of Rs.1000/- for each unit to be converted. Similarly HUDCO is providing soft loan to the extent of Rs.1000/- (maximum) for each such unit. The scheme is implemented by Maharashtra state Government through municipal councils. As informed to us, publicity was not given to this

programme through various media such as the radio or the TV or issuing published material on the subject. The Central Government instructs or guides the State Governments by way of correspondence on the subject.

HUDCO authorities also did not publish any special material for the promotion of this scheme and to create awareness among the public.

As stated earlier, in the State of Maharashtra, the responsibility of the Programme has been entrusted to Maharashtra Water Supply and Sewerage Board (MWS&SB) by the state Government. MWS&SB is expected to implement the scheme through municipal councils. MWS&SB is engaged in responding to the queries raised by the various municipal councils, and arranging necessary finances required by municipal councils for the actual implementation of the scheme and disbursement of funds. No efforts were reported to have been undertaken by MWS&SB to develop the initiative, enthusiasm or awareness among the implementors of the programme.

The task of conversion of dry type of latrines to pit type latrines was given to the municipal councils for eradicating the present scavenger system The municipal councils took some initiative to create an awareness amongst the beneficiaries by

providing them with brief details about the scheme, grant and loan component, target date for completion etc. in the local news papers. In Vasai town the council arranged one video film with the help of a NGO. All the municipal councils visited by us chose to intimate the beneficiaries by way of a letter.

AWARENESS OF BENEFICIARIES REGARDING SCHEME

In our survey it was revealed that the beneficiaries were aware of the benefits of conversion, the implementation and their role in conversion.

AWARENESS OF SCHEMES AMONG THE BENEFICIARIES

Particulars	Name of towns			
	Vasai	Kopargaon	Sangamner	Parbhani
No. of families surveyed	45	50	50	91
Awareness of members				
Yes	34	45	49	87
No	11	5	1	4

Even though the above table reveals that the people at the grass-root level were aware about the scheme, the municipal council officials

faced difficulties is execution of the schemes. During the survey it was learnt that the people cooperated in conversion since the municipal authorities had decided to stop the scavenging services after a particular date Where council preferred to handover the conversion to the NGO's, beneficiary initiative for conversion could not be judged as it was a forced conversion. However, in other places the beneficiaries did not take initiative for conversion on their own.

AFFORDABILITY :

For proper and timely execution of the scheme the cooperation and initiative of the beneficiaries is most important. Generally the beneficiary had to contribute towards the cost of conversion,whether the conversion is undertaken by them in the individual capacity or when the cost of conversion exceeds the fund support given by the government in the form of grant and loan from HUDCO i.e. Rs.2000/- per unit. It was observed that the grant/loan disbursals by the councils to the beneficiaries were delayed due to a delay in receipt of funds from the Government / HUDCO. In such cases, the beneficiary had to arrange his own funds to complete the conversion . Where the municipal councils had taken the initiative and appointed NGO's/contractors for conversion, the beneficiary did not have to contribute anything in advance to the councils. For

example, in Vasai and Parbhani, a majority of the conversion jobs were done by NGO's and the beneficiaries did not have to contribute anything towards conversion.

In short, where the conversion was don by the beneficiaries themselves, they had to arrange their own funds till they got reimbursement by way of loan or grant. Therefore, for timely implementation of scheme it was necessary to verify whether the beneficiary could arrange the required funds for conversion While implementing the scheme, such affordability criteria was not seen prior to implementation by councils. Further the component of government grant and loan was not linked up with the average income of the beneficiary. The grant and loan was given to the beneficiaries irrespective of their income

The survey further revealed the following

STATEMENT OF AFFORDABILITY OF BENEFICIARIES UNDER LCS PROGRAMME

Particulars	Vasai	%	Kopargaon	%	Sangamner	%	Parbhani	%
No. of families surve	45		50		50		91	
Household monthly income Rs.								
0-1000	6	13	7	14	27	54	60	66
1000-2000	14	31	17	34	9	18	10	11
2000-3000	10	22	5	10	7	14	6	7
3000-5000	4	9	5	10	4	8	4	4
5000 and above	6	13	8	16	-	-	-	-
Income not disclosed	5	12	8	16	3	6	11	12
Total cost of Block Rs.								
upto 2000	-	-	21	42	-	-	57	63
2000-5000	39	87	21	42	29	58	16	18
5000-8000	5	11	8	16	13	26	11	12
8000-12000	1	2	-	-	8	16	2	2
Not known	-	-	-	-	-	-	5	5
Maximum EMI	Rs 13/-							
Percentage of Income of the lowest category (Average Income Rs 522/-)	2 6 %							

Note:

Cost of the unit in excess of Rs2000/- was met by the beneficiaries through their own savings and no other borrowings were made by them. Therefore, the HUDCO loan amount of Rs.1000/- is to be repaid in say 10 years which carries 6 per cent interest. Therefore, per year repayment is .100/- and maximum interest (in first year) is Rs.60/- totalling to Rs.160/- repayment in the first year. Monthly instalment (EMI) shall be Rs.13/- at the maximum. This EMI of Rs.13/- when compared to the lowest category of income (Average Rs.500/-) comes to 2.6% of income, which we feel is affordable.

As informed to us the amount required to be incurred on maintenance of converted latrine is not significant. The beneficiaries can approach the NGO's (where the conversion is done by NGO's) for carrying out major repairs and maintenance of the latrines during the guarantee period. As the survey was conducted immediately after the conversion, the nature of activities and amount spent or to be spent on maintenance was not known to the beneficiaries.

CONSTRAINTS IN ADOPTION OF SCHEME

Following type of constraints were faced in adoption of the LCS scheme by the councils

- The beneficiaries are not aware about the operational aspects of the scheme i.e. when they should change the course of the outflow from one pit to other

- How to clean the pit and the latrines and at what frequency
- How much water should be used while using the newly constructed unit.
- In case of inadequate space what size and type of pit should be selected to meet minimum requirements.
- Where the beneficiaries are residing in rented premises the landlord and other tenants create various types of problems in selection of site, in fixing cost of maintenance and amount contributed by each tenant towards their contribution etc. Apart from the above, following types of problems were reported by the beneficiaries during the survey.

PROBLEMS IN IMPLEMENTATION

Particulars	Vasai	Kopargaon	Sangamner	Parbhani
No. of families surveyed	45	50	50	91
Families having complaints: Yes	7	14	9	15
No	38	36	41	76
Types of problems in Implementation				
(a)Site selection	-	-	2	2
(b)Site not ready	1	-	-	1
(c)Alternative toilet not provided	4	2	1	-
(d)Delay in obtaining approval from all beneficiaries	1	3	2	-
(e)Delay in making own contribution	-	1	2	1
(f)Delay in finalisation of scheme		-	-	-

Particulars	Vasai	Kopargaon	Sangamner	Parbhani
(g)Delay in obtaining external finance	-	1	1	3
(h)Delay in appointing contractor	1	1	4	2
(i)Resistance by other beneficiaries	-	-	1	2
(j)Resistance by scavengers	-	1	-	-
(k)Non availability of labour	-	-	3	4
(l)Poor work supervision by Council	2	-	1	-
(m)Contractor not completing the work	1	3	1	-
(n)Delay in handing over after conversion	-	-	-	-
(o)Documentation not completed in time	-	2	3	-
(p)Not aware about the importance	-	-	-	-
(q)Difficulties in construction	2	1	-	-
	[illegible]	[illegible]	21	[illegible]

During the discussions with councils and NGO officials, following execution problems were highlighted by them.

- Non-availability of labour
- Non-cooperation by beneficiaries in accepting pit type technology.
- Dispu between landlord and tenants in selection of site cost sharin, etc..
- Inadequate space for conversion.

USERS FEED BACK

The views of the beneficiaries on the LCS Programme are tabulated below

DESIGN AND CONSTRUCTION QUALITY

	Vasai		Kopargaon	%	Sangamner	%	Parbhani	%
No. of families surveyed	45		50		50		91	
Views								
Design								
Good	31	69	37	74	49	98	88	97
Average	12	27	12	24	1	2	2	2
Poor	1	2	-	-	-	-	1	1
No comments	1	2	1	2	-	-	-	-
Construction Quality								
Good	31	69	36	72	48	96	83	91
Average	11	25	11	22	2	4	-	-
Poor	1	2	1	2	-	-	8	9
No comments	2	4	2	4	-	-	-	-

BENEFITS OF THE FACILITY

	Vasai	%	Kopargaon	%	Sanganner	%	Parbhani	%
No. of families surveyed	45		50		50		91	
Benefits								
New facility	38	84	42	84	50	100	84	92
Convenience	2	4	8	16	4	8	9	10
Cleanliness	40	89	45	90	50	100	89	98
Hygiene	25	56	18	36	41	82	35	38
Improvement in surrounding	22	49	35	70	50	100	80	88

The results revealed that the beneficiaries are satisfied regarding design, construction, improved cleanliness, hygiene and agree that the area became more habitable than before.

CHAPTER : IV

TECHNICAL ASPECTS

CHAPTER - IV

TECHNICAL ASPECTS

In the four towns selected for the study we have carried out a detailed technical evaluation of the sample number of constructed units. Our evaluation considered the aspects of :

1. Technology
2. Design
3. Cost
4. Quality of construction and supervision
5. Pollution, maintenance and other aspects

Our comments on these areas are as follows:

1. Technology:

The Government of Maharashtra has specifically insisted that Pit-type technology should be adopted for conversion. Only if space is inadequate, land is rocky or water source is in immediate vicinity etc., only then septic tank unit can be considered. For constructing septic tank units, prior permission of the Government is necessary. Government has specifically prohibited use of 'Mini septic' tanks because they are un-hygienic.

Table below shows the projected and actual number of units by type of technology in the four towns.

Town	Projected Conversion			Actual Conversion (upto June 1990)		
	Pit	Septic	Total	Pit	Septic	Total
Vasai	282	-	282	151	87	238
Kopargaon	212	77	239	-	289	289
Sangamner	-	467	467	-	345	345
Parbhani	5700	-	5700	1300	-	1300

It is to be noted that Vasai and Kopargaon departed from their original plan of conversion. In case of Vasai, beneficiaries themselves insisted and converted on their own, dry latrines into pour flush septic type latrines. Whereas, in Kopargaon, the beneficiaries did not know much about the pit type technology. Private Contractors were appointed by beneficiaries who installed only septic tanks perhaps since the cost for this is more and profit therein being more. As per our observations, Pit type units could have been constructed in Kopargaon and Sangamner.

In Sangamner, because of lack of adequate information with the council on Pit type technology, Council prepared the project using septic tank type conversion and constructed accordingly.

Both these councils did not obtain any prior permission from the Government. Also Sangamner council did not mention any reasons for adopting 100% conversion through septic tank method instead of pit type in their proposal.

Kopargaon and Sangamner councils have not considered the adequacy of water availability for sanitation purposes while adopting the septic tank technology. The present availability of water per capita per day is 70 litres and 80 litres respectively which is highly inadequate especially for sanitation purposes.

2. Design:

- All the councils adopted the basic design of either circular or square for both septic or pit construction, depending upon the availability of space.

- In Vasai and Parbhani, Councils appointed Sulabh International for conversion work. Here, the Sulabh design of circular and square type pit was adopted for construction.

- The nodal agency, MWS&SB has not provided any design or specifications but instructed all the councils to follow ISI specifications (IS 2470 Part I for Septic Tank).

- At the council level where NGOs were not involved, the Junior Engineers of the council or private engineers/ architects

were entrusted with the work of preparation of designs. These designs were mainly used for preparation of estimates and project cost computation. Councils did not provide any designs/ specifications and estimates to the beneficiaries who have carried out the work on their own. In brief :

- In Vasai and Parbhani, designs and specifications were given to the contractor. Whereas, in Kopargaon and Sangamner designs and specifications were not given to either beneficiaries or to the contractor appointed by beneficiaries, as they followed septic type latrines for conversion. Council's view is that septic technology is very simple and as such no guidance is required for construction.

In these cases, the designs and specifications were developed by the contractors themselves. In most of the cases (where 100% conversion is to septic tank) the contractors have used ready made septic tanks and did only the work of piping and installation of septic tanks.

Our observations and suggestions on designing of Pit and Septic Tank type latrines :

i) The size of the pit/septic tank was computed on the basis of number of users but we have found 10 cases where the actual size of pit and septic tank was less than required. It is

concluded based on our discussions that in choosing a particular design, attention has not been given to the number of users but the cost of the design within which the execution is required to be made.

A. PIT TYPE :

for 10 users ?

Required (S[illegible] size and Actual size of Pits :

Town	Case No.	No.of users	Required CFT	Actual CFT	Short by
Vasai	1	20	120	112	8
	2	15	90	82	8
	3	35	210	117	93
	4	25	150	66	84
Parbhani	5	16	96	72	24

cubic feet

B. SEPTIC TYPE:

Required (Std.) size and Actual size of Septic tank:

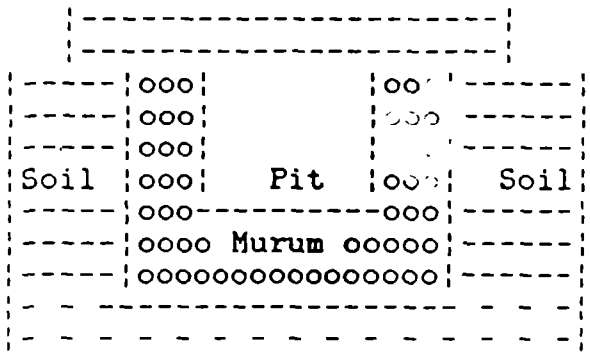
Town	Case No.	No.of users	Required CFT	Actual CFT	Short by
Vasai	6	50	350	283	67
	7	35	245	229	16
	8	35	245	204	41
Sangamner	9	15	105	56	49
	10	25	175	170	5

Pit type:

ii) Where both the pits are adjoining each other, the middle/ central wall should be of 9" thickness, but in all the cases the actual thickness of this wall was 4" - 5" thick. This thickness of 4"-5" is advisable if the soil is of a type other than black cotton soil, but in all the four towns the soil type is black cotton soil.

iii) The black cotton soil is not considered good for pit type latrines as it does not absorb the water easily over a long period. In such cases, the effectiveness of sewer treatment gets

greatly reduced. Therefore additional wall around the pit is required to be constructed and that has to be filled with Murum etc. This helps in the Murum absorbing the water coming out of the pit and then slowly seeping into the soil.



Septic Tank:

iv) In the construction of septic tank type of latrines soak pits were nowhere provided. The outlet of septic tanks was either joined to an open gutter/ sewer line or open space. Due to this, the pollution is bound to rise in and around the tanks.

v) In designing the septic tanks, mosquito nets on vent pipe (open to sky) were not provided. These nets are required for curbing the growth of mosquitoes in the area.

vi) The height of the vent pipe was short as compared to building height in most of the cases.

3. QUANTITY OF ESTIMATES :

Since the technology adopted being very simple, the computation of quantities relating to the Civil and plumbing work is easy. This quantity estimation was done by the Junior Engineer/ Architects appointed by the councils. We have evaluated the estimates of quantity and found them satisfactory. PWD manual is the basis of these estimates.

Cost per unit:

While preparing the proposal, all the councils adopted District Schedule of Rates (DSR) as applicable in their area. Based on these rates, a proposal was forwarded to MWS&SB by the councils for obtaining necessary finance. We have carried out an analysis of comparative rates which is given below:

calculation

Comparative Cost of Conversion (Pit-type): (Per unit cost)

Town	Upto 6 Users	Upto 10 Users	Upto 15 Users
	Rs.	Rs.	Rs.
Vasai	-	-	3995
Kopargaon	-	3725	-
Sangamner	3227	3546	4302
Parbhani	2230	2515	-

Kopargaon and Sangamner towns are in one district viz. Ahmednagar. However, in case of 10 user Pit Latrine the cost is Rs.3725/- and Rs.3546/- respectively. Also the comparison of Parbhani per unit cost with others indicates wide variations. This is because uniform designs and specifications were not adopted by all the councils. Such variation would not have occurred or the variations would have been marginal if MWS had provided standard type designs and specifications to all the Councils. This would have resulted in variation being limited to actual rates applicable in that area.

In Vasai, the estimate was prepared for 15 user latrines but the work was awarded to Sulabh International who have submitted a proposal for 5 user latrine (per unit cost Rs.2225/-). Work was awarded by the council to Sulabh without preparing afresh the estimate for 5 user latrines. A comparison, we feel, was necessary before award of work.

Such an exercise of comparison of cost could not be carried out by us for septic tanks as no estimates were prepared by any councils.

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4. QUALITY OF CONSTRUCTION AND SUPERVISION:

The conversion work was executed by the councils through the following parties.:

Vasai	-	Sulabh and beneficiary
Kopargaon	-	Beneficiary
Sangamner	-	Beneficiary
Parbhani	-	Sulabh, Beneficiary and Private Contractors.

Our Observations on the Councils' role in Execution of work:

i) 17 None of the councils were directly involved in execution, i.e. through their own departments.

ii) 17 All the councils informed us that they have supervised the work during conversion. Supervision was carried out by Junior Engineers or Sanitary Inspectors (who are not technical persons). There are however, no records/documentation of site visits made, Inspection Reports etc. with any of the councils. In the absence of any reports it is difficult to state whether detailed inspections were conducted by the councils.

iii) None of the councils has carried out tests on following material:

1) Concrete mix
2) Brick (strength test)
3) WC pan (durability test)
4) Pipes
5) Ready-made septi[illegible]nks

Such tests are required especially where the work is carried out by private contractors or beneficiaries directly to determine the life of construction. Also, councils should ensure the use of standardised material in construction.

iv) Inspections were necessary for conducting a 'technical audit' aimed at checking the quality of craftsmanship, adherence to norms to avoid pollution and ensure proper functioning of the sewer treatment system. In the absence of a technical audit by the council during the construction, corrective action required, if any, at a later date would amount to the demolition of the structure and will be an expensive proposition.

v) While handing over the converted units, neither the councils nor the contractors have explained to the beneficiaries the

operations and maintenance aspects. In our survey, most of the beneficiaries were unaware of O & M aspects such as :

- Periodic cleaning of pits
- Closing and opening of other pit at intervals
- Minimum use of water (per use) in case of septic tank
- Curbing growth of mosquitoes in septic tanks
- Cleaning of septic tank and removal of silt
- Height of vent pipe (to be increased if height of the building is increased)
- Importance of Soak pit and outlet for septic tank

vi) It is desirable that where there are more than 15 users, septic tanks should be installed instead of pits. Our survey showed that in the following cases pits are used for more than 15 user units.

Town	Case No.	No.of users
Vasai	1	25
	2	20
	3	16
	4	35
	5	25
Parbhani	6	16

vii) In Parbhani and Vasai where pits are constructed, councils do not have the required machinery to check the hydraulic pressure in the pit. This is required to avoid the collapse of pit walls in the event of high pressure from inside/outside.

viii) Especially in case of Vasai, where the water source is 'ground-water'. i.e.,bore-wells and wells, construction of pit-type latrines require strict adherence to pollution control norms. Examples of location of pits or septic tanks too close to the water source are given below:

a) Pit Type:

Town	Distance of Pit from water source Number of cases Upto 5'	5' - 10'	10' - 15'	Total
Vasai	1	-	1	2
Parbhani	1	2	-	3
Total	2	2	1	5

Std. minimum distance 15'

Following cases were observed in 3 towns where septic tanks were too near to the water source:

b) Septic Tank:

Town	Distance of Septic Units from water source Number of units Upto 5'	5' - 10'	10' - 15'	Total
Vasai	1	1	-	2
Sangammer	5	1	-	6
Parbhani	2	2	1	5
Total	8	4	1	13

Std. minimum distance 15'

ix) In Sangamner the vent pipe diameter was observed to be 1/2" instead of 2" standard dia pipe.

It is recommended that

(a) all the pits should be away from the water source by at least 15'.

b) Honey-comb should not be provided on pit wall towards the side of water source.

c) Councils should take quarterly samples of water to check whether there is any direct sewer seepage. In such cases, the pits should be demolished and replaced by septic tanks.

d) Wherever there is a possibility of water going inside the pit, the pit height should be kept above the ground to avoid such event. Also an RCC slab should be put as a cover on the pit, to avoid any direct seepage of water. The RCC slab should be of 2.5" to 3.Ø" thickness.

findings

e) To avoid pollution, the outlets of septic tanks should not be connected to underground drainage/ open gutter, otherwise, there is a possibility of outside storm water and sewer entering the septic tanks.

f) Wherever, the septic tanks are below the roads/pavements etc. (due to lack of space), the strength of the tank should be tested adequately before installation, to avoid it from collapsing due to weight

g) For proper functioning of septic tank, it is necessary that four litres of water is required in each use, otherwise bacteriological reaction will not take place in the septic tank. Councils should ensure that adequate water is made available f users to take care of this fact.

h) Also, wherever septic tanks are installed, soap and chemicals should not be used for cleaning since the soap water going into the septic tank kills the bacterial germs and the desired reaction does not take place.

i) The councils should ensure that the life of the construction (Pit or Septic) should be atleast 30 to 35 years.

j) Councils should obtain minimum 5 years guarantee for efficient functioning of the pit or septic tank. Presently Sulabh gives a guarantee of 5 years, whereas a private contractor for only 6 months.

We give below the minimum technical norms for construction of Septic tank and Pits.

Septic Tank:

Location of Septic Tanks and Sub-surface Absorption System :

(1) Dimensions of Septic Tanks Septic Tanks shall have minimum width of 75 cm.; minimum depth of one meter below water level and a minimum liquid capacity of one cubic meter. Length of tanks shall be 2 to 4 times the width;

(2) Septic tanks may be constructed of brickwork, stone masonry, concrete or other suitable materials ;

(3) Under no circumstances should effluent from a septic tank be allowed into an open channel, drain or water-body without adequate anaerobic treatment through soakpit;

(4) Minimum nominal diameter of pipe shall be 100 mm. Further , at junctions of pipes in manholes, direction of floor from a branch connection should not make an angle exceeding 45 degrees with the direction of flow in the main pipe;

(5) The gradients of land drains, under-drainage as well as the bottom of dispersion trenches and soakways should be between 1 300 and 1:400;

(6) Every septic tank shall be provided with ventilating pipe of at least 50 mm. diameter. The top of the pipe shall be provided with a suitable cage of mosquito-proof wire mesh. The ventilating pipe shall extend to a height which would cause no smell nuisance to any building in the area. Generally, the ventilating pipe may extend to a height of about . . . when the septic tank is at least 15 m. away from the nearest building and to a height of 2 m. above the top of the building when it is located closer than 15 m.;

(7) When the disposal of septic tank effluent is to seepage pit, the seepage pit may be of any suitable shape with the least cross-sectional dimension of 90 cm. and not less than 100 cm. in depth below the invert level of the inlet pipe. The pit may be lined with stone, brick or concrete blocks with dry open joints which should be backed with at least 7.5 cm. of clean coarse aggregate. The lining above the inlet level should be finished with mortar. In the case of pits of large dimensions, the top portion may be narrowed to reduce the size of the RCC cover slabs. Where no lining is used, specially near trees, the entire pit should be filled with loose stones. A masonry ring may be constructed at the top of the pit to prevent damage by flooding of the pit by surface run off. The inlet pipe may be taken down a depth of 90 cm. from the top as an anti-mosquito measure ;

(8) When the disposal of septic tank effluent is to a dispersion trench, the dispersion trench shall be 50 to 100 cm. deep and 30 to 100 cm. wide excavated to a slight gradient and shall be provided with 15 to 25 cm. of washed gravel or crushed stones. Open jointed pipes placed inside the trench shall be made of unglazed earthenware clay or concrete and shall have min. internal diameter of 75 to 100 mm. Each dispersion trench should not be longer than 30 m. and trenches should not be placed closer than 1.8 m.

B. PIT - Type Latrines:

1) The surface soil should not be contaminated

2) There should be no contamination in ground water that is entering into springs or wells

3) There should be no contamination into the surface water

4) Excreta should not be accessible to flies or animals

5) There should be no handling of fresh excreta; or when this is indispensable it should be kept to a strict minimum

6) There should be freedom from odours or unsightly conditions

7) Honey comb should be on 3 sides of the pit wall

8) Pit ground should not be concreted

9) Minimum distance from water source should be at least 15 feet

10) Pit should be covered with RCC slab

11) Size of pit should be minimum 54 CFT and maximum 290 CFT Also per person (user) additional space required should be 6 CFT

12) Specific care should be taken while constructing the circular pit with honey-comb brick work. In case the water table observed is above the bottom of the pit or/ and construction is in black cotton soil, sand or gravel envelope of 30 cm to 50 cm width be provided throughout the height of the pit from outside and bottom base be sealed with suitable material.

13) Minimum distance of 10 to 15 meters should be maintained from leaching pit / soak pit and under ground water source.

14) Hydraulic loading should not exceed 50 mm per day in leaching pit.

Main advantages of Leach Pit type latrine:

1) It is odourless as the gases produced are absorbed in the soil

2) There are no danger of air pollution as the water seal does not allow the gases to go out of the pit and, as such, no gas pipe is needed for the system.

3) It is easy to construct and it also involves less cost

4) It requires a small space and can be provided even in corridor, verandah or bedroom of the house

5) It can be constructed in different soil conditions and under varying depths of sub-soil water table.

6) A small quantity of water is required to flush out the human waste from the pan to the leaching pits.

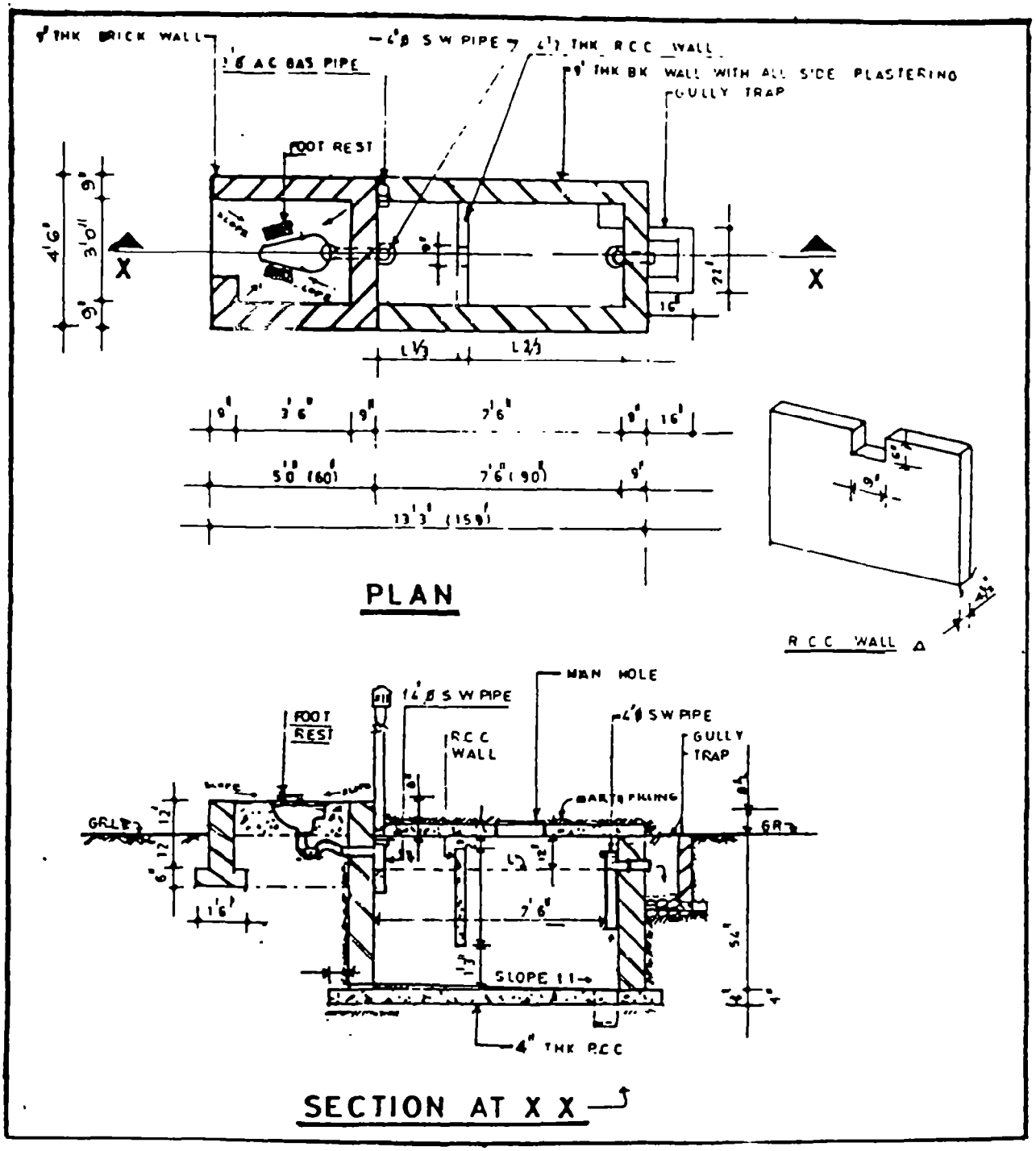
7) The human excreta collected in the pit is transformed into manure which is used for different purposes.

TYPICAL DESIGNS OF LATRINES

* Septic Tank
* Aqua Privy Pit
* Square Type Pit
* Circular Type Pit
* Circular Type Pit (under footpath)

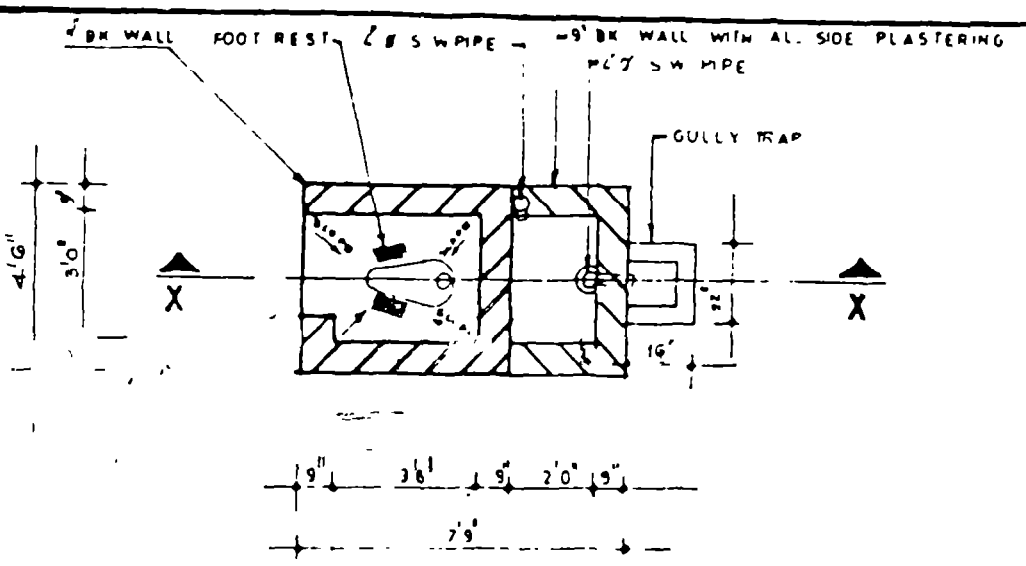
TYPICAL DESIGN OF SEPTIC TANK

Scale : 1":4'.0"

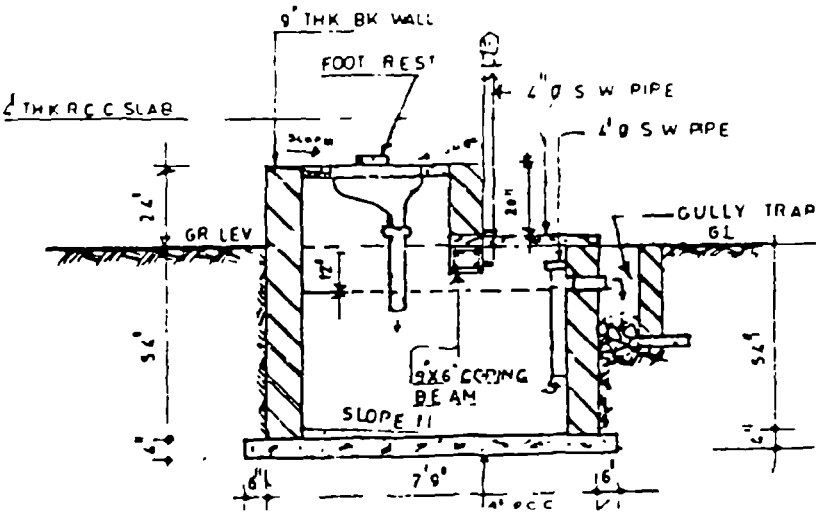


TYPICAL DESIGN OF AQUA PRIVY PIT

Scale : 1" : 4'.0"



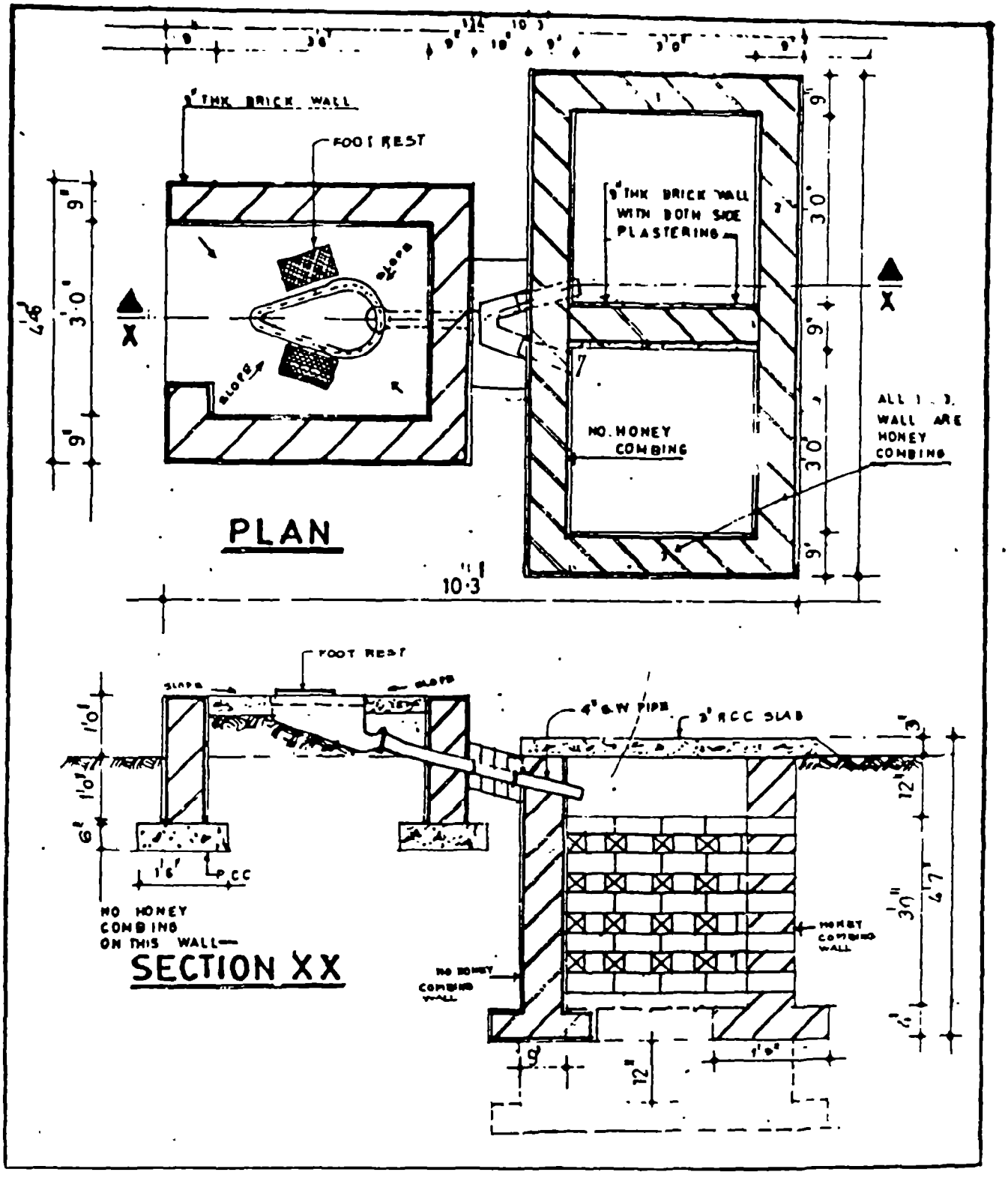
PLAN



SECTION AT XX

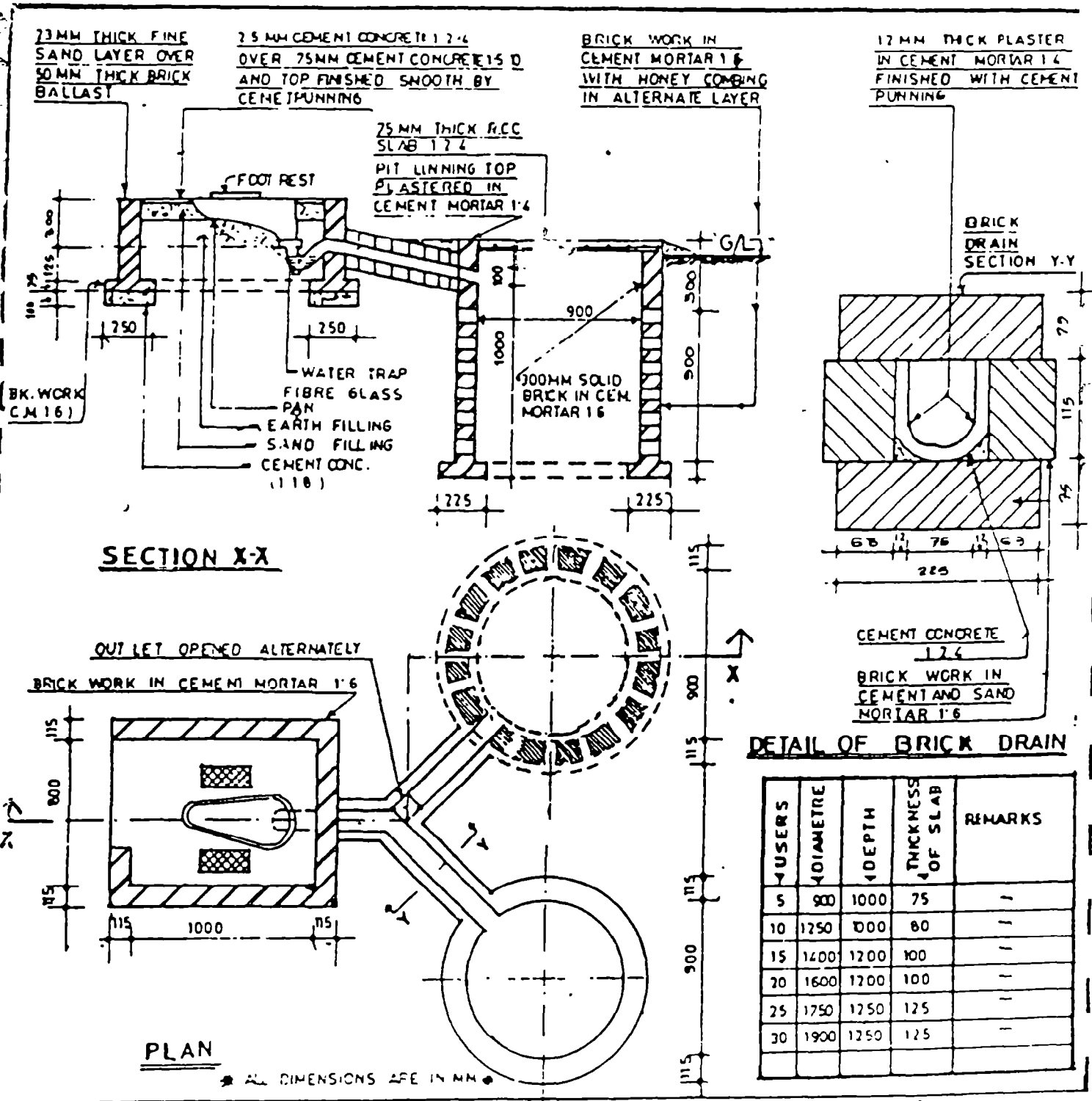
TYPICAL DESIGN OF SQUARE TYPE PIT

Scale : 1":4'.0"



TYPICAL DESIGN OF CIRCULAR TYPE PIT

Scale 1: 25



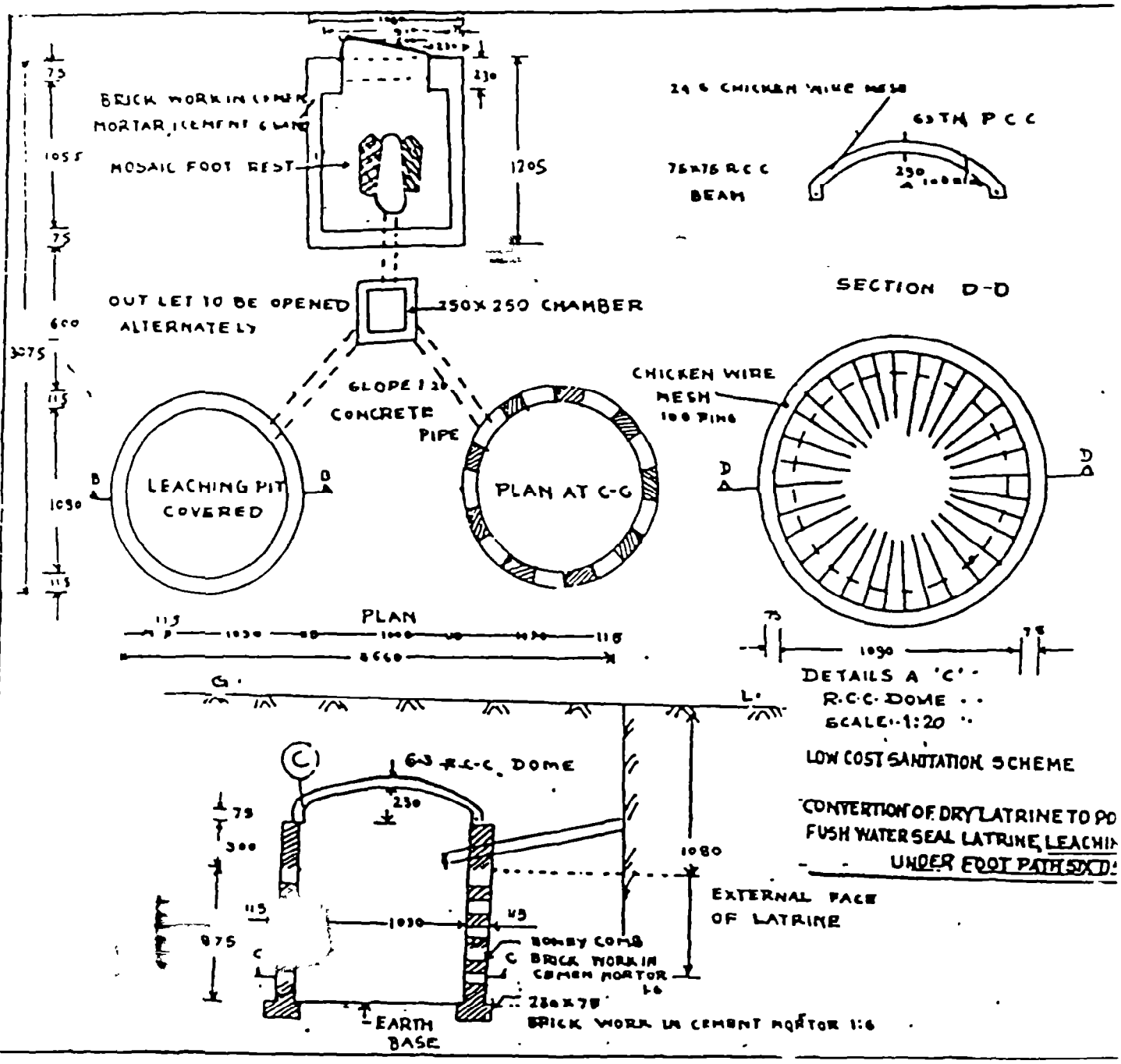
DETAIL OF BRICK DRAIN

USERS	DIAMETRE	DEPTH	THICKNESS OF SLAB	REMARKS
5	900	1000	75	—
10	1250	1000	80	—
15	1400	1200	100	—
20	1600	1200	100	—
25	1750	1250	125	—
30	1900	1250	125	—

NOTE : THE SIZE OF HOLES IN HONEY COMBING SHOULD BE 75 X 50 HOWEVER IN SAND/SOIL OR WHERE THERE ARE CHANCE OF DAMAGE BY FILD RATS LINING SHOULD BE DONE SOLD BRICK WORK WITH VERTICAL JOINT IN ALTERNATE LAYERS DRY i.e WITH NO MORTAR

TYPICAL DESIGN OF CIRCULAR TYPE PIT (UNDER FOOTPATH)

Scale 1 : 20



CHAPTER : V

COMMUNITY LATRINES

CHAPTER - V

COMMUNITY LATRINES

1. DESIGN, CONSTRUCTION AND FUNCTIONING:

a) Design and Technology:

The technology that can be adopted for the construction of community latrine is of two types i.e. pit technology and septic tank technology. Normally, for community latrines septic tank technology is preferred as pit technology is not suitable for more than 15 user units. Vasai, Kopargaon and Parbhani Municipal Councils, for their existing community latrines had adopted septic tank technology since the beginning whereas, at Sangamner, some of the existing latrines are still dry latrines. These dry latrines are being converted into septic type latrines under the low cost sanitation programme.

Two types of designs are adopted in pit type technology :

- Circular pit
- Square pit

The designs presently used in septic tank technology are:

- Hume pipe septic tank
- Rectangular ready-made septic tank
- Rectangular constructed septic tank

The size of the tank / pit for community latrines would depend upon the underground space available for construction and the number of likely users.

b) Construction:

Construction of community latrines is the responsibility of the municipal councils. Municipal Councils construct the community latrines at public utility places like bazaar, railway station, ST stand, etc. At times they also construct community latrines under slum improvement and slum clearance programmes.

Procedure for construction of community latrines:

Based on the public demand, municipal officials carry out a survey to decide the location of the community latrine and the number of seats to be provided in the community latrines. After the survey junior engineers prepare cost estimates based on District Schedule of Rates and the designs of the community latrines. The sanctions for the estimates are obtained from standing committee if the estimated cost is less than fifty thousand rupees and from general body if it exceeds Rs.50,000/-. For construction work, councils adopt the PWD system of execution. After the sanction, advertisements calling for tenders

are given in two local newspapers and the work is awarded to the contractor based on the lowest bid. Formal agreement with the contractor is made. After that contractor commences the work The contractor is expected to follow all the technical details/specifications given in the work order during the construction community latrines. The quality of the work carried out by the contractor is checked by a Junior Engineer at regular intervals till the completion of work.

The time taken for completing this chain of tasks i.e. right from initiation to handing over of the unit to the beneficiary is about 10 - 12 months.

During our visits to municipal councils, the same procedure was observed in all the four councils except that unlike Vasai, Kopargaon and Parbhani, the designs of community latrines at Sangamner were prepared by a professional architect instead of the Junior Engineer of the Council.

c) Functioning of Unit:

i) Pit Type Unit:

Functioning of pit technology is very simple. Out of the two pits human excreta gets collected in one of the pits at a time

and the water used for flushing percolates through the honey-combed walls of the pit. When that pit gets filled up, (pan gets choked up) the chamber towards that pit is closed and chamber towards other pit is opened to make the latrine re-functionable. After four to five months the human excreta in the first pit turns into odorless, harmless soil and it is taken out manually. This pit can be put to use when the other one is filled up. In this way the process continues.

However in case of aqua-privy pit only one pit is provided (instead of two pits) and the same has to be cleaned as and when it gets filled up. After cleaning the same can be used again.

ii) Septic Tank Unit.

The smooth functioning of Septic Tank system requires 4 litres of water per use. After use, the human excreta/ night soil gets collected in the septic tank attached to the pan/ seat. The bacterial germs clean the sewer going inside the tank and only clean sewer water comes out of the outlet pipe which is put into the open soak-pit. When the contaminated water comes out from the outlet, it indicates that the tank below is filled up completely and requires to be cleaned The septic tank can be cleaned with the help of machine i e vacuum cleaner or manually

The suction pump cleans the septic tank and collects the waste into a tanker which afterwards is unloaded at the dumping spot. The frequency of cleaning of septic tank depends upon the number of users and the size of the tank.

For better functioning it should be cleaned at quarterly intervals. But at most of the places we visited, it was observed that the tanks are cleaned as and when they over flow.

d) Adequacy of existing community latrines:

The number of existing community latrines (seats) in all four municipal councils were found to be highly inadequate. Our survey revealed that nearly 70 - 75% of the persons interviewed felt need for a lot more additional latrines.

COMMUNITY LATRINE USER SURVEY.

Particulars	TOWNS							
	Vasai	%	Kopargaon	%	Sangamner	%	Parbhani	%
Number of persons interviewed	21		20		20		38	
Additional Blocks required-Yes	21	100	13	65	13	65	31	82
No	-	-	7	35	7	35	1	3
Reply not given	-	-	-	-	-	-	6	15
Number of additional block required								
(1-5)	10		3		4		25	
(6-10)	-		4		6		3	
(10-15)	11		3		1		1	
(15-20)	-		-		1		1	
(20 and above)	-		1		1		-	
Reply not given	-		2		-		1	

As per the norms of the government one community latrine seat should be provided for a population of five hundred. The number of latrine seats existing Parbhani are less than the number based on the norms fixed by the Government

Town	Present Population (approx.)	No.of community latrine seats		
		Existing	Required as per Govt. norms	Excess (Shortage)
Vasai	40,000	84	80	4
Kopargaon	55,000	263	110	153
Sangamner	75,000	231	150	81
Parbhani	2,00,000	126	400	(274)

In case of Vasai, Kopargaon and Sangamner, though the number of seats provided are more as compared to norms, it was informed to us that the locations of these latrines are not suitable. Also, the population not covered by any sanitation system is significantly large.

Availability of Water:

As mentioned above, septic tank system requires sufficient amount of water i.e. 4 litres per use. Our survey in the four towns revealed that on an average 65% of the people have complained about the non-availability of water. The availability of water near the community latrines in all the four towns, either by way of stand post/ hand pump or by way of water tank provided by the councils, as reported in our surveys is reflected in the following table:

Particulars	TOWNS							
	Vasai	%	Kopargaon	%	Sangamner	%	Parbhani	%
Number of persons	21		20		20		38	
Water availability								
Yes	8	38	1		12	60		24
No	13	62	19		8	40	25	66
Not replied	-	-	-	-	-	-	4	10

2. OPERATIONS AND MAINTENANCE:

Operations and maintenance of the community latrines is handled departmentally by the municipal councils. In all the four municipal councils, no outside agency or the residents of the area were involved in the maintenance of the community latrines.

Present System:

Every morning with the help of tractors and water trolleys the municipal councils fill water into the open water tanks constructed near the community latrines. Such tanks are constructed wherever the hand pumps/stand posts are not installed. The mukadam deputes the scavengers for cleaning of

community latrines. Daily the latrines are cleaned with water and fortnightly, they use soaps and acid. Sanitary Inspectors also visit the community latrines to inspect the cleanliness of the block and the availability of water. The cleaning is done twice-a-day i.e. in the early morning and in the afternoon.

Apart from cleaning, municipal counc also carry out minor or major repairs to the community latrines. Minor repairs are carried out by Civil/PWD department under the supervision of Overseer/ Junior Engineer, whereas major repairs are done after calling for tenders and awarding the work to the contractor.

Municipal councils do not maintain any records on following O & M matters:

- Number of choke-ups
- Major repairs carried out and their cost
- Cost of maintenance
- Cleaning of septic tank - periodicity and timing
- Water allotment at various blocks
- Written/verbal complaints received from the users, etc.

Due to non-availability of records, information as regards effectiveness and efficiency and amount spent on maintenance could not be collected by us.

We give below the views of users on maintenance which were collected by us in our surveys :-

Particulars	TOWNS							
	Vasai	%	Kopargaon	%	Sangamner	%	Parbhani	%
Number of persons surveyed	21		20		20		38	
Choke ups	21	100	19	95	14	70	26	68
No Electricity	21	100	20	100	20	100	33	87
Unclean	21	100	20	100	16	80	28	74
Broken pans	9	43	12	60	-	-	10	26
No Water	12	57	20	100	10	50	26	68
Poorly maintained	15	71	14	70	10	50	19	50

Our observations and suggestions are given below:

1. Average percentage of the respondents reporting frequent choke ups is 80%. The reasons for choke ups are :

- throwing stones into the pan
- insufficient use of water
- septic tank is over-flowing

The municipal officials should take initiative to induce the people for proper use of the latrines. Stickers giving information regarding the proper use of latrines like amount of water to be used etc., may be pasted on the walls/ doors of the latrines. Municipal officials should also ensure the frequent and timely cleaning of septic tank so as to avoid frequent choke ups.

2. In Vasai, Kopargaon and Sangamner, nowhere in the community latrines electricity is provided. On an average 97% of the community latrines have not been provided with electricity. The reason given for this is that bulbs are stolen frequently. Though it may be a fact, it cannot be the reason for not providing electricity

It was observed that many people use community latrine facility in the morning but at night because of no lighting they prefer to use the open land or a street side for the purpose. On account of this, the human excreta spread on the road has to be cleaned only by the scavengers and as such the main aim of the low cost sanitation programme of avoiding human contact with human excreta and abolishing scavenging is defeated.

To avoid this vicious trap, it is necessary to provide electricity to each block and some protective measures should be taken so that the bulbs would not be stolen i e. wire net or cage may be fixed around the bulb and it should be locked by the municipal officials.

3. Unclean latrines also compel the user to use places other than the latrines. As per survey, on an average 86% of the people interviewed, found the toilets unclean. As explained in the above para, this aspect may also lead to same consequences. The municipal officials including Mukadams and Sanitary Inspectors should frequently supervise/ inspect the work done by sweepers. The sweepers should be given proper directions. Soap and other chemicals should be used daily to keep the toilets clean.

4. The blocks where the rush is quite heavy, the frequency of cleaning blocks should be more than twice-a-day. As a result, clean toilets would induce the people to develop a habit of using community latrines rather than using any other place.

5. In our survey of community latrines, broken pans were found in 42% of the cases. These broken pans should be immediately replaced. The sanitary Inspector/ Mukadam should not overlook this factor at the time of inspection / site visits.

6) For community latrines, septic technology is suitable but it needs sufficient amount of water to be poured after every use The shortage of water adversely affects the functioning of the septic tank. It is therefore the responsibility of the council to provide sufficient quantity of water to each block Esp/ .ly where ne rush more, the municipal council (eep open .ter tanks near the blocks filled up twice-a-day. Wh. .ever possible the standpost/handpump should be made available near the toilet block.

7) Other Observations:

- No doors (especially in Sangamner for ladies toilets)
- Sitting arrangement is not proper
- Septic tanks are overflowing and not cleaned

Some cases were noticed where the doors are not provided at all in the original construction plan. This is a serious thing as far as community latrines for women are concerned. Junior Engineers and professional architects who are appointed for designing of community latrine should take into consideration, the need of the door and necessary provision must be made in design of the community latrines. Wherever sitting arrangement is found to be unsuitable, sanitary inspectors should issue proper instructions to the civil department so that necessary repair is carried out immediately

Overflowing of septic tank, may lead to serious health problems in the surrounding area as it leads to spreading of epidemics and growth of mosquitoes. Sanitary Inspectors during their site visits should ensure that none of the septic tanks in the city is overflowing. They should also ensure that all the septic tanks in the city are cleaned at regular intervals.

3. COST OF ADMINISTRATION

Cost of administration in case of community latrine includes

- Unit cost i.e. cost of construction,
- Cost incurred on service and maintenance and
- Operating costs

Unit cost :

As worked out by Sangamner municipal council, estimated cost of conversion for different sizes of septic tank latrines is as under

No. of users	Estimated cost
	Rs.
Six	3277
Ten	3546
Fifteen	4302

The estimated cost includes

- Cost of site cleaning,
- Cost of dismantling of dry latrines'
- Cost of hume pipe septic tank (ready made),
- Cost of fibre glass pan and its fixing,
- Cost of providing s.w. pipe,
- Cost of providing an[illegible]nstructing masonry chambers,
- Cost of extra carriage of material in narrow lane, etc.

The unit cost of the community latrines, where number of users are more would be different. In case of community latrines where the number of users may be more than 30, ready made septic tanks i.e. hume pipe septic tanks cannot be installed. Bigger capacity septic tanks are required to be constructed at the site.

The unit cost of such community latrines can be ascertained from the recent contracts given by the Sangamner municipal council.

Place	No. of seats	Total cost of the contract
		Rs.
Near ST. stand	15	66350
At Chavanpura	30	91099
Near Delhi Naka	15	69600
	60	227049
Average cost per unit		3784

The estimated cost include :

- Cost of escavation for foundation i.e. for septic tank, drainage, inspection chamber,
- Cost of filling top stones and cement concrete in the foundation,
- Cost of steel ,
- Cost of cement plastering,
- Cost of brick work,
- Cost of S.W.G. pipe and glazed stone wire pipe,
- Cost of manhole cover,
- Cost of providing and fixing corrugated galvanized iron sheets, etc.

Operations and Maintenance Cost:

The statement showing operating and maintenance cost per month at three municipal councils is shown below . It may be noted that this data was not made available to us at Kopargaon.

Name of the town	Vasai	Sangamner	Parbhani
No. of seats in Community Latrines	84	231	126
Expenditure			
Salary/ Wages	7000	9000	29900
Supervision	3000	3000	19500
Repairs (minor)	1000	5000	1000

Name of the town	Vasai	Sangamner	Parbhani
Sanitation material	2000	3000	2000
Interest	-	-	-
Water	-	-	-
Electricity	-	-	-
Others	1250	100	2100
Total	14250	20100	54500
Per unit cost	170	87	437

- salaries and wages include the remuneration paid to scavengers/sweepers

- Supervision includes the remuneration paid to mukadams and sanitary inspectors

- Minor repairs include changing of pan, replacing doors, minor masonry work etc.

- sanitary material includes cost of soaps, acids, buckets, brooms etc.

- Water, Interest and Electricity cost could not be ascertained by the council.

At Parbhani the cost of operations and maintenance is exceptionally high because Parbhani Municipal Council does not provide scavenging services for private latrines and all the 23 scavengers are employed for cleaning of community latrines and supervision is done by 4 sanitary inspectors and 4 mukadams.

Income From Services :

In none of the municipal councils pay-and-use system is adopted, therefore income from such services is nil. Marginal Income is generated through rent for hoardings put above the community latrine blocks, especially at public places. The data relating to such revenue has not been provided to us. Also little income is generated through sale of manure.

In short, in the absence of any significant revenue, the entire cost of operations and maintenance is borne by the councils out of their own funds.

4. UTILISATION OF COMMUNITY LATRINES

Before we actually shift to the utilisation aspect of community latrines, it is essential to take note of the available community latrine facilities in all the four municipal councils

A statement showing the number of community latrines and urinals available:

Name of Town	Number of Toilet seats	Number of Urinals	Total
Vasai	84	-	84
Kopargaon	263	80	343
Sangamner	231	60	291
Parbhani	126	104	230

During our visits it was found that the condition of the community latrines in Parbhani is far from satisfactory. It can be concluded that nearly 50% of the latrines are not in working condition and abandoned by the users in the town.

We carried out the survey to know the utilization aspect of community latrines. The number of persons interviewed and their sex-wise and age-wise analysis is given on the next page:

Particulars	TOWNS							
	Vasai	%	Kopargaon	%	Sangamner	%	Parbhani	%
Number of persons surveyed	21		20		20		38	
Male	13	62	17	85	7	35	23	61
Female	8	38	3	15	13	65	15	39
Age(15-25)	7	33	6	30	4	20	9	24
(26-35)	5	24	7	35	4	20	12	32
(36-45)	5	24	7	35	9	45	8	20
45 and above	4	19	-	-	3	25	9	24

As regards the utilization of community latrines we have bifurcated the information collected under four main heads, i.e.:

- Number of users
- Type of users
- Type of facility used
- Time at which facility used

- Number of Users:

A statement showing the number of users as a percentage of the total population:

Town	Population	Number of Users	Percentage
Vasai	40,000	5,000	12.5
Kopargaon	55,000	8,000	14.5
Sangamner	75,000	30,000	40
Parbhani	2,00,000	18,000	9

Note:

Population figures are not as per the 1981 census but it is an approximation as given by municipal officials of the present population. Number of users is also an approximation as stated by municipal officials.

Type of Users.

Particulars	TOWNS							
	Vasai	%	Kopargaon	%	Sangamner	%	Parbhani	%
Number of persons surveyed	21		20		20		38	
Regular	20	95	12	60	10	50	29	76
Semi-regular	1	5	6	30	9	45	4	11
Passers	-	-	2	10	1	5	-	-
Reply not given	-	-	-	-	-	-	5	13

It can be observed that the percentage of semi-regular users in Kopargaon and Sangamner is relatively on a higher side. This is mainly because most of them are the owners of the shops and they do not reside in that area.

Type of facility used.

The statement showing type of facility used and availability of same facility in their houses:

Particulars	TOWNS							
	Vasai	%	Kop	on	%	Sangamner	%	Parbhani	%
Number of persons surveyed	21		20			20		38	
(a)Facility used									
Latrine only	18	86	10	50		19	95	26	68
Urinal only	1	5	2	10		-	-	-	-
Using both	2	9	8	40		1	5	8	21
Reply not given	-	-	-	-		-	-	4	11
(b)Facility available in house:									
Yes	-	-	4*	20		-	-	-	-
No	21	100	16	80		20	100	38	100

* The persons interviewed are passers-by.

In most of the cases it was found that urinal facility is available in the houses (in the form of bathrooms only) and those who use community latrines do not have a latrine in their houses.

Time at which facility used:

The statement showing analysis of time at which the community latrines are used:

Particulars	TOWNS							
	Vasai	%	Kopargaon	%	Sangamner	%	Parbhani	%
Number of persons surveyed	21		20		20		38	
Usage:								
Morning (6AM to 10PM)	15	71	15	75	16	80	28	74
Afternoon (10AM to 5PM)	9	43	8	40	7	35	5	13
Evening (5PM to 8PM)	6	29	8	40	5	25	11	29
Night (After 8PM)	1	5	1	5	1	5	8	21

It can be observed that the number of persons using community latrine at night is very small. This is mainly because lights have not been provided in the community latrines. This may also be because of inconvenient location of the community latrines, i.e. in some cases it was found that the community latrines are away from the houses and therefore the users prefer to use open land or street side at the night time.

A statement showing convenience or otherwise of the location of community latrines :

Particulars	TOWNS							
	Vasai	%	Kopargaon	%	Sangamner	%	Parbhani	%
Number of persons surveyed	21		20		20		38	
Convenient:								
Yes	17	81	15	75	11	55	27	71
No	4	19	5	25	9	45	7	18
Not using	-	-	-	-	-	-	4	11

Though most of the surveyed persons expressed that the locations of community latrines are convenient, many of them reside far away from the latrines. The main reason for this reaction is that they do not have to face the foul odour arising out of the community latrines.

RECOMMENDATIONS AT A GLANCE:

1. The main reasons for using street sides and open land instead of community latrines is the inadequacy of community latrines seats and lack of cleanliness. The municipal officials should carry out a survey assessing the demand for community

latrines and accordingly sufficient numbers of seats should be constructed. Cleanliness of the community latrines should be continuously checked by Mukadams and Sanitary Inspectors Accordingly, proper instructions should be issued to Sweepers/Scavengers.

: We recommend tha che community latrines should ~ provided mainly for passers-by and not so much for the residents of the area. In future, the responsibility for construction of new community latrines and its maintenance should not be laid on the municipal councils. The following procedure may be adopted to make the above mentioned idea practicable.

i) Allotment of existing community latrines in residential area to the residents in the following manner :

- To divide and allot the existing community latrines to the existing families/houses. Say one seat for 5 families.

- To shift the responsibility of maintaining those latrines from municipal councils to the families using it.

- To ask the families to keep their latrines under lock and key so as to avoid misuse.

ii) For the newly developing residential areas, where people cannot afford to have their own latrine, construction permission to build a house should be given only after they agree to construct or to share the cost of construction of community latrines. The responsibility of maintaining these newly constructed community latrines would rest with the residents only. These latrines will have to be kept under lock and key.

iii) Construction cost of community latrines at public places like bazaars would be recovered from the shop owners; whereas community latrines at railway stations, ST. stands should be constructed at the cost of respective service organisation. The community latrines at places other than above should be constructed out of municipal councils resources.

iv) Maintenance of Community Latrines at Public Places:

Private contractors should be appointed to run and maintain the community latrines. Contractors should be allowed to run the community latrine on pay and use basis. In addition to daily collection, especially where daily collection is not sufficient to meet the standard maintenance norms, the contractors may be allowed to display advertisements on the top of the community latrine or any other place and the standard rent may be recovered from him

Minimum maintenance norms, for the contractors and residents should be fixed by the councils. Periodical inspection should be carried out by the municipal officials to check whether the same have been followed.

3. It is recommended that the community latrines (other than those used exclusively by residents) should be compulsorily manned by attendants. These whole-time attendants would ensure the following :

- Proper use of latrine
- Adequate water usage
- Collection
- Immediate attending to repairs
- Cleanliness
- Maintenance of the property.

Without the attendants, the community latrines would deteriorate and the investment would eventually be lost.

4. One of the main reasons for non-functioning of community latrines is the inadequate use of water. Sufficient water should be made available near the community latrines Under this project hand pump, standpost etc. can be installed, overhead tanks, wells etc. may be constructed.

5. Electricity should be provided in community latrines. Bulbs should be put up in each block or between two latrines. Because of such facility, people would start using community latrines at night and use of open land and street sides would be curtailed.

6. At some places inadequacy of community latrines is felt because of non availability of adequate pla for the construction of the same. We provide two alternatives to solve this problem.

- To acquire required land from the land owner after paying sufficient compensation and to construct community latrines on such acquired land.

- To provide mobile community latrines.

7. Another reason for non-functioning of community latrine is the improper use by the users. People are also not aware about advantages of cleanliness. It is necessary to make some efforts to educate the people about the proper use of the latrines, which would help them to keep the latrines clean and maintained. Following measures can be taken to educate the people.

- To paint the instructions on the wall.

- To affix stickers giving the information about how to use the community latrines.

- To hold the public meetings to keep the people informed about the advantages of the cleanliness.

- To display the informative hoardings at crowded places like bazaar, railway stations etc.

8. Instead of using community latrines, people use a side of a street where scavenger service is required to be given. To restrain such type of use, stalls may be laid down along the side of the street.

9. Sometimes septic tanks overflow with the result that the approach road to the latrines becomes unusable and the surrounding area becomes dirty. Sanitary inspectors should take initiative to clean the septic tanks of community latrines on regular intervals so that these do not overflow. The records of such cleaning of septic tank should also be maintained to facilitate regular monitoring.

10. It was observed at Sangamner that the plan did not include the doors for the community latrines, especially where latrines are constructed for ladies. Care should henceforth be taken to provide the doors.

11. Adequate financial provision should be made in the budget to facilitate the purchase of required cleaning machinery such as tanker, pump and pipes etc. so that cleaning of septic tanks will not be held up because of lack of machinery and funds.

CHAPTER : VI

NGO'S ROLE IN THE FIELD OF LOW COST SANITATION

CHAPTER VI

NGO's ROLE IN THE FIELD OF LOW COST SANITATION

Non Government Organisations (NGO) are playing an important role in providing sanitation services in the country. They are also contributing their efforts in the implementation of Low Cost Sanitation Programme formula by the Government of India. NGOs have developed their own technology in 'pit' as well as in 'septic tank' sanitation units. At many places in Maharashtra, Municipal Councils have appointed NGOs for conversion of private individual dry latrines into pour-flush latrines. NGOs also construct and run public convenience system on pay and use basis. The main objectives of NGOs in the field of Low Cost Sanitation and for upliftment of scavengers are as follows :

- To educate people about individual sanitation system and to impart training for construction of such facilities.

- To undertake construction work of upgrading the existing public convenience complexes and to help local bodies in strengthening their sanitation and environmental programmes.

- To maintain community convenience complexes of local authorities on 'PAY and USE' basis.

- To help the authorities in rehabilitating scavengers by imparting proper training for self employment schemes of the Government and semi-Government bodies under protection of the Civil Rights Act, 1955.

- To plan and arrange for imparting practical training to the masons, Government employees, public servants, citizens and villagers in various sanitation and related projects.

- To assist municipal bodies, corporations and other connected organisations all over the country in abolishing the system of service latrines and installation of low cost sanitation units.

- To carry on research in the field of sanitation, bio-gas and various allied subjects.

- To try and find out practical solution to problems like those of public health, manure, food, economic problems of scavengers and their employment etc.

- To arrange demonstration-cum-training camps for agricultural output with the help of manure produced from pit/septic latrines.

- To manufacture materials for low cost sanitation such as waterseal, pan etc. and to supply them to contractors on 'No profit No loss' basis.

- To construct demonstration unit on contract basis .

- To r nder co- peration and help to get the rnment loa s and grants for Bhangi Mukti programme.

- To construct low cost houses for sanitary workers and to make efforts to improve their living conditions.

- To ensure jobs to those scavengers who have been relieved from the course of cleaning service latrines and arrange for their vocational training.

- To construct hostels with Government assistance and to open schools in different towns for the education of down trodden and to arrange their training in Spinning, Weaving, Sewing, Embroidery, Typing and various other vocations so that they may stand on their feet and earn livelihood.

- To draw plans for all round development of people of tribal areas, bhangis and harijans and its implementation

- To do the work of slum improvement, to arrange rehabilitation of weaker sections of the people and work connected with slum clearance and environmental sanitation

- To help various local bodies to improve, personal hygiene, community health, social uplift and economic well-being.

At present in Maharashtra, two NGOs are working in the field of low cost sanitation. They are :

1) - Sulabh International and

2) - National Sanitation Improvement and Bhangi Mukti Foundation (NASEB), known as NASA Foundation.

We have studied the background and functions of above mentioned NGOs in the field of Low Cost Sanitation. These are classified under the following heads.

1. Background of the organisation
2. Project Management and Execution
3. Technology adopted for conversion of dry latrines into Pour-Flush Latrines and research activities undertaken in the field of low cost sanitation.
4. Financing pattern for the projects.
5. Hindrances faced by NGOs in project implementation and in running of community convenience systems.
6. Work done for upliftment and rehabilitation of the scavengers.

1. Background of the Organisation :-

Sulabh International :-

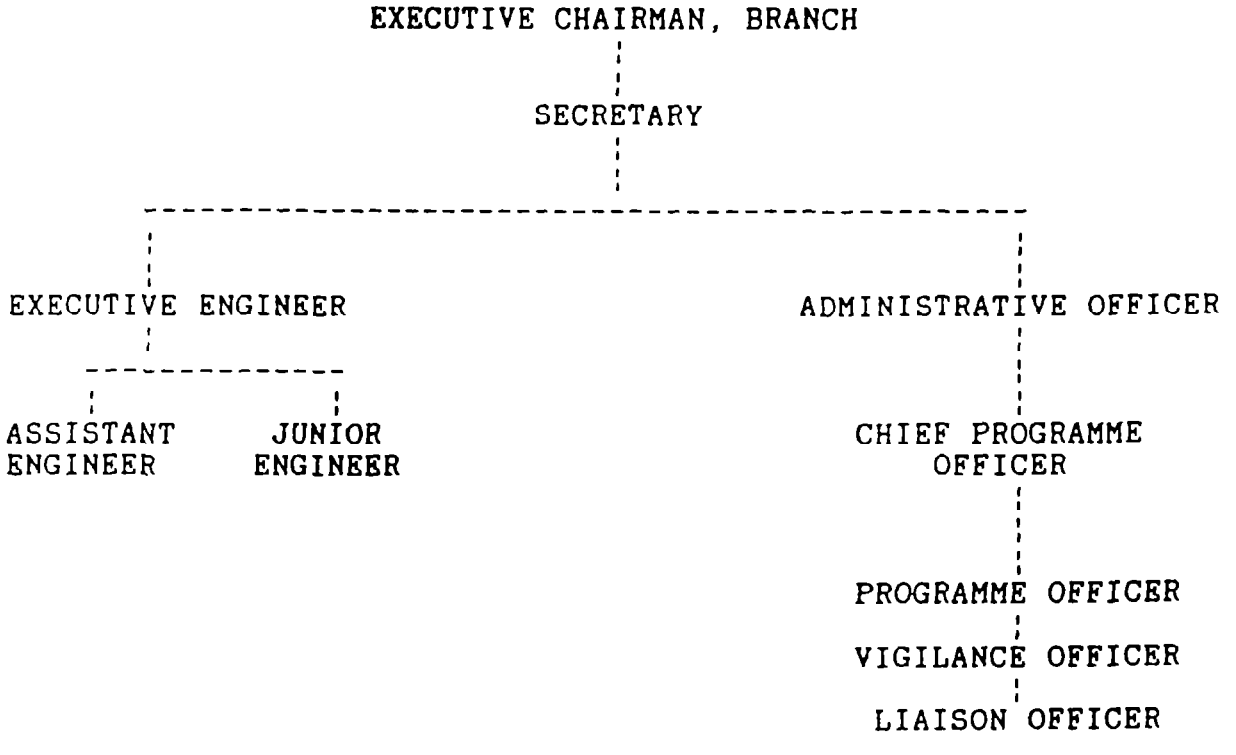
Sulabh International is a non profit making organisation registered under the Registration of Societies Act, 1960. It has been set up under the chairmanship of Dr.Bindeshwar Pathak, a distinguished expert in the field of urban sanitation. Sulabh ternationa has it- head office at Patna and its ' - ches are spread all over India.

Since its inception, Sulabh has converted 4,44,799 dry latrines into pour flush latrines and has also constructed 2037 community convenience complexes in nearly 532 towns in 20 states of India. Apart from this, it has also carried out some similar projects in Sri Lanka. It is reported that Sulabh International's annual turnover exceeds Rs.10 crores and provides employment to nearly 15000 direct and indirect workers without putting any burden on Government.

The present organisational set up of the branch in Maharashtra is given below :

SULABH INTERNATIONAL

BOMBAY BRANCH OFFICE
MAHARASHTRA



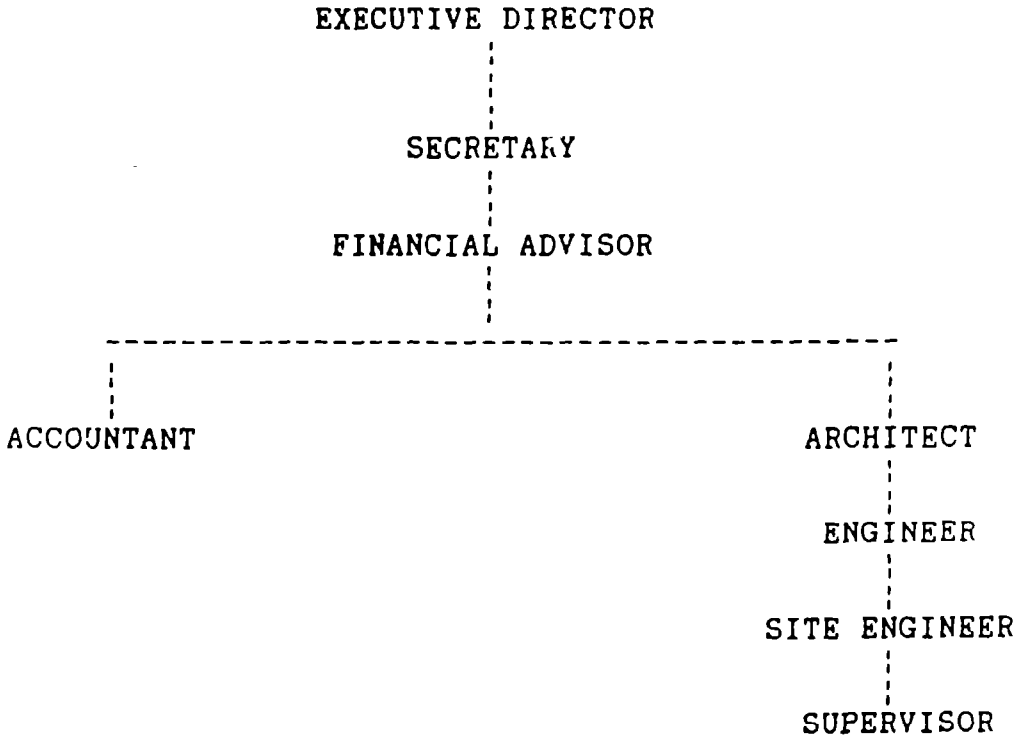
NASA FOUNDATION :

National Sanitation Improvement and Bhangi Mukti Foundation (NASA) is registered under the Bombay Public Trusts Act and Registration of Societies Act 1960. It has been set up under the chairmanship of Shri.Iswarbhai Patel, a well known social worker and a leader in the field of low cost sanitation. NASA's head office is at Ahmedabad, Gujarat and its branches are in the States of Maharashtra and Karnataka. Since inception, NASA has converted over 1,80,000 dry latrines into pour flush latrines in the State of Gujarat and about 568 in the state of Maharashtra, and has also constructed seven community conveniences complexes in the state of Maharashtra.

The present set up of the branch in Bombay for Maharashtra State is given below:

BOMBAY BRANCH OFFICE

MAHARASHTRA STATE



2. Project Management and Execution

Sulabh International

The liaison officer visits various councils, corporations and organisations, wherever work is to be carried out and provides necessary information regarding the ty f jobs car ied out by Sulabh International. If, the cor rned organisation is interested, the Assistant Engineer from Sulabh visits the town/place for the purpose of soil testing and assessing the availability of sanitation material and labour in the local market etc. Based on the report submitted by the Assistant Engineer, Junior Engineer prepares a design and a statement of estimates under the guidance of the Executive Engineer. These estimates are submitted to the local bodies for approval. After the approval, a formal agreement is made. At the time of commencement of work generally a pictorial demonstration of the unit, along with video tapes, etc., is shown to the beneficiaries to make them conversant with the working of the new system. A team consisting of Chief Programme Officer, Programme Officer, Vigilance Officer, Masons and other skilled workers, is sent to the project place and work is carried out by appointing local labour. After completion, the unit is handed over to beneficiaries along with the 5 years guarantee card (30 years' guarantee is given in case of community latrines).

On receipt of complaints from beneficiaries/ councils, the Administrative Officer or Vice-Chairman informs Chief Programme Officer, who in turn sends Vigilance Officer for inspection of the defective unit. Depending upon the nature of defect, a suitable team is sent for rectification. In case of community complexes, run on pay and use basis, workers deputed at the site carry out the maintenance work. Sulabh does not pay any rent to municipal councils and the maintenance expenses are met from the user charges collected.

NASA Foundation

Almost identical procedure is followed by NASA for the purpose of conversion of dry latrine in to pour flush latrine and for running and maintenance of community convenience complexes. The guarantee given for individual latrines and community convenience complexes is also identical i.e. 5 years for individual latrine and 30 years for community convenience complexes.

3. Technology adopted and Research carried out in low cost sanitation by NGOs

Technologies adopted by both the NGOs are the same. NGOs use pit technology for individual dry latrine conversion and septic technology for community latrines. Though the technology used

for latrines is same, the designs developed by Sulabh International and NASA Foundation are different. Sulabh has developed at least eleven designs under pit type technology, suitable for various income categories. Similarly, NASA has developed five designs. Continuous research is undertaken at Sulabh Institute of Applied Research, Patna to develop the designs to increase its utility and reduce the cost of construction. Special group called 'Technical Advisory Group' (TAG) is formed to carry out continuous research activity at the institute. The research regarding bio-gas plant is also undertaken by TAG at this Institute.

4. Financing Pattern for Project

Financing patterns adopted by both the Non Government organisations i.e. Sulabh International and NASA Foundation, are identical. NGOs prepare the cost estimates depending upon the design approved by the clients. These estimates are prepared on the basis of District Schedule Rates (DSR) applicable to the project area. NGOs charge 20 percent over and above the direct cost so estimated, by way of administration charges.

The financing pattern for the project is as follows :

- 50 percent of the estimated cost (including 20 percent administration charges) at the time of signing the Agreement.

- Next 40 percent of total cost is taken after 40 percent completion of total work.

- Remaining 10 percent, in case of Sulabh International is payable on 80 percent completion of the total work where as in case of NASA Foundation it is payable on completion of the total work. NGOs do not avail of any bank finance for implementation of the project.

Apart from above, as per agreement, NGOs also reserve their right to charge for price/rate difference in case of sudden rise in the prices of raw materials.

Apart from projects undertaken, NGOs also run training institutions. Sulabh runs an institution which is sponsored by Department of Social Welfare, Government of India. The institution run by NASA Foundation of Ahmedabad is sponsored by UNICEF, W.H.O. and Government of India.

5. ~~Hindrances in Project Implementation faced by NGOs~~ :

NGO, Response to issues of Project Implementation

NGO officials reported the following type of ~~hindrances~~ problems in project implementation.

- Sometimes the land or soil available for the construction of pit type latrines is not suitable. Black cotton soil after some period becomes very hard and the water which is required to seep through the honey-comb wall does not seep out. In such a case they have to make some amendments to the design, which

increases the cost of construction Another example is that, in some cases there is water content in the soil, which puts pressure on the pit walls resulting in collapsing of the pit. In such a case they have to put additional concreting so as to strengthen the pit walls, which again incr ases the cost. Councils/ Beneficiaries do not equally share this additional burden.

- Space available for construction, sometimes is so small that it is very difficult to construct pits/ tanks in such places. They have to alter the designs of the pit so as to maintain the required capacity. Sometimes pit is constructed just below the pan (Aqua - Privy Pit System).

- Sometimes the place available for construction is so unclean and unapproachable that the locally hired labour refuses to work in that environment. In such cases they have to pay them some additional remuneration to get the work done.

- In some cities, NGOs came across a shortage of skilled and unskilled labour, especially where other job opportunities are available to daily paid workers. Local labour prefer to accept some work other than construction of latrines. In such cases, labour from other States is called for at higher wages, which again puts burden on the NGOs.

- It was reported by NGOs that the disputes over sites and cost between the tenants and landlords cause hindrances in their implementation. As the local council cannot take immediate action in such matters, the work is delayed.
- Sometimes beneficiaries do not co-operate with the NGOs for the final selection of sites where the ementation is required to be carried out.

6. Upliftment and Rehabilitation of Scavengers :

At present, Sulabh International runs an institute at Jambul village near Ambarnath, Bombay, which gives training in various trades to the scavengers. This institute is run on behalf of Mahatma Phule Backward Class Development Corporation Limited and is sponsored by the Department of Social Welfare, Government of India.

The present capacity of this institute is five hundred trainees at a time. The trainees are offered accommodation and boarding facility free of cost. The scavengers are given training as per their aptitude/liking. All courses available in this institute are of one year period. The training is given in the following trades.

- Masonry,
- Carpentry,
- Electrician,

- Plumbing,
- Tailoring,
- Book binding,
- Motor mechanic and
- TV/VCR repairing

The Chair and founder member of NASA Foundation is th Principal of the Sanitation Institute of Ahmedabad. This, institute is sponsored by UNICEF, W.H.O. and Government of India. One of the objectives of this institute is to train sweepers and scavengers.

In summary, the NGOs assist Government by implementing their programme, develop social awareness, provide services of conversion, maintenance of latrines, educate the people by running training institutes or by way of demonstration, provide new avenues of employment to scavengers/ sweepers and down trodden etc. by imparting vocational guidance, run research institute for upgrading the systems etc. The overall role played by the NGOs is thus vital and is of immense support to both the community and the government.

CHAPTER : VII

ABOLITION OF SCAVENGING
AND
REHABILITATION OF SCAVENGERS

CHAPTER - VII

ABOLITION OF SCAVENGING AND REHABILITATION OF SCAVENGERS

BIRTH OF SCAVENGING SYSTEM:

In Mohanjodaro and Harappan Civilisations in ancient times Storm Water Drains were in existence but there is no information available Sanitation and Sewer Systems. In Roman Civilisation, Science with regards to construction of palaces, houses, etc. was of the highest level of architecture. But there are no details available about the in-house sanitation facilities, sewerage system etc. European countries developed fast due to industrialisation without getting adequate support of proper disposal system for storm water and sewer. As per historical research, the first system of drain and sewer was constructed in 14th Century in Europe.

In ancient India what type of system was followed for sanitation, sewer collection and disposal is not known. Research findings show that during Mogul rule over India, the basket type latrine system was introduced. Islam Religion does not permit the ladies to move freely and have to wear "Burkha". For these ladies "Basket type latrines" were constructed and the prisoners/ low cast community persons were forced into scavenging. In India, at that time, the scavenging work used to be given as a matter of punishment to the culprits/ law breakers. Subsequently, over the years this became the system.

In the 18th and 19th Century, when British ruled India, they followed the system of sewer collection and disposal through scavengers. Due to growth in population, the scavenging system increased multi-fold in all the semi-urban and urban parts of India.

Bombay being a natural port, Britishers gave more attention to improve the infrastructural facilities. The developments were made in all respect except sanitation. Due to this, epidemics used to kill thousands of people every year. To overcome such situations, British Authorities formed Board of Conservancy in the year 1845 and prepared guidelines for cleanliness, sanitation, sewer, etc. This work of sanitation was allotted to private contractors who were known as "Halalkhor". As these private contractors were not giving proper services, the work of sanitation was handed over to the then Municipal Council of Bombay in the year 1864-65. This sanitation work was divided in two parts :

- Cleaning and Sweeping of Roads, Gutters (done by Sweepers)
- Cleaning of Latrines (done by Scavengers)

It is observed that both the category of workers are known as "Bhangi". The sweepers consider themselves as superior to the Scavengers

In the State of Maharashtra a majority of the sweepers/scavengers are from the caste known as "Mahar". These scavengers migrated from other States mainly from Uttar Pradesh, Bihar and Gujarat. It is also reported that this category of Scavengers developed when the slaves were traded between two regions.

Scavengers belong to Hindu, Muslim, Sikh, etc. religions. There are different caste' sub-castes, viz. Dhed, Meghaval, Mayavanshi, Vankar, Walmiki, Chambhar, Khalap, Lalbegi, Shaikh, Malkana, etc. As per their caste systems they can change their caste as well as religion. Even if they change their religion, the sub-caste remains the same. Due to caste system they are supposed to do only limited type of work, i.e. sweeping and scavenging, making of baskets, drum beating, etc. In certain cities/ villages they also work as farm labourers or weavers of hand made-clothes. The nature of work, the sweepers or scavengers can do or are allowed to do by the society depends on their caste, where they stay and the system of the village/ city. The sweepers/ scavengers are treated as untouchables by the society as a whole. The standard of living, health, education, personality,etc. depend upon their caste.

The Scavengers migrated from their own state to other states mainly due to following reasons:

- Drought
- Epidemic
- War
- Caste system
- Land Lord (Zamindar) system
- Industrialisation, etc.

Due to the above reasons the communities were forced to leave their place and shifted to different cities/ villages. In new cities/ towns, some of them were able to get jobs, which they were not carrying out earlier. However a majority of them were unable to get jobs of proper nature. To earn a livelihood they preferred sweeping job as it was remunerative compared to any other available job.

In the year 1864 some of the municipal councils were spending more than 80% of their income on sanitation. For example, the wage structure of Nasik Municipal Council in the year 1864 for sanitation was as follows:

Category	Per month Salary (Rs.)
- Sanitary Inspector/ Medical Officer	100/-
- Sweeper - Mukadam	15/-
- Sweeper	10/-
- Scavengers	15/-
- Lady Sweeper	8/-
- Cart Attendant	17/-

The above table highlights that higher wages attracted a fair number of unemployed and migrated communities towards this work initially.

Working Conditions:

"night soil"

Upto the year 1891 Scavenging work was carried out only at night which was changed to early morning subsequen . In the year 1934 the timings were fixed and now the work starts at 6.00 a.m. The Government of India appointed two committees to study the problems and to recommend suggestions to improve the working conditions of sweepers and scavengers. The B. N. Barve Committee report and N.R. Malkani Committee report have commented heavily on the conditions of scavengers and sweepers. They have recommended number of suggestions such as providing facility, equipment, medical and other support to sanitation staff and to increase sanitation tax to force the people to do sweeping/ cleaning on their own with an intention to remove the pressure on sanitation department and to develop initiative in people to maintain their own latrines. The recommendations were accepted in principle by the Government though they were not implemented.

Social Background and working conditions of Scavengers:

1) Medical:

It is reported that due to unhealthy working conditions, the sweepers/ scavengers suffer from common diseases such as eye trouble, bronchitis, etc.

2) Dumping Post:

The garbage of the city is normally deposited in the "Dumping Depot" located outside the city. No facilities like water, soap, equipments are provided near the Dumping Post to sweepers. These needs were recommended by Barve/ Malkani Committees.

3. Accommodation:

Houses are normally allotted to these scavengers by the councils. Their colonies are located on the outskirts of the city Sometimes they are evicted from these places due to developments in cities. The area allotted to each family is very small. One or two small rooms are provided to these staff.

Where the houses are not allotted they have to stay in own or hired hutments. Scavengers from Walmiki caste normally deal in pigs and do pig breeding business. Due to this, outside area where they stay is not kept in proper manner; and remains unclean most of the time. This is one of the reasons why city residents object to scavengers colonies near to their localities. In some cities they have made efforts to form co-operative societies and have constructed their own houses.

4. Other facilities:

The colonies/ areas in which scavengers live are deprived of various facilities such as water, electricity, roads, schools, creches, etc. They have to surrender the premises to the council (if provided by council) after leaving the job. Due to the poor financial conditions they cannot think of purchasing new premises. To retain the premises, they force the work of sweeping/ scavenging on their children.

In some of the cities viz. Kolhapur, Pune, etc. due to co-operation of the councils/ corporations they were in a position to purchase/ construct good houses on their own.

The Meghaval community people normally maintain their homes in proper manner, viz. cleanliness, arrangement, hygiene etc. As compared to Meghaval, Walmiki community is not that particular about the maintenance aspect.

5. Education:

Prior to independence, separate schools were run for sweepers/ scavenger's children. More than 90% of the community is illiterate. The education is not considered as important area due to :

- poverty
- non-awareness about the education

They impart education mainly to boys. Girls are not educated since education becomes a hindrance in their marriage and after marriage they are of the opinion that education is not useful for earning a livelihood. Often the boys discontinue education in mid-way due to poverty, early marriage and non-availability of guidance.

However, most of the scavengers/sweepers agree that education is required and they try their best to educate their children. They agree that their children should not do sweeping/ cleaning work and should diversify in other fields like carpentry, driving, gardening, business or become clerks/ peons in offices.

6. Marriages/ Religion:

As mentioned elsewhere, the religions can be changed by the scavengers but the status quo of caste remains. A majority of the scavengers belong to Malkana, Lalbegi or Sheikh Banghi caste. The former two castes follow Hindu as well as Muslim religions with equal enthusiasm.

All the communities deal with each other freely. In some areas untouchability is still followed. However, inter caste marriages are not accepted by any caste. Further, some caste group migrated from different parts of India fight with each other on various issues. The unity/ understanding is absent amongst them.

7. Business/ Trade/ Service:

More than 60% of the Scavengers/ sweepers are employed in the Municipal Councils/ Corporations. The ladies serving in this trade are equal in number to males. Remaining people of the community work with government or private parties mainly as sweepers/ peons. The educated are generally employed in government offices in clerical and other grades due to the reservation policy of the government. Some of the sweepers/ scavengers are doing business/ trade of following type:

- Peon
- Teacher
- Mechanic
- Driver (car / rickshaw)
- Cycle repair shop
- Grocery/ cloth shop
- Pig breeding

The sweepers/ scavengers are not ready to take other jobs due to the following reasons:

- they may lose their monopoly in the activity
- as compared to number of hours they work, they get more income

- normally they have to work in the morning hours due to which they have sufficient time to do other business/ trade during the day
- the job provides them housing facility
- physical hardship is less in this job
- no training/ qualificatic required

8. Financial Status:

In most of the houses all the major members of the family are employed. The income generated by the whole family is insufficient due to bad habits developed in community and loans taken.

The sweepers/ scavengers are normally in the habit of drinking, gambling, etc. They borrow and spend lot of money for marriages, deaths, employment, touring and religious activity. They believe in black magic and blind faith. It is seen that financially well settled sweepers/ scavenges, do money lending business for their community and charge interest ranging from 5% to 25% per month. Due to higher interest rates, the principal is never paid in time. They borrow for paying earlier loan and the cycle of loan continues for a longer time Now-a-days they are trying to reduce their expenses and break this vicious circle.

EXISTING STATUS OF SCAVENGERS AND THEIR WORK ROLE:

In the survey of four towns we have collected specific information/ data to find out the present status of scavengers, their work, social background, etc. This information was then compiled by us and given below in a summary form.

Town	Number of latrines serviced		Number of Scavengers		Total
	Private	Community	Male	Female	
Vasai	282	-	2	14	16
Kopargaon	289	-	6	6	12
Sangamner	412	60	11	7	18
Parbhani	5700	-	-	-	NIL*

*Private scavenging is done through Bhangi Association employing approximately 100 Scavengers.

Work done by Scavengers:

- Removing the basket from the latrine
- Dumping the night soil in the cart
- Replacing the basket in the latrine
- Taking the hand cart to the dumping spot
- Unloading the cart
- Cleaning the cart and tank over it
- Cleaning/ lifting the night soil on the road and public places - (such work is not done by Sweepers).

Present Salary Range.

Gross Rs.1000 - 1500 per month In addition Provident Fund, Bonus, Pension, etc. is given. Also special scavenging allowance is paid.

Housing

Normally houses are provided to Scavengers. In some cases where houses are not given, house rent is paid.

Other facilities:

Free medical facility at Municipal Council Hospitals and Health Centres

Education:

Illiteracy 90% (ladies not allowed any education)

Duty Hours:

Morning 7.00 a.m. to 12.00 noon.

In case of Parbhani, scavengers are not employed by Municipal Council, but are the members of Bhangi Association. This association has enrolled about 100 Scavengers and provides services to all the 5700 basket latrines. The head of the association has stated that average monthly income of each scavenger is about Rs 200/-, but our analysis proved otherwise

Number of Units		5700
Average family size	.	5.5
Number of persons	.	31,350
Charge per month per person	:	Rs.4/-
Total collection	:	Rs.1,25,400/-
Numb r of Scavengers	:	100
Average monthly income per scavenger	:	Rs.1,254/- p.m.
		Say Rs.1200/-to Rs.1300/-

It was reported to us that whenever any scavenger migrates permanently, he auctions his number of units/services (lines). Such auction normally fetches about Rs.1,00,000/-.

Views of Scavengers:

Given below are the views of Scavengers, Scavenger Union Leaders, Sanitary Inspectors etc. about system of scavenging based on our discussions with them:

1) They want to come out of scavenging

2) They are ready to come out of this system even at marginal financial loss

3) They do not want their children to fall in the same job and they want them to have proper education but due to security of job and the housing facility, they normally ask their children to accept the scavenger job. This is the reason why they do not take much interest in educating their children.

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4) There is a need of finance for self employment purpose like establishment of shop, training for various trades, like masonry, carpentry, etc.

5) In case of private scavengers, they would like to seek some better job other than scavenging but the only problem is their engagement (employment) somewhere else. The other employment should be assured.

6) At Dumping post, water, soap etc. should be made available so that they have access to hygiene.

STRATEGY FOR ABOLISHING SCAVENGING:

Following steps should be taken for abolishing scavenging:

1) All basket type latrines should be converted into septic type/ pit type latrines. After the implementation of this programme , inspection should be carried out to see that no basket type latrine remains. If found, notice should be served to convert it. After notice if rectification action is not taken, some penalty should be levied and even after that it is not converted, the unit should be demolished by the Council. For this purpose necessary amendments in bye-laws should be made.

2) Proper watch should be kept to ensure that new basket type latrines are not made. Also because of poor maintenance and resultant failure of converted latrines, people should not go back to old system.

3) In case of new development in the city, councils should ensure that such developments with pour flush latrines. For this purpose council should make necessary amendments in bye-laws. Where there is no sewer system, pit type or septic tank should be insisted upon.

4) In case of Muslim areas where the females use the latrines which are in the house and require scavenging services, the Council should ensure that such people should be provided with pour flush latrines in their house or special community latrines should be constructed for ladies and will be maintained by users only.

5) Where people use open areas

- sufficient community latrines should be provided
- that area should be used for other purposes like stalls etc. or it can be fenced

6) Wherever septic tank type latrines are constructed, when filled up these should be cleaned with the help of pumps/ vacuum cleaner, but where such pumps or cleaners are not in sufficient number, the tanks will be cleaned with the help of scavengers.

To avoid the human contact with the human waste sufficient machinery for cleaning such tanks should be provided by the Council. Private contractors can be initiated for this work who can charge fees to the users directly.

7) Some amendment in the law can be made by which the scavenging can be treated as criminal offense.

8) Municipal Councils should abolish the post of scavengers and henceforth as a rule no scavengers should be appointed.

STRATEGY FOR REHABILITATION OF SCAVENGERS:

why does this always comes second?

1) Emotional Approach:

Scavengers both municipal employees and private should be taken into confidence and should be explained about the nature of scheme, advantages arising out of this scheme, improvement in their status of work etc. In short, emotional support should be given so that they can be made prepared to accept the change.

The above can be done in the following ways:

a) If the scavengers are municipal employees, they can be advised by the Sanitary Inspectors/ Mukadam etc.

b) Where private scavenging exists and these scavengers are having their views in favour of scavenging efforts should be made to convince the leader of the scavengers and in turn the scavengers themselves.

- Where unions do not exist, and private scavenging exists, the Sanitary Inspector should take the initiative to call them and explain the advantages of such scheme to make them prepared for the change.

Help of social welfare organisations should be taken in these respects.

2) Before re-employing the liberated scavengers at various places their age, health, literacy, liking should be assessed and accordingly those who have inclination towards service should be absorbed in municipal council after giving initial required training/ knowledge about his prospective job, etc. Following type of jobs can be given by the council.

- Street sweeping
- Gardening
- Security guard
- Peons
- Water boy
- Octroi clerk
- Liftman

- Helper on fire fighting vehicle
- Helper on water supply tankers
- Driver on any municipal vehicle

3) Those who cannot be absorbed in councils are to be absorbed in other Government organisations and following additional type of work can be given to them.

- Delivery boy
- Clerks like Inward/Outward Clerks
- Water meter reader
- Electric meter reader
- Postman
- Helpers, semi-skilled laborers etc.

While allotting these jobs, care should be taken to see that the benefits which were given to scavengers before rehabilitation and the benefits which they will be getting after rehabilitation do not vary much.

4) Those who have the inclination towards self employment;
The jobs which do not require special skill but can be started with the help of minimum investments, such as

- Vegetable/ fruit vendor
- Tea/pan stall
- Cycle rickshaw
- Cycle repair shop
- Dairy business on a small scale

5) Training under following trades should be given to the Scavengers:

- Tailoring
- Motor mechanic
- Electrician
- Welder
- Plumbing
- Masonry work
- T.V./ Radio repairing
- Draftsman
- Telephone operator
- Carpentry

This training can be given in the following ways:

- Sending to NGO (training centres specially established for rehabilitating of scavengers - example Sulabh)
- Sending to ITI by reserving seats
- Within the department

It should be ensured that they should get their training, free of cost. Apart from that during the training period they should get their salaries.

6) Training to next generation or priority in service in the department work should be given to the children of the liberated scavengers, if they are suitable for that type of job.

7) The sweepers/ scavengers presently prefer scavenging job due to the housing facility. Therefore, councils should try to provide permanent housing facilities to them.

8) Goods manufactured by the scavengers should be purchased by Government organisations on priority basis, which in turn will help them to establish their business. Gradually this can be withdrawn, say after 10 years.

9) For setting up business/ trade, technical knowhow, interest concession, subsidy, etc. may be given so that they can manufacture the goods at cheaper rate and sell in open market. This benefit can also be continued for 10 - 15 years.

ANNEXURES

ANNEXURES

Proforma of questionnaire used during survey.

Q-I : Individual Beneficiaries

Q-II : Community Latrine Users

Q-III : Evaluation of Community Latrine Operations

Q-IV : Technical Checklist

JPS ASSOCIATES
MANAGEMENT CONSULTANCY DIVISION
BOMBAY

EVALUATION STUDY OF LOW COST SANITATION PROGRAMME

INDIVIDUAL BENEFICIARIES:

Number_____
Town_____
Interviewed_____
Passed by_____
Entered by_____

Name : _____
Address : _____
_____

LOW COST SANITATION BLOCKS :

1. Number of members in family_____
   Major : Male_____ Female_____ Minor _____
   Literate_____ Illiterate_____
2. House : Rental ☐ Owned ☐ Others ☐ (Relative/Board/Agency)
3. Who is responsible for maintenance of building?
   Owner (Landlord) ☐ Occupant (Tenant) ☐ Others (Board/Agency) ☐
4. Previous Toilet Facility:
   Scavenger ☐ Public Toilet ☐ Pour Flush ☐ No Facility ☐
   Other, specify _____
5. a) Awareness of members regarding cleanliness, sanitation?
   YES ☐ NO ☐
   b) Do they agree that facility is required?
   YES ☐ NO ☐
6. Converted Toilet Facility:
   Litch Pit(1) ☐ Litch Pit(2) ☐ Septic Tank ☐ Mini Septic Tank ☐
   Aqua-Privi ☐ Sewer Line ☐ Other,specify _____
7. Initiative for Conversion:
   Municipal Council ☐ NGO_____ ☐ Own/Group ☐
8. Conversion done by:
   Municipal Council ☐ NGO_____ ☐ Own/Group ☐
9. Year and month of Conversion:_____
10. Problems in Implementation of Conversion Scheme:

Site Selection	Resistance by Scavengers
Site not ready	Non-availability of Labour
Alternative Toilet not provided	Poor work supervision by MC/NGO
Delay in obtaining approval from all the beneficiaries	Contractor not completing the work
	Handover after completion delayed
Delay in making own contribution	Documentation not completed in time
Delay in finalisation of scheme	Not aware about the importance
Delay in obtaining external finance	Difficulties in construction
Delay in appointing Contractor	
Resistance by other beneficiaries	

11. Nearest Water Source available from the Toilet_____(Mtrs.)
    (Well, Borewell, Standpost, Handpump)
12. Views:
    Design — Good ☐ Average ☐ Poor ☐
    Construction Quality — Good ☐ Average ☐ Poor ☐
13. Functioning:
    Performance — Good ☐ Average ☐ Poor ☐
    Choak-ups since Conversion:_____
    Who removes the choak-ups? Own ☐ Council ☐ NGO ☐
    Money spent on removing chock-ups Rs._____ On Major Repairs Rs._____

Q-1

14. Cleaning of Pit:

After how many months_____
Is labour available? YES ☐ NO ☐
Cost of cleaning the Pit Rs._____
Cost of repairs to Pit Rs._____

15. Benefits of New Facility:

Better System ☐ Cleanliness ☐
Convenience by Proximity ☐ Hygine ☐
Improvement in surrounding ☐ Status ☐ Other, (specify)_____ ☐

16. Usage:

Toilet Block:
a) Separate
- Number of members in the house

b) Joint
- Number of families
- Number of Users

17. Use:

Regular ☐ Not so regular ☐

In case it is not regular, note the reasons:

_____

_____

18. Maintenance:

Own ☐ Council ☐ NGO ☐

Cost of Maintenance incurred per month Rs._____
Type of Maintenance required:

Cleaning ☐ Electricity ☐ Paint ☐ Repairs ☐
Plumbing ☐ Water ☐

19. Affordability and Security:

a) Gross total Household income per month Rs._____
b) - Monthly instalment for LCS Block Rs._____
- Other Loan instalment,if any (House Loan,.....) Rs._____
- Monthly Rent(including Sanitation Tax Rs._____) Rs._____
c) - Total Cost of the Block Rs._____
- Total initial amount contributed for conversion Rs._____
- Total loan amount Rs._____
- Share of Council/NGO Rs._____
d) Security given_____

20. a) Taxes to Council paid by Owner ☐ Occupant ☐ Others ☐
b) Monthly charges paid Rs._____as(prior to conversion)
Rent ☐ Maintenance ☐ Sanitation ☐ Others ☐

21. OBSERVATIONS:

_____

_____

INTERVIEWED BY :
DATE :
TIME :

Q-II

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BOMBAY

EVALUATION STUDY OF LOW COST SANITATION PROGRAMME

COMMUNITY LATRINES USER

Number_____
Town_____
Interviewed by_____
Passed by_____
Entered by_____

Location of the Community Latrine

Name : _____
Address : _____

Male ☐ Female ☐ Age ____

1. Type of User:
   Regular ☐ Semi-regular ☐ Passer ☐ Visitor to the Area ☐
   In case of Regular User and Semi-regular user what facility he uses?
   Urinal ☐ Toilet ☐ Bath ☐
   Is this facility not available in his house? YES ☐ NO ☐
2. Usage :
   Morning ☐ Afternoon ☐ Evening ☐ Night ☐
3. Observations:

Convenient	Yes	☐	No	☐		
Size of Block	Adequate	☐	Inadequate	☐		
Cleanliness	Good	☐	Average	☐	Poor	☐
Maintenance	Good	☐	Average	☐	Poor	☐
User Charge (if paid)	Cheap	☐	Average	☐	High	☐
Water Availability	Yes	☐	No	☐		

4. Rush for blocks — More ☐ Average ☐ Less ☐
   More blocks required ? Yes ☐ No ☐
   If yes, how many? _____Nos
5. Does the area become better after Latrines were constructed?
   Yes ☐ No ☐
   If no, why?
   _____
   _____
6. Viewson Maintenance, such as :
   i) Choak-ups ☐ ii) Broken Pans ☐
   iii) No Electricity ☐ iv) No Water ☐
   v) Unclean ☐ vi) Poorly maintained ☐
   vii) Others _____ ☐
7. Any other comments for improvement?
   _____
   _____

Interviewed by _____
Date _____
Time : _____

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EVALUATION STUDY OF LOW COST SANITATION PROGRAMME

CHECKLIST FOR EVALUATION OF COMMUNITY LATRINE OPERATIONS

(_____ MUNICIPAL COUNCIL)

1. C.L. run by : Council NGO Other Specify

2. Prior to the C.L.what facility was provided at the same place?
   Specify:
   _____old type (Basket) _____urinal _____bath _____toilet

3. Who took decision regarding construction of C.L?
   Council, NGO, Ot'-. _____(spec fy)

4. The decision was n in_____year.

5. The decision was taken due to :
   - Grant
   - Government's instructions
   - Public complaints/ demand
   - Insufficient Scavengers
   - Health department's suggestions
   - Existing facility insufficient
   - Area developed
   - Others specify_____

6. Time taken for sanction and implementation of scheme of C.L._____specify(years)

7. When the C.L.was completed_____month_____year and opened for use_____month_____year.

8. Total number of staff employed_____v/s.required_____
   Out of which old staff accommodated _____Nos.
   New Recruits _____Nos.

9. Timings for staff in shift yes/no
   Shift of how many hours 8 hours
   10 hours
   12 hours

10. How much time C.L. is kept open?
    1st shift from_____to_____
    2nd shift from_____to_____
    3rd shift 24 hours.

11. Total cost of Construction : Rs.in lacs
    - Land
    - Building/Block
    - Facility(water,electric,etc.)
    - Sanitation
    - Administration(interest,salary,etc.)
    Total _____
    _____

12. No. of units constructed:
    a) Actual:
    Male_____Urinals_____Bath_____Latrine
    Female_____Urinals_____Bath_____Latrine
    b) Proposed in Original Design:
    Male_____Urinals_____Bath_____Latrine
    Female_____Urinals_____Bath_____Latrin

13. Population expected to be served _____ per day

14. Population service ratio based on _____

15. Cost of Maintenance (per month)

- Salary/wages
- Supervision
- Repairs (Minor)
- Sanitation Material
- Interest
- Water Charges
- Electricity charges
- Taxes of council (if any)
- Others

Total _____

16. User Charge : (Per person - Per Use) :

- Entrance fee
- For bath
- For latrine
- Others (specify)

17. Whether the charges are revised YES NO

18. Any clause to change the rates YES NO

19. Total Revenue per month

- User charges
- Advertisement
- Other (specify)

20. Profit/loss on running C.L. is transferred to
Council NGO Other

21. (A) Problems faced in operations
From Staff :

- Regarding shift
- Sitting arrangement
- Timing
- Pay scale
- Facility (medical, leave, O.T.)
- Non availability of material

(B) From User :

- Timing
- Service
- Cleanliness
- Charges

22. whether the C.L. is run on contract basis YESS NO
If yes, what are the terms and conditions?

- Staff controlled by contractor YES NO
- Maintenance by contractor YES NO
- Major repairs done by owner YES NO
- Term of lease 5 years 10 years 15 years
more than 20 years.

- Annual charges to be paid to Council

_____(Rs. in lakhs)

23. Comments for Improvements:

_____

_____

_____

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BOMBAY

TECHNICAL EVALUATION OF LOW COST SANITATION PROGRAMME

INDIVIDUAL BENEFICIARIES

Name : Number :

Address : Town :

Technical Surv. carried by :

1. No. of Blocks:
2. Type of Blocks: Pit , Septic , Mini Septic , Flush, Other
3. No. of users using the Block
4. Technical details of Block:

Actual	As per standard (ISI/UNDP) (to be filled in (office)	Variation	Remarks on Variation

A) Construction :

I. Whether block is converted/ constructed.

II. Details of Block and Tank :

a) Size of block (seat)

Width

Length

Height

b) Size of pan

Type of pan (Ceramic/ Others)

c) Foot rest

d) Thickness of walls

e) Slope in block

------degree
------drop (in inches)

f) Roof and size:

A.C. Sheet/Tin/RCC/Other (specify)

g) Details of Vent. Pipe :

- Height above ground
- Height above building top
- Thickness
- Type (Cer Metal)
- Whether Nylon net used
- Whether Black colour used

h) Whether window/ventilator provided

- Size
- Type (Grill/Honey Comb/ Other)

i) Type of Door and size (Wooden/Metal)

j) Height of Block above ground level

k) Details of Tank:

- Type of construction (readymade/fabricated)
- Sizes
- Material used (Bricks,RCC)

l) Details of Gally Trap

m) Whether Soak Pit provided

Yes/No - Size

n) Details of S.W. Pipe:

Quality (type)
Size/Length

o) Type of Soil

p) Whether field rats damag g goods in that area? Yes/No
- if yes whether lining provided

q) Level of ground water

r) Distance of drinking water line from the block

s) Hydraulic pressure on block

t) Availability of water in ...