NETHERLANDS ASSISTED PROJECTS

NALGONDA DIST.

INTEGRATED APPROACH SANITATION DOCUMENTATION

NETHERLANDS ASSISTED PROJECTS - ANDHRA PRADESH
AP III NALGONDA - PHASE I

COMMUNITY BASED SUPPORT ACTIVITIES
SANITATION COMPONENT

COST: Rs.950.00 LAKHS
COST OF PHASE I: Rs.380.00 LAKHS

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1. RURAL WATER SUPPLY/SANITATION SECTOR SCENARIO IN ANDHRA PRADESH

1.1 Andhra Pradesh is the fifth largest state in India (70 million people and surface area 2.77 lakh km2). 3/4 of the state is rural, with 50 million people living in 27,379 villages and 35000 hamlets, in cluster habitations widely scattered all over the 23 districts. At the fringes of these illages are the harijanwadas (about 10 million people). Add th isolated tribal thandas (about 5 million tribal population).

1.2 Interventions:

Intervention into the RWS/S sector is three decades old. It started with borewell programmes for drought hit districts and has steadily grown over the years. Investments are estimated at Rs. 543 crores.

Out of total 27379 villages, 22860 problem villages have been identified. By the end of VII plan (April 1990), 17316 problem villages were covered through 1.60 lakh bore wells and 8067 PWS schemes and 5 CPWS schemes.The balance 5544 problem villages are planned to be covered during the VIII plan.

1.3 External Inputs:

External interventions in rws/s are limited to Netherlands, UNICEF, and now the World Bank.

Netherlands inputs over two phases (1979-1991) have been Rs. 51.50 crores for covering 489 villages in 8 districts with 16 CPWS and 83 PWS schemes. A lift irrigation scheme is also taken up, at a cost of RS.8.5 crores. Apart from this, NAP has committed 7.80 crores for the support activities.

The World Bank credit of Rs.20 crores is to cover rehabilitation of 328 cyclone affected schemes and construction of 30 CPWS (covering 200 villages) in cyclone-prone coastal districts.

The borewell/rural sanitation programmes have been supported partly by UNICEF.

1.4 Sanitation Interventions:

The policy has been to spread thin the meager resources. The programme (Vimukthi) was launched in 1983. Investments have been Rs. 17 crores and facilities provided 1.47 lakh individual and 1905 community latrines, covering a population of 7.34 lakh people.

Achievements are thus generally negligible. However, a fresh start is now being made under the auspices of UNICEF, involving voluntary agencies, and adopting intense coverage approach. The programs taken up/being taken up with Netherlands support are discussed in later parts of this document.

2. SECTOR AGENCY:

2.1 Status/Functions of PRED:

The task of providing safe drinking water and sanitation facilities in rural areas is vested with the Panchayati Raj Engineering Department. PRED is also the rural engineering service. with responsibilities for: rural infrastructure development such as construction and maintenance of school buildings, health centres, panchayati raj buildings, minor irrigation works, panchayat roads etc.

2.2 Organisational Set Up:

The department has at the moment 4 Chief Engineers, 20 Superintending Engineers, 95 Executive Engineers, 2500 graduate/diploma holder field engineers and a large number of technical and administrative support staff.

At the state level the Chief Engineers are responsible for specific sectors of activities. At the district, division and sub-division level, the monitoring and implementing staff are responsible for all activities and report to all Ces. At the field level (mandals), one junior engineer is to be responsible for gram panchayat and mandal works and another for Zilla Praja Parishad works and rural water supply/sanitation.

Administration is with the seniormost Chief Engineer, who has the rank of Engineer-in-Chief.

As the engineering wing of the panchayati raj institution, PRED is also accountable to peoples bodies and district administration.

2.3 Budget:

The annual budget of the department (for all works) is around Rs.300 crores, of which allocation for rws/s is around Rs.50 to 55 crores.

The sources of funds for RWS/S are: centrally sponsored ARWS, state sponsored MNP (bilateral funds are included under this head), special programmes such as DPAP etc. 10% of all funds are earmarked as SC component.

The allocation under the VII plan had been Rs.224 crores for rws and Rs.20 crores for sanitation.

Under the VIII plan, the proposed outlay for RWS is Rs.450 crores, and for sanitation Rs.25 crores. This includes anticipated inputs from bilateral assistance. and World Bank. Outlay include HRD (1 crore), MIS (2 crores), O/M (25 crores), water quality monitoring (3.45 crores), community participation (1 crore).

3. SANITATION SECTOR INTERVENTIONS:

3.1 Programme:

The International Drinking Water Supply and sanitation Decade(1981-90) declared a target to cover 25% of rural population with sanitation facilities, with a primary objective to improve the health standards of the people.

Based on experience pour flush latrines are being constructed under programmes since 1983 in Andhra Pradesh, as mentioned hereunder:

- Vimukthi Programme of Government of Andhra Pradesh to liberate the scavengers and project privacy of women, started in 1983-84.
- UNDP/UNICEF sponsored "Feasibility Study Project" taken up in (11) districts (1984-85).
- UNICEF sponsored project in Chittoor, Warangal and extended to Krishna district, involving the beneficiary and Non-Governmental organisation (1987-88)
- UNICEF action plan for four years (1991-95) covering (8) districts.
- Government of India sponsored RLEGP/NREP and Central Rural Sanitation Programme (CRSP) starting from 1985.
- Royal Netherlands Assisted Projects

3.2 Present Status:

The physical and financial achievements with the help of programmes discussed above are briefly given under:

S.No	Year	Amnt (in millions)	Expendt.	Household latrines	Cmmnty latrines	Population covered
1	83-84	22.60	22.60	27585	125	1.38
2	84-85	14.00	14.00	15673	101	0.78
3	85-86	45.75	33.90	25573	449	1.28
4	86-87	48.40	35.95	34748	307	1.74
5	87-88	56.70	32.70	20713	439	1.04
6	88-89	48.38	21.14	18202	438	0.91
7	89-90	5.00	4.35	2250	30	0.11
8	90-91	10.00	3.22	1840	16	0.10
Total		250.87	167.89	146584	1905	7.34

The coverage is about 1.79%. However, given the fact that most of the facilities are un-utilised, the effective coverage is less than 1%. Clearly the challenges ahead are formidable.

3.3 Perspectives under the VIII Plan:

A State Sanitation Cell has been setup under the control of an officer of the rank of an Executive Engineer. A study has been made of the sanitation programme being taken up in Gujarat and being implemented by the Gujarat Water Supply and Sewerage Board with the cooperation of voluntary agencies. Based on this study, and experience under Vimukthi programme, a proposal for re-launching the programme is under consideration.

The salient features are:

1. Integrated Approach to Sanitation: Improved Sanitation is to comprise of several activities - human excreta disposal, waste water disposal, garbage and cattle dung disposal, smokeless chullah, home sanitation, food hygiene and personal hygiene.
2. Under the latrine construction programme only household and institutional latrines to be taken up.
3. NGOs to be involved for effective implementation.
4. The estimate cost for household toilet unit is to be revised fr Rs. 1600 to Rs. 2000 and of school latrine to Rs. 10,000.

3.4 Action Plan under VIII Plan:

Under VIII Plan it is proposed to cover 10% of the Rural population with sanitation infrastructure facilities. Given the unit cost of Rs.2000 per unit, the total budget would be Rs. 134.60 crores, as against the tentative budget allocation Rs. 25 crores. In actual practice, given the budget constraints and the limitations of the implementing machinery, the targets may be pruned to a much more realistic 3% to 4% of the total population. However with the assistance of UNICEF/GON, it is proposed to launch area based and intense coverage projects in various districts of the state.

Under UNICEF assistance, between 1991-95, eight districts are to be covered at an estimated cost of Rs. 5 crores. Rs. 4.04 crores is allocated for latrine construction and 0.96 crores for other sanitation activities. UNICEF contribution is anticipated at Rs. 1.90 crores and beneficiary contribution will be Rs. 1.08 crores, the GOAP share RS. 2.02 crores. The physical target 24000 individu latrines and 200 school latrines.

Under phase 2 of the Netherlands Assisted Projects, some 200 villages in six districts are to be covered with a project outlay c Rs. 3.55 crores. The funding pattern is RNG - Rs. 2.67 crores, GOAP - Rs.0.88 crores and people/GP Rs. 0.71 crores. The component will include household and institutional latrines, domestic sanitation, health/hygiene/nutrition education, sanitation around water supply and environmental sanitation for the whole village.

Under the third generation NAP projects, all villages covered unde water supply are to be provided also sanitation facilities. The budget allocation for the Nalgonda is Rs. 9.50 crores, RNG contribution being Rs. 7.125 crores, GOAP share Rs. 2.375 crores.

4. NAP INTERVENTIONS IN AP

4.1 The Royal Netherlands Government has been supporting the Government of Andhra Pradesh with bilateral assistance for meeting the targets of the International Drinking Water Supply and Sanitation Decade.

4.2 Objectives of NAP Intervention:

a. To support the GOAP in its efforts to provide protected drinking water to identified problem villages within the frame work and strategies of the IDWSSD.

b. To further enhance the effectiveness of the project through the introduction of an integrated approach involving multiple inputs from various specialist agencies.

c. To support institution development efforts of PRED and other collaborating agencies to equip them to adopt an integrated approach to water and sanitation, at the sector level.

4.3 History of NAP Intervention:

Under Phase I (1979-1990), 201 villages were taken up in 6 districts at an original estimate of Rs.1441.00 lakhs (later revised to Rs.1825.51 lakhs). The schemes are nearing completion and administrative closing report is to be ready in March 1991. During this phase 4 Comprehensive Protected Water Supply Schemes (CPWS) and 50 individual schemes (PWS) have been taken up.

Phase II was taken up from 1988 and is to be completed in March 1993. 288 villages in 4 districts are to be covered through 12 CPWS and 33 PWS schemes. 10000 acres of land are to be irrigated through a Lift Irrigation scheme. The sanctioned estimate for these second generation projects is Rs.2809.40 lakhs (now being revised to Rs.4238.00 lakhs).

Under Phase II, in keeping with the integrated approach recommended by the IDWSSD, and subsequently adopted by GOI, support activities such as community education and participation, health awareness, sanitation, income generation, external water quality monitoring, consultancy support for various activities etc. are being taken up at a sanctioned estimate of Rs.780 lakhs. The estimate for these components is likely to be revised to Rs.900 lakhs.

4.4 Institutional Arrangements for Overall Coordination:

State Level: Apex Steering Committee headed by the Chief Secretary

Nodal Agency: PRED assisted by the NAP Cell in the office of the CE-RWS

District Level: Exclusive NAP-PRED Circles (2) and Divisions (5). The Superintending Engineer is the chairperson of the District Project Committee involving District level project agencies and health/education departments.

Project Level: The Executive Engineer is the Chairperson of the Project Coordination Committee involving the PRED and NGO.

Village Level: The Village Action Committee being set up by the NGO and involving the community, GP, PRED ground level operators, school teachers and PHC staff.

5. THIRD GENERATION PROJECTS:

4 third generation projects are under various stages of formulation for covering more than 1200 villages/hamlets in four (Nalgonda, Prakasam, Ananthapur and Krishna) districts. The anticipated project cost will be Rs.275 crores, including all cost escalations during the project execution period of 8 to 10 years.

5.1 Project Components:

1. Technical Component: construction of water supply scheme

2. Community Based Support Activities:

   - community participation and health education
   - income generating activities
   - mother and child welfare
   - sanitation

3. Institutional Development:

   - human resources development
   - management information systems
   - strengthening of planning/monitoring/design cell
   - support in developing sustainable and community based operation and maintenance systems

These third generation projects are much more ambitious in nature, both in terms of coverage and costs. Unlike the two previous projects, the department has given considerable attention to the formulation of the project, drawing lessons and experiences from the past. Voluntary organisations and other governmental agencies are being involved right from the outset to ensure that the project has inbuilt provisions for the active involvement of the community and to ensure that the project will indeed go to enhance the quality of life and health standards of the community.

Though preliminary proposals for all 4 projects have been presented to RNE through GOI, after detailed discussions with the RNE, it was decided that the Nalgonda project would be taken up first for more detailed project formulation. Given the cost of the project, it was also agreed that each proposal would be reworked as two-phased.

6. AP III - NALGONDA

6.1 Outreach:

Nalgonda district consists of 1141 revenue villages and 1812 hamlets in 59 mandals. The District has a population of 29.40 lakhs, and is spread over an area of 14240 sq.kms.

6.2 Coverage and Phasing:

The project will cover a 1981 population of 375380, a 1992 population of 482655, and an ultimate 2022 population of 877370.

It is planned to take up the project in two phases, keeping in mind both technical and financial parameters. 82 villages and 99 Hamlets are to be covered in Phase I. Of these, 76 villages are fluoride problem villages, 6 are scarcity problem villages. 144 villages and 238 hamlets will be taken up in Phase II. Of these, 94 are fluoride affected and the balance 50 are scarcity problem villages:

Zone	Vil	Hmlts	Population 1981	1992	2022
Phase1	82	99	174940	225677	408000
Phase2	144	238	200440	256978	469370
	226	337	375380	482655	877370

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Zone	No.of Vills/ Hamlets		Population 1981	1992	2022
Phase One:					
1	22	14	51257	66126	119029
2	60	85	123683	158551	288971
	82	99	174940	225677	408000
Phase Two:					
1	16	19	22305	28774	52082
2	20	27	23936	30879	55891
3	48	81	52726	68018	123265
4	15	26	27100	34859	63277
5	29	35	42583	53440	100634
6	16	50	31790	41008	74221
	144	238	200440	256978	469370

6.3 Project Components:

The project components are broadly categorised as:

- Technical Component (water supply construction)
- Community Based Support Activities
- Institution Development Support

COMPONENT	NODAL AGENCY	BUDGET	TIME SCH
Water Supply	PRED	9742.000	6 years
CEP/HEP	NGO (ASM)	96.569	5 years
Sanitation	PRED/ASM	950.000	6 years
Income Gen.(Dairy)	NARMUL	347.000	4.5 years
IG (Sericulture)	SERIFED	151.760	5 years
Mother and Child Dvpnt	ICDS	198.400	4 years
MIS Development	Consultancy	125.000	4 years
Human Resources Devpt.	PRED(RDTC)	894.880	5 years
8 components	6 agencies	12505.609	6 years

6.4 Community Based Support Activities:

As a policy, upto 25% of the total cost of the integrated scheme is to be set apart for Sanitation, Extern. Water Quality testing (by establishing laboratories where required), Health Education and Community Participation Programmes, Women and Child Welfare activities including income generating schemes.

This component was not included in Phase I (1979) but formed a part of Phase II (1987). More emphasis is being placed on it now in phase III.

A. Community Education and Participation and Health Education:

The responsibility for organising the community for participatio in the execution and operation and maintenance of the water supply system, and for front line motivation/ organisation for sanitation activities is entrusted to a voluntary organisation (NGO):

Arthik Samatha Mandal (ASM)
Vijayawada

ASM will operate from a project office at Nalgonda and will have zonal offices covering clusters of 30 to 40 villages each. In each village, animators selected from the village will act as an interface between the project and the community. These animator will be trained and supported by a team of experienced communit development workers, health workers and folk artists.

The major task of ASM would be the organisation of village acti

committees for taking up responsibilities in the areas of O&M and sanitation. Identification and training of village level care-takers of the water supply system, and cooperating with the PRED for evolving a viable village level O&M system would also be ASM's task. ASM will assist PRED in the siting of public standposts and in motivating people to evolve systems for collecting tariff from private connections etc.

Other tasks would be health awareness programmes in schools, taking up of sanitation related activities in the community as well as in schools, cooperating with other agencies in managing income generation activities, mother and child health, etc.

ASM's interventions will dovetail with the construction activities by PRED. During the first four years, all the phase I villages will be covered and initial contacts established with all phase II villages.

ASM is to cover the entire project area in a phased manner over a period of 5 years. For continuing activities beyond this 5 year period, ASM would submit a supplementary project proposal, during which the intense interventions will be phased off. After the phasing off period, ASM will carry on token intervention programmes with their own resources/ resources mobilised from district development agencies.

B. Sanitation Programmes:

Since the provision of protected drinking water is not perceived as an end in itself, the health/quality of life implications are given considerable attention. Prevention of water related diseases will be given high priority through health education, water quality monitoring and the provision of sanitation facilities.

Sanitation is perceived as a spectrum of activities around water supply: waste water disposal, maintenance of hygienic conditions around water supply points, improved practices around collection and storage of water, provision of sanitation infrastructure such as soak pits and drain aways, environmental sanitation such as proper drainage, sanitary facilities in schools, anganwadis and health centres with drinking water facilities, domestic sanitation infrastructure such as household latrines, kitchen gardens, soak pits, bathing cubicles, smokeless chulas and improved personal hygiene practices would constitute the total package.

These sum total of activities is to be coordinated at the community level by ASM. PRED will provide financial, technical and administrative backstopping, dove-tailing such support with front-line motivation/organisation work.

The technology proposed is low cost pour-flush water sealed two pit latrines with built in flexibility in design and estimates to suit varying community needs.

The construction activity will be organised through the village

masons under the overall control of the village action committee. Peoples/GP contributions ranging from 10% to 25% are also envisaged.

The construction activities will include

- Institutional Latrines: schools - 250 units, health centres 50 units, Anganwadis - 150 units. All these units will be provided also with drinking water cisterns

- Sanitation around water supply: Estimates for public standposts and GLSRs include provision for drainage.

- Upgradation of village sanitation in 50% of the project villages/hamlets, with the cooperation of the Gram panchayats

- Provision of household toilets (35% of the households in half of the project villages will be covered)

- Smokeless chulas, kitchen garden and other related activities.

The budget ear-marked for sanitation related activities is Rs.950 00 lakhs. It is anticipated that 40% of the funds (Rs.380 00 lakhs can be utilised during phase 1, as follows

RNG - 40% of 75% of 950.00 = Rs. 285.00 lakhs
GOAP & Ppl Cont. - 40% of 25% of 950.00 = Rs. 95.00 lakhs

C. Income Generation through Organisation of All Women Dairy Cooperatives:

80 All Women Dairy Cooperatives are to be organised by the Nalgonda/Ranga Reddy Districts Milk Producers Union (NARMUL) 6400 women already involved in dairying will be provided organisational, technical, managerial and extension support to enhance their income from rearing milch animals. In addition 1600 women belonging to the economically weaker sections will be inducted for the first time into main stream dairying.

D. Income Generation through Sericulture:

A farm to fabric programme has been submitted by the Federation of Sericulturists and Silk Weavers Cooperative Societies Limited (SERIFED) for taking up farm activities such as mulberry growing and silk worm rearing, and up stream processing activities such as silk reeling, silk yarn twisting and silk cloth weaving. The programme is to benefit women of the economically weaker sections. Members will be organised into primary cooperatives an provided technical and marketing support by the district level and state level Union/Federation.

E. Mother and Child Welfare/Development Programme:

This component will be implemented by the Director, Women and Child Welfare, who is responsible for the Integrated Child

Development Services (ICDS) which functions under the Health Department of GOAP.

The nodal points at the village level would be:the Mahila Mandal and the Anganwadi. ICDS has set up nearly 150 anganwadi centres (pre-schools) in the project area of Nalgonda. The centres are managed by an anganwadi worker and her helper, under the supervision of the mahila mandal. The activities include: day-care, nutrition programmes for children, immunisation programmes, peri- natal care, referral services to primary health centres. Support and coordination for villages level activities are provided by the district level ICDS staff headed by the Project Officer, the Community Development Programme Officer and Extension Supervisors at the Mandal levels. The programme has close liaison with the primary health centres.

6.5 Time Scheduling and Execution Plan:

It is projected that the project can be executed within a period of 6 years (1992-1998). Phase I is planned for 4 years (1992-1996) and phase II for 4 years (1994-1998). There will be an overlap of 2 years between the two phases.

6.6 Monitoring/Coordination:

Each of the project implementing agencies will monitor their programmes both at the district level and at the state levels. They will report progress both physical and financial to the monitoring office (Netherlands Assisted Projects). The Chief Engineer, Rural Water supply, as the nodal project executive will convene monthly and quarterly meetings involving the personnel involved in execution and review the progress and issue necessary timely instructions in case of short fall of the targets.

At the village level the voluntary agency will be the primary pivotal agent. They are to form Village Action Committees which will eventually act as an interface between the community and the PRED and will assume joint responsibility with the department for operation and maintenance at the village level.

At the district level, Panchayati Raj Engineering Department will function as the pivotal agency. The institutional mechanism will be the district project committee chaired by the Superintending Engineer responsible of the works with the head quarters executive engineer as the Convener. All the participating agencies will also be represented. The Superintending Engineer will also facilitate coordination with the district authorities.

At the state level the Apex steering committee chaired by the Chief Secretary with Chief Engineer, Rural Water Supply as Convener, with all concerned Secretaries, the Water Coordinator of the Royal Netherlands Embassy and the Advisor of NAP Office as members, and representatives of all implementing agencies as invitees, will review progress.

6.7 Budget Requirement for Stage I:

COMPONENT	TOTAL COST	COST OF STAGE I	RNG SHARE	%	GOAP	%
Water Supply	9742.00	3863.00	3283.55	85%	579.45	15%
Sanitation	950.00	380.00	285.00	75%	95.00	25%
CP and HE	96.57	72.43	72.43	100%	NIL	
Mthr & Child	198.40	119.04	119.04	100%	NIL	
Dairying	347.00	208.20	208.20	100%	NIL	
Sericulture	151.76	91.06	91.06	100%	NIL	
HRD	894.88	536.93	402.70	75%	134.23	25%
MIS	125.00	93.75	70.31	75%	23.44	25%
TOTAL	12505.61	5364.41	4532.29	84%	832.12	16%

7. APPROACH TO THE SANITATION COMPONENT

7.1 Sanitation Component under AP II:

1. Pilot Effort:

Sanitation activities constitute one of the components under NAP, with an initial budget allocation from the Roval Netherlands Government of Rs. 286.60 lakhs. Subsequently, the budget was revised to Rs. 266.72 lakhs. Though the project components and strategies were spelt out in the project documents (Mission Report AP 12), it was decided to first launch a pilot programme to test the validity of the assumptions on which the project was drawn up. PRED had redirected an amount of Rs. 15.86 lakhs from its Vimukthi funds, to create an advance fund with Sulabh International for initiating the programme.

The project was evaluated by NAP Office (with the assistance of external resource team) during the first half of 1988 and based on its findings and conclusions, it was decided that the project concepts, design, estimates and operational plans required substantial modifications, from a target and construction oriented specialist activity, to a multi-faceted and community based development intervention.

2. Programme under AP 2:

Accepting those recommendations, GOAP had issued an order, GO Rt. 1079 dated 30 June 1990 (PR&RD) for relaunching the programme, pooling an additionality of 25% from the Vimukthi Programme (Rs.88.28 lakhs) to the funds made available by the RNG (Rs.266.72 lakhs), raising the total bilateral funds to Rs. 355 lakhs for AP I & II villages. The Panchayati Raj Engineering Department functions as the nodal agency for the planning, execution and monitoring of the programme and for mobilising the support of NGOs and gram panchayats, school and health authorities, and above all of the communities themselves.

7.2 Policy Framework for the New Programs under AP 2 and 3:

The approach to rural sanitation is shaped by the concepts and strategies of the "International Drinking Water Supply and Sanitation Decade" (reiterated in the 1990 Delhi Declaration), and by WHO's call for "Health for All by 2000 AD". The two goals are interlinked.

The integrated approach advocated by the IDWSSD perceives the provision of water and sanitation facilities as contributing not merely to the development of basic service infrastructure, but above all to improved health and quality of life of the people.

"Health for All" is largely dependent on our ability to provide safe drinking water and sanitation facilities to everyone... and to maintain them as safe. And, improved health will go a long way to enhance the quality of life.

7.3 The Water/Sanitation/Health Triad:

Nearly 80% of all diseases are water borne, caused by intestinal pathogens passed out through the faeces of diseased persons and ingested by others. By breaking this faecal-oral cycle, several common diseases like cholera, typhoid, dysentery, diarrhoea, gastro-enteritis, etc. can be prevented. Protection of drinking water through good water management and water hygiene is the solution.

Improved and more adequate use of water for personal and domestic hygiene can arrest/reduce several skin and eye diseases - scabies, conjunctivitis, trachoma -so common among children (referred to commonly as water-washed diseases).

However, along with these, improved water management/ use, personal, domestic and environmental hygiene/ sanitation and food hygiene need to be promoted. Faecal-oral cycle can be triggered of through flies contaminating food, improper hand washing after defecation/handling of children's faeces; disease carrying mosquitoes and flies can be eradicated through vector/fly control measures such as filling up marshy and stagnant areas, good drainage, proper care for drinking water containers, etc.

The goal of sanitation program is to improve the health standards of the people in the project areas:

- through good water supply management
- through hygienic water collection, storage, use
- improved adequate sanitation knowledge, attitudes and practices - personal/domestic/environmental.

These efforts are to be supported by:

- promotion efforts and concurrent sanitation/ hygiene infra-structure development
- directly health related activities such as mother and child health care, immunisation programmes, peri-natal care, nutrition

education, improved nutrition practices

- building up/equipping rural institutions and their leaders with skills/knowledge/backup services

Right through this process, conscious efforts will be made to involve the community as a whole, and women in particular, in sharing responsibility for the management and upkeep of the water supply system and sanitation infrastructure.

7.4 Concept of Sanitation:

Sanitation is essentially a preventive and promotive health care intervention. Since health is very much linked with water, good management of water supply and sanitation around water shall receive focussed attention.

The project is concerned with improved knowledge, attitudes and practices with regard to personal, domestic and environmental sanitation/hygiene and water management. Sanitation has to do with "the way of life" of individuals, families and communities and has to come to grips with very personal and intimate habits and life styles which are tradition bound and culturally conditioned.

Sanitation activities will cover a wide range of programmes around health awareness/practices and community organisation/living.

Hence sanitation intervention efforts have to be linked holistically to community development efforts than be tackled as an isolated and one time programme - such as a latrine construction project.

8. OBJECTIVES OF THE PROJECT

8.1 Short-term Objectives:

The immediate focus shall be on provision of facilities that attract positive community reactions to the project, since they respond to immediately felt needs:

a) privacy and safety especially for women.
b) convenience especially for women, children and old/sick people
c) personal and domestic cleanliness
d) reduced morbidity of children

8.2 Long Term Objectives:

While the immediate response shall provide an entry point the sanitation program shall proceed beyond, to a wide range of heath related objectives, equipping the community with knowledge, skills and organisations for accepting and discharging their responsibilities for the health of their villages, homes and people:

a. to protect drinking water sources/supply outlets from contamination.

b. to promote hygienic practices for water collection, storage and use

c. to promote domestic and environmental sanitation in the community.

d. to safeguard people's health by preventing water-borne diseases, through breaking the faecal-oral cycle.

e. to create community awareness and action to promote village health/hygiene conditions.

f. to inculcate civic sense and social responsibilities in the community.

g. to integrate health/hygiene/sanitation into the village development planning/resource allocation by the GP.

9. STRATEGIES

9.1 Promotional Activities:

This is seen as the most critical and frontline activity, to be taken up by the voluntary organisations in close cooperation with the gram panchayats, PHCs and schools:

- participatory training of and planning with the community and formal and informal leaders on health/hygiene/nutrition and sanitation issues
- generating felt needs
- organising the community for responsible participation
- linking sanitation with health/nutrition programs and good water management
- integration of sanitation into overall community development efforts

9.2 Technical and Administrative Support:

It is important that support services dovetail with frontline organisation work so that generated demand can be responded to without delay.

- preparation of adequate and appropriate designs and estimates for construction activities
- assembling of construction materials, technical manpower, financial resources, administrative arrangements as close as possible to the frontline organisation work, in time and location
- preparation of communication materials and handouts for the

community, and for individuals

- organising of training programs for planners, community leaders, village masons and construction of demonstration models

- organisation of review and feed back activities

9.3 Project Approach:

1. Intense Coverage:

Activities will concentrate on selected villages and aim at taking up a large number of sanitation activities involving at least 60% (based on experiences under AP II) of the households and covering facilities such as water supply, educational and health institutions, environmental sanitation, etc.

2. Area Based:

In selecting households within a village or villages within a mandal, a contiguous area approach shall be adopted to ensure sustainability and spread of project concepts and strategies.

Beginning from a given location, the program can expand to cover the whole village/mandal.

3. Integration:

Efforts will be taken to dovetail sanitation program with preventive health care, immunisation, Mother and Child Health, Anganwadi, School Health, Jawahar Rozgar Yojana, social forestry, kitchen gardening, non conventional energy programs, improved maintenance of water supply, etc.

4. Decentralized Community Approach:

The gram panchayats and particularly the sarpanch and women members shall play an active role. However to ensure wider community participation, under the auspices of the GP, a Village Action Committee shall be formed involving especially the women.

Available local masons shall be identified and trained to take up construction activities. Their involvement will also facilitate promotion of the concept and technology and long term sustainability, apart from creating income generating activities. Wherever possible women will be identified and trained as masons. They have the added advantage of having direct access to women, who are our main target group.

5. Orientation towards Women:

Especially in areas related to personal and domestic hygiene, women shall be the critical target group, as they play very crucial role in education and socialization of children, and are traditionally the custodians of water and domestic hygiene and health/hygiene especially of children. Audio-visuals and training modules will have special focus on women. Sanitation activities shall also be directed to respond in the first place to the felt

needs of women: convenience, privacy, safety, etc.

Applications for smokeless chulhs, household latrines, etc. shall be received only from women.

6. Construction of Complete Units:

All construction activities will aim at the construction of the total unit and good finish so that the participating group will have a sense of pride in owning the asset and hence will be motivated to maintain it. As far as institutional latrines are concerned provision of assured water supply shall be compulsory.

7. Sustainability and Replicability:

Care is taken to ensure that the strategies and designs/estimates are replicable. Efforts will also be consciously made to institutionalize the experiences gained during the project, both within NGOs and PRED. For this inter agency workshops and training programs at sector level will be planned and organised, involving also agencies from other projects/states.

9.4 Institutions for Coordination and Monitoring.

1. Village level: village action committee (VAC) along with gram panchayat, school teachers, village level functionaries of PHCs and other governmental institutions, and of the PRED. The nodal agency will be ASM. (The VAC concept discussed in Annexure 1)

2. Project Level: Project Coordination Committee, involving ASM, PRED, ICDS, Mandal level Officers of Health, Education, Rural Development Departments. The nodal officer will be the Executive Engineer.

3. District Level: District Project Committee, involving ASM, ICDS, District Health Officer, Executive Engineers of PRED, District Education Officer, NARMUL, SERIFED and other collaborating agencies. The nodal officer will be Superintending Engineer.

4. State Level: Review meetings with collaborating agencies chaired by the Chief Engineer.

The responsibilities of these coordinating cells will include reviews, monitoring of progress, easing of constraints and bottlenecks, recommending necessary modifications/additions to this manual, and project evaluation leading to the development of strategies for sustainability and replication at the sector level.

The methodology for such exercises shall be, as far as possible, participatory - involving the village leaders, women, school health clubs, VAC/GP.

10. PARTICIPATING AGENCIES AND THEIR TASKS

10.1 Partner Agencies:

1. Panchayati Raj Engineering Department

   NAP Cell
   NAP Circle (Hyderabad)
   NAP Divisions (Nalgonda)

2. Voluntary Organisation

   Arthik Samatha Mandal

3. Gram Panchayats in the project villages

4. School Authorities/Medical Health Officers in the project villages.

5. Mandal Development Officers/Mandal Education Officers

6. Integrated Child Development Service and particularly, the anganwadis and mahila mandals organised under NAP

7. The All Women Dairy Cooperatives, being organised by NARMUL

8. District Medical and Health Officer, District Education Officer, mass media officers, NEDCAP, etc. at the district level, apart from NAP collaborating Agencies such as IPM.

   Other departments will be invited to participate as and when required by the DPC.

9. At the state level, the Engineer-in-Chief will mobilise support of various departments as and when required.

10. NAP Office will provide liaison and resource support at all levels and coordinate/monitor the project on behalf of the RNE.

11. The most important partner is the participating family, and particularly the house wife.

10.2 Role of the Gram Panchayat:

1. Formation of a Village Action Committee in collaboration with the voluntary organisation and involving the sarpanch, mahila members, representatives of various groups, school teachers, government functionaries, health staff etc. This VAC shall be the body responsible for the planning and implementation of the sanitation programme.

2. Collaborate with ASM in organising various village level and mandal level training programmes and mass awareness programmes

3. Act as an interface between the village and the project in

assessing the felt need for the project and in making application for the project and in planning the project with the PRED/NGO

4. Announce the programme in the village and call for applications from households and scrutinise them and forward them to PRED after prioritising the applications in clusters of 20 to 25 on the basis of neighbourhood contiguity. If any application is rejected, the reasons for the same is to be communicated to PRED. Receive and remit to PRED the down payments from participating families.

5. Call for applications from local masons and after scrutiny recommend to PRED for training

6. Assist the PRED in preparing the village Sanitation Master Plan coordinating the demands from the households/schools/PHC/other institutions

7. Assist the beneficiaries in the construction activities, in mobilising construction material and in ensuring quality of work

8. Assist the voluntary organisation in organising promotional activities and training programmes

9. Contribute with cash/material/labour, as per guidelines, for taking up environmental sanitation activities such as drains/soak pits, garbage disposal arrangements, and other village specific sanitation issues

10. Cooperate and share responsibilities with PRED for ensuring sanitation around water supply outlets and for village level maintenance of the water supply system

11. Support ASM in organising education/awareness programmes on water use and management, especially for women

12. Dovetail sanitation programmes with other village development activities and preventive health care, nutrition programmes

13. Develop community based systems for the maintenance of sanitation facilities and for sustaining community interest and awareness.

10.3 Responsibilities of Arthik Samata Mandal:

ASM shall be a member of the project team at the project, district and state level. As such its responsibilities cover planning, implementation, monitoring and institutional capacity development.

However in a village specific context, ASM will be responsible for frontline promotion and organisation work at the village level.

It shall be the primary responsibility of ASM to motivate and seek assistance from the gram panchayat in the program. The NGO will interact with the GP in forming the village action committees.

The catalyzing responsibility of ASM shall include:

1. identification of target villages.

2. organisation of mass contact and other awareness generating programs.

3. formation of the VAC in close interaction with the GP, the AWDCs and other women's groups that exist.

4. training and equipping the VAC to take up sanitation program responsibilities

5. functioning as a resource team to the GP/VAC in the discharge of its responsibilities as enumerated in B above.

6. organising education/awareness programs at the household and village level.

7. organising the school health club and sanitation/ health/hygiene programs in schools.

8. integrating sanitation efforts at the village level with health/nutrition programs, overall village development activities.

At the project level, the organising responsibilities of ASM shall include:

1. participate in the formulation/modification of project guidelines.

2. participate in the selection of villages. finalisation of application, preparation of village master plans.

3. participate in periodic reviews at all levels.

4. participate in technical training programs and take direct responsibility for leadership training and for training on communication, promotion of good Knowledge/Attitudes/Practices on health/hygiene among the community/women leaders and project staff.

5. develop suitable communication media such as folk art, AV materials, posters, handouts, promotional literature, etc.

6. identify and involve resource persons in training activities.

7. dovetail project activities with other development interventions from district level units of agencies such as NEDCAP, ICDS, DWCRA, Women Welfare, Health, Education, Information services etc.

8. coordinating various activities at the mandal level, involving mandal level officers of the government.

In the execution of these tasks, ASM shall interact closely with the PRED and coordinate activities at the various coordination meetings.

10.4 Responsibilities of PRED:

PRED shall be the nodal governmental agency at the project, district and the state level. At all levels, it shall have the responsibility for coordination between the activities of ASM, GP, education/health departments, etc.

All administrative and financial responsibilities will be vested with PRED.

All aspects related to technology, designs, estimates, mobilisation of specified construction materials, technical and quality supervision of works, etc. shall be the responsibility of PRED.

However since ASM is the frontline agency, it shall be the primary responsibility of PRED to provide backstopping to it in terms of meeting generated demands with necessary programs and resources.

Some of the responsibilities in these four areas are:

1. convening of project coordination meeting on a monthly basis and finalisation of agenda in consultation with ASM.

2. convening of district project committee meetings on a quarterly basis.

3. identifying constraints and bottlenecks which need to be taken up at the state level.

4. ensuring the involvement of district and mandal level governmental agencies in the program.

5. finalisation of technical designs and estimates and updating/modifying them to suit ground realities.

6. organisation of technical training programs for project teams and for village masons.

7. construction of demonstration models.

8. call for project applications from GPs/schools. etc. and scrutinise these applications.

9. preparation of village master plans and finalisation of estimates, time schedules. and according technical sanction for such estimates.

10. issue of sanction letters.

11. central purchase of specified construction material to ensure quality and economy.

12. site inspection and marking, ensuring safety of water sources, and adopting designs and estimates to site conditions.

13. quality supervision of construction materials locally assembled, general supervision of construction of household latrines, direct implementation of construction of institutional latrines, and payment to beneficiaries of household latrines at specified stages of work completion.

14. preparation of budgets, mobilisation and administration of finance and submission of quarterly physical and financial progress reports to GOAP/NAP Office, inventory control of centrally purchased materials.

15. participation in meetings organised by ASM at the village and mandal level.

16. support the GP in proper maintenance of water supply assets.

10.5 Responsibilities of Women Participants:

The participating families in the villages and particularly the house wife shall be the key person in the project around whom the entire sanitation activity shall evolve.

Apart from involving her in certain construction activities, the explicit objective of the project shall be to equip her to internalize and then bring about improved hygiene/health/sanitation KAP in her family and neighborhood. Promotional activities shall be geared to such perception building and responsibility sharing.

1. The house wife shall be the project applicant.

2. She will participate in motivation programs.

3. She will be provided training for maintenance.

4. Once the sanction letter is issued by the PRED, the applicant shall be responsible for the assembling of construction

materials, for entering into a contract with a mason, for ensuring quality of construction, for receiving payments from PRED at the stipulated stages of completion.

10.6 Responsibilities of Schools:

The vital role school children can play as messengers and promoters of health/sanitation messages is acknowledged. The project will have activities aimed specially at school children.

1. School Health Club where children will share responsibility for planning, construction and maintenance of sanitation facilities, school garden, sanitation and hygiene within the school premises.

2. Child-to-Child programs where members of the health club will take responsibility for educating and motivating non school children.

3. School-to-Village programs where school health clubs will participate in promoting health/hygiene in the village through shramdans, cultural programs, etc.

4. Inter-School Health Club programs where children will interact and share/reinforce health/hygiene lessons and experiences.

10.7 Responsibilities of ICDS/Anganwadis:

Sanitation programs are to be taken up in the 150 Anganwadi units which are to be provided with new buildings.

1. The anganwadi worker at the village level shall be the catalyser for mobilising the mahila mandal for active participation.

2. She will be involved in all sanitation related training programs.

3. In collaboration with ASM, the ICDS shall organise health/hygiene/nutrition education for the women members of the anganwadis and take up sanitation related activities such as soakpit, compost pit, smokeless chulla, proper use and maintenance of the latrine in the premises of the anganwadis.

10.8 Responsibilities of Local Masons:

1. Make application for training to the gram panchayat

2. Participate in training/refresher training programmes organised by PRED and obtain certification for participation in the programme.

3. Participate in meetings convened by VAC/GP for launching the programme

4. Assist VAC in identifying households for participating in domestic sanitation programme

5. Enter into agreement with each household in the cluster for which he is selected as mason (at any given time, the local mason can accept contract only with one cluster)

6. Assist households/VAC in assembling locally available material, as per bills of quantity

7. Guide the household in excavation work as per site markings

8. Take up construction work as per design and specifications supplied and complete all units in the cluster to the required level for claiming payment.

9. Participate in cluster meetings organised by VAC/NGO.

11. SANITATION COMPONENTS

11.1 Construction Activities:

1. At household level:

   - household latrine
   - soak pit
   - bathing cubicle
   - smokeless chulla
   - compost pits for solid waste disposal
   - hygienic cattle sheds

2. At institution level:

   - toilet/urinal units with assured water supply for schools, and Anganwadis
   - bathing cubicles in PHCs
   - garbage disposal pits
   - soak pits
   - revival/improvement of existing facilities

3. At the village level:

   - open drains/environmental sanitation
   - soak pits
   - social forestry
   - compost/garbage pits
   - protection of traditional water sources
   - sanitation around water supply
   - vector/fly control measures
   - other village specific sanitation programmes

11.2 Promotional Activities:

- participatory training/planning
- mass contact programs at village level
- health/hygiene/nutrition education for women, youth, school children
- health/hygiene education for VAC, GP, school teachers, health workers, anganwadi workers
- school health clubs
- school to village and child to child programs
- door to door campaigns
- involvement of health workers/teachers

- exposure programmes
- demonstration programmes
- shramdhans
- intra and inter village/school programs
- publicity through posters/hoarding/AV/folk media

11.3 Training/Exposure Programs:

- leaders of various groups
- members of the GP/VAC
- school teachers/anganwadi workers
- leaders of school health clubs
- village masons (men and women)
- participating families
- project personnel
- village animators
- mandal level seminars for formal leaders/ officials

11.4 Development of Communication Material:

- audio-visuals
- folk arts
- teaching aids
- demonstration models
- pamphlets/handouts
- user's manuals for families and schools
- instructions for use/maintenance to be displayed in the toilet units
- public display materials such as posters, hoarding

11.5 Support to Preventive/Promotive Health Care:

- support for organisation of MCH programs
- organisation of immunisation programs
- nutrition education
- promotion of kitchen gardens

11.6 Activities around Water Supply:

- planning/execution/maintenance of sanitation around water supply outlets
- community monitoring of quality/regularity of water supply
- community involvement in prevention of wastage of water and vandalism
- organisation of water awareness programs, including proper collection, storage and use of water

12. SELECTION CRITERIA

12.1 Outreach:

In principle, the targeted outreach of the project is 226 villages and 337 hamlets in the district of Nalgonda, which will be provided with protected water supply under NAP-AP III.

However, given the intense coverage/area based approach, it may not be feasible to cover more than 35% of the households in 50% of these villages.

The selection criteria for villages and households are detailed below.

12.2 Selection of Villages:

1. Preliminary Identification:

Criteria for identification of a target village shall be:

- adequate availability of water
- confidence expressed by the NGO that community interest and participation can be generated
- contiguous areas
- preliminary appraisal by PRED of the technical feasibility

The preliminary list shall be finalised in the project coordination meetings convened by the Executive Engineer.

ASM will then organise intense promotional activities in the villages that are identified for initiating the intervention efforts. PRED will closely collaborate in these promotional activities.

2. Final Selection of Villages:

The final selection shall be confined to villages where ASM has initiated promotional activities, and there is reasonable assurance that adequate community interest has been generated, and where leaders/GP/women/PHC/School, etc. are prepared for responsible participation in the programme.

The indicators shall be.

- Village action committee formed and trained
- Village animator identified and trained
- School health club formed and activities in progress
- Mahila mandal and anganwadi set up is working well
- The GP addresses a letter to the PRED stating that it is interested in taking up the programme, undertaking the responsibility to mobilise the village and to contribute cash as per norms and assuring that 35% of the total number of households (including SC/ST), as well as the schools and the PHC will participate in the programme

This letter shall be discussed at the Project Coordination Meeting. Subsequently the PCC shall organise a discussion with the GP/PHC/School/VAC, where the project guidelines are further elaborated. The minutes shall be recorded and passed as resolutions of the GP and forwarded to PRED.

The Executive Engineer shall then address a letter to the GP inviting it to participate in the preparation of a village sanitation master plan.

The list of villages shall be prioritised in batches of 5, on the basis of acuteness of the sanitation problems to be addressed, and the GPs shall be informed of their position in the list.

12.3 Selection of Participating Households:

After receiving this invitation, the GP shall call for applications from individual households for participating in the domestic sanitation programme.

In the scrutiny and short listing of these applications by the GP/VAC, the following norms shall apply:

application in the name of the housewife
only one application per house
application accompanied with the down payment
application indicates that the entire package of domestic sanitation will be taken up

- undertaking to participate in classes being organised or the participants
- undertaking to use and maintain the facilities and to provide access to them for inspection

Further, the VAC should feel convinced that the applicant is keenly interested in the programme and capable of maintaining the assets created. If any application is rejected, the GP shall return the down payment to the applicant.

The GP shall also organise these applications into clusters of 20 to 25 participants, and indicate priority to be accorded to the clusters.

The applications then shall be forwarded to PRED by the GP, along with the challan for the total down payments as received from selected beneficiaries and deposited in the treasury account of the executive engineer.

After receiving these applications and processing them, the field engineer of PRED will make a site inspection to ascertain the availability/suitability of site for the latrine construction programme. Some members of the VAC will also be involved in this inspection.

12.4 Selection of Schools:

Only schools within the selected project villages will be considered for the school sanitation programme.

Application shall be forwarded to the PRED by the headmaster and the president of the School Improvement Committee, along with a resolution of the committee, with copies marked to the concerned GP and Mandal Education Officer. The application shall also contain an undertaking to maintain the assets created, to assign a teacher to form and manage the school health club and to facilitate the conduct of school health/ hygiene classes/activities.

The MEO should endorse the application and provide an undertaking for maintaining the facility.

While scrutinising the application, the PCC shall apply the following norms:

- the performance of the school health club

- the interest evinced by the SIC and the teachers in taking up sanitation/health/hygiene activities

- technical feasibility for construction of sanitation facilities and for providing assured drinking water through extension of pipe line or with a borewell.

- satisfy itself that the token contribution from the school towards maintenance funds has been mobilised

Based on these criteria the PCC shall make a decision to include the school under the programme and communicate the decision to the school, with copy to GP/MEO.

12.5 Selection of PHCs:

Only PHCs within the selected project villages will be considered for the sanitation programme.

Application shall be forwarded to the PRED by the Medical Officer, with copies marked to the concerned GP and DM&HO. The application shall also contain an undertaking to maintain the assets created.

The DM&HO should endorse the application, and provide an undertaking to maintain the facility.

While scrutinising the application, the PCC shall apply the following norms:

- the interest evinced by the PHC in taking up sanitation/ health/hygiene activities

- technical feasibility for construction of sanitation facilities and for providing assured drinking water through extension of pipe line or with a borewell.

Based on these criteria the PCC shall make a decision to include the PHC under the programme and communicate the decision to the applicant, with copy to GP and DM&HO.

12.6 Selection of Anganwadis:

All the 150 anganwadis selected for coverage under the mother and child welfare component will be provided with sanitation facilities, along with the construction of the new anganwadi buildings. However, the PCC shall satisfy itself that the anganwadi worker and the

members of the mahila mandal have been well oriented and educated regarding the use and maintenance of the facility.

The participation of the mahila mandal in domestic and village sanitation programs, and health/hygiene education will also be mandatory.

Wherever the PCC feels that the existing mahila mandal/anganwadi is not adequately motivated, the construction program will be delayed.

12.7 Selection of Village Masons:

Masons shall apply to the GP for participating in construction activities. The selection shall be the responsibility of the VAC/GP. The GP shall also encourage women to apply to be trained as masons.

After scrutiny of their capacity, the GP shall forward applications to the PRED.

PRED shall organise training programs for such masons on the technology and construction aspects. Training inputs will also include health aspects of the program. Special training programs will be organised for potential women masons.

Masons who have successfully completed training shall be permitted to take up construction contracts with the participating families. However it shall be left to the discretion of each cluster to identify and enter into contract with the mason.

There shall be only one mason per cluster. No mason will be permitted to take up work in more than one cluster at a time.

13. TECHNOLOGY/DESIGNS/COSTS

13.1 Introduction:

Rural latrine schemes have been designed and implemented in different parts of India over the past few decades. However, no uniform designs and specifications have been used. Consequently there was a felt need to specify optimum requirements for designing low cost sanitary latrines, without sacrificing performance and

taking into account the socio- economics, cultural habits, pollution aspects and technical feasibility - based on past studies and experiences gained.

13.2 Household Toilets:

Under this Project standard UNICEF type design is adopted: two pit pour flush water sealed latrine.

a. Latrine Size:

80 cm X 100 cm - Internal Dimensions.
102 cm X 122 cm - Outside Dimensions.

b. Foundation:

Type designs are given for general soil conditions. Base course in hard broken metal with sand and brick ballast is provided. However, according to specific soil conditions suitable foundations are to be designed and adopted, like pile foundations if necessary in black cotton soils.

For sub structure brick masonry in cement mortar 1:8 is adopted.

c. Superstructure:

Brick masonry in cement mortar 1:8 is to be adopted. A niche may be provided in the wall to keep the soap for washing hands. Both sides of the wall are to be plastered in cement mortar 1:6.

d. Door:

Zinc sheet over country wood frame is adopted though a ms sheet welded to ms angular frame is preferred. Latches are to be provided on both sides, and hooks on the inside.

e. Pan and Trap:

Preferably ceramic

f. Connections to Leach Pits:

PVC pipes of 75 mm diameter.

g. Inspection Chamber:

An inspection chamber of 225 X 225 mm at the bifurcation point of pipe connections - brick masonry with RCC cover, with handle for lifting it.

Chambers to be provided with benching to guide the flow. The chamber will also be used for providing a stopper of suitable material to that branch of pipe which is not in use. Care to be taken so that the inspection chamber and cover are protected from damage by orienting the chamber below ground level.

h. Foot Rests:

Preferably ceramic foot rests are to be provided with the alignment of footrests such that the centre line of the both foot rests placed on opposite sides of the pan intersect at an angle of 40 degrees and the apex of the angle lies along the longitudinal central axis of the pan. The back portion of foot rests should be raised slightly to give a slope towards the front to provide a comfortable squatting position.

i. Flooring:

Impervious flooring is to be provided to prevent moisture conditions (which can cause insect breeding). The surface of the floor should be very smooth and have slight slope towards pan.

j. Leach Pits:

Leach pits serve the dual function of storage/digestion of excreted solids and infiltration of the waste water/liquids. Leach pits are to be designed on the following parameters:

i. the solids accumulation rate:
ii. the long term infiltration rate of the liquid fraction across the pit/soil interface;
iii. the hydraulic loading on the pit;
iv. the minimum period required for effective pathogen destruction;
v. the optimal emptying frequency.

k. Number of Pits:

Two leach pits. However considering soil/water table

conditions and availability of space. a single pit of increased dimensions could also be considered. The field engineers shall make specific proposals in this regard.

l. Shape of Pits:

The shape of pit can be circular, square, rectangular or a combination of the two. However, separate circular pits should be constructed wherever feasible as these are more stable and cost less. Where circular pits of standard sizes cannot be constructed due to space constraints, smaller diameter (not less than 750 mm) but deeper pits or combined oval pit with impervious partition may be provided.

The ratio of diameter and depth of pit is an important factor in the optimisation of pit dimensions. The greater the depth, more is the cost of excavation/lining/cleaning, while bigger the diameter, more is the cost of cover. The economical depth and diameter ratio should be worked out for every region based on current rates of labour and materials.

m. Spacing Between Two Pits:

The minimum space between the two pits should be equivalent to at least the effective depth of the pit. Spacing between the two pits can be reduced by providing an impervious barrier like cut off screen or puddle wall. As suggested above, if space is a constraint, even a combined oval pit can be provided. Larger leaching area would then be required.

n. Siting of Pits:

The ideal position of locating the pits is that the pits are placed symmetrically at the backside of the latrine pan. However, if site conditions do not permit this layout, the pits can be placed on the side or even in front of the pan.

o. Distance of Leach Pits From Existing Structures:

In many cases the space available for constructing leaching pits may be small and placement of pits near existing structures may be unavoidable. The safe distances (in meters) in different types of soil and depth of leaching pit for a two storeyed building as recommended by CBRI are given below:

Type of soil	For pits within premises: Total depth of pit	For pits within premises: Dist. frm existing structure	For pits outside premises: Total depth of pit	For pits outside premises: Dist. frm existing structure
Clayey sand (sand>50%)	1.30	0.22	1.96	0.54
	1.73	0.43	2.27	0.72
	2.05	0.60	2.56	0.88
Sandy clay (clay and silt>50%)	1.30	0.32	1.96	0.80
	1.73	0.60	2.27	1.06
	2.05	0.88	2.56	1.30

However, in cases where the leaching pits are quite close to existing building foundation, the opening in the brick work lining of the leaching pit may be reduced to 12-15 mm.

p. Location of Pits in Depressions and Water Logged Areas:

As far as possible, location of pits should be avoided in depressions where waste water or rain water is likely to remain collected all round and over the pits. If it cannot be avoided, the top of pits should be raised by 0.6 to 0.8 m above the ground level and earth filling be done all round the pits upto a distance of 1.5 m right upto the pit top. The raising of pit may necessitate raising of the latrine floor also.

q. Lining of Pits:

The lining is to be honey-comb brick work with appropriate number of rings of solid brick layer at suitable intervals in between. The thickness of brick lining should be 75 mm for pits within premises and 115 mm for pits outside the premises. The brick work should be either in cement mortar 1:8 (adopted in the estimate) or lime or any other suitable mortar of equivalent strength.

As an alternative if it is economical, the lining could be done in 115 mm width in pits within premises with honey-comb brick work with no mortar; however, solid rings would be in cement mortar 1:6. In stone masonry, the vertical joints

should be kept open i.e. should not have mortar.

The size of holes in honey-comb brick work will be the height of brick layer and one third length of the brick. However, in case the soil is sandy or sand envelope is provided or where the foundation of the building is very close to the pit, the width of openings should be reduced to 12 to 15 mm i.e., vertical joints of brick work should not have any mortar. A ring of solid brick layer in cement mortar 1:8 - 115 mm width in 75 mm thick lining and 225 mm in 115 thick lining should be provided as foundation below the bottom of pit. A solid layer of brick work in mortar may also be provided over the foundation layer.

The lining above the invert level of drain or pipe (entering the pits) upto the bottom of pit cover will also be in solid brick work i.e. without any openings.

r. Safe Distance from Drinking Water Sources:

1. In dry pits or unsaturated soil conditions:

where the distance between the bottom of the pit and the maximum ground-water level throughout the year is 2 m and more, the pits can be located at a minimum distance of 3 m from the drinking water sources such as tube wells and dug wells if the effective size (E.S.) of the soil is 0.2 mm or less: and

for coarser soils (with Effective Size greater than 0.2 mm), the same distance can be maintained if the bottom of the pit is sealed off by an impervious material. such as puddle clay and 500 mm thick envelope of fine sand of 0.2 mm effective size is provided all round the pit.

2. In wet pit or saturated soil conditions ie., where the distance between the bottom of the pit and the maximum ground water level during any part of the year is less than 2 m:

the pits can be located at a minimum distance of 10 m from the drinking water sources such as tube wells and dug wells, if the E.S. of the soil is 0.2 mm or less;

for coarser soils (with E.S. more than 0.2 mm), minimum distance of 10 m can be maintained if the pit is sealed

off by an impervious material such as puddle clay or plastic sheet and a 500 mm thick envelope of fine sand of 0.2 mm effective size is provided all rough the pit.

The above cases are summarised in the following matrix:

Case	Dist.betwn bttm of pit and maximum grnd-water lvl	Effctve size of frmtn soil	Minmm horizntl distance of separation	Modifi-cation needed.
1.	>2m	< 0.2 mm fine sand.clay,silt	3m	None
2.	>2m	>0.2 mm(crse sand)	3m	prvde envelope of sand and impermeable pit bottom
3.	<2m	>0.2 mm(coarse sand)	10m	provide envelope of sand and impermeable pit bottom.
4.	<2m	<0.2mm (fine sand, clay & silt)	10m	None

In both the above cases of 2 and 3. the sand envelope should be taken at least upto 2 m above the possible highest maximum water level and edges chamfered to see that no water stagnates on the top of the sand filling.

Where the bottom of the pit is sub merged below the maximum ground-water level:

a. the top of the pits should be raised above the ground level, if necessary, so that the inlet pipe into the pit is at least 0.75 m above the maximum ground-water level.

b. the sand envelop is taken upto 0.3 m above the top of the inlet pipe and confined suitably to exclude any surface drainage including rain water directly entering the sand envelope:

c. in mound type latrines, 1 m high earth filling should be provided for at least 0.25 m beyond the sand envelope with the edges chamfered to lead away the rain or surface water and

d. the honey-comb brick work for the pit lining should be substituted by brick work in cement mortar 1:6 with open vertical joints ie., without mortar.

e. Where sand is not available economically, local soil of effective size of 0.2 mm can also be used.

s. Pit Covers:

R.C.C. pit covers are proposed with provision of rings to lift and handle them.

13.3 Institutional Latrines:

a. School Latrine:

Technology adopted is the same as for household latrines. Water supply will be assured through the provision of cisterns with connections to the water supply system. If this is not feasible, borewell is to be provided. The number of cubicles/urinals could be determined as per actual requirements. Soak pit and garbage disposal pits will also form part of the sanitation package.

b. PHCs

Depending on the requirement, an individual latrine or a modification of the school latrine with provision for a bathing cubicles. Water supply connection will be provided.

c. Anganwadis:

An individual latrine with suitable modifications for children is to be provided. Water supply connection will be provided. In addition a slopping platform with soakpit is to be provided for bathing/washing children.

13.4 Type Designs:

Type Designs for individual household latrines, school latrines and for other components of sanitation are appended.

13.5 Estimated Costs:

The Individual Latrine is estimated to cost Rs. 1950, the School unit Rs.18,000, the anganwadi unit Rs.5000 and the PHC unit Rs.12000. An annual escalation of 10% is provided with the base year as 1991.

13.6 Bill of quantities for Household Toilets:

S.No.	Item	Quanty	Rate	Cost
1.	Bricks	1170 Nos	450/1000	526.50
2.	Brick ballast	0.09 cum.	100/cum.	9.00
3.	Steel	7 Kgs.	9.75/kg.	68.25
4.	Cement	165.70 kgs	1400/MT	231.98
5.	Sand	0.87 cum.	31.00/cum	26.97
6.	40 mm metal	0.09 cum	115.70/cum	10.41
7.	20 mm metal	0.113 cum	184.20/cum	20.81
8.	Pan & Trap	1 Set		150.00
9.	Door	1		200.00
			Total	

13.7 Bill of Quantities for School Sanitation Units:

S.No.	Item	Quanty	Rate	Cost
1.	Bricks	7073 Nos	450/1000	3182.85
2.	Sand	8.774 cum.	31/cum	271.99
3.	40mm metal	2.935 cum	115.70/cum	339.58
4.	20mm metal	0.996 cum	184.20/cum	177.93
5.	Cement	1867.3 Kg.	1400/MT	2614.22
6.	R.R.Msnary	5.36 cum	57.57/cum	308.57
7.	Steel	127 Kg	9.75/kg	1238.25
8.	Pan & Trap	3 sets	150/each	450.00
9.	Ventilators	3 sets	30/each	90.00
10.	Foot rest	4 sets	50/each	200.00
11.	Paint	2 kg	50/kg	100.00
12.	Lime	4 kg	20/kg	80.00
13.	HDPF Pipes	9 mts	30/mt	270.00
14.	Masons	2* 20 days	35/each	1400.00
15.	mazdoors	4* 25 days	20/each	2000.00
16.	Doors	6 Nos	200/each	1200.00

13.8 Other Domestic Sanitation Components:

a. Smokeless Chulla

A smoke less chulla is an ordinary chulla, modified to incorporate a chimney which leads the smoke out of the kitchen.

The advantages of this chulla are: the elimination of smoke leads to elimination of eye irritation.respiratory diseases, dirt on clothes, kitchen walls and adjoining rooms: saving of firewood and cow dung cakes, resulting in conservation of forest wealth and increased availability of cow dung as manure; two (or more) pots of food can be cooked simultaneously thereby saving time.

Smokeless chullahs can be built manually from locally available material. Construction is easy and can be undertaken by the beneficiary. However, for large scale construction, the use of moulds will be more effective. Technical and financial assistance from NEERAP will be made available.

b. Bathing Platform/Cubicle:

Bathing cubicle is a covered place with cement mortar base for bathing, cleaning utensil and washing clothes. The drain will be connected to a soakpit.

By providing a bathing cubicle, privacy is readily available, especially for women and girl children for having their wash or both; the cement mortar base helps to prevent wetting the ground and making it slushy, which may become a breeding ground for mosquitoes and health hazards.

c. Soak Pits:

The soakpit is filled with graded boulders, stones, brickbats and sand. The waste water passes through a mud pot filled with grass with holes at the bottom. The top of the pit is covered with bamboo mat applied with clay, mixed with water or with Cuddapah slab to prevent excess water running into and choking the pit during monsoons. It also prevents mud falling inside the pit due to people moving around.

13.9 Environmental Sanitation:

For taking up of environmental sanitation activities like side drains, garbage disposal pits, soak pits, etc., the GP should approach the EE with the proposal to share 50% cost from out of funds allotted to it under JRY. For the estimating and designing will be as per the norms of JRY and will have a strong labour component.

14. COST SHARING AT VILLAGE LEVEL

The following norms shall be adopted for beneficiary contributions:

14.1 Household Latrines:

Down payment in cash along with the application to the Gram Panchayat.

SC & ST:	Rs.100.00
All others:	Rs.400.00

The responsibility for excavation, whitewashing of superstructure, site levelling, providing of water container/bucket/mug/soap dish and brush shall be with each applicant. Cost over and above the sanctioned amount for each stage of work shall also be met by her.

14.2 School Sanitation:

Along with the application, the school authorities shall indicate funds mobilised for maintenance, through the school health club, as follows.

Schools with strength upto 200:	Rs.200.00
Schools with strength of 200 - 500	Rs.400.00
Schools with strength above 500	Rs.600.00

Further the school shall contribute voluntary labour during the construction phase.

14.3 Environmental Sanitation:

While making application GP shall also enclose a resolution to share 50% of the estimated cost for taking up environmental sanitation.

once the master plan is approved and technical sanction is provided for the estimate, the GP shall deposit this amount with the PRED.

14.4 Other Components of Domestic Sanitation Programme:

The cost shall be met by the households except as detailed below:

An incentive of Rs. 50/- shall be paid to every SC/ST household taking up all the domestic sanitation facilities. Further, subsidies available under NEDCAP etc shall be extended to all families participating in the programme. All other costs shall be borne by the household.

15. PROJECT RESOURCES/BUDGET

15.1 Funds.

The budget estimate for this program is as follows:

RNG Funds:	Rs. 712.50 lakhs
GOAP Funds & people contribution:	Rs. 237.50 Lakhs
TOTAL	Rs. 950.00 lakhs

Apart from these funds, activities such as smokeless chulas and social forestry will be funded by the concerned agencies. PRED will take overall responsibility for dovetailing such activities with this sanitation programme.

ASM has indicated separately budget requirements for promotional and organisational activities/training (except technical) programmes, under the community participation component.

15.2 Budget Allocations

Budget allocation will be directed to respond fully to demand generated from as many project villages as possible. A cluster of 20 to 25 villages will be selected at a time (grouped into batches of 5, as per guidelines discussed under Selection Criteria), and the entire range of programmes/activities will be taken up, aiming at saturation coverage. This process will be replicated till the project resources are exhausted.

The construction components are estimated as follows:

a Household Latrines.

- 1992 population: 482655
- number of households at 6 persons/house: 80442
- 35% coverage of half project households: 14077 or say 14000

b Anganwadi Sanitation Units: 150

c. School Latrines in app.50% project villages: 250

d. Sanitary Units in PHCs. 50

e. Environmental Sanitation in Villages 250

15.3 Project Period.

The project is broken up into two phases. Since most of the villages will be receiving the water only by 1995/1996, bulk of the construction activities can start only from 1993/94. However since both under phase I and II, there are villages with existing water supply schemes (augmentation component), sanitation activities can be initiated in these villages, while promotion activities will be taken up in villages to be provided with water supply for the first time

Given these circumstances the effective project period will be 1993 to 2000, covering more or less a seven year period. Phase I will be covering the period 1992 to 1996, with promotional activities being initiated from 1992 and construction activities from 1993. As the project moves forward and more and more of the project activities are being implemented, the construction activities will gather momentum The tentative plan of action and a schematic flow diagram are provided

Abstract is provided below :

	Component	PHASE 1 Target	PHASE 1 Amount	PHASE 2 Target	PHASE 2 Amount	TOTAL Target	TOTAL Amount
1.	Household Sanitary Units	7000	182.49	7000	233.24	14000	415.74
2.	Anganwadi Sanitary Units	70	4.74	80	6.58	150	11.32
3.	School Sanitary Units	100	25.18	150	46.13	250	71.3
4.	Health Centre Sanitary Units	25	4.08	25	5.01	50	9.09
5.	Environmental Sanitation(Villages)	100	137.61	150	257.28	250	394.89
	Total		354.10		548.25		902.35
	Technical Training/Contingencies		25.90		21.75		47.65
	Grand Total		380.00		570.00		950.00

Cost Sharing Pattern:

	Phase 1	Phase 2	Total
RNG	285.00	427.50	712.50
GOAP & PEOPLE CONT	95.00	142.50	237.50
TOTAL	380.00	570.00	950.00

A.P III SANITATION COMPONENT OF NALGONDA PROJECT

A. Basic Data:

1. Present Population (Phase I & II) 482635
   Present households@ 6 per house 80443
   Expld Coverage 35% of half project 14077 or 14000

B. Construction Activities Proposed:

Component	Phase1	Phase2	Total
Household Sanitary Units	7000	7000	14000
Anganwadi Sanitary Units	70	80	150
School Sanitary Units	100	150	250
Health Centre Sanitary Units	25	25	50
Environmental Sanitation(Villages)	100	150	250

C. Unit Cost at 1992 prices

Household Sanitary Units	1950
Anganwadi Sanitary Units	5000
School Sanitary Units	18000
Health Centre Sanitary Units	12000
Environmental Sanitation(Villages)	100000

* 10% escalation is to be provided for every year

TARGETS/ESTIMATES IN LAKHS PHASE 1

Component	1993 Target	1993 rate	1993 Amount	1994 Target	1994 rate	1994 Amount	1995 Target	1995 rate	1995 Amount	1996 Target	1996 rate	1996 Amount	TOTAL Target	TOTAL Amount
1. Household Sanitary	700	2145	15.02	1400	2360	33.03	2100	2595	54.50	2800	2855	79.94	7000	182.49
2. Anganwadi Sanitary	5	5500	0.28	10	6050	0.61	25	6655	1.66	30	7321	2.20	70	4.74
3. School Sanitary Un	0	19800	0.00	10	21780	2.18	30	23958	7.19	60	26354	15.81	100	25.18
4. Health Centre Sani	0	13200	0.00	5	14520	0.73	10	15972	1.60	10	17569	1.76	25	4.08
5. Environmental Sani	3	110000	3.30	12	121000	14.52	35	133100	46.59	50	146410	73.21	100	137.61
			18.59			51.06			111.54			172.91		354.10

D. ABSTRACT PHASE 1 - CONSTRUCTION PROGRAMMES:

Total Cost Construction Actvts under Phase 1	:	354.10
Technical Training/Contingencies	:	25.90
		380.00

A.P III SANITATION COMPONENT OF NALGONDA PROJECT

PHASE 2 : 1997-98 TO 1999-2000

A. Construction Activities Proposed:

Component	Phase1	Phase2	Total
Household Sanitary Units	7000	7000	14000
Anganwadi Sanitary Units	70	80	150
School Sanitary Units	100	150	250
Health Centre Sanitary Units	25	25	50
Environmental Sanitation(Villages)	100	150	250

B. Unit Cost at 1996 prices

Household Sanitary Units	2855
Anganwadi Sanitary Units	7300
School Sanitary Units	26000
Health Centre Sanitary Units	17500
Environmental Sanitation(Villages)	146000

* 10% escalation is to be provided for every year

	Component	TARGETS/ESTIMATES IN LAKHS PHASE 2									TOTAL	
		1997			1998			1999				
		Target	rate	Amount	Target	rate	Amount	Target	rate	Amount	Target	Amount
1.	Household Sanitary	3500	3141	109.92	2800	3455	96.73	700	3800	26.60	7000	233.24
2.	Anganwadi Sanitary	60	8030	4.82	20	8833	1.77				80	6.58
3.	School Sanitary Un	70	28600	20.02	50	31460	15.73	30	34606	10.38	150	46.13
4.	Health Centre Sani	15	19250	2.89	10	21175	2.12				25	5.01
5.	Environmental Sani	70	160600	112.42	60	176660	106.00	20	194326	38.87	150	257.28
				250.06			222.34			75.85		548.25

C. ABSTRACT PHASE 2 - CONSTRUCTION PROGRAMMES:

Total Cost Construction Actvts under Phase 1 :	548.25
Technical Training/Contingencies :	21.75
	570.00

15.4 Mid-course Corrections:

The project time schedule/annual budget allocation plan is only indicative. During the course of implementation of the project, based on feed back from AP II, PRED and ASM together shall prepare realistic time/ activity/fund flow plans, which shall be monitored at the PCC, DPC and state level.

The unit cost estimates for latrine units are not in toto applicable to every situation. The executive engineer at the project level shall prepare realistic estimates for each component and on an yearly basis. However such standard estimates shall be discussed at the PCC/DPC and finally approved by the Engineer-in-Chief. Minor escalations within such estimates, as necessitated by design or SSR modifications to suit site conditions, shall be within the competence of the EE.

Cost sharing patterns discussed are based on present perception of community demand. As and when the programme picks up momentum, the percentages may be hiked up.

16. ADMINISTRATION/MANAGEMENT

16.1 Nodal Role of PRED:

PRED shall be the project manager at project, district and state levels. The program will be planned, implemented and monitored under the overall technical, financial and administrative control and accountability of the Engineer-in-Chief.

Within the guidelines formulated and approved, the Superintending Engineer and the Executive Engineer will have the project responsibilities at district and project level respectively.

The activities of the various participating agencies will be coordinated by these nodal officers through the various institutional arrangements already discussed.

16.2 Personnel Mobilisation:

As far as ASM is concerned, a sanitation core team shall be set up, comprising of a sanitation specialist, a health educationist and a

community organiser. They shall be supported by a team of field staff and folk media artists.

In a similar fashion, PRED shall nominate a field officer and a work inspector by name, to take responsibility for participation in the planning of the project, under the guidance of a deputy executive engineer.

16.3 Technical/Administrative Sanction of Estimates:

As soon as a village is selected for the program, in consultation with the GP and with the approval of the PCC/DPC, the EE shall finalise the sanitation master plan for the village, containing the project plan along with technical designs and estimates.

Technical sanction of the master plan along with the estimates, designs and operational plan shall be accorded by the competent technical authority, as follows:

Master plan estd upto Rs.1 lakh:	EE
Master plan estd upto Rs.10 lkhs:	SE
Master plan estd above Rs.10 lkhs:	E-in-C

Once technical sanction is accorded, EE shall be empowered to incur expenditures as per departmental and financial codes.

16.4 Contents of the Master Plan:

1. Map of the revenue village and hamlets
2. Data on population/households (locations wise)
3. Data on existing institutions
4. Data on water table, soil conditions, population density
5. Existing water supply and sanitation facilities and their management/maintenance
6. Application from the GP for participation in the sanitation program
7. Assessment by PRED/NGO regarding the capacity of the GP/VAC to take up the project
8. Household Toilets: No of applications in clusters of 20 to 25, beneficiary down payments received, feasibility of taking up this component, adequacy of space, suitability of soil/water table conditions, availability of local construction material, local masons that can be trained to take up the work, estimates. Separate data on SC/ST

9. Institutional Latrines: requirement, design and estimate, organisation of construction, provision of water supply
10. Environmental Sanitation: requirement, plans and estimates for village drainage system, sanitation around water supply points, plans and estimates for other village specific sanitation programmes and details on how the works can be tackled under JRY
11. Domestic Sanitation: willingness of the GP to take up the programme, estimates for smokeless chullas to be taken up with NEDCAP
12. Plans/estimates for front-line organisation work as presented by ASM.
13. Letters of undertaking from Medical Officer/DM&HO and Headmaster/DEO, ICDS for maintenance of institutional latrines
14. Implementation time schedules and budget requirements
15. Maintenance and sustainability of the programme
16. Dovetailing of the programme with health/hygiene education
17. Type designs/estimates for household/institutional latrines with water supply
18. Water supply infrastructure, improvements proposed and estimates.
19. Village Masons identified for training
20. Letter of undertaking from GP:
    - for mobilising 35% of households for HL/DS
    - for contributing 50% of cost for environmental sanitation
    - for facilitation/guidance through VAC
    - to closely cooperate with ASM
21. List of VAC members and animator
22. Abstract of estimates, with cost showing data and source of funds
23. PRED/ASM personnel specifically responsible for the programme
24. Training/Orientation Plan for the Village/School/Anganwadi/ Mahila Mandal

16.5 Guidelines for the Preparation of the Master Plan:

1. Standard designs shall be modified to suit local situations. Wherever necessary, estimates shall also be revised keeping in mind costs involved in material transport, prevailing market rates, etc. However, as a general rule, the project contribution for household toilets will be fixed for each year and for each sets of conditions, after the matter is discussed in the DPC and approved by the E-n-C. It is expected that the household will meet the cost escalations that may occur in individual cases.

2. The estimates under the master plan shall include cost of household and institution toilets, village sanitation, any village specific sanitation activity, and subsidy of Rs.50/ per SC/ST household taking up the domestic sanitation components.

3. During the preparation of Master Plan, PRED shall discuss with the DEO/DM&HO/ICDS and obtain undertaking from them to maintain the sanitary units.

4. Estimates shall be made by PRED for training of village masons, and mass production of user manuals for households/ schools/health centres, user instructions on tin sheets, etc. These estimates shall be charged to the master plan.

5. ASM shall make an estimate for the cost of promotion activities and training programmes for the village. Funds however shall be tapped from budgets sanctioned to ASM for their activities.

6. Domestic Sanitation Package:

   The Master Plan will indicate negotiations taken up with the NEDCAP/Social Forestry/Health Department for providing support to activities under the domestic sanitation package and their undertakings shall be included in the master plan:

   a) NEDCAP (Smokeless Chullas): undertaking to take up the construction programme in the village and to train women to take up construction work.

   b) Social Forestry: agreement to provide saplings/seedlings and to impart know-how

   c) Health Department: undertaking to support the NGO in health/hygiene/nutrition promotion activities

7. ASM shall make an annual budget for production of promotion materials such as posters, folk media, audio-visuals, pamphlets, etc. The costs however shall be met from funds provided to the NGO.

All these separate plans and estimates shall be compiled together in the master plan, indicating the various components, their costs and cost sharing pattern, as also the source of funds for each activity.

The master plan shall be discussed in the PCC before technical sanction is accorded.

16.6 Accounting and Reporting:

The EE shall open an account for the purpose of the sanitation project, into which both the releases from the department and contributions from the community shall be credited. Norms for incurring and booking of expenditure shall de decided by PRED in such a way that while financial codes are adhered to. the need to respond to a community based and low cost intervention effort is not vitiated by time consuming and complicated procedures.

On a quarterly basis, the EE will forward physical and financial progress reports to the E-n-C. who will consolidate them and forward to RNE through GOAP for claiming reimbursement. Cop, of the statement and claim will be forwarded to NAP Office.

RNE will reimburse every claim to the extent of 75% of the expenditure incurred, after deducting 25% GOAP share and the additionality of peoples/GP contribution component).

16.7 Entrustment and Execution of Works:

1. Individual latrines:

After the master plan for the village is approved, and operational plans finalised, the field engineer will along with the GP/NGO/ selected local masons. organise a discussion with each cluster where the technical and financial procedures shall be explained and the sanction/ work/maintenance "family manual" issued to each applicant.

Subsequently, each applicant shall conclude work contract with the mason, in the proforma to be provided.

Site markings will be done by the field engineer. After this the family will be authorized to go ahead with the construction work.

On the recommendation of the VAC/ASM, each applicant will be advanced the amount earmarked for assembling locally available construction material such as bricks and sand. Pooling of the amount and common purchases, etc shall be taken up only on a

voluntary basis.

After the material has been assembled and excavation work completed and verified by PRED, the centrally procured materials: cement, steel, pipes, pan/trap/foot rests, pre-fabricated metal door, roofing material etc. will be supplied to each beneficiary as per bill of quantities indicated in the family manual. At this stage, the cost of all materials together will be booked as stage I of the construction activity.

Subsequent stages of work/payment to the individual families shall be as follows:

a. completion of work upto basement level for pits, squatting platform, junction box, including providing of pipe connections and fixing of pan/trap/footrests.

b. completion of superstructure and fixing of roof, casting and fixing of pits and junction box covers.

c. plastering inside and outside, fixing of door and white washing by the mason. Site levelling, placing of tin sheet with sanitation message, and providing water cistern, bucket, mug, brush/soap by the beneficiary at her own cost.

PRED will make payments at site and in cash to the woman participants. However each cluster will organise construction in such a way that all constructions have reached the same stage at the time of inspection, to facilitate disbursal of money and entry in measurement books.

The department will develop administrative and financial procedures in such a way that this community orientation is possible and to ensure that women are not inconvenienced unnecessarily.

Similarly, the department will make arrangements to centrally purchase materials such as steel and cement, pans, pipes, to fabricate the metal doors and to supply them to the beneficiaries in the village.

It shall be primarily the woman participant's responsibility to ensure the proper construction of the latrine. However she

will be supported by the VAC. The PRED will appoint a site inspector for providing technical guidance to the participants and to the VAC.

Before the final payment is made, the members of each cluster shall participate in an orientation programme on the proper use and maintenance of the toilet unit. This will be organised by the VAC/ASM.

2. Institutional Latrines:

The school/PHC/Anganwadi toilet units will be taken up following conventional departmental procedures. Wherever feasible, the VAC/Mahila Mandal (for anganwadi) may nominate a person to take up the work.

3. Village Sanitation:

The GP shall transfer 50% of the estimate from JRY funds to the account of the executive engineer. From that point on, PRED will take responsibility for the execution of work, as per norms governing the Jawahar Rozgar Yojana.

Sanitation around water supply, by providing soak pits, lead away drains, etc will be taken up under this component.

4. Sanitation Improvement to the Augmented Water Supply Systems:

Improvements to PSPs, repairs of structures, valve pits, arresting of leakages, etc. shall be taken up with funds available with the department.

5. Bathing Platform/Cubicle:

a. Standard designs are available.

b. The work can be taken up by the local mason identified for each cluster and rates fixed between him and the household.

6. Soakpit/Solid Waste Disposal Pit:

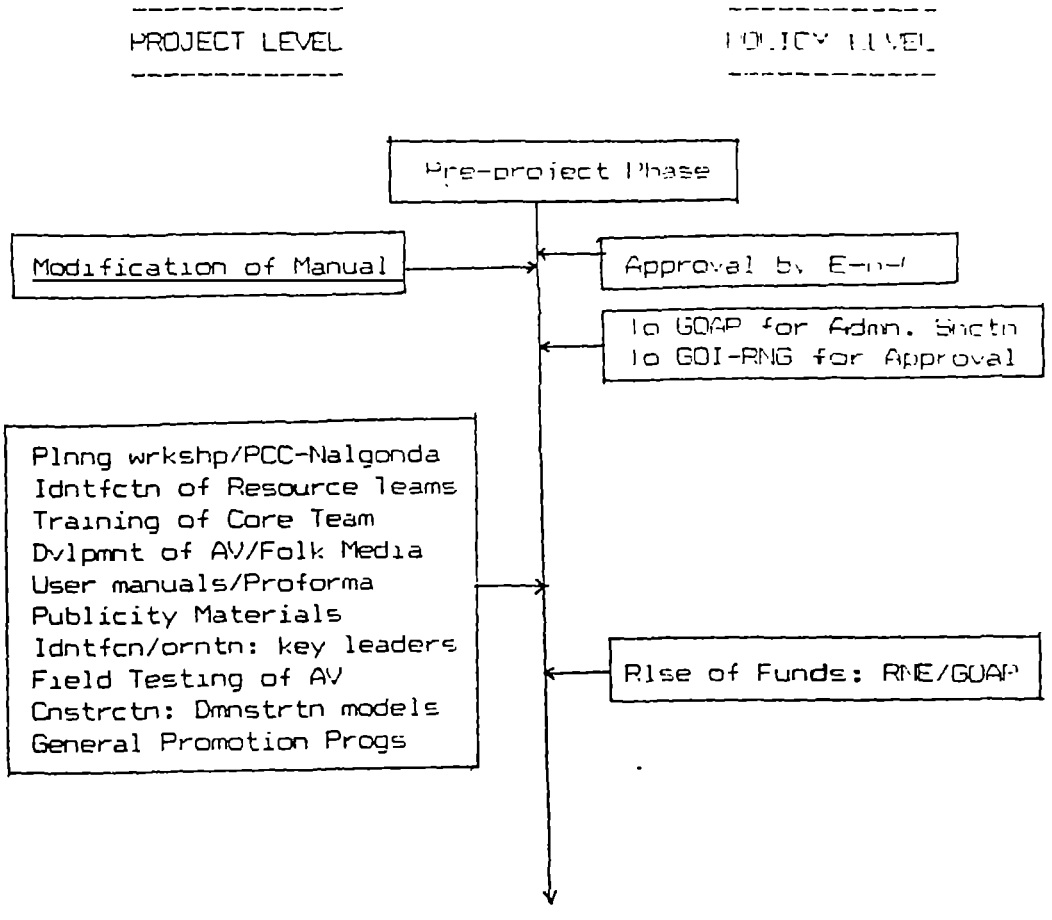
   a. Standard designs are available

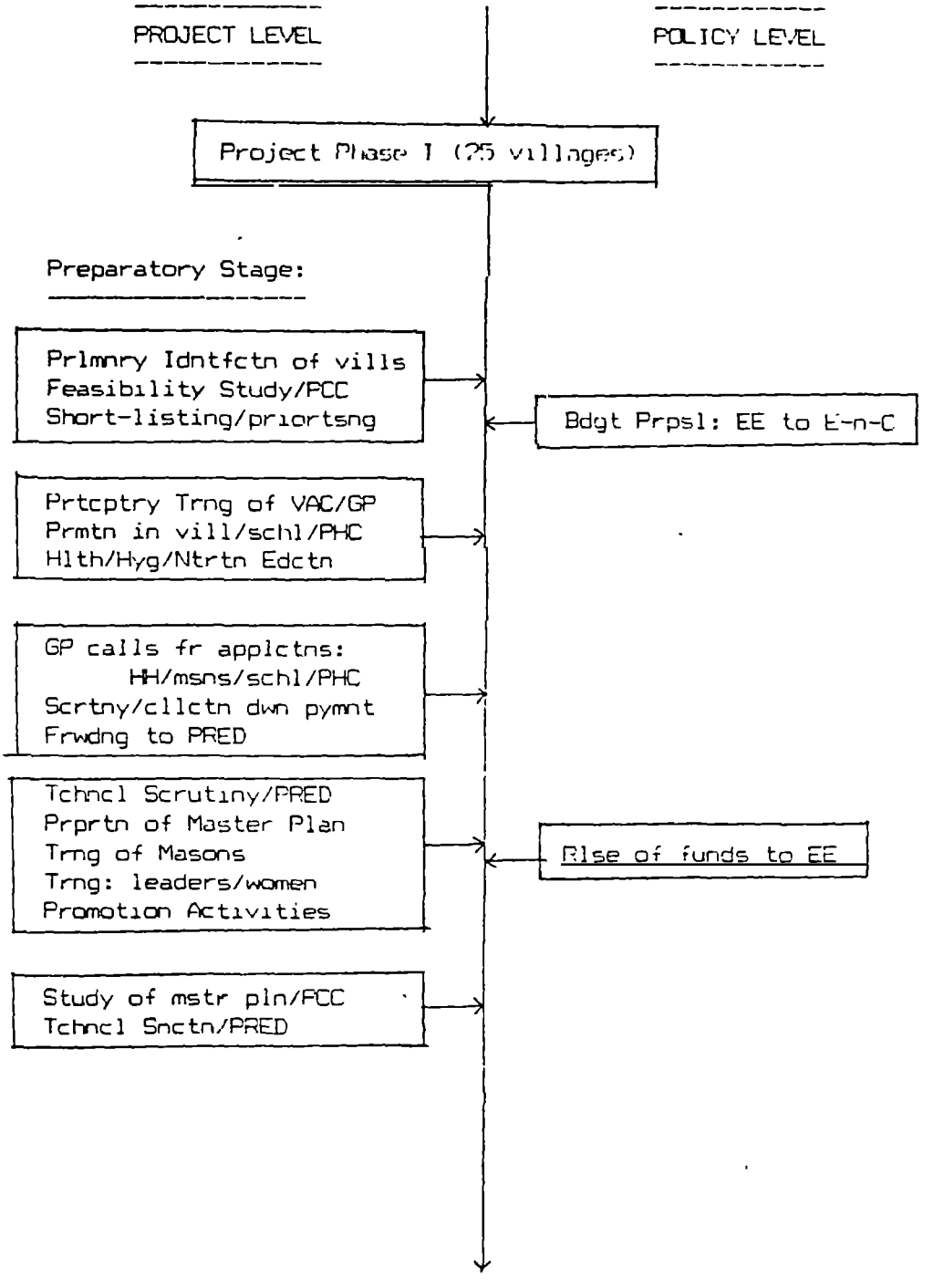
   b. The work to be taken up by each household on its own.

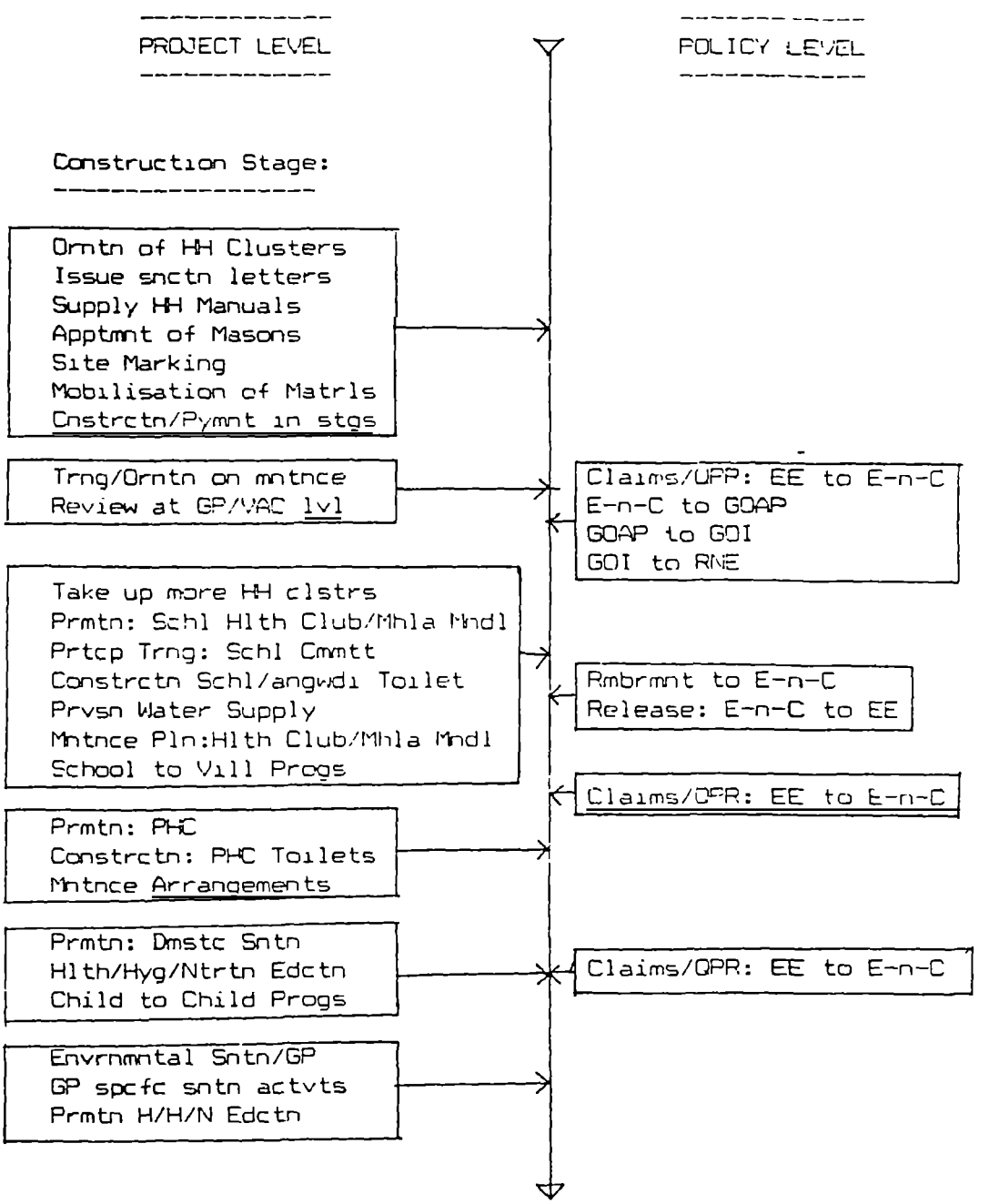
Activities 5 and 6 are to be taken up along with the construction of the household latrine units for each cluster. After completion and inspection by PRED, the SC/ST households will be paid an incentive of Rs. 50/ per household.

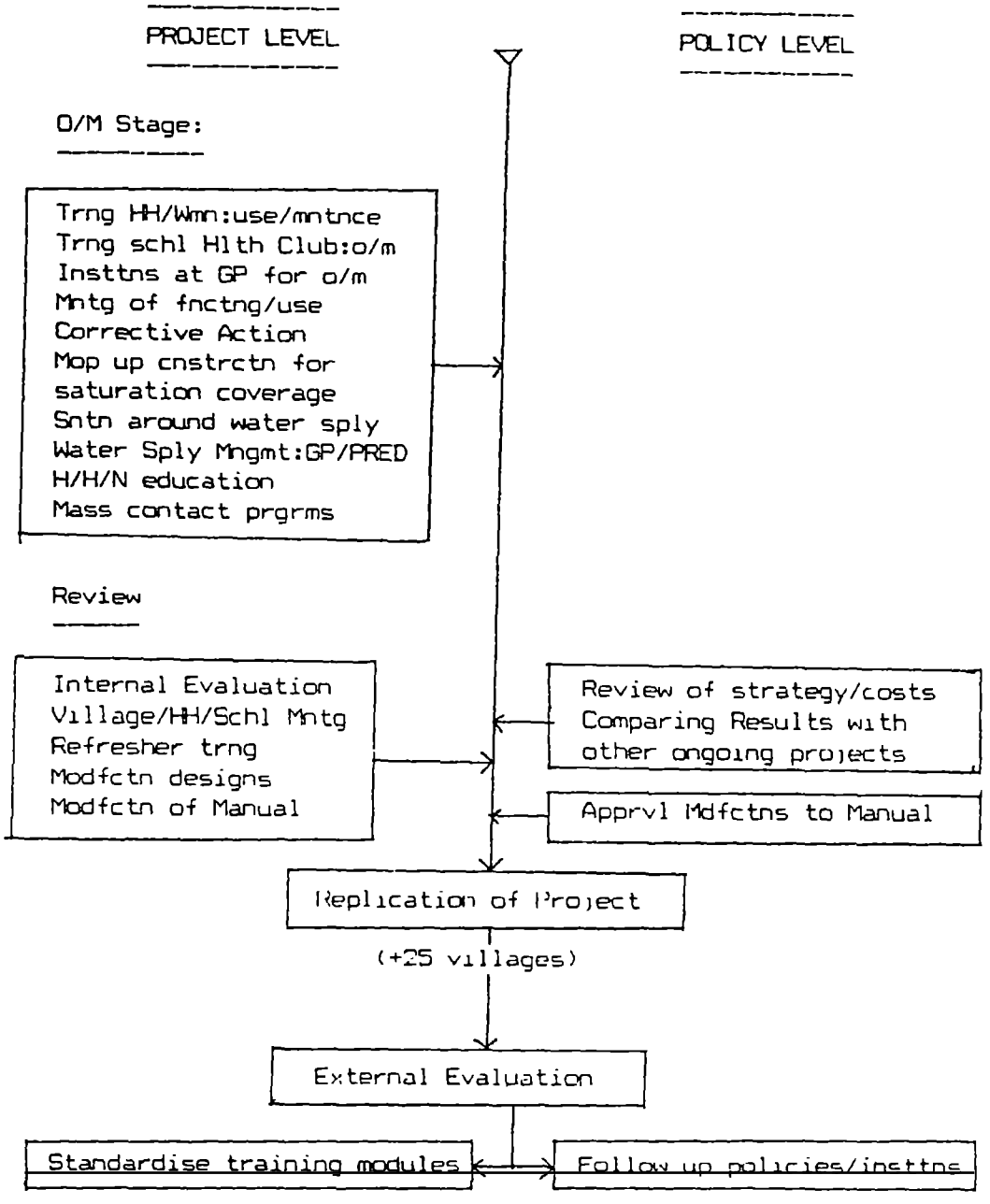
Facilitation/promotion will be the responsibility of the NGO. The field supervisors of PRED will provide technical guidance.

17. ACTIVITY FLOW




PROJECT LEVEL
POLICY LEVEL
Project Phase I (25 villages)
Preparatory Stage:
Prlmnry Idntfctn of vills
Feasibility Study/PCC
Short-listing/priortsng
Bdgt Prpsl: EE to E-n-C
Prtcptry Trng of VAC/GP
Prmtn in vill/schl/PHC
Hlth/Hyg/Ntrtn Edctn
GP calls fr applctns:
HH/msns/schl/PHC
Scrtny/cllctn dwn pymnt
Frwdng to PRED
Tchncl Scrutiny/PRED
Prprtn of Master Plan
Trng of Masons
Trng: leaders/women
Promotion Activities
Rlse of funds to EE
Study of mstr pln/PCC
Tchncl Snctn/PRED


PROJECT LEVEL
POLICY LEVEL
Construction Stage:
Ornstn of HH Clusters
Issue sanctn letters
Supply HH Manuals
Apptmnt of Masons
Site Marking
Mobilisation of Matrls
Cnstrctn/Pymnt in stgs
Trng/Ornstn on mntnce
Review at GP/VAC lvl
Claims/UPP: EE to E-n-C
E-n-C to GOAP
GOAP to GOI
GOI to RNE
Take up more HH clstrs
Prmtn: Schl Hlth Club/Mhla Mndl
Prtcp Trng: Schl Cmmtt
Constrctn Schl/angwdi Toilet
Prvsn Water Supply
Mntnce Pln:Hlth Club/Mhla Mndl
School to Vill Progs
Rmbrmnt to E-n-C
Release: E-n-C to EE
Claims/OPR: EE to E-n-C
Prmtn: PHC
Constrctn: PHC Toilets
Mntnce Arrangements
Prmtn: Dmstc Sntn
Hlth/Hyg/Ntrtn Edctn
Child to Child Progs
Claims/OPR: EE to E-n-C
Envrnmntal Sntn/GP
GP spcfc sntn actvts
Prmtn H/H/N Edctn



18. TIME SCHEDULE/PHYSICAL COVERAGE:

The full cycle of activities in each phase of the project is expected to take about 21 months - from preliminary identification to monitoring functioning/ utilisation of services and establishment of institutions for sustainability. However as the project gathers momentum, and as the expertise with the implementing agencies build up, and as more new NGOs and PRED divisions are drawn into the project, it is expected that the overlap between various phases can be increased.

Thus it is tentatively programmed to cover/initiate work in 150 out of 181 villages/hamlets by June 1996. As discussed earlier, the

emphasis will be on saturation coverage in villages taken up under earlier phases than extending intervention to more areas.

The 14 villages under AP I in Nalgonda District is planned to be included in the sanitation component of AP III - NALGONDA, as these villages are within the proposed project area. and to be covered under the augmentation work of water supply construction.

19. MONITORING/EVALUATION

19.1 Why Monitoring/Evaluation?

Sanitation is essentially a people s movement and action for health. Construction activities by themselves would contribute only partially, as the provision of some necessary infrastructure. More important are the tasks related to organising and educating people, especially women and children, empowering and equipping them with knowledge, skills, institutions and backup services. to take the responsibility for sustaining the processes set in motion and for widening them out to other areas related to their health and development.

This demands that the project should have good interface between water, sanitation, health, peoples aspirations and perceptions.

Hence the need to constantly monitor the processes and dynamics that the project sets in motion and assess them for their:

adequacy
appropriateness
impact
sustainability
replicability.

19.2 Institutions for Monitoring/Evaluation:

The institutions built into the project for coordination and management will monitor the directions of the project at all levels:

cluster
village
project/division
district
state.

ASM shall take primary responsibility for monitoring the dynamics at the village level, through participatory data collection and evaluation strategies. Their feedback shall be discussed at the project level, for necessary course corrections.

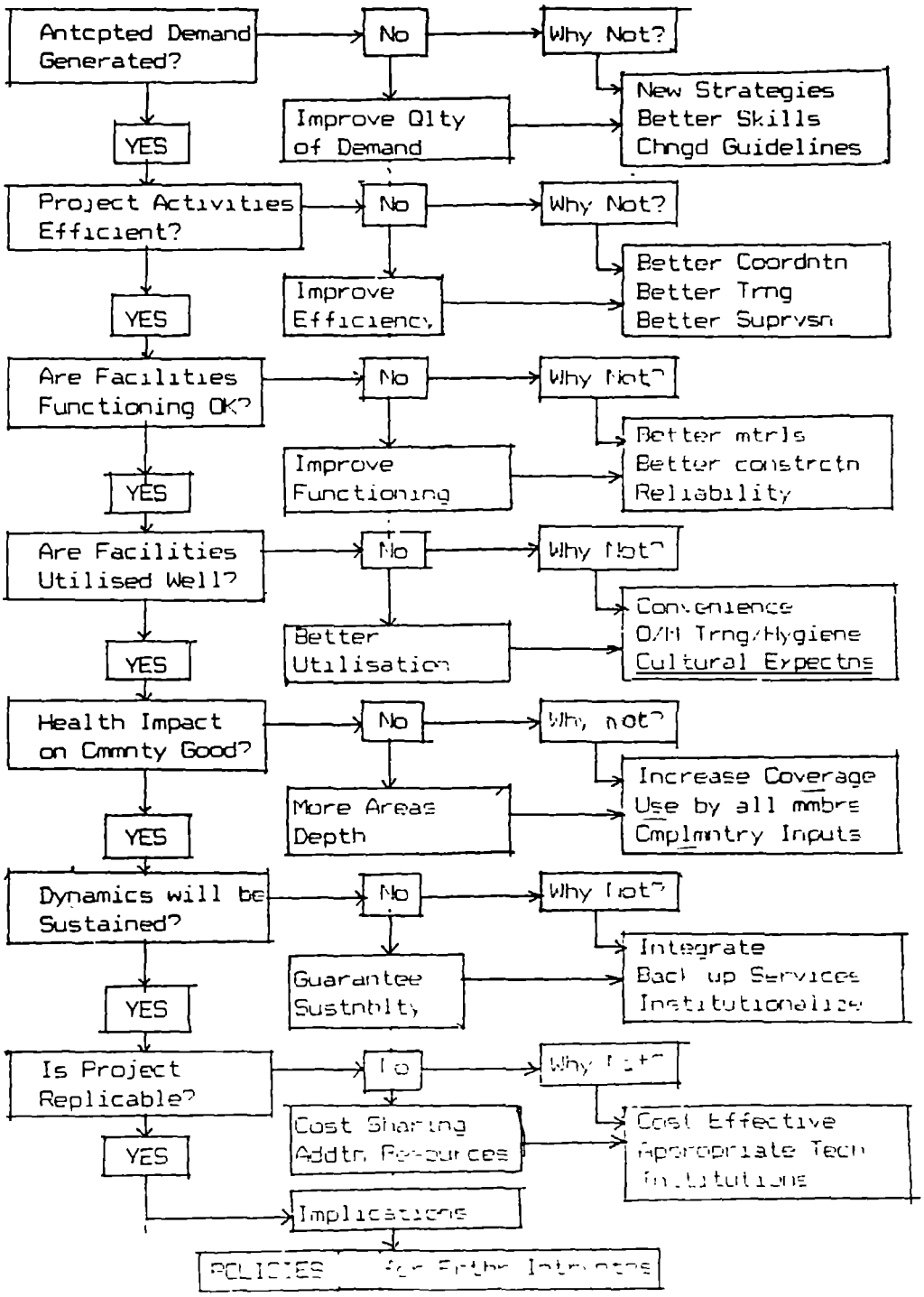
19.3 A Conceptual Framework for Monitoring/Evaluation:

The areas to be covered under monitoring/evaluation shall be the following:

- actual response/anticipated demand
- impact of promotional efforts

- impact of participatory training/planning
- efficiency of construction management
- level of functioning of services
- degree of utilisation of services
- health benefits
- sustainability of the dynamics
- replicability of the strategies

An evaluation process would begin by addressing itself to any/ several/all these areas - depending on the timing and purpose of the effort:



19.4 Developing Indicators for Measuring Performance:

Indicators for assessing the project performance in the various areas shall be developed through team processes. Indicators will serve to highlight the extent to which the actual achievements are different from the anticipated ones, and also point to the reasons for the same, and contribute to initiation of follow up action:

1. the indicators of good community response shall include the extent of demand in terms of various sections of people (only middle income groups, no women?), type of demand (only latrines and not domestic sanitation, only construction and not organisation and education), indicators for people excluding themselves/being excluded and of the reasons for such exclusion, the categories that are generally excluded. Indicators of good participation and of reasons for non participation (poor promotion/not convinced/bad experience/unfamiliar technology/political and cultural barriers) - these can not only help in understanding the limitations of the strategy and shortcomings in its launching.

   Monitoring/evaluation shall itself provide the insights/training for relaunching a more effective promotion effort.

2. Similarly, the efficiency and quality of construction, level of functioning and utilisation of services, quality of health benefits, chances for the project to be maintained by the village, etc. will be assessed and corrective action taken.

   Insights into the cultural and psychic conditioning of communities and people, social taboos, norms regarding acceptable behaviour, etc. will be sought from such monitoring/ evaluation. These will go to assess the effectiveness of promotion, training and participation as also the appropriateness of communication materials and programmes.

3. Feedback will also cover the area of design suitability and acceptability for toilet units - location, siting, shape, size, ventilation, lighting, areas where malfunctioning frequently occur, availability of back up services, skill level of local masons, adequacy of technical training, and field supervision etc.

4. Wherever health impact is found to be inadequate, monitoring and evaluation will help relaunch health/hygiene/nutrition education, support services from health department, and take steps to increase the coverage under sanitation programme in terms of people and spectrum of activities.

However, assessment will be planned and organised by the project team and involving the VAC/GP. This is to ensure that monitoring/evaluation is directly linked to action.

19.5 Feedback Utilisation for Spread of Project:

The implications of the findings from monitoring and concurrent evaluations (by the project team itself) has relevance not only for formulating policies, but also for enhancing the efficiency and effectiveness of the project as it spreads into other divisions.

Insights from both success and failure will help improve/modify:

- selection criteria for villages/households
- designs/estimates
- personnel mobilisation
- training methods/content
- cost sharing patterns
- promotion techniques
- participatory planning with GP
- school health club/Mahila Mandal
- sustainability
- replicability
- management of project

Further, such feedback will ensure that resources invested are put to proper use, by initiating and ensuring that unutilized/non-functioning facilities are put back to service.

20. TASKS AHEAD

- preparation of a family manual
- manual for GP/Schools/Anganwadi
- preparation of application forms and all other relevant forms
- health education materials and campaigning materials would already have been prepared for AP II sanitation program. In areas where the KAP in the community are very different from the AP I & II villages, more relevant materials would be prepared specifically for that area.

ANNEXURES

NETHERLANDS ASSISTED PROJECTS

NALGONDA DIST.

SANITATION DOCUMENT ANNEXURES

NAP-APIII

NALGONDA

COMPONENT.

COMMUNITY BASED SUPPORT ACTIVITIES.

PART 2 . SANITATION.

VOLUME . 2.

ANNEXURE 1

ANNEXURE NO.1

VILLAGE ACTION COMMITTEE

1. Introduction

Participatory process is understood as a process of facilitating and supporting peoples' own effort towards self improvement and self reliance. External interventions are only promotive. People take the primary responsibility for identifying their own development needs and for organising themselves to respond to these felt needs.

Within the parameters of this project participation must assume a more limited meaning. Given the nature of the intervention as essentially external, and with a macro-orientation, participation can be perceived only as efforts to actively involve the target population in the planning, implementation and maintenance of the program.

2. Village Level Action Committees

a. Formation:

VACs will be organised in all project villages/hamlets. The NGO will be responsible for this organisational work. The NGO will initiate participation of the community and especially the women in the planning, implementation and maintenance of the program at the village level, in close collaboration with the gram panchayat.

The NGO will mobilise neighbourhood groups around public water stand posts and then organise representatives of these groups into VACs. Wherever necessary representatives of the Panchayat Board especially mahila members, village level health/water supply functionaries, school teachers, anganwadi workers, adult education animators, etc. may be included in these committees. The Panchayat President will be the convenor of the VAC.

The strength of the VACs would be between 9 to 21 depending on the population of the village, including the hamlets.

The organisation of peoples' committee will be limited to the village levels. Beyond this level the existing mandal set up may be utilised, as and when required.

b. Tasks and functions of VACs:

To bring the project to the village and to organise people around it. This task would include:

1. assisting the NGO in preparing a village profile
2. village level study of the projects in terms of its

concepts, components and delivery system, leading to program development and modifications

3. dissemination of information in the village so that the people in the village will be able to understand and participate in the project to the fullest extent.
4. with the technical assistance of PRED select the locations for PSPs, tanks etc.
5. ensure proper use of the water supply and of the maintenance of the system through the appointment of village level operators. Fix the rate of contribution from the families and facilitate the collection of this tariff by the operators.
6. wherever sanitation program have to be taken up the tasks of the VACs will be as indicated in the sanitation document.

ANNEXURE 2

DETAILED CUM ABSTRACT ESTIMATE OF CONSTRUCTION OF LATRINE FOR RURAL HOUSE HOLDERS IN THE NAP-AP-II SANITATION PROJECT AREA:

*****

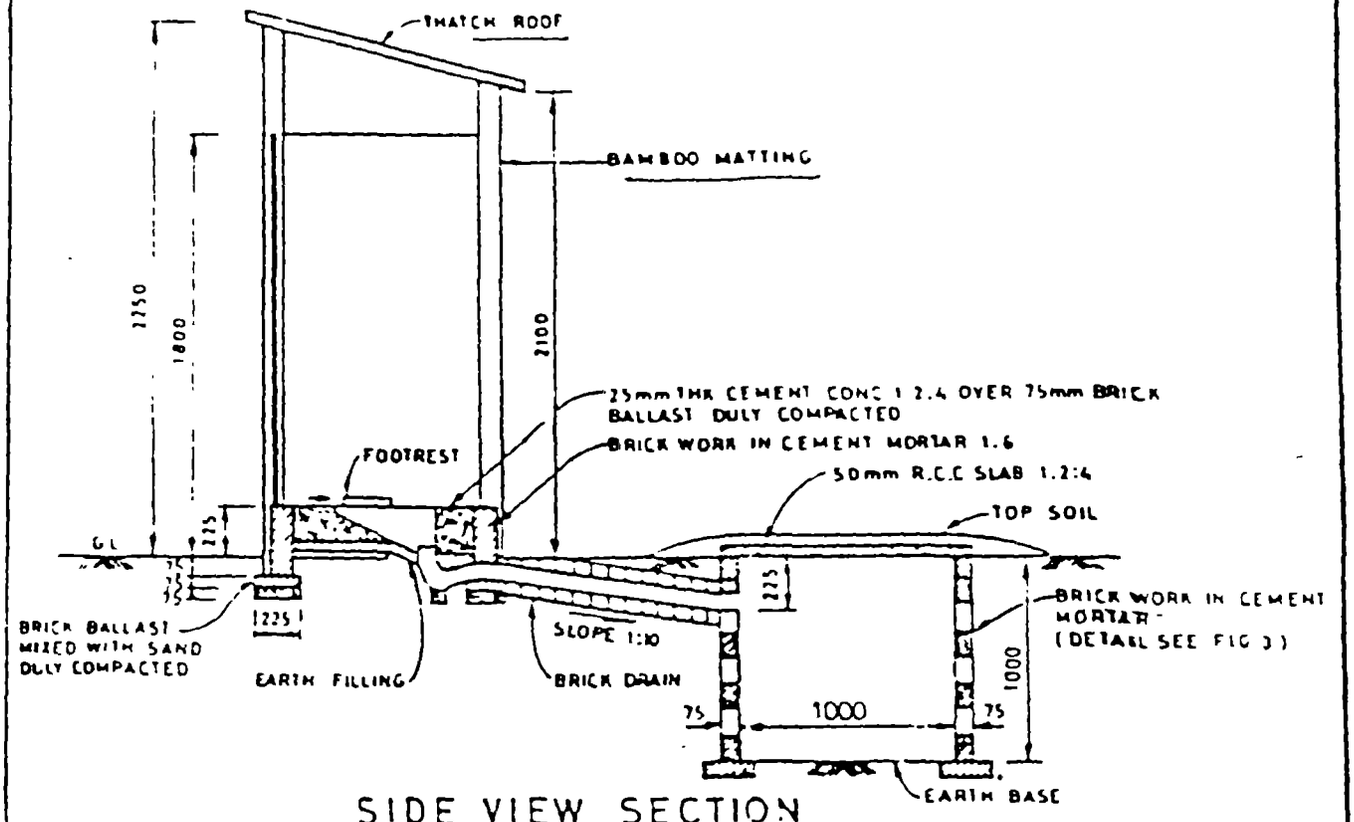
S.No. 1	Description of work 2	No. 3	L 4	B 5	D 6	Qty. 7	Rate 8	Amount 9
1.	Earth work excavation and and depositing on bank with an initial lead and lift in stones earth, earth mixed with fair size boulders etc., for foundations.							
	All round latrine	1x1	4.06	0.225	0.225	0.205		
	Inspection chamber	1x1	0.60	0.60	0.40	0.144		
	Leach pits	2x3.14	$\frac{1.40 \times 1.40}{4}$		1.34	4.125		
						4.474 or say 4.50		
						cum. $\frac{8100}{10}$ M^3		36.45
2.	Providing base with 40 mm HBG metal mixed with sand duly compacted with watering and ramming including cost and conveyance of materials & labour etc.,							
	Allround latrine	1x1	4.06	0.225	0.075	0.068		
	Inspection chamber	1x1	0.60	0.60	0.075	0.027		
						0.095 say 0.100	$\frac{147.25}{M^3}$	14.72
3.	Providing base with brick ballast mixed with sand duly compacted with watering & ramming including cost & conveyance of materials & labour charges etc.,							
	Allround latrine	1x1	4.06	0.225	0.075	0.068		
	Inspection chambers	1x1	0.60	0.60	0.075	0.027		
						0.100 M^3	133.12 cum	13.31
4.	Brick in C:: (1:8) including cost & conveyance and labour etc., complete.							
	Latrine brick on edge	1x1	4.06	0.225	0.115	0.105		
	Upto basement	1x1	4.06	0.115	0.260	0.121		
	Superstructure	1x1	4.06	0.115	1.50	0.70		
	Deduct for Door	1x1	0.60	0.115	1.50	(-)0.104		
	Inspection chambers all round.	1x1	1.600	0.115	0.35	0.067		

1	2	3	4	5	6	7	8	9
4.	Leach pit bottom portion							
		$2\times\frac{22}{7}$	1.115	0.115	0.225	0.181		
	Top portion	$2\times\frac{22}{7}$	1.115	0.115	0.225	0.181		
						1.459 cum.	393.06 cum.	573.47
5.	Honey comb brick work in CM 1:8 including cost and conveyance and labour charges.							
	Deach pit	$2\times\frac{22}{7}$	1.0	—	0.90	5.65 M^2	$\frac{781.50}{10}$ M^2	441.54
6.	RCC(1:2:4) mix using 20 mm HBB metal, with necessary quantity of steel, including cost & conveyance, labour, centering,curing but excluding cost of steel and fabrications charges etc.,.							
	Cover slab over leach pit.	$2\times\frac{22}{7}$	$\frac{1.20 \times 1.20}{4}$		0.05	0.11		
	cover slab over Inspection chamber	1x1	0.50	0.50	0.08	0.013		
						0.123 M^3	975.00 cum.	119.95
7.	Plastering with CM(1:6) of 12 mm thick including cost & conveyance & labour etc.,							
	Out side super structure.	1x1	4.52	--	1.50	6.78		
	Inside	1x1	3.60	--	1.50	5.46		
	disdes of door	1x2	0.115	--	1.50	0.345		
	top of walls	1x1	4.06	0.115	--	0.467		
	Inside of inspection chamber.	1x1	1.20	—	0.35	0.420		
	Latrinefloor	1x1	1.00	0.80	—	0.80		
	Deduct for door	1x2	0.60	—	1.50	1.80(-)		
	" for top wall over door.	1x1	0.60	0.115	--	0.069(-)		
						12.34 M^2	$\frac{127.45}{10}$ M^2	157.30

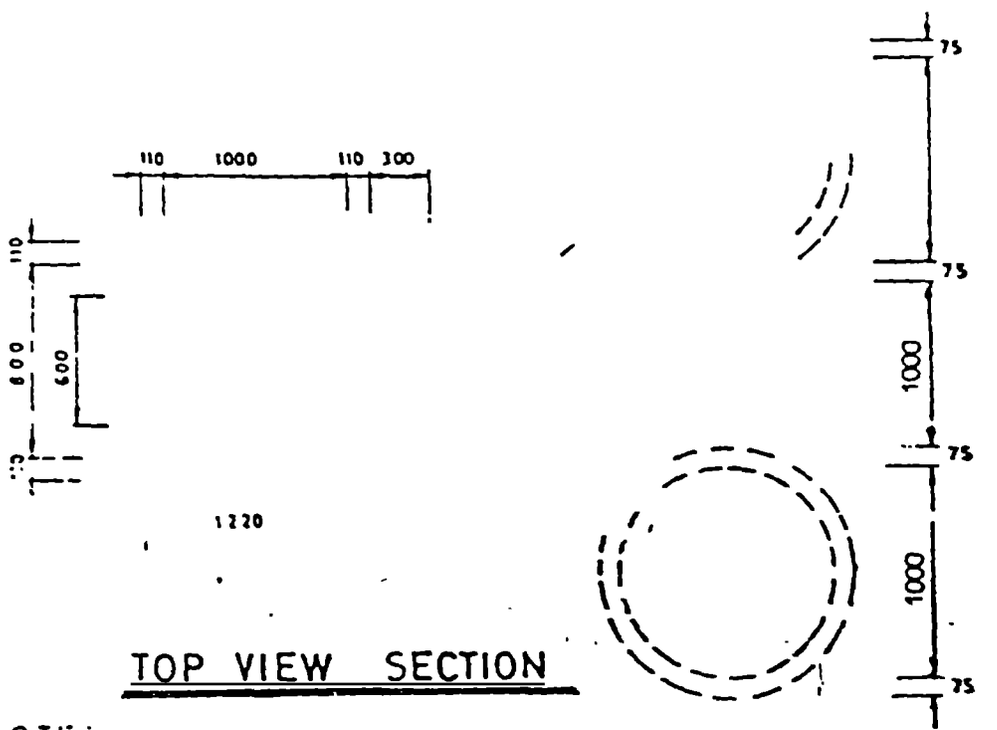
..3

1	2	3	4	5	6	7	8	9
8.	Supplying and fixing zinc sheet door of size 600x1500 MM duly fitted over country wood rapers 75x30 mm with necessary hinger, pot lock etc.,	1 No.		--L.S.--				100.00
9.	Supplying and fixing 100 mm stone ware pipes/PVC/AC including cost of jointing materials.			-- L.S.--				75.00
10.	Cupplying and fixing fibre glass pan and trap including fixing.	1 No.		--L.S. --				150.00
11.	Supply, fixing of AC sheet	1 No.		-- L.S.--				75.00
12.	Cost of steel					7 Kg.	9.75/ Kg.	68.25
13.	Fabrication charges					7 Kg	0.90/ Kg.	6.30
								1,831.29
								or say
								1,850.00

(RUPEES ONE THOUSAND & ~~EIGHT~~ Nine HUNDRED THIRTY ONE AND TWENTY NINE PAISE ONLY)



SIDE VIEW SECTION



TOP VIEW SECTION

NOTE:-

ALL DIMENSIONS ARE IN mm

LIST OF VILLAGES AND HAMLETS COVERED UNDER PHASE I:

ZONE 1

TOTAL NO. OF VILLAGES : 22
TOTAL NO. OF HAMLETS : 14

Sl. No.	Revenue Village	Hamlets	Sl. No.	Revenue Village	Hamlets
1.	Marriguda		2.	Duddaram	
3.	Appajipet	Narloniguda Bottuguda	4.	Avaravani	
5.	Vellemla	Kothaguda	6.	Chandrampalli	
7.	Elikatta		8.	Rathipalli	
9.	Neereda	G.Reddipalli	10.	Urumadala	
11.	Chityala	Venkatapuram Pochambaviguda	12.	Shivaneniguda	
13.	Vanipakala		14.	Mandra	
15.	Wattimarthi		16.	Anaparthi	
17.	Y.Reddyguda	Dasariguda Seshabaviguda C.Rayananpur Kondapakagudem	18.	Cheruvugattu	Gummalabavi Enuguladori
19.	Narketpalli	Gopalapalli Chintabaviguda	20.	M.Yedavalli	
21.	Nimmani		22.	Cherlapalli	

ZONE 2:

TOTAL NO. OF VILLAGES: 60
TOTAL NO. OF HAMLETS: 85

Sl. No.	Revenue Village	Hamlets	Sl. No.	Revenue Village	Hamlets
1.	Bngarigdda	Gollaguda Papireddiguda	2.	Angadipet	
3.	Chandur	Lakkineniguda	4.	Kastala	
5.	Ponugode	Ramachandrapur	6.	U.thalapally	P.malathanda Yotavaliguda Kubbakaguda
7.	Ragatta		8.	Idikuda	Turkoniguda
9.	Pullemla	Singoronibavi Marribhavi	10.	Bondangparthy	
11.	Sirdepally	Gollaguda	12.	Munugode	Kammaguda Battakalva L.deviguda Turpuguda Somabatta Mangellaguda Nattoniguda
13.	Chollege	Gollaguda	14.	Chikatimamidi	Kammaguda
15.	Kompalli	Turupuguda Padamatiguda	16.	Kalvakuntla	Erukalaguda Ballvaniguda
17.	Kondapur		18.	Velmulanne	Lambadiguda

Sl. No.	Revenue Village	Hamlets
19.	Puttapaka	Baltonibai
		Saigonibai
		Mathuroniguda
21.	Narayanpur	G.Nagarthanda
		Kurmakasharam
23.	Chelmeda	
25.	Kothlaram	Madupugudem
27.	K.K.Guda	Suriguda
		Narammabavi
		Lovodithanda
29.	Kothulapur	Madupugudem
31.	Thagadpally	Chintalaguda
		Dhamera
33.	Lakkaram	Dharmoguda
35.	Lingojiguda	Ankireddiguda
		Gilleduchelk
		Katur
37.	Gundrampalli	
39.	Peddakaparthi	
41.	Bongonicheruvu	
43.	Kachlapuram	
45.	Ukondi	
47.	T.Vellamla	Vembavi
49.	Chinakprthi	Mosuguda
		Boyagubba
		Yenuguladori
52.	Jamistanpally	
54.	Kalwapalli	
56.	Kakulakondaram	Ramulabanda
58.	Koratikal	Dubbakalva
60.	Solipur	

Sl. No.	Revenue Village	Hamlets
20.	Kothaguda	Kurmaguda
		Gagulonibavi
22.	Servel	Moroniguda
		Rajammabavi
		Malreddiguda
		Lingvariguda
		Thurkoniguda
		Devirediguda
		Chittambavi
		Yerrakunta
		E.devichruvu
		Gollaguda
24.	Gujja	Kammaguda
		P.baviguda
		Mariguda
		B.marlaguda
		Thangellguda
26.	Chimriyal	S.bhaviguda
		Bantonibhavi
		Marribhavi
28.	Mohammadabad	V.B.L.Thanda
		E.Dhubbthnda
30.	G.Malkapur	
32.	Choutuppal	L.reddiguda
34.	Thalasingaram	
36.	Panthangi	Aregudem
		Reddibai
		Gundlabai
		Thumbai
		Saidabad
38.	Aipur	Isathigudem
40.	Pitlampalli	
42.	Perepalli	
44.	Palvela	
46.	Singaram	
48.	Ipparti	
50.	Kistapur	
51.	Gudapur	
53.	Pulipalpula	B.valliguda
		Gangoliguda
55.	Panchnpalli	Deepakunta
57.	Donekal	
59.	P.Domalplly	M.Domalpally
		Mallubaviguda
		Gollaguda
		P.pallyguda

ANNEXURE 4

A. BATHING CUBICLE

Bathing cubicle is a covered place with cement mortar base for bathing, cleaning utensils and washing clothes.

Firstly, by providing a bathing cubicle, privacy is readily available, especially for women and girl children for having their wash or bath.

Secondly, it helps people to wash/bathe regularly and keep themselves clean and thereby free from scabies.

Thirdly, the cement mortar base helps to prevent wetting the ground and making it slushy, which may become a breeding ground for mosquitoes and health hazards

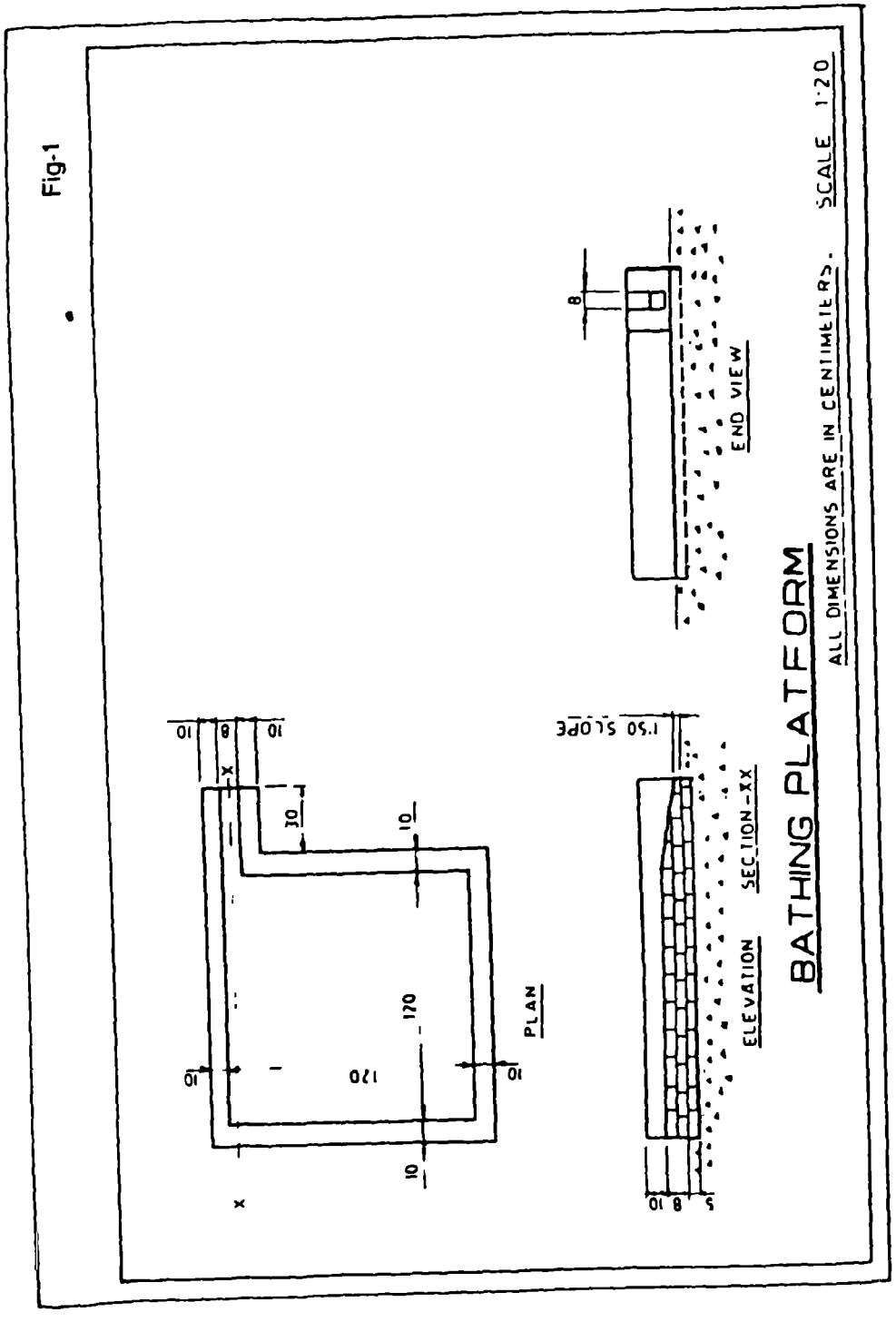
Fourthly, it helps to keep a clean environment and gives an aesthetic look

Lastly, the chances for children to get tetanus and other filth-related diseases are minimised or eliminated, thereby the children can grow up in a good environment It is easy to construct, maintain, and is low cost.

Thus, a bathing cubicle will help to improve the quality of life of people.

BATHING CUBICLE

Fig-1



MAINTENANCE OF BATHING CUBICLE

- Always keep the platform and surroundings clean and dry.
- Scrub the platform with coconut fibre to prevent fungus formation and slipperiness.
- Ensure water is drained off to the soakpit
- Once in a year or two replace the shelter of the cubicle.
- Take care against pets, cattle etc. straying into the cubicle and defecating in the cubicle and spoiling it.

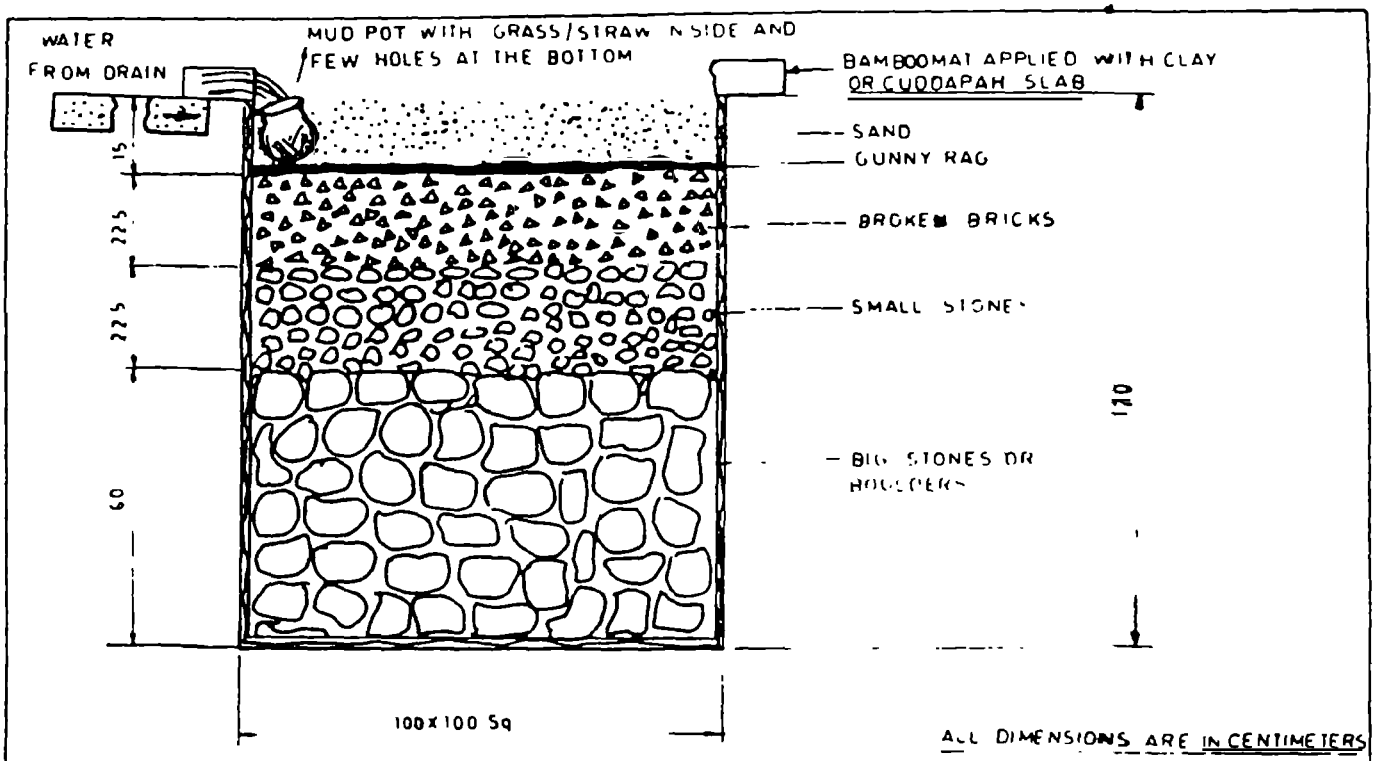
BATHING CUBICLE

	Material required	Quantity	Cost
1.	Boulders/Stones/Pebbles	----	----
2.	Broken bricks/Stones	-----	----
3.	Sand	1 bag	----
4.	Cement	0.5 bag	----
5.	Dried palmyra leaves/ dried coconut leaves/ bamboo mats/Cuddapah slabs	----	----
6.	Labour	Half day	By beneficiary

B. SOAKPIT

The soakpit is a pit to prevent stagnation of waste water. This pit is filled with graded boulders, stones, brickbats and sand The waste water passes through a mud pot filled with grass with holes at the bottom. The top of the pit is covered with bamboo mat applied with clay, mixed with water or Cuddapah slab to prevent excess water running into and choking the pit during monsoons It also prevents mud falling inside the pit pushed due to people moving around

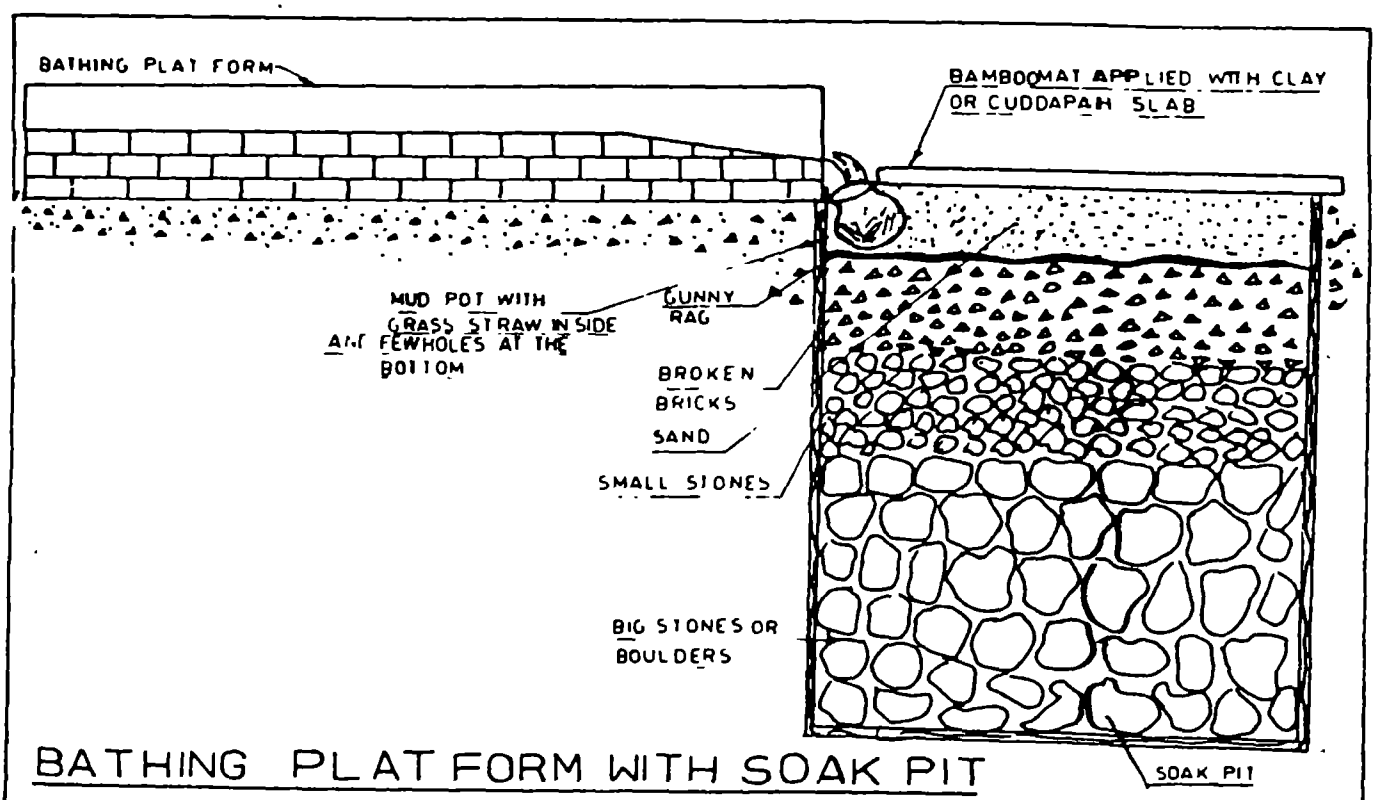
Fig-2



SOAK PIT

SCALE 1:10

Fig-3



BATHING PLAT FORM WITH SOAK PIT

SCALE 1:10

MAINTENANCE OF SOAKPIT

- Ensure that water from the bathing platform, drain goes into the soakpit.
- Always keep the pit closed with a bamboo mat or Cuddapah slab.
- When the pit gets choked up, remove all the material from the pit, dry them for three days. Then fill up the same stones and replace the saturated brickbats and sand. Replace the grass and strawpot. If the pot is broken, then replace it.

C. SMOKELESS CHULLAH

A smokeless chullah is an ordinary chullah, modified to incorporate a chimney which leads the smoke out of the kitchen.

The advantages of a smokeless chullah are :

First, the elimination of smoke leads to elimination of eye irritation, respiratory diseases, dirt on clothes, kitchen walls and adjoining rooms.

Secondly, saving of firewood and cow dung cakes, resulting in conservation of forest wealth and increased availability of cow dung as manure.

Thirdly, two (or more) pots of food can be cooked simultaneously thereby saving time.

Smokeless chullahs can be built manually from locally available material. Construction is easy and can be undertaken by the beneficiary. However, for large scale construction, the use of moulds will be more effective.

Fig-4

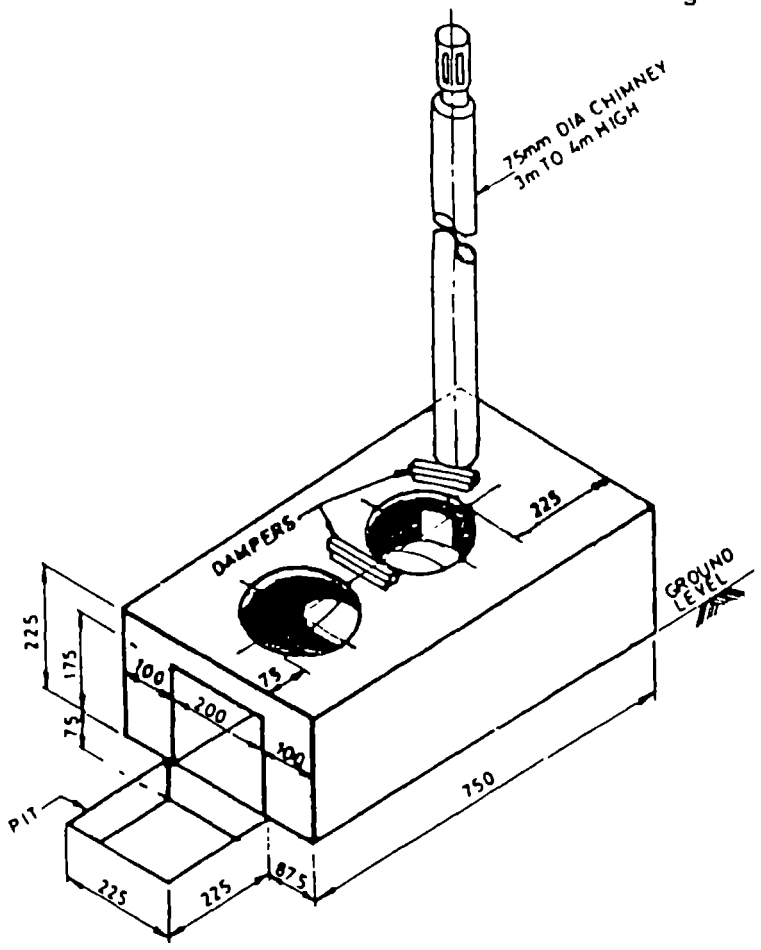
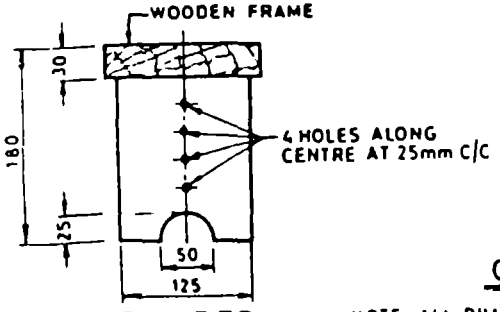
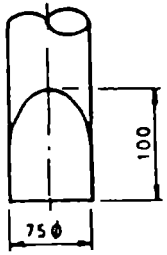


FIG 1 – ISOMETRIC VIEW OF SMOKELESS CHULHA



DAMPER

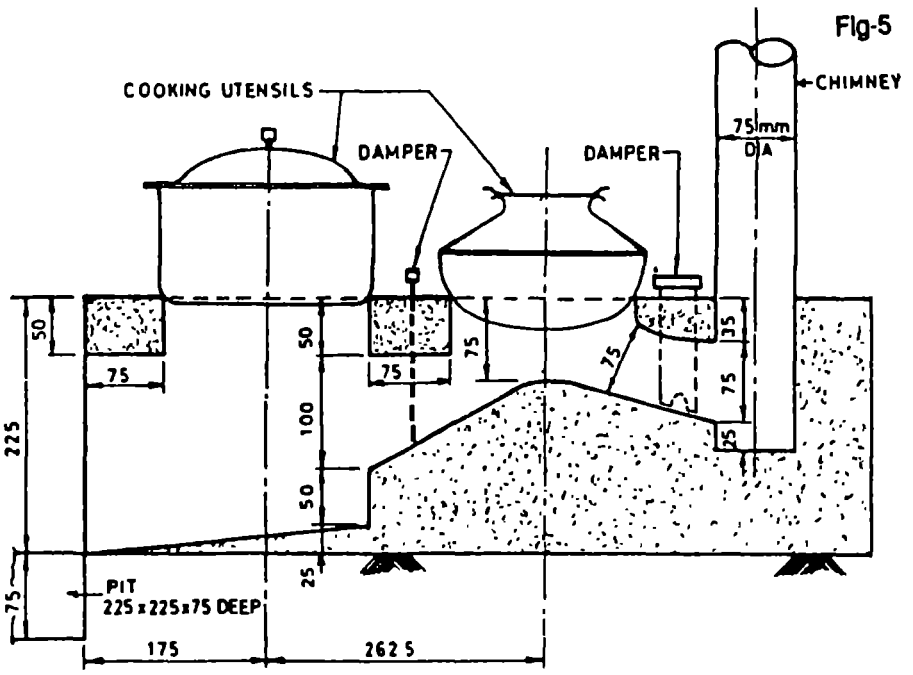


OPENING FOR CHIMNEY

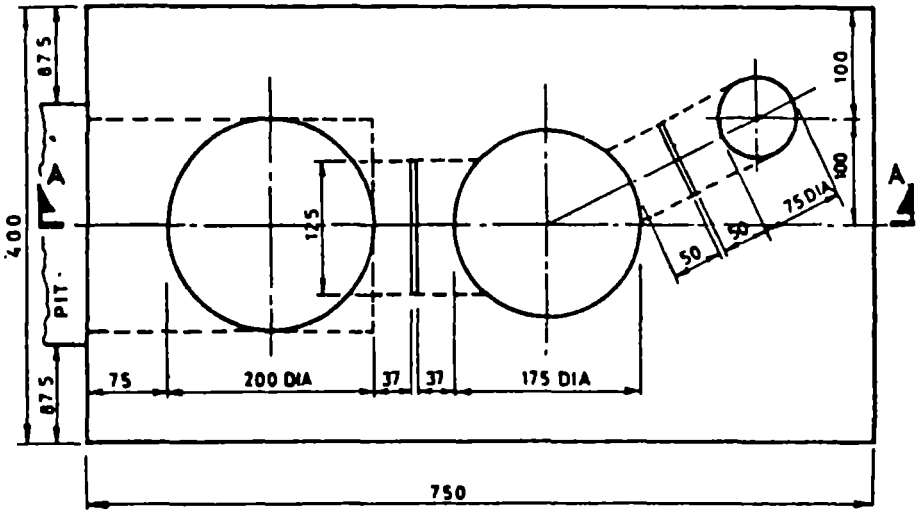
NOTE ALL DIMENSIONS ARE IN mm

UNICEF

Fig-5



SECTION – AA



TOP VIEW

FIG.2 - TOP VIEW AND SECTION OF SMOKELESS CHULHA

UNICEF

MAINTENANCE OF SMOKELESS CHULLAH

After cooking, coat the chullah with a mixture of dung and mud daily.

Remove ashes to keep air passage clear.

Clean chimney once in every three months. This can be done by moving up and down a bag of sand of 75 mm diameter, tied to a string and placed inside the chimney; alternatively a bamboo stick with a piece of cloth tied to one end can be used.

SMOKELESS CHULLAH

Materials Required

	Material	Quantity	Cost - Rs
1.	Clay	8 - 10 baskets	Nil
2.	Cow dung	1 basket	Nil
3.	Husk	1 basket	Nil
4.	Ash	1 basket	Nil
5.	AC pipe or clay pipe 75 mm dia.	3-4 meters	25.00
6.	Iron rings 200 mm dia and 175 mm dia.	Two	10.00
7.	Iron dampers 180-125 mm of 16 G sheet with wooden handle	One	10.00
8.	Coal	One	10.00
9.	Labour One day by beneficiary		50.00

ANNEXURE 5

ANNEXURE - V

CONSTRUCTION OF SANITATION BLOCK FOR SCHOOLS

A B S T R A C T

1.	Building Portion	Rs. 11,500
2.	Water Tank Portion	Rs. 1,950
3.	Pits (2 Nos) 2,100 each.	Rs. 4,200
4.	Soak Pit (LS)	Rs. 100
5.	Junction Chamber & H.D.P.E. Connedtions etc.,	Rs. 250
	T O T A L :	Rs. 18,000

(RUPEES EIGHTEEN THOUSAND ONLY)

CONSTRUCTION OF SCHOOL SANITATION BBOCK UNDER NAP-AP+II SANITATION PROGRAMME:

ABSTRACT CUM DETAILED ESTIMATE

Sl No.	Description of Item.	No.s	L	B	D	Qty.	Rate/ Unit.	Amount
1	2	3	4	5	6	7	8	9
1.	Site clearing and levelling etc., -- LS----							50.00
2.	Earth work excavation in trenches for foundation in all types of soils including lead & lift etc., complete.							
	a) Front long wall	1x1	6.978	0.45	0.60	1.884		
	b) Back long wall	1x1	6.978	0.45	0.60	1.884		
	c) Cross wall -1	1x3	1.31	0.45	0.60	1.415		
	d) Cross wall -2	1x2	1.46	0.45	0.60	0.788		
						5.971	81.00/ 10 Cum.	48.36
3.	C.C.(1:6:10) using 40 mm HBG metal including cost and conveyance of all materials labour charges etc., complete for levelling course.							
	a) Back long wall	1x1	6.978	0.45	0.15	0.471		
	b) Front long wall	1x1	6.978	0.45	0.15	0.471		
	c) Cross wall -1	1x4	1.31	0.45	0.15	0.354		
	d) Cross wall -2	1x2	1.46	0.45	0.15	0.197		
						1.493	374.98/ Cum.	559.85
4.	RR Masonry in CM 1:8 for foundation and plinth including cost & conveyance of all materials, labour, curing charges etc., complete.							
	a) Front long wall	1x1	6.678	0.30	0.75	1.50		
	b) Back long wall	1x1	6.678	0.30	0.75	1.50		
	c) Cross wall -1	1x4	1.46	0.30	0.75	1.314		
	d) Cross wall -2	1x2	1.76	0.30	0.75	0.792		
						5.106	281.33/ Cum.	1436.47
5.	Brick work in CM (1:8) for superstructure including C/C wall materials labour,curing charges etc., complete.							
	a) Front long wall	1x4	0.225	0.225	1.95	0.394		
	b) Bront wall	1x3	1.954	0.11	1.95	1.257		
	c) Back long wall	1x1	6.528	0.225	1.95	2.864		
	d) Cross walls	1x4	1.31	0.225	1.95	2.299		
	e) Cross walls	1x2	1.91	0.225	1.95	1.676		
	f) Partition wall	1x1	0.60	0.110	1.95	0.099		
	g) -do-	1x4	0.30	0.11	1.95	0.257		
	h) -do-	1x1	0.30	0.11	1.95	0.064		
						8.910		
	Deductions:							
	a) Ventilators	1x3	0.45	0.225	0.15	0.045		
	b) Doors	1x3	0.60	0.110	1.65	0.326		
	c) Doors D1	1x1	0.45	0.110	1.65	0.081		
						0.452		
	Net quantity = 8.91 - 0.452 = --------					8.458	393.06/ Cum.	3324.50

1	2	3	4	5	6	7	8	9
6.	RCC 1:2:4 using 20 mm HBG chips including cost & conveyance of all materials, labour charges, curing,centering charges etc., complete but excluding cost of steel and its fabrication charges for roof slab of							
	over the W.C. portion	1x1	6.528	1.535	0.10	1.00	975.00/ cum.	975.00
7.	Doors of plain GI sheet with wooden frames of 0.11 x 0.025 m size.							
		3 Nos	0.60	-	1.65	2.97	170/Sqm.	504.90
		1 No	0.45	-	1.65	0.74	-do-	125.80
8.	Supply & fixing of pre-cost cement jalli of size 0.45 x 0.15 m for ventilators	3 Nos	------L.S.-----				30/- each.	90.00
9.	Plastering with CM (1:6) 12 mm thick including C/C of all etc., complete.							
	a) Long back walls outside.	1x1	6.528	-	1.95	12.73		
	b) Long bakc walls inside.	1x1	5.068	-	1.95	9.88		
	c) Cross walls -1	2x5	1.31	-	1.95	25.54		
	d) Cross walls-2	2x4	0.71	-	1.95	11.07		
	e) Latrines out side	1x2	1.535	-	1.95	5.98		
	f) Front walls	1x2	0.90	-	1.95	3.51		
	g) Front walls	1x2	6.312	-	1.95	24.61		
	h) Walls of Girls Urinals	1x1	0.825	-	1.95	1.608		
	i) Plat form of boys urinals.	1x2	0.60	-	0.45	0.540		
	j) -do- girls -do-	1x1	0.825	-	0.60	0.495		
	k) Partition of wall of Boys & Girls Blocks.	1x2	0.60	-	1.95	2.34		
						98.303	126.34/ 10 Sqm.	1242.00
10.	Flooring with CC(1:6:10)using 40 mm HBG chips 100 mm thick including 12 mm thick plastering with CM(1:6) plastering for- entire room.	1x1	6.078	1.91	-	11.60		
	Deductions:(-)							
	walls portion	1x4	1.31	0.225	-	1.179		
						10.42	501.32/ 10 Sqm.	522.37
11.	Construction of plat-form with brick masonry in CM(1:6) including C/C of all. etc., complete.							
	a) for girls urinals.	1x1	0.45	0.838	0.15	0.056		
	b) for boys -do-	1x1	0.45	1.31	0.15	0.088		
	c) for screen wall of Boys urinals	1x1	0.60	0.110	1.35	0.089		
						0.233		
	Deductions:							
	a) for gap in platform of girls urinals.	1x1	2(0.15 x 0.15)		0.15	0.006		
						0.227	393.06/ 1 cum.	89.22

1	2	3	4	5	6	7	8	9
12.	Plastering with CM(1:6) to plat-form & screen wall including cost & conveyance of all materials 12 mm thick etc., complete.							
	a) Plat-form of girls urinals	1x1	0.45	0.838	-	0.377		
	b) -do-of boys urinals.	1x1	0.45	1.31	-	0.590		
	c) Boys screen walls.	2x1	0.60	-	1.35	1.620		
						2.587	126.34 / 10 Sqm.	32.6
13.	Earth filling with excavated soil initial watering, tamping etc., complete for entire building portion.				--L.S.--			50.0(
14.	Providing pans and water seal with trap including C/C of all materials etc., complete.				--E			
		3 Sets	-	-	-	3 Sets	150 /each	450.0(
15.	Providing foot rests (china clay) including C/C of all materials etc., complete.	4 Sets	-	-	-	4 Sets	50/each	200.00
16.	Providing soil outlet drain 6" brick drain	1 No	8 RMT	-	-	8 RMT	L.S.	500.00
17.	White washing with best shell lime two coats including cost and conveyance of all materials etc.complete.							
	Same Item No. 9				----	L.S.	----	75.0(
18.	Painting of Doors & Frames				---	L.S.	--	100.0(
19.	Cost of steel and fabrication charges including conveyance of charges. (100 Kg/m^3)	1x1				110 Kg.	9.75/Kg	1072.5
							Total:	11448.(
								or s
								11500.0(

(RUPEES ELEVEN THOUSAND FIVE HUNDRED ONLY).

DETAILED CUM ABSTRACT ESTIMATE FOR CONSTRUCTION OF WATER TANK OF SIZE 1.5 x 1.0 M:

Sl No.	Description of Item	No.	L	B	D	Qty.	Rate/ Unit.	Amount
1	2	3	4	5	6	7	8	9
1.a.	Earth work excavating and depositing on banks with an inital lead of 10 mtrs. & lift of 2 m in all types of soils.							
	for basement of water tank.	1x1	2.57	1.56	0.15	0.60	8.10	4.86
b.	C.C.(1:6:10) for basement incl.C/C.of all materials, labour charges etc.,complete.	1x1	2.57	1.56	0.15	0.60	374.98 / Cum.	224.98
2.	Construction of basement for water tank with brick masonry in CM(1:8) including Cost and conveyance of all.	1x1	1.50	1.00	1.00	1.50	393.06 / cum.	589.59
3.	Construction of 4½" thick wall on the basement for water tank including cost & conveyance of all materials etc., complete in CM(1:8)							
	Water tank(3 sides)	1x1	3.72	0.110	1.00	0.40	393.06/ cum	157.22
4.	Plastering with CM(1:4) including Cost & conveyance of all materials,wiring etc., complete (20 mm thick)							
	inside of the tank(allround)	1x1	3.50	-	1.00	3.50		
	out side -do- (3 sides)	1x1	3.94	-	1.00	3.94		
	on top side of wall (allround)	1x1	3.72	0.110	-	0.40 / 7.94	264.46 / 10 Sqm	210.00
5.	Provision of 3/4" G.I.Pipe to connect the urinals and latrines.	1x1	12.00	-	-	12.00 mtrs.	L.S.	300.00
6.	Sluice valves of 3/4" size	2 Nos.	---	L.S.---				70.00
7.	Taps of 3/4" size	8 Nos	---	L.S.---				150.00
8.	20 mm with plastering over the CC bed inlcuding of all materials etc., complete.	1x1	4.35	0.45	-	1.95	229.18 / 10 Sqm.	45.00
9.	Brick masonry in CM(1:8) for platform.		5.47	0.11	0.075	0.045	393.06 / 1 Cum	17.68
10.	Providing 4½" HDPE Pipe for connecting the water tank platform to the junction box of soak pit.	1x1	6.00	-	-	6.00 mtrs.	L.S.	150.00
							Total:	1919.00
							say	1950.00

(RUPEES ONE THOUSAND NINE HUNDRED FIFTY ONLY)

CONSTRUCTION OF CIRCULAR PITS OF SIZE 1.5 Ø x 1.8 mtrs.Depth

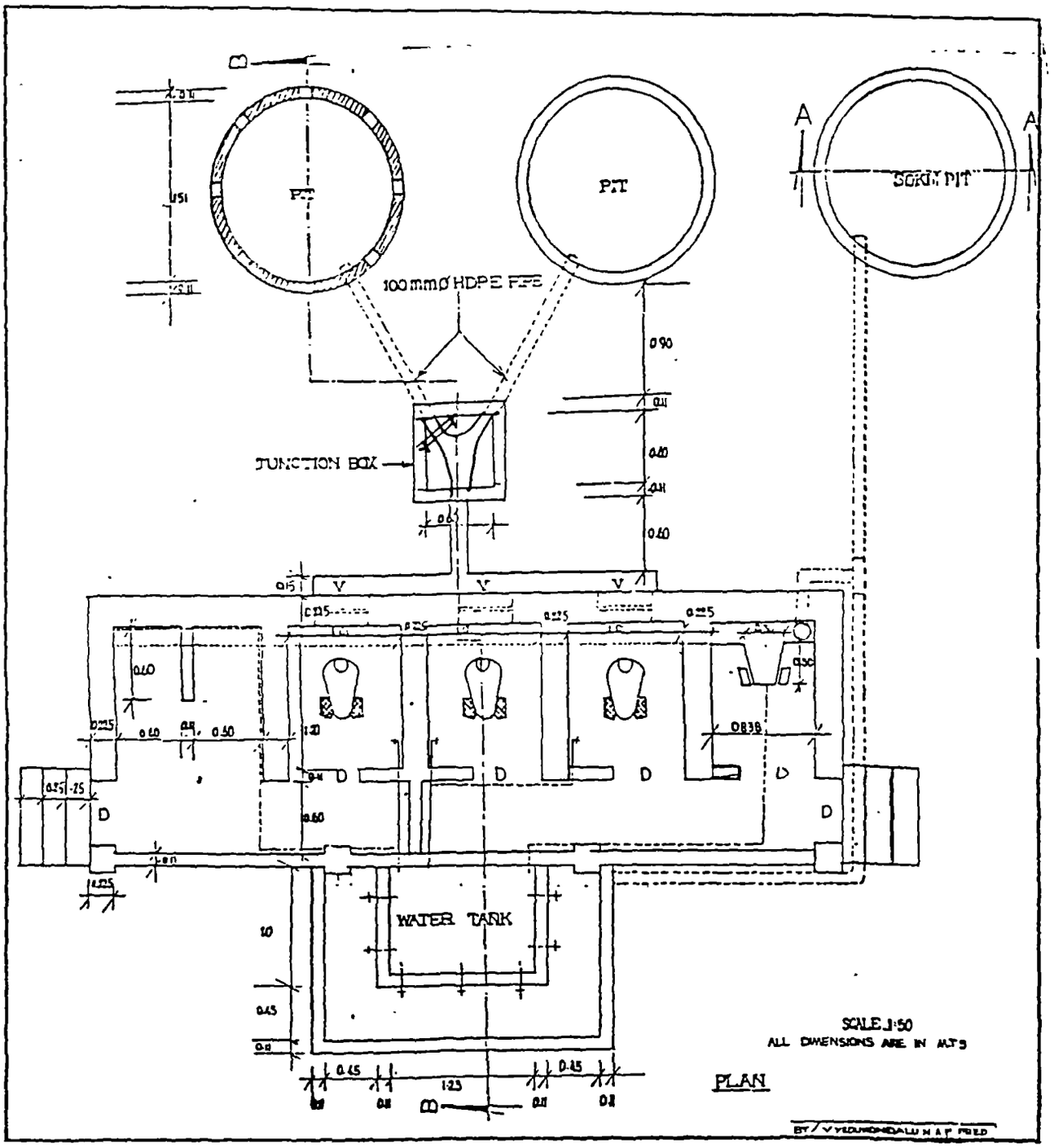
Sl. No.	Description of Item.	No.	L	B	D	Qty.	Rate/ Unit	Amount.
1	2	3	4	5	6	7	8	9
1.	Earth work excavation in ordinary soils for pits including initial lead & lift etc., complete.	2x1	$\pi/4$ x1.84	x2.025		10.769 1 cum.	8.10	87.22
2.	Brick work in CM(1:8) using IInd class Bricks including cost & conveyance of all materials & labour charges etc. complete.							
	Bottom of pit	2x1	$\pi/4$(1.82x1.82-1.39x1.39)			x 0.225 0.51		
	Top of pit	2x1	$\pi/4$(1.72x1.72-1.50x1.50)			x 0.30 0.33		
						0.84	393.06 1 cum.	330.17
3.	Brick work in Honey's Comb of 0.075 m thick in CM(1:8) including cost & conveyance of all materials etc.,complete.	2x1	$\pi/1.61$ --		1.50	15.17 Sqm.	781.50/ 10 M^2	1185.50
4.	Providding and fixing of pre cast units of RCC(1:2:4) using 20 mm thick HBG metal chips excluding cost of steel and its fabrication.	2x1	$\pi/4$x1.72x1.72x0.075			0.348	975.00 1 Cum	339.30
5.	Cost of steel including its fabrication charges(30 Kg/ 1 cum)					11 Kgs.	9.75 1 Kg.	107.25
6.	Providing iron rings.	4 Nos				4 Nos	10.00 each	40.00
							Total:	2089.00 say 2100.00

(RUPEES TWO THOUSAND ONE HUNDRED ONLY).

CONSTRUCTION FOR JUNCTION CHAMBER & H.D.P.E. PIPE CONNECTION

Sl No.	Description of Item	No.	L	B	D	Qty.	Rate/ Unit	Amount
1	2	3	4	5	6	7	8	9
1.	Earth work excavation in ordinary soils for foundation including cost & conveyance of all materials.	1x1	0.90	0.90	0.525	0.425	81.00 / 10 Cum	3.44
2.	CC(1:6:10) using 40 mm HBG metal including C/C of all materials complete etc.,	1	0.90	0.90	0.075	0.060	374.98 / 1 Cum	22.49
3.	Brick masonry in CM(1:6) for							
	Long walls	2	0.82	0.110	0.45	0.08		
	Cross walls	2	0.60	0.110	0.45	0.05		
						0.13		
	Chamber insdie of brick masonry (4½" height)	1	0.525	0.525	0.11	0.03		
						0.14		
	deduct drain portion inside of the chambers.	1	0.15	0.110	0.11	0.002		
		2	0.11	0.110	0.11	0.002		
						0.126	409.86 / 1 Cum.	51.64
4.	Plastering with CM(1:6) of 12 mm thick.							
	Walls inside	2x2	0.60	-	0.45	1.08		
	Out side walls	2x2	0.82	-	0.45	1.47		
						2.55		
	Deduct drain portion side walls	1	0.11	-	0.11	0.012		
		2x1	0.11	-	0.11	0.020		
						0.032		
					Net Qty.=	2.518	126.34 / 10 Sqm.	31.81
5.	Precast unit of CC(1:2:4) using 20 mm chips including cost & conveyance of all materials etc., complete.							
	for cover slab	1	0.82	0.82	0.075	0.05	719.64 / 1 Cum	35.98
6.	Providing iron rings for lifting of cover slab.	2				2 Nos	10.00/each	20.00
7.	Providing 110 mm dia of HDPE pipe connection from junction chamber to pits including cost & conveyance of all.	2 Nos	1.20	-	-	2.40 RMT	L.S.	75.00
							Total Rs.	240.36
							or say	250.00

(RUPEES TWO HUNDRED AND FIFTY ONLY).


PIT
PIT
SOAK PIT
100 mm ø HDPE PIPE
JUNCTION BOX
WATER TANK
SCALE 1:50
ALL DIMENSIONS ARE IN MTS
PLAN

DATA - SHEET

Sl.No.	Qty. 1.	Description of work 2.	Rate per cum. 3.	Amount 4.
1.	10 Cum.	Earth work excavation and depositing on bank with an initial lead and lift in stoney earth, earth mixed with fair size for foundations.	81.00	81.00
2.		Providing base with 40 mm HB Metal mixed with sand duly compacted with watering and ramming including cost & conveyance of all materials labour charges etc., complete./1 Cum.		
	0.90 cum.	Cost of 40 mm HBG Metal	115.70/	104.13
	0.54 "	Cost of sand	28.00	15.12
	1.00 "	Labour charges	-	28.00
				147.25/ cum.
3.		Brick masonry in CM(1:8) including cost & conveyence labour charges etc.,complete/1 Cum.		
	512 Nos	First class bricks.	450/ 1000 Nos.	230.40
	0.20 cum.	Cement Mortar (1:8)	288.30/cum.	57.66
	1.00 cum.	Labour charges.	~~393.06~~	105.00
				393.06/ cum.
4.		Brick masonry in CM(1:6) including cost & conveyance labour charges etc.,complete. /1 cum.		
	512 Nos.	First class bricks.	450/- 1000 Nos.	230.40
	0.20 Cum.	Cement Mortar (1:6)	372.30/cum.	74.46
	1.00 cum.	Labour charges.	-	105.00
				409.86/ cum.
5.		Providing brick ballast with sand duly compacted with watering and ramming including cost & conveyance of all materials, labour charges etc., complete for 1 Cum.		
	0.90 Cum.	Cost of brick ballast	100/cum.	90.00
	0.50 cum.	cost of sand	28.00/cum.	15.12
	1 Cum.	Labour charges	28.00/cum.	28.00
				133.12/c

LEACH PIT DESIGN (250 MEMBERS):

Considering 15% usage

Total discharge (Q) = 250 x 0.10 = 25

Assume waste water flow in lpcd = 9.5 lpcd.

Therefore Q = 25 x 9.5 + 5 = 242.50 lpcd.

Assume pit internal dia = 1.50 mtrs.

and effective depth 1.50 mtrs. with freeboard of 0.3 m.

Area infil = 22/7 x 1.72 x 1.50 = 8.10 m^2.

If the soil is sandy loam or loamy, the infiltrative area required is 242.50/30 = 8.08 m^2.

∴ Hence infiltrative area provided is sufficient:

Solids storage volume (v), assume solids accumalation rate as 0.04 m^3 per capita per year for a dry pit and for a desludging interval of 2 years

$$V = 0.04 \times 2 \times 25 = \underline{2.0\ m^3}$$

$$\text{Volume of pit} = \frac{22}{7 \times 4} \times (1.5)^2 \times 1.5$$

$$= \underline{2.65}\ m^3$$

Hence the volume of pit is sufficient.

1	2	3	4.
6.	Plastering with Cement Mortar 1:6 of12mm including cost & conveyance, labour charges etc., complete for 10 Sqmr.		
0.15 cum.	Cement Mortar (1:6)	372.30/cum	55.84
1.1 No.	Brick layers	35.00/each	38.50
0.50 No.	Man Mazdoor	20.00/each	10.00
1.1 No.	Woman Mazdoor	20.00/each	22.00
			126.34/ 10 Sqmr.
7.	Plastering with CM (1:6) of 20 mm thick including cost & conveyance of, labour charges complete, for 10 Sqmr.		
0.21 cum.	CM (1:6)	372.30/cum	78.18
2.2 Nos.	Brick layers.	35.00/each	77.00
0.50 Nos.	Man mazdoor	20.00/each	10.00
3.20 Nos.	Woman Mazdoor	20.00/each	64.00
			229.18
8.	Plastering with CM(1:4) of 20 mm thick including cost & conveyance, labour charges complete, for 10 Sqmtr.		
0.21 Cum.	Cost of Cement Mortar(1:4)	540.30/cum.	113.46
1.00 Cum	Labour charges	-	151.00
			264.46
9.	Honey comb brick work in Cement Mortar (1:8) including cost & conveyence and labour charges for 10 Sqmtr.		
750 Nos.	Cost of brick	450/1000 Nos.	337.50
0.28 cum.	Cost of CM(1:8)	288.30/cum	80.72
2.91 Nos.	Brick layers Ist Class.	35.00/each	101.85
6.79 Nos.	Brick layers IInd Class.	26.50/each	179.93
2.20 Nos.	Man Mazdoor.	20.00/each	44.00
5.40 Nos.	Women Mazdoor.	20.00/each	108.00
			852.00
	Deduct labour charges for plastering with CM(1:6) of 12 mm thick.		70.50
			781.50/10 Sqmtr.

..3

1	2	3	4
10.	CC(1:2:4) max using 20 mm HG metal for RCC work including cost & conveyance & labour charges for 1 cum.		
0.92 cum.	Cost of 20 mm HBG metal	184.20	169.46
0.46 cum.	Cost of Cement Mortar(1:2)	1044.80	480.37
1.00 cum.	Labour charges.	-	69.81
			719.64
11.	RCC(1:2:4) using 20 mm HBG metal with necessary steel including cost & conveyance and labour, centering, curing charges but excluding cost and fabrication charges of steel etc., for 1 cum.		
0.92 cum.	Cost of metal	184.20	169.46
0.46 cum.	Cost of sand	31.00	14.26
0.23 cum.	Cost of cement	2016.00	463.68
1.00 cum.	Labour charges	123.62	123.62
	Centering charges.	204.00	204.00
			988.40/cum.