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REPORT
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FOR DOMESTIC WATER SUPPLY AND
SANITATION

LATRINE PROJECTS
IN THE INDO-DUTCH RURAL
WATER SUPPLY AND SANITATION
PROGRAMME

A DISCUSSION PAPER

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TABLE OF CONTENTS

	Page
FOREWORD	iv
1. INTRODUCTION	1
2. APPROACH TO RURAL SANITATION	1
2.1 National policy	1
2.2 State policies	3
3. INDO-DUTCH LATRINE PROGRAMME	3
3.1 Pilot projects	3
3.2 Current status	6
3.3 Implementing organizations	7
3.4 Type of facilities	9
3.5 Costs and financing	9
3.6 Other sanitation activities	12
4. OPTIONS TO ENHANCE SUSTAINABILITY	13
4.1 Introduction	13
4.2 Stronger promotion of latrines	13
4.3 Enhanced financial allocations	14
4.4 Reduced costs of facilities	16
5. ORIENTATION OF FUTURE NA-PROGRAMME	19
5.1 Introduction	19
5.2 Creating demand	19
5.3 Selection of priority areas	19
5.4 Involvement of existing government services	20
5.5 Building implementation capacity at village level	20
5.6 Experiments with different latrines and subsidies	20
5.7 Including other sanitation aspects	21
5.8 Monitoring project achievements	22
5.9 Analysis of other experiences	22
REFERENCES	22

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FOREWORD

This paper on sanitation is the second paper in a series dedicated to themes of common interest in the Indo-Dutch integrated rural water supply projects carried out by Indian organizations in five states (Andhra Pradesh, Gujarat, Karnataka, Kerala and Uttar Pradesh). Cooperation between the Governments of the Netherlands and India in the rural water sector exists already for over ten years. Gradually, the programme has taken on a more integrated character, in which rural water supply, community participation, involvement of women, health education, sanitation, and in some cases income generation for women are part and parcel of the overall approach.

Sanitation has been included in the Indo-Dutch rural water supply programme since 1986, when the first pilot project was started in Andhra Pradesh. To date, pilot latrine projects or implementation programmes are undertaken in four states, with activities being most advanced in Kerala.

The Netherlands Government intends to continue its support to rural sanitation. Together with the Indian Government and other Indian partners it intends to work on the development of strategies to increase the coverage of sustainable facilities which are properly used.

To provide a stronger basis for the further development of such strategies and encourage a wider discussion of the sanitation issue, DGIS requested the IRC, International Water and Sanitation Centre, to provide a summary of the current status of the ongoing latrine projects in the Indo-Dutch programme and to analyze their strategies with a view to their long-term sustainability. In particular, it was felt to be important to reflect more deeply on the aim and direction of the latrine projects at a time when the first projects have been or are being carried out and before longer-term commitments are made.

The first draft of the paper was prepared by Mr. Steffan Hvam with inputs from IRC. It was extensively discussed in the Netherlands and at the NAP India conference held from 5 to 7 May in Trivandrum, Kerala, where the paper was the background document for sanitation. The reactions have been incorporated in the present version. It is hoped that this paper will contribute to the wider enhancement of the sanitation issue and will encourage further fruitful cooperation between all project partners of the Indo-Dutch Integrated Rural Water Supply and Sanitation Projects.

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1. INTRODUCTION

Including sanitation and hygiene education in the rural water programme was first recommended in 1980, when the Operations Review Unit of the GON concluded that unsanitary conditions and unhygienic use of water would impede the intended health impact of the projects (IOV, 1980). As a result, pilot sanitation projects were identified, with an emphasis on latrine construction.

The first pilot latrine project started in Andhra Pradesh in 1986. It was followed by pilot projects in Kerala and Uttar Pradesh in 1988 and in Gujarat in 1990. In Karnataka, a 6-month planning period has been started in 1991, to establish a project which may include a sanitation component.

In the Indo-Dutch programme, sanitation implementation lags considerably behind water supply. Total approved programme assistance over the first ten years (1978-1988) was Dfl. 375 million. Of this amount, 90% was allocated to water, 7% to sanitation and 2-3% to hygiene education. The design population for the NA-water projects is some 8 million people, or 1.1 million families. With an average present latrine coverage of some 2%, a large effort is required to reach a situation where families receiving water from NA-projects also have and use adequate sanitary facilities.

At present, Indo-Dutch latrine projects are in their pilot or initial programme stages. Soon, decisions will have to be taken on the scale and direction of the continuation of the projects. It was therefore considered useful to prepare a summary and analysis of the current projects, with an emphasis on the role the NA-projects have in the development of sustainable and replicable approaches in rural sanitation.

To guide development at the longer term, GON and the State Governments are negotiating so-called Frameworks for Collaboration for the coming five years. In Kerala, the framework has been approved, frameworks for AP and Gujarat are under consideration. Under these frameworks some 15% of Dutch financial assistance will go to rural sanitation. In Karnataka and UP, no frameworks have been formulated as yet.

2. APPROACH TO RURAL SANITATION

2.1 National policy

Indian national policy aims at an integrated approach in the water sector. This implies that rural water supply projects are supplemented by sanitation and hygiene education and that the population, men as well as women, takes an active part in all three activities, preferably to the extent of self-management (DRD, 1986a, Ghosh, 1988, UNDP, 1990).

The main focus of the Indian sanitation programme is the conversion of bucket latrines in urban areas and the increase of urban and rural latrine coverage. During the IDWSS Decade, coverage increased from 0,5% to 2,6% at country level, thus falling considerably behind the target of the seventh Plan, which was to serve 25% of the rural population with latrines by 1991 (DRD, 1986b, Ghosh, 1988).

Other main policy directives were: preferably installation of the double-vault, pour-flush latrine (Fig. 1); maximal use of local materials for optimal cost reductions; 100% subsidized latrines for SC/ST households; involvement of NGOs in training for construction, maintenance and use, with some basic funding from Central Government

to be supplemented by State funds; and implementation preferably by the same state agency which implements the sanitation programme under the Rural Landless Employment Guarantee Programme (DRD, 1986b).

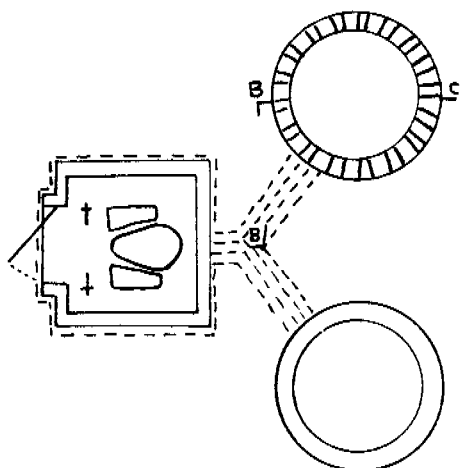


Figure 1: Pour-flush latrine with double vault. Source: TAG-India (1985).

Under the VIIIth Plan, guidelines for rural sanitation have recently been revised:

- The target has been scaled down to 10% coverage by 1994/95;
- The double-pit, pour-flush latrine is still the preferred model, but other acceptable low-cost models can be tried, including single pit latrines;
- Low-cost materials should be used maximally;
- The choice of models should be left to the beneficiary;
- Priority should be given to areas with:
 - * related development programmes, e.g. ICDS, DWCRA, TRYSEM
 - * scavengers
 - * high latrine demand, e.g. for privacy
 - * high child mortality due to water-borne diseases
 - * literacy, water supply and health campaigns
- In each village at least 20 households should participate;
- Projects should be integrated and include health education, community and women's participation, training for maintenance, etc.;
- Other improvements, such as drainage, bathing platforms, smokeless stoves and washing complexes for women can be included;
- Panchayats/beneficiaries should contribute to financing;
- SC/ST/BPL households can receive a maximal subsidy of 95%, their own contribution can be in cash and/or kind;
- For subsidy to others, prevailing state norms can be applied, provided contributions by either users or Panchayat are not less than 10% in villages wanting 100 latrines or more, 15% in those with 50-99 latrines, and 20% in those with 20-49 latrines;
- Individual beneficiaries should as far as possible be involved in the construction of their own latrine, under the overall supervision of the executing agencies;
- The executing agency should preferably be the same as the one executing the sanitation programme under JRY;
- Norms and models are to be developed to suit local conditions and along with subsidies and implementing agencies be sanctioned at state level;
- Interministerial committees at Central and State level will coordinate the programme, with possible representation from the Departments of Health, Education, Panchayat, Rural Development, Planning and PHED;

- Monitoring should include plans, progress and achievements, including proper selection of beneficiaries, quality of construction, maintenance and use and absence of pollution of water sources (formats for some aspects included) (DRD, 1991).

2.2 State policies

At state level, NA-rural water supply projects are implemented by the state water agencies or water boards. These organizations do not always have the mandate to carry out also rural sanitation projects. Although the Central Government recommends that one agency implements rural sanitation, in practice a state may have several rural sanitation programmes, including the Indo-Dutch projects, with each programme/project implemented by a different organization.

With regard to technical designs, state policies followed the national policy in preferring the double-vault, water-seal latrine. It has further become the accepted policy to install the full latrine (underground parts with a completed and permanent superstructure). The reason is that under earlier programmes, which included little or no latrine promotion and community and women's participation, the beneficiaries often did not install the latrine slabs, or complete the superstructures, which is a first condition for privacy and use.

This policy, combined with high construction standards set by some of the implementing agencies and the fact that users, when given a free choice without financial implications voted for the most durable option has impeded the use of local materials in some programmes and pilot projects.

Policies on financial contributions also vary between and within states. In one programme, a full subsidy is only given to SC/ST households, while in another, full subsidy is also given to BPL households (Below Poverty Line, or less than Rs. 500/month). Two other programmes do not give full subsidies to SC/ST and BPL households.

Subsidies for households above the minimum income also vary from State to State (see further section 3.5).

3. INDO-DUTCH LATRINE PROGRAMME

3.1 Pilot projects

In the Indo-Dutch latrine programme, sanitation improvement was started through pilot latrine projects in all states. Some of these projects tested only one model and strategy in a few villages (Gujarat) or compared different models in the same village (UP). Others used a larger sample (AP, Kerala) and compared different strategies (Kerala). In Andhra Pradesh, the pilot project tested one implementation strategy in 22 of the 171 villages of AP-I.

The pilot project was carried out by a national NGO specialized in latrine projects and included promotion, education and construction activities for 1 community latrine, 22 school toilets and 500 double-vault, pour-flush household latrines. The project failed, because most latrines were of poor quality, not completed and not used. Promotional activities were minimal and had no effect (NAP Office, 1988).

The pilot project was subsequently abandoned and replaced by a more general community development and health education programme. This included promotion of environmental sanitation (especially improvement of drainage at public waterpoints) and women's programmes in 202 villages of AP-I (31 more villages were included under a later extension).

A new programme is now to be started in 434 villages of AP-II and 52% of the 226 villages in AP-III, testing a more participatory and demand-driven approach. Implementation will be by the Panchayati Raj Engineering Department for the technical aspects and an NGO for the non-technical aspects (Appraisal mission, 1991). For each qualifying village, PRED, NGO and Village Action Committee will make a village master plan, which can cover various types of sanitary improvements (latrines, soakpits, bathing cubicles, smokeless stoves, chains of waterpoints etc.) at household, institution and village level (AP 25, p. 20).

In Gujarat, a revised pilot project has been developed for 2 villages. It involves the construction of the standard type latrine as well as bathrooms under the state's subsidy regulation.

The original plan had been to construct these facilities in all household free of charge (GU-15). For reasons of sustainability this proposal was reformulated on request of DAL/ZZ. In the new proposal, underground parts would be fully subsidized, but users would be given the choice between 4 different types of superstructure and contribute a higher share of the cost of the more expensive types (GU-20, Annex 10).

The reformulated project was rejected by the GWSSB as not being in line with the Central Rural Sanitation Programme, under which only one standard type of superstructure with a fixed subsidy may be installed. The new pilot project has therefore been adjusted and now follows the state policy without testing other approaches (GU-23, annex 8).

In Kerala, a pilot latrine project was carried out in all 7 panchayats of KE-I. The pilot project introduced one type of latrine (the state-adopted, double-vault, pour-flush latrine with permanent superstructure), but tested different organizations as project implementors.

In the pilot phase, some 2000 subsidized pour-flush latrines were installed in poor households. In each area, different implementors were involved: local NGOs; Panchayats and locally formed Ward Water Committees; semi-government institutions; and the Socio-Economic Units.

Installation by the Panchayats gave the best results, so this strategy was expanded to a full-scale latrine programme of Rs. 200 Lakh, under which poor (BLP) households can apply for a double-vault, pour-flush latrine with permanent structure and maximum use of local materials. Beneficiary households themselves contribute 25% of the total latrine cost, 20% in cash and 5% in unskilled labour. Panchayats and WWCs carry out local implementation. They select beneficiaries, procure materials, supervise construction and monitor construction, maintenance and use. In addition, Panchayats contribute to local construction costs according to their capacity (SEU, 1991 and pers. com.).

Figure 2:
Standardized design
and materials for latrine,
local materials for
houses

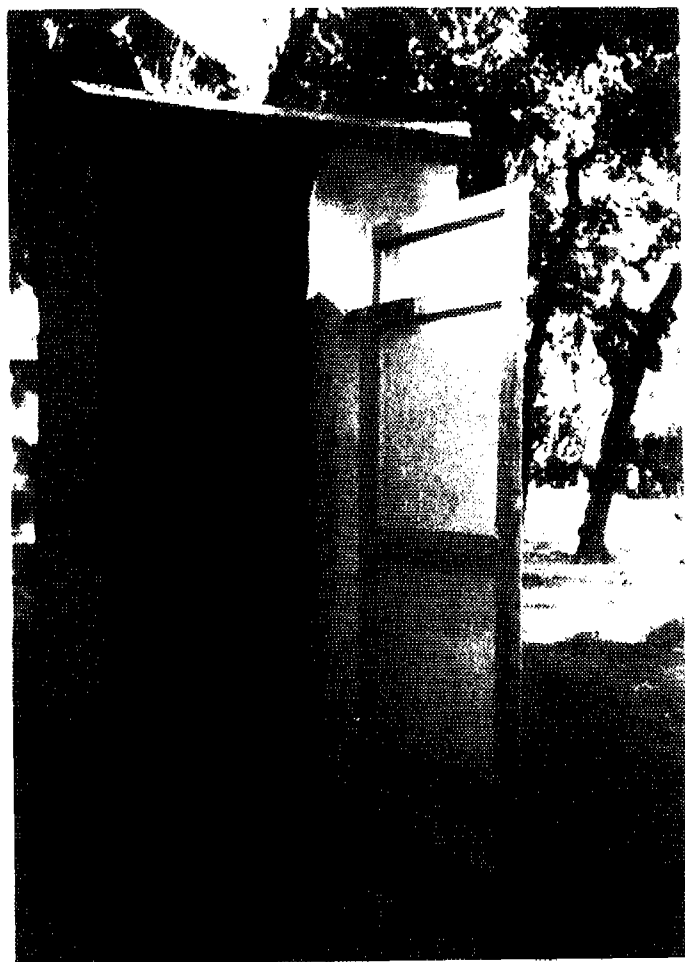


Figure 3:
Use of local materials for roof,
wall and door to bring down unit
costs

The SEU, which is implementing the overall programme, is now looking at ways to make the latrines more affordable for the poorest of the poor. This applies to those who cannot afford the 20% cash contribution and who live in a poor Panchayat which cannot afford to contribute much to construction costs either. At the same time, the programme is testing the marketing of a medium subsidy latrine for the medium income groups. It also considers selling unsubsidized latrine kits for self-financed latrine construction, to meet the generated demand for the programme's latrines from the higher income groups (Indo/Dutch/Danish mission, 1989, Kurup, pers. com.).

In Uttar Pradesh, a latrine project was prepared in 1985 and cleared in 1987 (UP-V). It covers 46 out of 722 villages of the first water supply project. A pilot latrine project was carried out in 2 (4%) of these villages in 1988.

In each village, 20 double-vault, pour-flush latrines were constructed. Different designs and materials were tested in the same village. A committee consisting of representatives from Jal Nigam, PSU, BHU and some village representatives then selected one of the more sturdy models as standard to be constructed throughout the pilot region.

Delays in project clearance, selection of a relatively more costly design, increase in cost of materials, a pre-arranged user contribution and a relatively high agency charge implied that coverage within the given budget were reduced to about 1/3 of the original plan.

3.2 Current status

An overview of the current status of the ongoing latrine projects and programmes is given in Table 1. So far, some 12,500 household latrines have been installed. Installation of another 80,000 is planned.

TABLE 1: STATUS OF INDO-DUTCH LATRINE PROJECTS PER 31 MARCH 1992^{*)}

State	Project	Household latrines		Institut. latrines		Communal latrines built**)
		Planned	Built	Planned	Built	
Andhra Pradesh	Pilot	500	350	22	22	1
	Implementation	14,000	-	450	-	-
Gujarat	Pilot	180	85	2	-	-
	Implementation	17,000	-	130	-	-
Karnataka	Implementation	24,000	****)	240	-	-
Kerala	Pilot	2,000	2,000	-	30	1
	Implementation	10,000	7,600	-	-	-
Uttar Pradesh	Pilot	40	40	27	23	-
	Implementation	13,500	2,500	-	-	-

*) Figures rounded off

***) Discontinued as no success (Joint Mission Kerala, 1989; AP-19, Annex 11)

****) May be adapted during project inception phase.

3.3 Implementing organizations

a) Latrine projects

Institutional arrangements for implementation of NA-latrine projects are still under development. Table 2 gives an overview of the present situation for the NA-latrine projects.

TABLE 2: IMPLEMENTATION OF NETHERLANDS-ASSISTED LATRINE PROJECTS*)

State	Agency in charge	Fund flow	Implementing agency	
			State level	Community level
Andhra Pradesh	Dept. Panch. Raj & Rural Dev.	PRED	PRED with State NGO	PRED with State NGO
Gujarat	State Water Agency (GWSSB)	GWSSB	State NGO	Voluntary groups
Kerala	NA Project Office (SEU)	SEU	SEU	Panchayats
Uttar Pradesh	Dept. of Urban Development (DUD)	DUD	State Water Agency (JALNIGAM) with NA Project Office (PSU)	JALNIGAM with PSU

*) Organizational arrangements for the Karnataka project are under study

In AP, implementation of the technical work is by the state water organization, the PRED, while a state-level NGO specialised in community development implements the socio-educational work in the communities.

In Kerala, both technical and other activities (latrine promotion, beneficiary selection, mason supervision, monitoring of installation, functioning and use) are implemented by the Panchayats and Ward Water Committees. Overall organization and coordination is carried out by Dutch and Danish financed project offices (SEUs). The KWA, which is in charge of urban and rural water supply and sewerage systems in Kerala, is not in charge of on-site sanitation and is not inclined to take over this programme. The SEU is therefore looking at possible ways how in future the current programme activities could integrate into existing organizations and structures. Figure 4 gives an option under consideration.

In Gujarat, the GWSSB has delegated the implementation of rural latrine programmes to a voluntary organization specialized in sanitation, the Environmental Sanitation Institute. This NGO implements several rural sanitation programmes financed by international donors (World Bank, Unicef) and the State Government. Implementation at village level is done by local voluntary organizations or groups. The tasks of the NGO are to select these organizations, train them in technical, organizational and promotion tasks, provide educational materials and monitor overall implementation, including regular field-checks on technical quality and participation of SC/ST sections.

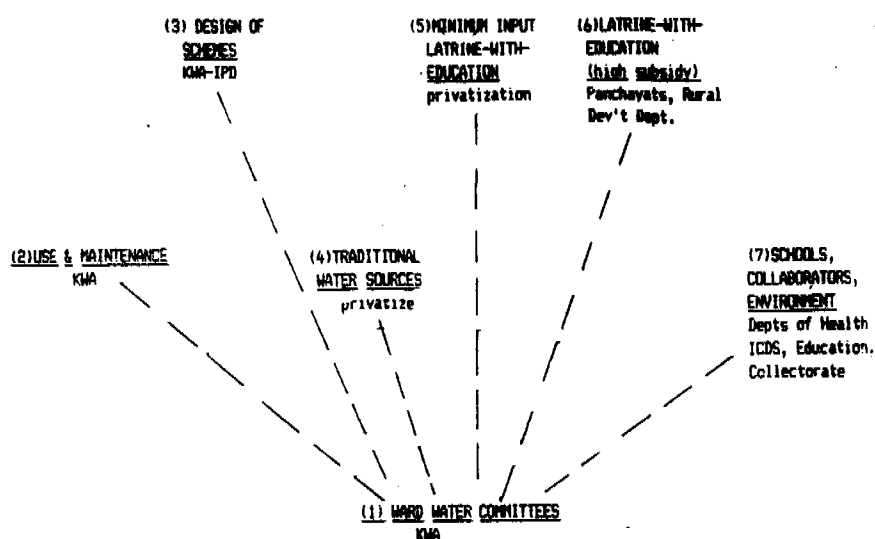


Figure 4: One of the possible concepts for future institutionalization of water supply and latrine activities in Kerala. Source: SEU, 1991.

In UP, first a comparative study was carried out on existing latrine programmes of Jal Nigam and the Panchayati Raj Department. Initially, Panchayati Raj was selected as technical agency, because of its more participatory approach (UP-16). However, the Department failed in its performance in other latrine programmes (poor structural quality of latrines, no involvement of users). Thereupon, the Review and Support Mission recommended to strengthen the technical capacity of Panchayati Raj (UP-22), but the State Government decided to shift the Indo-Dutch sanitation project to Jal Nigam (UP-24).

The selected organizations are not necessarily in charge of all sanitation activities within their State and the best organization, or combination of organizations for rural sanitation projects has not yet been established. There are thus still alternatives to be looked at in relation to the development of institutional capacities for larger-scale projects.

b) *Hygiene education*

Hygiene education in the sanitation projects is mostly carried out by NGOs. In all cases, and in contrast to the water programme and advice on national policy (section 2.1), salaries of fieldstaff are fully financed by the GON. The decision to work with NGOs, while satisfactory in some respects, has also met with a number of problems.

In AP and UP, contracts with two NGOs specialized in rural development (AP) and social research (UP) had to be terminated because they were not able to manage a large programme of this nature. In AP, the NGO specialized in sanitation, which was involved in the pilot project, did not implement the hygiene education programme. In Gujarat, the sanitation NGO was assessed to be capable to manage the technical work, but not the health education which was also in its package, so that a second NGO, specialized in health education, had to be contracted for this work.

Government Departments and programmes with a mandate for health-related tasks, such as the Department of Health and various women programmes, are presently involved on a limited scale.

In Kerala, ad-hoc arrangements are made at Panchayat level with whatever Government service is interested to cooperate (e.g. Integrated Child Development Service, PHC staff, nurses training school). In UP, a special arrangement was made with a government programme for women and children, DWCRA (Development of Women and Children in Rural Areas) to carry out health education in a part of the project villages. In AP, cooperation with the State's Women and Child Health programme has been proposed for AP-III.

In addition, women's organizations and networks play sometimes a role at local level. At state level there is no systematic approach or policy on a more structural involvement of staff from existing social and health services and of women's organizations and networks. As a result, project offices may get a budget to support government services that is many times higher than the support given to the services themselves, e.g. to DWCRA (UP-24, p. 71)

3.4 Type of facilities

Under the present approaches, complete latrines (underground parts and superstructure) are built according to the standard model advocated by state and central policies (the double-vault, pour-flush latrine, see Fig. 1). Because of its relatively high unit costs, this model is unaffordable to most rural households unless heavily subsidized. In some programmes, efforts have therefore been undertaken to use more local materials for the construction of the latrine superstructure and to adapt the design dimensions.

In Kerala, the SEU has encouraged the project fieldworkers to use and test available local materials and experiment with local adaptations of the standard design. This resulted in a reduction of net unit costs from an initial Rs. 1850-2200 to Rs. 1450-2200, depending on local conditions. Inflation has since raised unit costs to Rs 1520-2400 in 1991 (Shordt, pers. com). In UP, one standard design for all villages is adhered to, but internal discussions on lowering the costs of this design brought down the initial unit costs from Rs.3700 to Rs.3100 (UP-26).

Efforts to develop more affordable, yet adequate quality designs of the standard model continue in Kerala. The project carried out a comparative study on costs using local materials, such as bricks. Where brick making is expensive, local masons, including women, are trained to make cement blocks, either as home industry or to pass on this skill to beneficiaries (SEU-CO, 1991). In Gujarat, the implementing NGO has experience with using local materials in other programmes, but it is not clear whether this will also take place in the NA-programme, as this is not indicated in the adopted plan (GU-23, annex 8).

All Indo-Dutch programmes also contain a school sanitation component. In general the school latrines are provided free of charge to the schools, which are supposed to take over the operation and maintenance. Use and maintenance seem to pose problems in some of the programmes, due to various technical and organizational factors as e.g. inadequate sanitation promotion, insufficient cleaning of the latrines and lack of funds for maintenance.

3.5 Costs and financing

Table 3 gives an overview of the approximate costs of the latrines currently built under the NA-programme. They include both the direct costs (materials, labour) and the indirect costs. Direct cost differ due to variation in design specifications and costs of material. Indirect costs include the costs of: 1) project coordination and monitoring; 2) community

participation and hygiene education and 3) overhead (charges by the implementing agency to cover costs of administration, office equipment, supervisory staff, research etc.). Table 3 gives an overview of these costs in 1990/91. Costs are in rounded-off figures.

TABLE 3: DIRECT AND INDIRECT UNIT COSTS OF NA-LATRINES IN RS

	Direct cost	Agency charge	NGO charges	Project office support*)	Total costs
AP	3000*)	-	190	160	3350
Gujarat	2450	140	340	40*)	3000
Kerala	1860**)	-	-	150	2000
UP	3575	800	-	1440	6000

*) Estimate. Actual cost yet to be calculated

***) Average. Rate is Rs. 1500-2400, depending on local circumstances.

Table 3 shows that the indirect costs are an important part of the overall latrine costs and that especially the agency charges and project support costs vary considerably.

In Gujarat, the government charges 17.85% establishment charges. Of these, 10% go to local NGOs for latrine promotion, implementation and hygiene education, 5% to the state sanitation NGO for training and management and 2.85% to the GWSSB for administration and overall supervision (GU-23, annex 8). In the pilot project, these charges are somewhat different because also bathrooms were included (GWSSB, 1992). When their costs are left out, the charges on latrines are 3.7% for the local NGOs implementing the programme, 3.7% to the state NGO training, guiding and supervising the local NGOs and 3.6% for administration costs of the GWSSB. In Kerala, the programme is implemented by the SEUs, so there is no KWA charge. In Uttar Pradesh, and according to State regulations, the water agency charges 19% overhead on the each latrine (4% for design, 15% for supervision) plus 1% for research and development and 8% for physical contingencies (UP-26, p. 67). In addition, Rs. 1440 or 25% goes to sanitation promotion (latrines and other sanitation improvements), hygiene education, training and monitoring (PSU, 1992).

Furthermore, cost escalations are sometimes higher than planned for.

In Gujarat, the Rs. 2250 model of 1988 was budgeted for Rs. 2900 in 1990, an annual increase of 29% instead of the planned 8%. In UP, direct unit costs were Rs. 1836 in June 1989 (UP-22,p.45) and Rs. 3575 in June 1990 (UP-24, p.67), a cost increase of almost 100%. In Kerala, the annual cost increase ranges from 5 to 9% and stayed within the planning.

Because few villagers can pay these costs, the introduced latrines are heavily subsidized. Table 4 gives an overview of the range of subsidies in rounded-off figures. Costs and subsidies for Karnataka are not yet known.

TABLE 4: SUBSIDIES ON LATRINE UNIT COSTS

	SC/ST	BPL	APL/Medium incomes	Higher incomes
Andra Pradesh	92%	n.i	85%	85%
Gujarat	85%	85%	80%	80%
Kerala	80%	80%	50%*)	0%
Uttar Pradesh	95%	95%	90%*)	90%*)

SC/ST=Scheduled caste/tribe BPL=Below Poverty Line (Rs. 650/month)

Medium Income (Kerala)= Max. Rs. 1000/month

n.i. = not indicated

*) Varies with actual latrine costs, because users pay a flat contribution, and not a percentage of the costs, as in other cases.

The table shows that there is a considerable variation between the various financing policies for low-income households.

In AP, SC/ST households will be asked to contribute Rs. 100 in cash.

This constitutes 3% of the present direct latrine costs of ca. Rs. 3000, plus labour. What BPL households will pay is not indicated. In Gujarat, SC/ST and BPL households must contribute 25% of the superstructure, which is about 14% of the direct latrine costs at the current price. However, in the first pilot village, the users have contributed 5% in kind, because the NGO reported no household could be asked to contribute any cash. In Kerala, households with an income below Rs. 500/month pay 20% of the direct latrine costs, plus unskilled labour. No special distinction is made for SC/ST households. In UP, SC/ST/BPL households contribute no cash, only voluntary labour.

Contributions for households above the poverty line also vary between states.

In AP, they have to contribute 25% of the direct latrine costs. In Gujarat, they will pay 50% of the cost of the superstructure, or ca. 21% of present total direct latrine costs. In Kerala, the project recently started an experiment to assist medium-level households (incomes between Rs. 500 and 1000 per month) to install a latrine. They must contribute Rs. 650 or 50% of current direct latrine costs. Wealthier households have to build their own latrines, but it is planned to start selling pan and fittings to them at cost price. They can then hire local, project-trained masons to build their own latrines. In UP, households with a monthly income above Rs. 500 had to pay 25% of the direct latrine costs, or Rs. 400. When the cost of the latrines started to go up (see previous page) the project decided to keep the Rs. 400 contribution, because the amount was by that time generally known and accepted. At the present price of a latrine, this means that they get a subsidy of 90%.

Apart from the beneficiaries, in Kerala also Panchayats contribute to latrine financing. Their contributions so far have ranged from Rs. 500 to Rs. 125,000, with an average of Rs. 33,000 (SEU, 1991, p.15). In AP, Panchayat contributions to water supply and sanitation are under consideration. In the other states there are no Panchayat contributions.

3.6 Other sanitation activities

Other sanitation activities are so far limited. They concern especially drainage improvement at public waterpoints (Fig. 5), but also the construction of household soakpits (UP, Kerala), bathing cubicles (Gujarat, AP), fly control and solid waste disposal (Kerala) and smokeless stoves (AP).

Discussions with the RSMs indicated that especially construction and upkeep of drainage at (all) public waterpoints need to be improved. Evaluation reports of the first generation water supply projects also give this as a major issue at village level (UPDESCO, 1989, ORG, 1990). First experiences indicate that low-cost self-improvements like soakpits can be implemented and managed by the communities and households themselves, provided enough guidance and technical assistance is given (ETC, 1990, Patel, pers. com., Shordt, pers. com.). The per capita cost of more comprehensive programmes, e.g. for street pavement and roadside drainage, may easily be of the same order as for water supply, in which case a higher priority should be given to water projects (pers. com. RSM-UP).



Figure 5: Lack of drainage at village water point

4. OPTIONS TO ENHANCE SUSTAINABILITY

4.1 Introduction

Taking the allocation to Kerala as a guideline, the Dutch Government plans to support the rural water sector in the present 5 States with some Dfl. 150-200 million over the next five years. As agreed or under agreement in the Frameworks for Collaboration, some 15% of these funds, or Dfl. 23-30 million, will go to rural sanitation.

With an average unit cost of Dfl. 245 (Rs. 2700) per latrine, this means that when other sanitation improvements are not considered, maximally 100,000-120,000 household latrines could be built. Taking an average of 7 people per household, this would mean serving some 700-800,000 people, or 9-10% of the total population served under the NA-rural water supply projects, which is some 8 million people (AP-24, Vol.II, Gu-22, Annex 5&7, SEU 1991, p.6, UP-26).

However, this estimate does not yet take into account the indirect costs of the latrines nor the fact that other sanitation improvements will be included. The indirect costs of latrines would bring total unit costs to at least Rs. 3500-4000 or Dfl. 320-360 per latrine. At these costs and with the available funds, rural latrine coverage in the NA-areas could be expanded by some 6%, and excluding other sanitary improvements.

The actual percentage may be lower, because of population growth and cost increases, of which the latter may partly be offset by devaluation of the Rupee. On the other hand, the promotion of latrines and the availability of trained masons and lower-cost designs, parts etc. may increase latrine demands, thus creating higher coverage levels in the more interested areas.

Both cases will make only a small difference in coverage. To make a real difference to the environmental and living conditions, a much higher latrine coverage as well as other improvements in village sanitation will be needed. This will require that the current efforts are intensified and made more sustainable, using all possible vehicles and taking into account the experiences gained under the pilot and implementation projects and from other Indian sanitation projects (not here reviewed), which may be further advanced in finding cost-effective solutions.

The following sections list a number of key issues which have emerged from the review of the current projects and the reactions of the Review and Support Missions and the Socio-Economic Advisor, Kerala and which need to be addressed in relation to an expanding and more cost-effective programme.

4.2 Stronger promotion of latrines

Sanitation still seems to have a low demand for villagers and interest in latrines is based more on a need for privacy than on health considerations. With population pressures increasing and privacy becoming scarce, interest in latrines is likely to grow, particularly amongst women. However, further stimulation will be needed and suitable approaches are to be identified to raise the demand for latrines, as undertaken e.g. in Kerala.

Government priorities for sanitation, including activities for community participation, women's involvement and health education are also increasing. However, further stimulation is yet required, as agency staffing for rural sanitation lags behind and management capacity for integrated sanitation programmes is scarce.

One option deserving further testing is that tasks of latrine promotion, health education and monitoring are included in the work of the staff of existing services with a health or development mandate, such as Child Development Services and PHC. Direct personnel costs would in that case remain part of the regular budget of these services, but additional costs, e.g. for training, educational materials, supervision, allowances, etc. and a special coordinating and monitoring unit would be borne by the latrine projects. Under this option, it would be possible to serve a larger number of households, because no extra fieldstaff for latrine promotion would have to be employed, as is presently the case. Also, a more sustained latrine promotion and health education programme could be established, because the regular government staff will stay on in the project area and can benefit from the project's special inputs in capacity building, materials development etc.

From the present experiences it is further not clear whether a larger scale and more promotion oriented latrine programme is best carried out by the same organizations which carried out the initial projects, or whether longer-term sustainability of the latrine programme requires a shift in the organizational set-up.

The relevance of a school latrine component can not be doubted, particularly because children may be more influenceable than adults with regard to health awareness and sanitation practices. Furthermore, in areas with distinct caste or other cultural or social barriers, sanitation promotion through schools is one of the easiest ways to reach all. In order to achieve optimal output from the school sanitation programmes, the following aspects should be taken into account:

- Water supply connections should be in place to allow the use and upkeep of the pour-flush models as well as for handwashing;
- Funds for maintenance of the latrines and payment for the water supply connections must be ensured in collaboration with the Ministries of Education;
- The interest, or curiosity, created during construction of the latrines should form the basis for simultaneous and intensive hygiene promotion activities;
- A kind of school sanitation clubs could be created with active participation of the pupils in order to ensure proper use of the latrines as well as contribute to further dissemination of sanitation and hygiene messages;
- Specific arrangements for cleaning must be made. Involvement of the pupils should be avoided unless it can be ensured that the cleaning is not done exclusively by harijan pupils;
- Monitoring of upkeep and use of school latrines should be part of the local monitoring system on latrine functioning and use.

4.3 Enhanced financial allocations

To reduce the growing gap in coverage between rural water supply (increased from 31 to 74%) and rural sanitation (increased from 0,5 to less than 2%), considerable finance is needed. Current Government and donor allocations are too low to close the gap. At the present rate of progress, already the conversion of bucket latrines in the urban areas is estimated to take over 500 years, not counting the construction of latrines in urban households without any sanitary facility (10.4 million) and in the rural areas, where 80% of the population lives (d'Souza, 1990).

Ways to reduce the financial gap include:

- Enhanced user participation, including stimulation of people to build and finance their own facility. In Kerala, an (unplanned) latrine demand was created among wealthier classes by providing subsidized latrines to lower income groups. The project now considers to meet the demand from this group by marketing the key fittings (trap, pan and Y-junction) at a no-loss, no-profit price, while leaving it to the households themselves to engage a (project-trained) mason and construct the latrine (SEU, pers.com.).
In Uttar Pradesh, an experiment is carried out in two villages outside the pilot area, with households paying the full direct costs of the latrine. The project now considers to expand the marketing of full-cost latrines to those who are able to pay, so as to serve more people with a sanitary latrine within the given budget (UP Jal Nigam and PSU, pers. com.). It may even be possible to include a small service charge to these households, because they are saved from having to buy and transport the materials, while the high-quality ceramic pan is not for sale in UP and is imported by the project from Gujarat.
- More flexible installation subsidies. At present, only two types of subsidy are given, high to BPL households, slightly lower to others. Current variation in these subsidies (Table 4) indicates that differences in payment capacity in reality vary more, both within and between Panchayats. Allowing a greater flexibility in contributions from beneficiaries as well as Panchayats could reduce present high subsidies, yet preserve the assistance to the poorest households. One option to do so is to classify households into more than two subsidy categories. This is now under development in Kerala (see Table 4). It is also being considered in UP, where the project wants to give a high latrine subsidy to those without private connection to piped water supply and electricity; a lower latrine subsidy to those with a connection to either water or electricity, and a low or no subsidy to those with a private connection to both services (UP Jal Nigam and PSU, pers. com.).

This option has the great advantages of reducing high subsidies to those better-off and allowing to serve more (poor) people with the given budget, but it also requires additional work and an independent verification unit. Both requirements can be a limiting factor for further programme expansion. An alternative for testing would be to give households a choice in a range of latrine models and provide a subsidy in the form of free key materials (slab and fittings) and installation for the most basic model or models. Households wishing to install a larger or more luxurious model then pay for the extra costs themselves.
- Enhanced contributions from the Panchayats. Such contributions are presently not accepted by higher Government levels, including in Kerala, where the Panchayats themselves introduced a practice of voluntary contributions according to payment capacity and were willing to accept a more formal contribution of 10% (SEU, 1990). The latter was however not allowed by the Department of Panchayats, because other programmes don't ask contributions, poor Panchayats are said not to be able to miss funds for sanitation and state policy does not support Panchayat payments (Shordt, pers. com.).
- Fixing costs and contributions case by case. To reduce the average unit costs of latrines and make optimal use of local opportunities, project staff can be encouraged to adapt off-the-shelf models to variations in the local availability and prices of materials and bargain for the lowest price at the quality norms set. This is already happening in

some states and considered in others. Experience has further shown that because of inflation, it is better to budget and announce user contributions per community or group of communities where the project is about to be implemented, than for a whole area, as it is very difficult to raise beneficiary contributions after a first amount has become known.

- Alternative forms of community financing. These may include experiments with donations to a voluntary latrine fund to assist those unable to pay, or the establishment of village revolving fund, as done successfully in Thailand, but less successfully in Tanzania. In Kerala, the SEU helps people to get a loan from a bank or a housing cooperative. More recently, the fieldstaff has started to encourage project participants to open a savings account in the post office as soon as the latrine project is initiated in their panchayat. Since the period needed for promotion, beneficiaries selection, training, etc., is some 8 months, beneficiaries have usually been able to save a substantial part or all of their cash contribution before actual construction starts (SEU, pers. com.).
- Enhanced national or state contribution. India has already raised its allocation to rural sanitation in its VIIIth Five Year Plan, including an allocation of Rs. 1,9 million, or 10% for user information, participation and education, but not yet to the level needed (Mukherjee, pers. com.).
- Enhanced donor contribution, as formulated in the Dutch policy plan for development cooperation with India.

The increase of Government and donor finances has its limitations, e.g. pressure for other sectors and countries and priority of other sanitation issues. Hence enhanced user contributions, especially from better-off households and Panchayats and promotion of self-constructed latrines seem the most effective strategies to increase funds for rural latrine coverage.

4.4 Reduced costs of facilities

a) Reducing costs of current design

For greater sustainability, efforts to reduce costs of the present design should be continued. An example of a conscious cost-reduction strategy is the programme in Kerala, where suggestions from fieldstaff are encouraged and experiments with and cost-comparisons between different local designs are carried out (SEU-S, 1991). Monthly meetings of sanitation staff have also started in UP. Further measures to reduce costs will also be tried, such as adapting dimensions for superstructures and negotiating a reduced price for bricks with the district magistrates in charge of local price control (Jal Nigam and PSU, pers. com.).

Another important source for cost-reductions is a lowering of overhead charges on latrines.

b) Testing lower-cost options

Besides lowering the costs of the double-vault model, also other, lower-cost models can be tested. A first such type is the single-pit latrine (Fig. 6A). Slab and superstructure of this latrine are placed directly over a single pit. When the pit is full, it is covered and slab and superstructure are moved to another site in the compound, where a new pit has been dug. When pit lining is required, which increases the costs, the first pit can be reused after one year, when its contents have composted.

Figure 6a:
Single-vault latrine
directly over pit

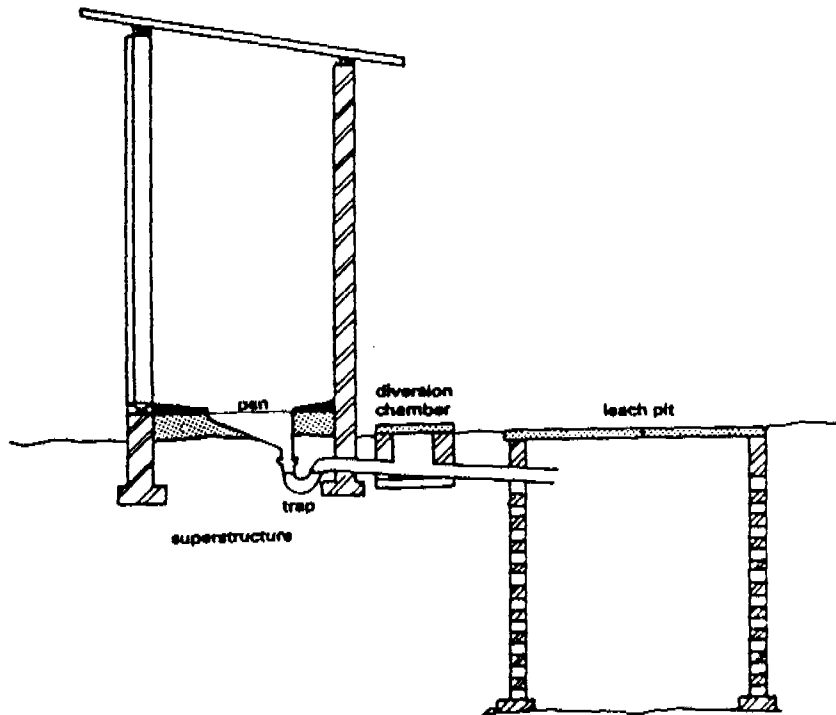
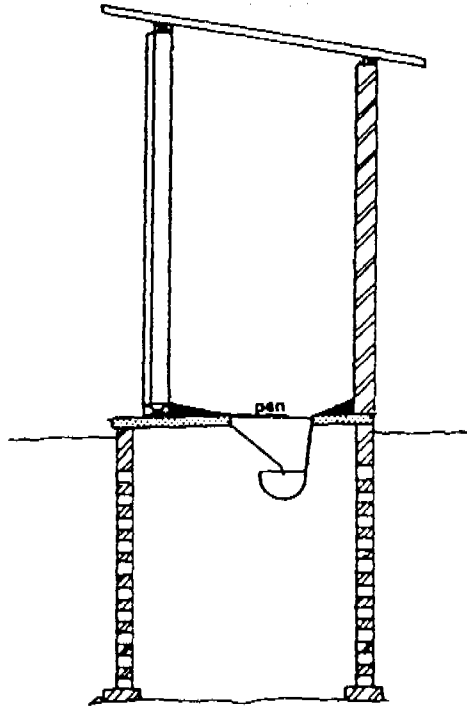


Figure 6b:
Single-vault,
off-set latrine

This option presupposes that the pit does not fill up too quickly and that by the time it is full, using a latrine has become so accepted, that its owners prefer to shift the latrine, rather than return to the field. Testing a replaceable single pit latrine would thus seem most appropriate where the absorption capacity of the soil is good and an effective latrine promotion and monitoring programme exists. It may be particularly feasible where returning to the fields is difficult, e.g. in areas where population density is high, cover scarce and people appreciate latrines for privacy, convenience, status and safety.

An alternative to shifting the latrine is to have the pit emptied, as now sometimes is also done with double-vault latrines. This involves handling of fresh excreta, however, and therefore needs great care. Mechanical devices, such as vacuum tanks, are now coming onto the market, which may prove a good solution, especially in high density areas with an interested private sector and a need of employment. Nevertheless, the preferred option is to shift the latrine to another location.

A second lower-cost model, the single-vault off-set latrine is presently under trial in Kerala. Testing includes costs, time required for the pit to fill up and the readiness of people to add a second pit or have it emptied. First experiences indicate a cost savings of 30% (Shordt, pers. com.). The pit used in this model is an off-set pit (Fig. 6b), whereas the previous type is built directly over the pit (Fig 6a). The latter allows larger cost reductions, because of reduced material requirements and lower complexity of construction.

c) Offering users a greater choice in technology

In the present projects, only one type of latrine is offered to the users. Even if people wanted, they cannot install a cheaper type of facility and they get no incentive to use a lower-cost model. To make the programme more sustainable, users could be offered a wider range of options in types of latrine and superstructures, such as twin-pit latrines and, where suitable, single pit latrines, both with different types of superstructure. The more luxurious the option, the more proportionally the beneficiaries would then have to contribute. This will allow to see if, when excessive subsidy on the higher-cost models is removed, users are willing to adopt, maintain and use also lower cost types of latrines.

d) Guiding users to construct own superstructure

In the past, experiences with households building or completing their own superstructure have been negative. In Uttar Pradesh and the pilot project in Andhra Pradesh, users did not build or finish superstructures, so that the pits installed by the project were not used. In Kerala, a new attempt is now being made, using community organization instead of an individual household approach. After intensive promotion, the SEU (C) has made an agreement with the people in one panchayat that instead of building 500 full latrines as budgeted, the budget will be used to construct 1000 latrines up to plinth level only. The beneficiaries have pledged to build the superstructures. As a guarantee, each household has to have the superstructure materials ready in his or her yard, before pit construction starts. At a site visit this process was seen to be well underway. The local ward water committee monitors the progress of the construction and the completion, use and maintenance of the latrines. They regularly discuss progress and results with the SEU (Abdullah, pers. com.).

5. ORIENTATION OF FUTURE NA-PROGRAMME

5.1 Introduction

The NA-latrines projects, despite their limited financing, have quite some flexibility in some states, and may therefore play an important role in developing innovative approaches towards rural sanitation. In the following pages, a few key issues are discussed which could be used in this development.

The new policy on rural sanitation of the GOI provides more scope for testing of these issues, especially those concerning the selection of priority areas, the encouragement of beneficiaries to build their own latrines, experiments with different types of latrines, a greater payment by Panchayats and beneficiaries and the including of other sanitation aspects.

Other issues go farther and concern the need to develop strategies to develop demands for low-subsidized and self-financed latrines; a greater involvement of existing government services; a greater user choice including a progressively greater contribution from those who chose more expensive models, and more community-based monitoring.

5.2 Creating demand

In the present projects, the approach is still mainly a supply strategy, i.e. the projects install complete latrines, with limited funds (1-4%) spend on promotion, training and health education. For a greater latrine demand, more demand-creating approaches will have to be developed.

It may, for example, be easier to start the project in areas where a demand for latrines already exists, e.g. because of a lack of privacy. In such areas less efforts may be needed to stimulate especially households with a higher socio-economic status to build, maintain and use their own non- or low-subsidized latrines. Once these groups have been encouraged to install a latrine and a demand is created also among the lower income groups, the programme can be expanded to them, with, where necessary, higher subsidies on the costs of the materials and the mason.

Limitation of subsidised latrines to people of the lowest income groups is an example of creating a demand in the opposite way. The service to these target groups generated a demand for latrines among higher income groups. As a result medium-income groups now install the same latrines at a much lower subsidy while higher income groups install latrines completely by themselves.

Furthermore, there may be ways to adapt latrine promotion and designs better to the reasons why different categories of beneficiaries want latrines, so that better latrine promotion strategies can be developed.

The degree to which women are involved in latrine promotion, allocation and installation, and the effect which this has on latrine demand needs to be better documented.

5.3 Selection of priority areas

With the present limited budget and implementation capacity for sanitation and the large unserved population, spreading sanitation projects over all NA-project areas will have limited impact (see section 4.1). The alternative is to select priority areas where the

greatest impact can be achieved with the given funds, either because there is already a high latrine demand or because there is a high health risk from unsafe excreta disposal.

High demand areas can be those where already a substantial demand for sanitation improvements exist or can easily be developed and the people and Panchayats are willing to contribute to the programme. High risk areas are for example wet and densely settled areas. The greatest effect can obviously be obtained in areas combining both conditions.

5.4 Involvement of existing government services

To step up the efforts, a much larger group of people need to become active in promotion and support tasks. Instead of contracting more staff into the projects, it seems better to try to strengthen the involvement of existing services and programmes with a health or development mandate (e.g. Ministry of Health, Rural Development, Women and Child programmes) into the NA-programme. This should be preferably done on a more structural basis than at present, *i.e.* through agreements at policy and managerial levels, so that also arrangements can be made for task descriptions, institutional and training support, flow of finances, definition and monitoring of programme objectives and outputs, etc.

Furthermore, in states where several government organizations implement latrine projects, it will be useful to review whether to continue and consolidate this development. Before expanding the present projects/programmes, a careful assessment of the various organizational options is likely to be made, including a review of the administrative and organizational implications of funding rural sanitation activities through other organizations than state water agencies.

5.5 Building implementation capacity at village level

Rural sanitation differs from rural water supply in the sense that most of its facilities can be constructed by local people. While overall programme implementation (e.g. technical designs, promotion strategy, training, monitoring and overall supervision) rests with state-level services or organizations, direct implementation capacities can be built up in and near the villages themselves.

In the NA-projects, this already happens with regard to the technical capacities (training local masons (Fig. 8)). In Kerala and to some extent, Gujarat, also local capacities for non-technical and managerial tasks are developed. In Kerala, the Panchayats and Ward Water Committees carry out the local projects, including promotion, selection of beneficiaries, procurement of materials, control of construction quality and monitoring of latrine installation, maintenance and use. In Gujarat, this work (apart from the monitoring of maintenance and use) is done by local voluntary organizations after screening of their capacity by the national NGO managing the overall programme.

Experiments with this approach deserve to be expanded to other areas and developed further, so that in future, Panchayats and local groups can continue sanitation projects with a minimum of external support and households wishing to install a latrine (or a soakpit or bathing facilities see 5.7), have easy and affordable access to the required materials, designs and technical know-how.

5.6 Experiments with different latrines and subsidies

As the NA-sanitation projects can have a lasting impact on sanitation in only a limited number of villages, its main function should be not to construct more latrines along set

lines, but to develop and test a different approach to rural sanitation, and contribute to the development of more sustainable programmes in the Indian setting.

This implies more guided experiments with also choice of technology and financing arrangements. Tests with the use of different local materials and designs, and experiments with different latrine types, including those with a single pit (off-set and direct discharge) and with the provision of latrine kits (slab, pan and fittings) for self-construction should be expanded to all projects.

Furthermore, a greater range in subsidies and financing systems should be tested. One option is providing more flexible subsidies according to income levels and types of facilities. A second one is subsidies in the form of free essential parts, such as fittings and, where necessary, lined pits for latrines and underground parts for bathrooms. In those cases there should be sufficient guidance and monitoring to ensure that a superstructure is completed and the facilities are maintained and used.

New pilot projects and experiments should be carried out on a large enough scale and under sufficiently isolated conditions to allow the drawing of general conclusions, and procedures and inputs tested should be sustainable and replicable on a larger scale.

5.7 Including other sanitation aspects

In a number of areas, lack of drainage or other sanitary problems are a greater health risk or felt problem than latrines. In such cases, improvement of these conditions should be included into the NA-programme. Examples are the improvement of drainage at taps, handpumps and other public waterpoints and the construction of soakpits by households with private taps. However, such improvements should not be free or so highly subsidized (as e.g. the bathrooms in Gujarat) that the same facilities cannot be expanded to all project villages with such felt problems and needs.

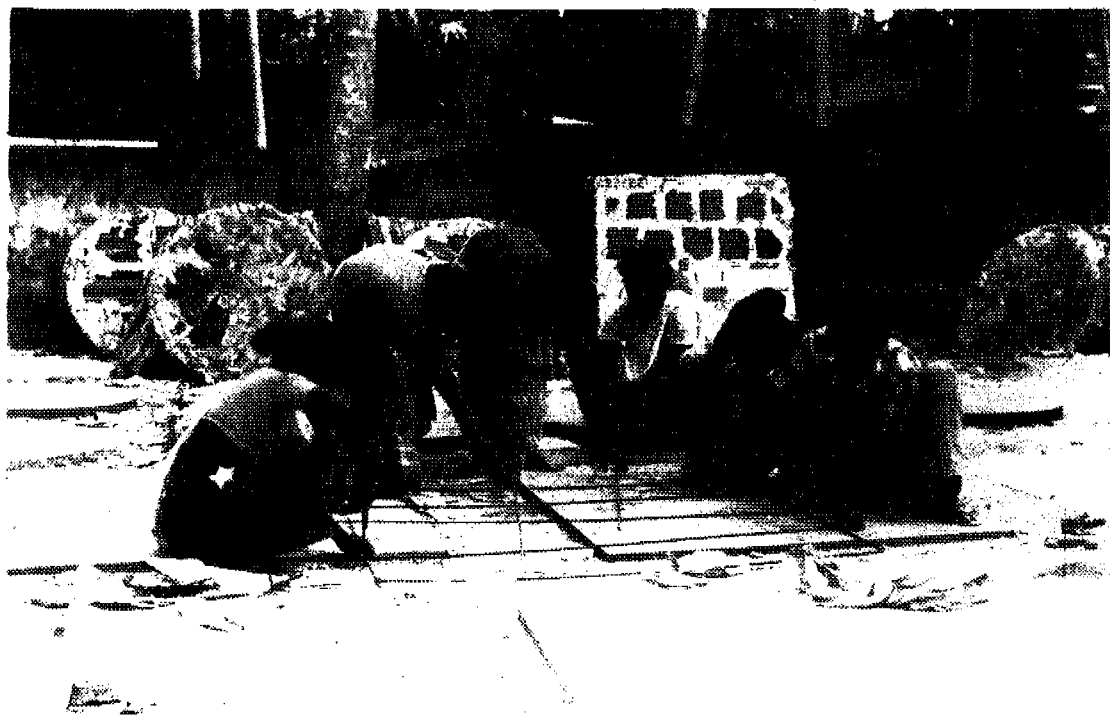


Figure 8: Female masons being trained on concrete slab-making

5.8 Monitoring project achievements

Monitoring is an important tool to learn from, especially when new project approaches are embarked on. All projects should therefore develop a monitoring system on the inputs, costs and results of their sanitation activities and regularly publish overview data in project progress reports.

Usually, monitoring is done by project staff. In Gujarat and Kerala, very interesting community monitoring systems exist, whereby local voluntary associations (Gujarat) or ward water committees (Kerala) monitor local latrine construction, latrine coverage and type of beneficiaries (SC/ST/other), while project staff provide training and supervision. The respective village data are subsequently combined and summarized to programme-level statistics at the programmes' headquarters.

Expansion of this type of community-based monitoring system to all NA-sanitation projects deserves attention. In Gujarat, the system should be expanded to include also monitoring of latrine maintenance and use, as already done in Kerala (Figure 9). It may further be possible to incorporate other key sanitation aspects, such as the absence of stagnant water at village waterpoints. Caution may be needed, however, to avoid that voluntary members of committees or other community bodies become overburdened with (unpaid) work. Taking such aspects into account, can in those cases be required, e.g. by keeping monitoring demands down, selecting committee members on, amongst other things, available time, better organisation of the work, smaller monitoring areas, and in case of much work, arranging for some remuneration by those using the data (Panchayat, programme).

5.9 Analysis of other experiences

To some extent, exchange of experiences between NA-sanitation projects, and also other non-NA projects takes place. Examples are NAP India meetings, staff visits (e.g. from the Gujarat sanitation specialist to UP and AP, visits of Kerala project staff to AP and Tamil Nadu) and exchange of project documents. These activities should be continued in a more structured way, e.g. by documenting each exchange visit in a visit report, developing occasional summary reports on the NA-sanitation projects and documenting also other innovative sanitation projects in the region, in particular on their sustainability aspects. Continued field development and -testing, including documentation of strategies, activities and results remains however the main vehicle for further development of the NA-sanitation programme.

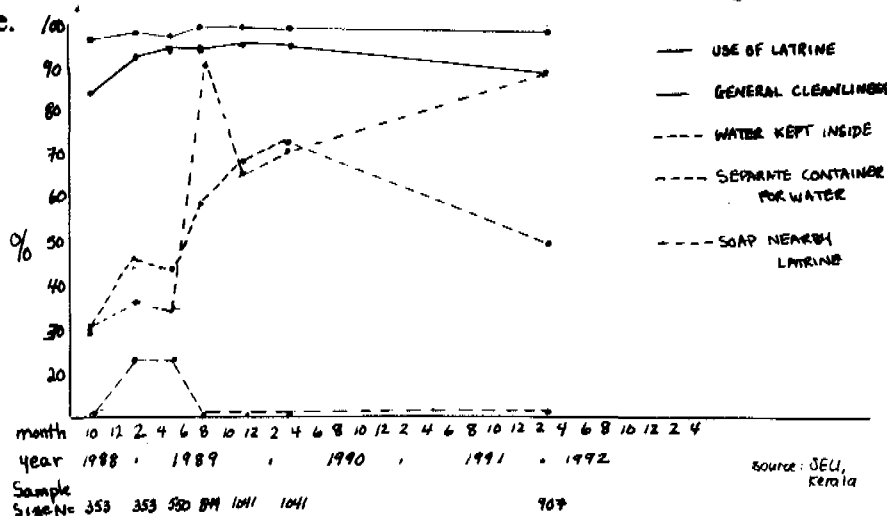


Figure 9: Monitoring of latrine maintenance and use