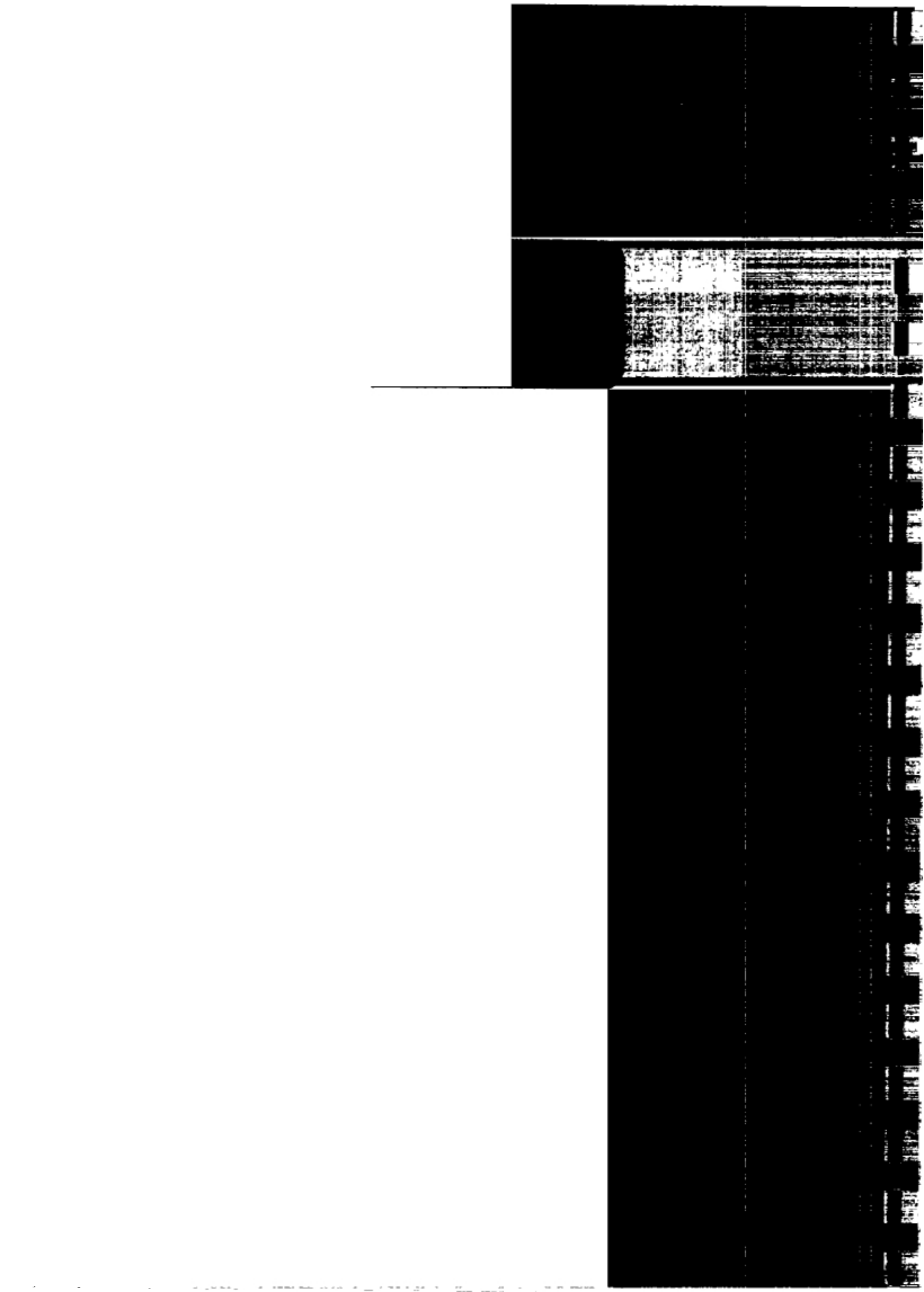


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BANGLADESH - NETHERLANDS DEVELOPMENT COOPERATION PROGRAMME

18 DISTRICT TOWNS PROJECT

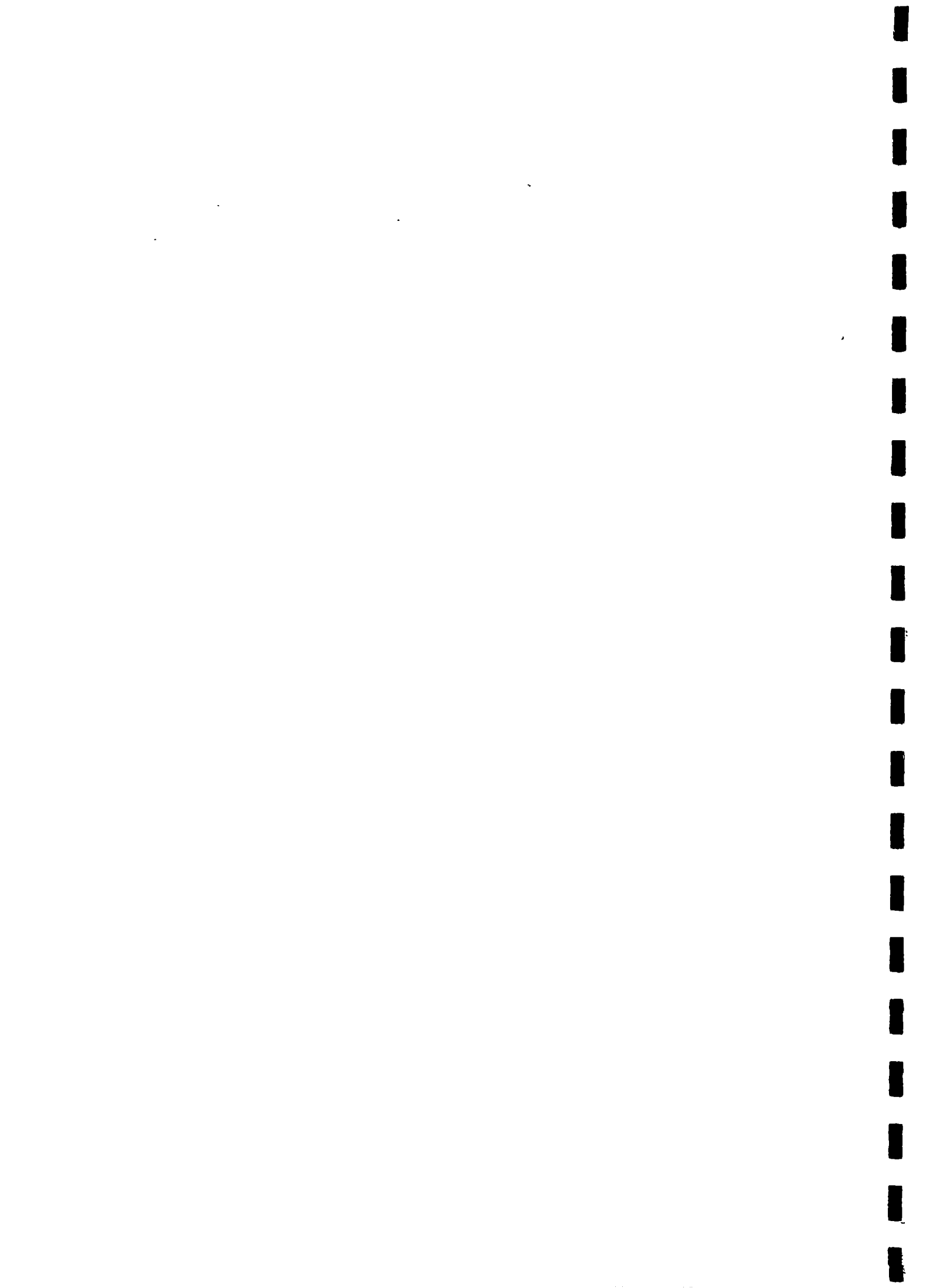
LIBRARY Review of the Sanitation Programme
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May - June, 1991

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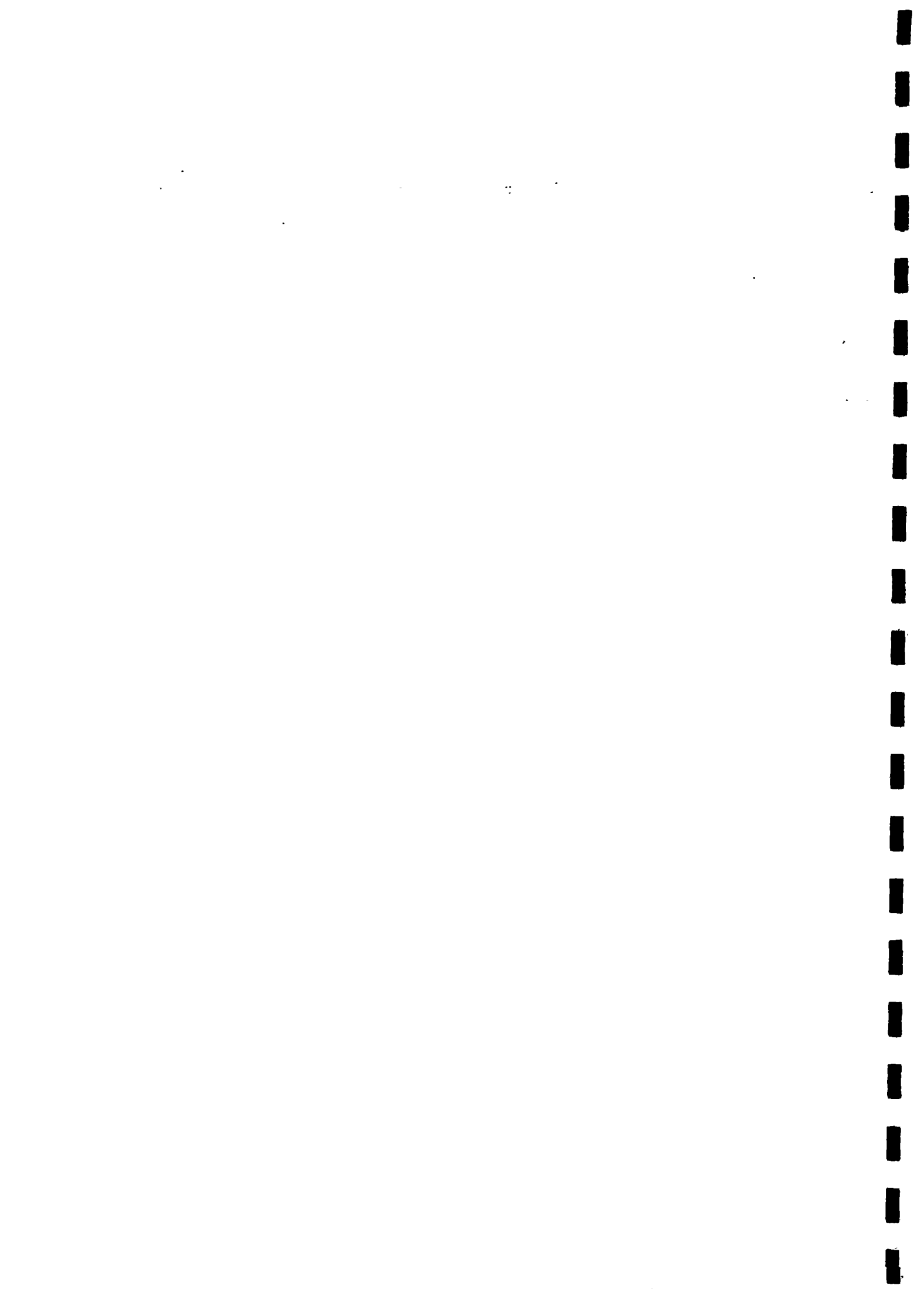
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Sanitation Review - 18 DTP

Summary and Recommendations

1. Introduction

The Sanitation Programme of the 18 District Towns Project was reviewed during May/June 1991. The Project has a primary objective of improving the health conditions of the communities of these eighteen towns. Specific objectives are the provision of sustainable water supply and sanitation systems, priority to be given to the poorest of the community and with active community participation, especially involving women.

At the time of review, initial implementation guidelines had been prepared for sanitation together with draft proposals for hygiene education. These were the starting points for this review which called for evaluation of existing Sanitation and Hygiene Education proposals, recommendations for improvement with supporting guidelines, and assistance with the initial establishment of new material.

At this time, project commitments had already been made in thirteen Pourashavas, but with no proportionate relationship provided for between sanitation and water supply allocations.

2. Sanitation Assessment

A brief review is made of sanitation in Bangladesh. Significant factors are the dominant use of the Direct Pit latrine using the ferrocement pour flush pan developed by UNICEF, the problem of sustainability with this system and the lack of effective hygiene education. Also noted was the failure so far to design an affordable sanitary latrine for the poorest people, the cost limitation to widespread private sector involvement and the scope existing for further research and development.

Review of the draft 18 DTP sanitation guidelines and hygiene education proposals concluded that the approach taken was generally appropriate, but that several significant improvements could be made. Particular concerns were the lack of linkage between latrine installation and hygiene education, the lack of installation quality control, the lack of a structured implementation methodology to take the programme to the community, the combining of promotion and hygiene education when they have different objectives, the lack of sustainability for the chosen latrine technology and the complex subsidy system based on an assumed affordability status. The organisational structure was acceptable in view of the institutional and community involvement objectives of 18 DTP and the provision for NGO involvement appropriate for Pourashava circumstances. The potential benefit of involving caretakers in sanitation had not been recognised.

3. Sanitation Programmes

The essential features of a well formulated sanitation programme are technical and social design of latrine facilities, affordability, market orientated promotion, a structured implementation methodology, a user education programme linked directly to installation, a reliable supply of materials and components and well organised organisational and management systems.

To simply build latrines is not sufficient; they must be used, cared for and maintained, if the installation investment is to have value.

4. Programme Organisation

An organisational basis which takes the Sanitation Programme "to the community" has been proposed with the establishment of Community Sanitation Centres in each Pourashava ward. This is an extension of the ward based community Water and Sanitation Surveillance Committee (WSSC) concept already established. The proposed organisational structure is shown by Figure 1.

Institutional roles will involve the Project Director (PD) having overall responsibility for the Sanitation Programme, with the Sub-Divisional Engineer (SDE) 18 DTP for each Pourashava representing the PD in the field. The Pourashava will have a supporting implementation role. Operational management of the programme in each Pourashava will be contracted out to an NGO, which will employ its own field staff in accordance with the programme organisational structure. There is an institutional requirement for a Sanitation Coordinator provided either by the Project Office or within the NGO organisation.

Implementation staff would involve a Sanitation Supervisor for each Pourashava and in each Ward a Sanitation Promoter and a Sanitation Educator working from the Community Sanitation Centre (CSC). Community implementation staff would involve latrine installation mistries, production mistry teams for manufacturing latrine components and a CSC chowkidar/labourer. Work descriptions and selection criteria have been drafted for implementation staff.

Community participation would involve households as beneficiaries, caretakers of tubewell household groups orientated as sanitation resource persons for their group, the WSSC who represent the ward community and would identify with the CSC and the Pourashava Supervisory Board to monitor overall programme operation.

The operation and capacity of Community Sanitation Centres is considered and proposals made for their establishment. A kutchha style facility compatible with community surroundings is favoured to encourage community members to better identify with "their" Centre. Each centre would consist of an office, a store room and a production area, part of which would be covered.

5. Technology

Alternative technologies have been reviewed on the basis of an initial consideration of design requirements of operational sustainability, hygienic containment of excreta, the need to be socially functional, technically functional and easy to clean, able to be maintained by the household and be affordable.

Alternatives technologies considered were the "Home Made" latrine, the Single Direct Pit (SDP) pour flush latrine, the Double Direct Pit (DDP) pour flush latrine and the Offset Double Pit (ODP) pour flush latrine. Each is described, their benefits and disadvantages discussed and costs presented.

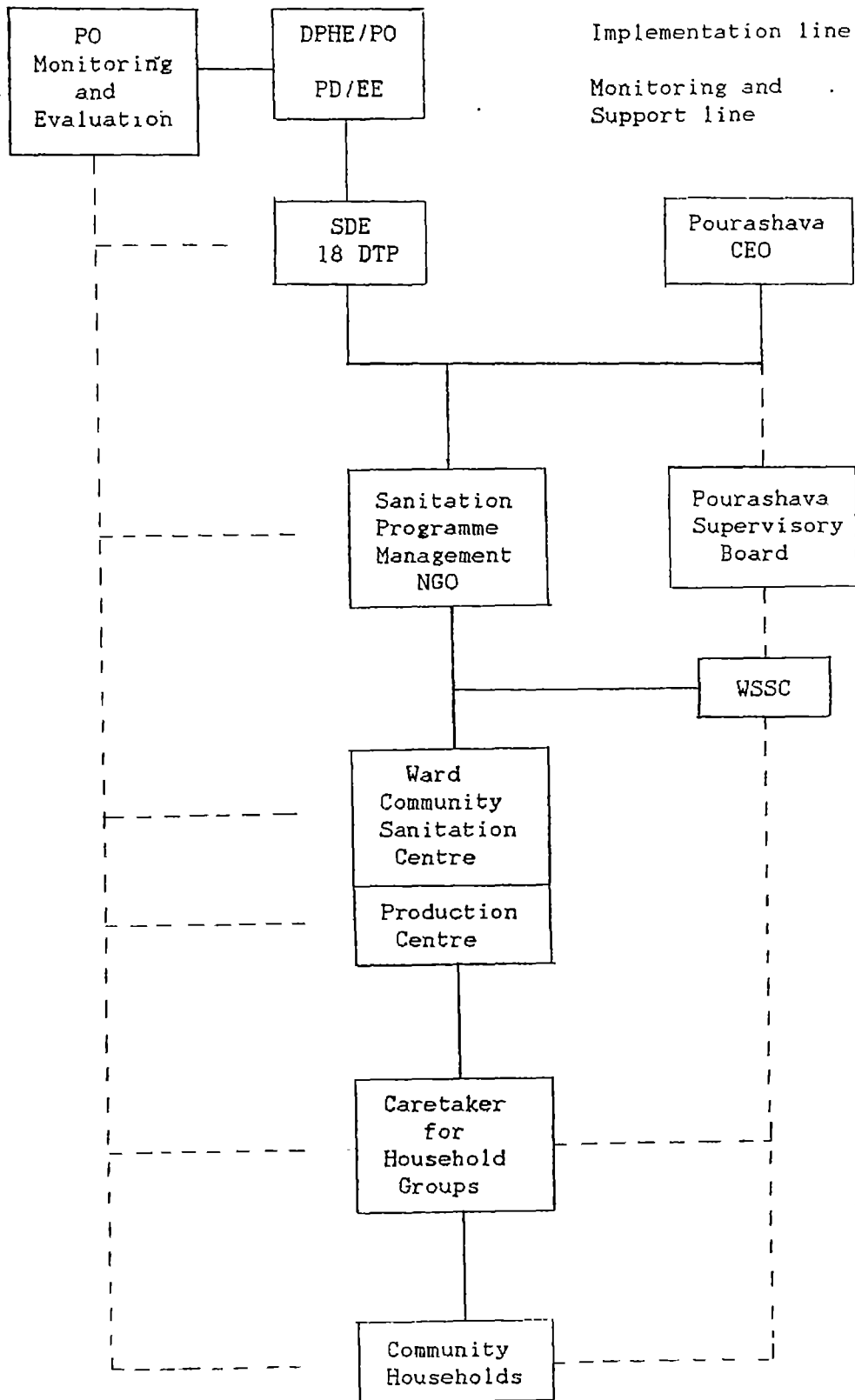


Figure 1
Organisational Structure for Sanitation

The comparison summarised by Table 1 concludes in favour of the Direct Double Pit latrine which is proposed for the Sanitation Programme because of its sustainable operation, hygienic containment of excreta, reasonable household maintenance, limited space need and least total cost to the household. The subsidy to be met by 18 DTP is estimated to be Tk 918. It is proposed that the ODP latrine also be included in the programme as a fully acceptable but more costly technology, but in this case, the subsidy would be limited to that for the DDP latrine.

Table 1
Comparison of Technology Alternatives

<u>Design Criteria</u>	<u>SDP</u>	<u>DDP</u>	<u>ODP</u>
Operationally Sustainable	Limited	Yes	Yes
Hygienic Containment	Partial	Yes	Yes
Household Maintenance	Demanding	Reasonable	Easy
Space required	Less	Less	More
Cost to Householder	225+414	250	1202
Subsidy allowed	564	918	918
Cost Total (Tk)	1203	1168	2020

Observations on the construction design and installation of the DDP and ODP latrines are made with supporting guideline notes. Special situations for self-supporting soils and high water table conditions are considered. Finally, areas for further technical development are proposed, some of which needs to be implemented as part of programme establishment and other which would involve separate study, possibly with additional funding.

6. Implementation Methodology

A proposed implementation methodology incorporating basic 18 DTP programme policy is outlined by Figure 2. There are four phases of Programme establishment in each Pourashava, latrine promotion with applications, latrine installation and lastly, sanitation education for proper use and care of the installed latrine.

A Pourashava Sanitation Programme would be approved, Community Sanitation Centres and Production Centres established and Ward work plans prepared. With the acceptance of latrine applications following promotion, Households would sign an agreement of commitment to the latrine installation. The household dig the pits, provide labour and the superstructure while a mistry is organised by the Programme to install latrine components. The latrine slab would not be provided until superstructure materials have been collected. Supervision visits would be made to check progress, quality and that agreed conditions are met. A structured sanitation education programme of several visits to each household would follow latrine completion.

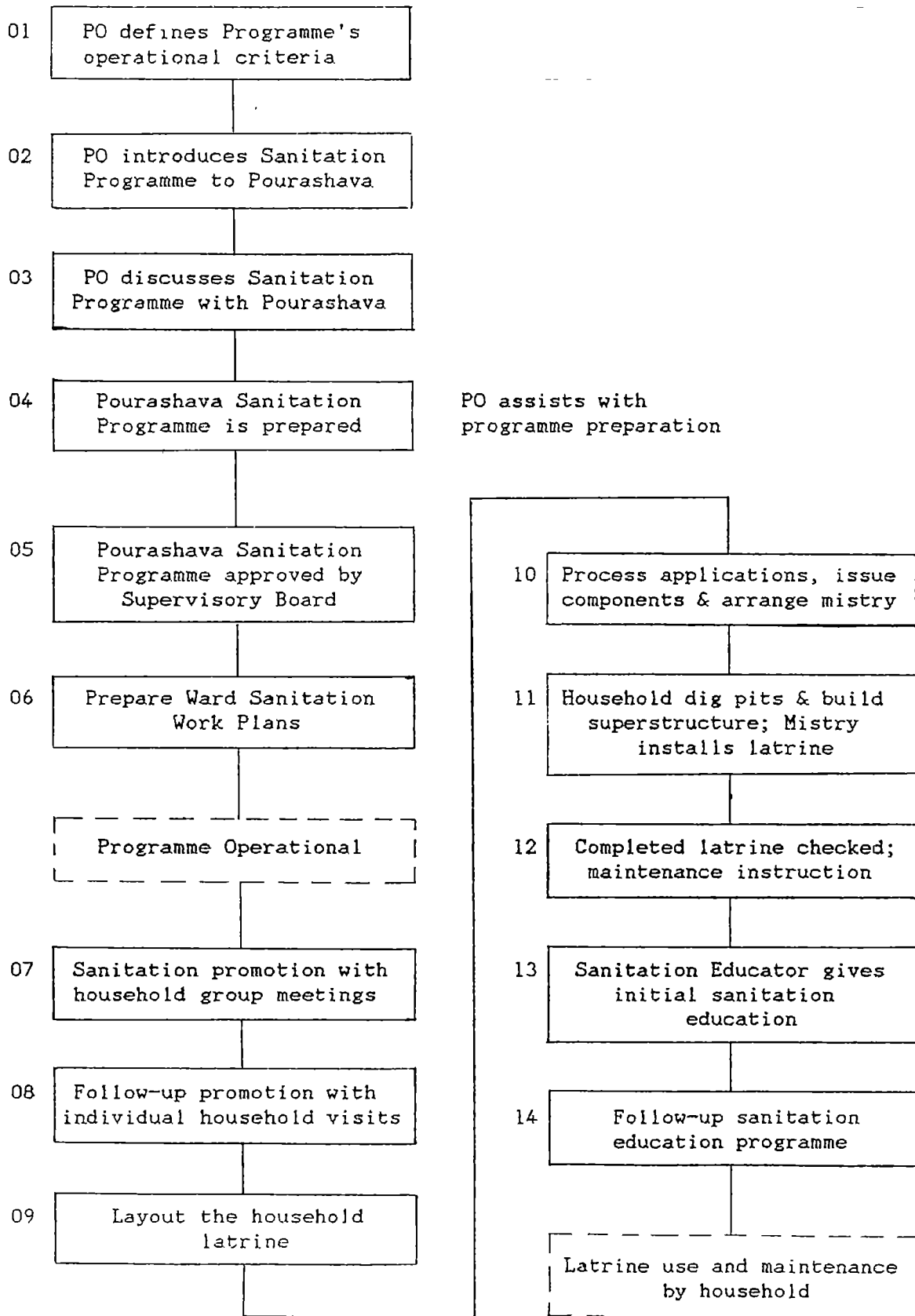


Figure 2

Sanitation Programme Implementation Activities for 18 DTP

Implementation steps are outlined in appended Activity Sheets. Supporting details for each are discussed with referral to appended guidelines and other sections of the report.

7. Promotion

A structured marketing based promotion programme is proposed to generate the flow of latrine applications required to enable sanitation performance targets to be achieved that the latrine is an acceptable product has been an important consideration for promotion.

A promotion package with seven messages and associated drawings was prepared based on sanitation issues which it is considered households perceive to be important. The principal subjects are privacy, convenience, excreta containment and pleasant easy latrine use and care, status and value, religious significance and low cost. It is also proposed that a latrine be first installed in the caretaker's household as a demonstration unit for her group. Household group promotion meetings would be followed by individual household visits.

Supporting message presentation guidelines and meeting and visit procedural guidelines need to be prepared by the PO for training and implementation of the promotion programme.

8. Sanitation Education

A specific programme for Sanitation Education (latrine use and care) was proposed and preparation initiated. It should be a mandatory part of latrine implementation. Target households will be those with new latrines installed. A hygiene education programme prepared for the general community will be separately implemented.

The sanitation education programme involves all members of target households and is primarily concerned with changing their sanitation habits. Two sets of messages with supporting drawings will be used. The first is for all members to use the latrine, flush it after use, wash their hands and for the latrine to be cleaned daily. The second is to train young children to use the latrine and collection and disposal of their excreta until they are trained.

Implementation will rely heavily on the use of the drawings and physical demonstration in a programme of phased visits to each household during the month following latrine completion. The Sanitation Educator will implement the programme with the support of the group caretaker. Guideline material needs to be completed by the PO.

9. Financial

The DDP latrine will be funded on a no cash exchange basis with associated administrative benefit. 18 DTP will supply components and meet delivery and mistry installation costs. Households will do all labouring and provide their own superstructures.

Systems for making payments would need to be set up for implementation, production and NGO management. Payments would be based on record systems proposed for programme supervision and monitoring purposes.

10. Procurement and Manufacturing

Purchase systems and bulk storage facilities need to be provided in each Pourashava by DPHE. The Sanitation Supervisor would organise transport from storage to production centres.

Production Centres would be organised and supervised by Sanitation Programme NGO staff with operations monitored by the SDE. A consistent manufacturing procedure would be required for all components to ensure consistently acceptable component quality. A list of issues of concern during manufacture is provided. These requirements need to be backed up with effective quality control supervision, with penalties and an 18 DTP guarantee for faulty components produced.

11 Training

The effective training of all personnel working on the Programme will be an essential feature for effective function and understanding of their work and responsibilities. The training requirements of each position are outlined.

It is proposed that there should be a Master NGO Trainer appointed on contract for training NGO staff and that this training should be done at Pourashava level with the SDE involved when appropriate. For mistry training, it is also proposed that a Master Mistry Trainer (both production and installation) be appointed on contract with training at Pourashava level. Both would travel extensively between Pourashavas in the process of their work. A training timetable would need to be integrated with Programme establishment between Pourashavas.

12 Performance Management

A reasonable level of performance management would be necessary for the Sanitation Programme to achieve its performance targets because of the nature of the community based operation. Routine performance recording systems are proposed for both implementation and production activities. Supervision, monitoring and assessment/evaluation responsibilities would need to be exercised at relevant levels of Programme operation.

13 Programme Implementation

The Sanitation programme provides an implementation project model which could be adapted to the circumstances of each pourashava.

To fully achieve the health objectives of 18 DTP, there would need to be integrated implementation of water supply (particularly tubewell supplies), sanitation and hygiene education at individual household level, rather than general community level. This has not been provided for in the thirteen batch one and two district towns for which funding allocation has been very variable between towns. The actual sanitation demand should be reviewed and the possibility of extra funding to provide a reasonable tubewell/latrine ratio considered.

The 18 DTP programme for batch three towns is not yet determined. It is suggested that 18 DTP policy could be modified to provide for the integrated implementation of tubewell and sanitation programmes in these towns so as to better achieve the health improvement objective of 18 DTP.

The active involvement of community women is fully provided for in the proposed Sanitation Programme but there would need to be active encouragement for participating individuals and programme accommodation of their social circumstances.

The Sanitation programme is not directly sustainable due to the level of subsidy required. There are however, indirect aspects of potential sustainability which the programme should foster.

Principal Strategies

As proposed, the Sanitation Programme incorporates an number of operational strategies. Some of these still need careful individual consideration before adoption. A summary of both accepted and new strategies is:

- Community Sanitation Centres will be established in each ward from which to implement the combined Sanitation (and Sanitation Education) Programme.
- The Sanitation Programme would be managed in each Pourashava by a contracted NGO employing field staff consisting of a Sanitation Supervisor and Sanitation Promoters and Educators.
- The Sanitation Programme would initially be taken to those household groups selected to receive a new tubewell in accordance with 18 DTP selection criteria and only to other household groups if extra funding is available.
- Households would only receive a new latrine if they have access to tubewell water in accordance with tubewell programme implementation criteria to ensure sufficient water of acceptable quality is available for latrine function and sanitation education requirements.
- Household group Caretakers would actively support the Sanitation Programme as sanitation resource persons for the group.
- For a Caretaker to be selected in the future, her household would have to agree to install a latrine when required by the Programme and to make the latrine available for demonstration during the active promotion of sanitation to her household group.
- The Double Direct Pit latrine technology proposed would be adopted for by the Programme as the preferred sustainable and affordable option.
- Each Community Sanitation Centre would implement the Sanitation Programme in accordance with Ward work plans using the household group as the organisational community unit.
- The Sanitation Programme would be actively promoted on the basis of a marketing philosophy.
- Each household would sign an agreement of commitment for latrine installation with conditions including:
 - o Household to provide all labour and the superstructure.
 - o Latrine slab and pan would not be supplied until superstructure materials are seen to be available.
 - o If a superstructure is not built following latrine installation, the latrine components could be recovered by the Programme.
 - o Sanitation Education must be accepted as part of latrine installation.
- Community Mistries would be employed for continuity and quality of latrine installation and be paid on a piece rate basis.
- Household Sanitation Education would be a mandatory part of latrine implementation and would follow a structured implementation programme.

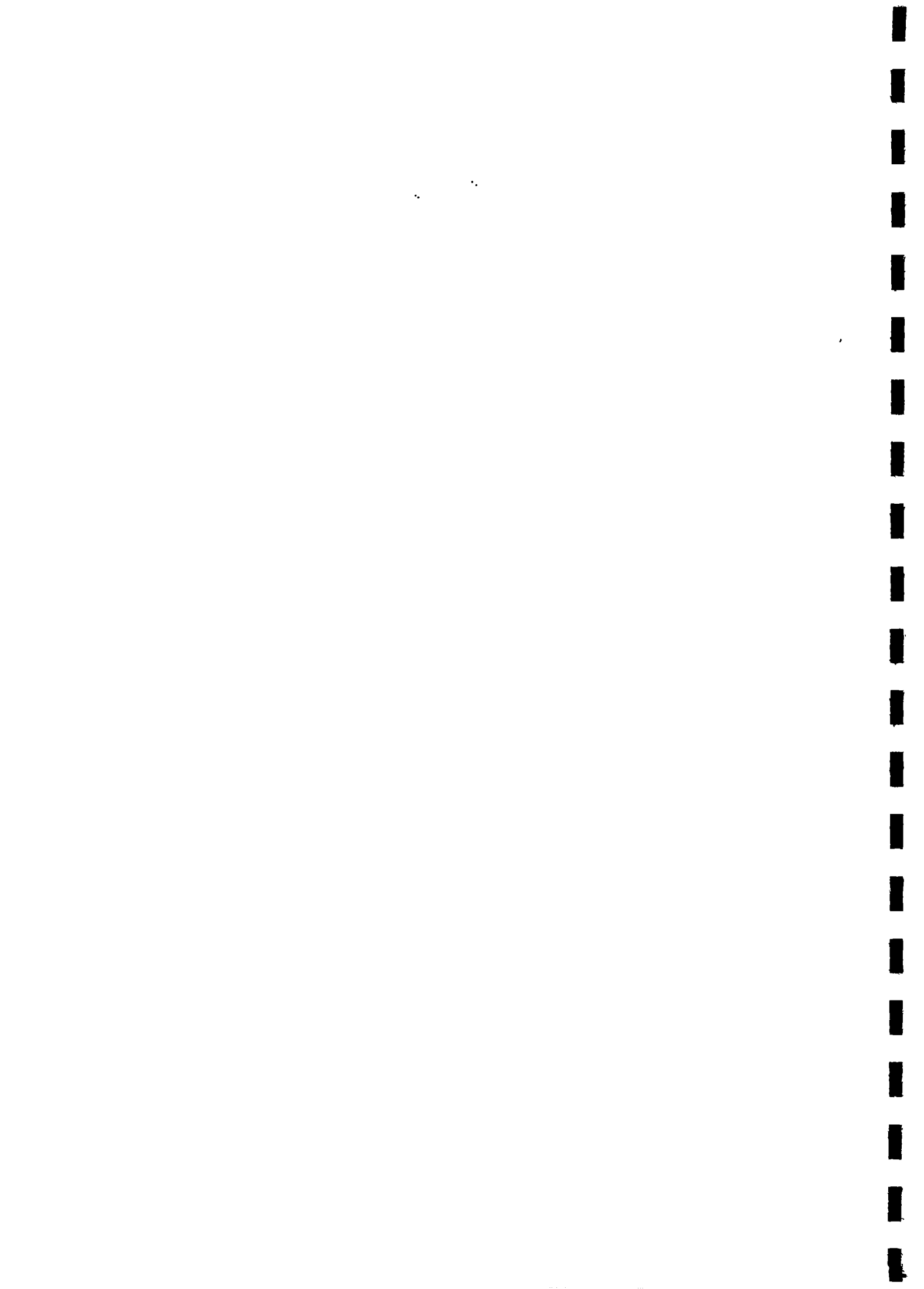
- There would be no exchange of money between the Sanitation Programme and beneficiaries in accordance with the proposed financial structure of the Programme.
- Production Centres set up for the Programme would be worked by community women trained for the work and paid on a piece rate basis.

15

Recommendations

The following recommendations for the Sanitation Programme are made.

- (1) That the structured Sanitation Programme proposed be adopted by 18 DTP for sanitation implementation.
- (2) That the strategies involved and listed be individually considered for policy and implementation acceptance.
- (3) That the use and selection of managing NGO(s) be resolved without delay due to the operational dependence of the Programme on NGO involvement.
- (4) That a Sanitation Coordinator should be provided either in the Project Office or within the managing NGO organisation as soon as possible so that she/he can assume responsibility for the functional establishment of the Sanitation Programme.
- (5) That two Master Trainers, one for NGO staff and one for mistry training, be contracted for the establishment of Sanitation Programme operations.
- (6) That operational guidelines required for Programme implementation and training be completed by the Project Office.
- (7) That the trial implementation of the proposed Sanitation Programme in the Narail Pourashava should continue.
- (8) That Sanitation implementation in Batch 1 and 2 District Towns will proceed as planned, but with a review made of the extent of "actual" sanitation need for intended new tubewell beneficiaries to determine whether additional funding should be considered.
- (9) That 18 DTP policy should be modified for Batch three towns to ensure that Pourashava funds are allocated so that new tubewell beneficiary households receive an integrated package of tubewell and latrines (with sanitation education) for the achievement of Project health improvement objectives.



1. INTRODUCTION

The 18 District Towns Project (18 DTP) is a combined "package" for the provision of water supply, sanitation, drainage and hygiene education to eighteen separate district towns in Bangladesh. The Project follows on from the preceding 12 District Towns Project which is near completion. Both projects are implemented through the Department of Public Health Engineering (DPHE) of the Ministry of Local Government and Rural Development and Coordination (MLGRD) with assistance from the Netherlands Government. The Pourashavas and communities of these towns are also actively involved as recipients, contributory implementors and with subsequent operational responsibility for services provided at both community and household level.

1.1 18 DTP Objectives

The primary objective of 18 DTP is to improve the health condition of the communities of these district towns through the provision and improvement of these services¹.

Specific objectives listed are that:

- systems provided will be sustainable and form a sound basis for health improvement,
- priority to be given for the poorest people living in the fringe and slum areas where water supply and sanitation do not meet minimum sanitary standards.
- there will be active community participation as both beneficiaries and workers, especially for women.

The operative "key words" have been kept in mind through the process of this sanitation review to ensure that proposals are in keeping with project objectives.

1.2 Project Situation Found

Through to May 1991, the 18 DTP had been in progress for some two years. Feasibility studies have been made for the first and second batch of towns and are under preparation for the last batch. Implementation programmes for the first thirteen towns have been decided by the Pourashavas involved, water supply programmes (mainly pipe systems) designed, drainage systems are being investigated and institutional systems for Pourashava development devised with introduction being initiated.

For sanitation, initial implementation guidelines were recently prepared and for hygiene education draft proposals had also been prepared and tested.

It is also significant, and unfortunate for sanitation, that project commitments have already been made in the first thirteen towns without having previously identified a structured sanitation programme with clear objectives. As a result, in eight of the first thirteen District Towns, sanitation is barely a viable activity in Project terms (Table 1.1). This situation is at variance with the objectives of 18 DTP.

¹ 18 DTP Mission Report, February 1991.

Table 1.1

Proposed Tubewells and Latrine Installations

Pourashava	No. of Tubewells	No. of Latrines
DD		
Narail	?	1273
Manikganj	?	689
Magura	?	201
Shariatpur	?	816
Jhalakati	?	-
Bhola	?	-
Naogaon	?	5200
Lalmonirhat	?	3168
Nilphamary	?	2806
Panchagarh	?	434
Thakurgaon	?	674
Moulavibazar	?	402
Joypurhat	?	3061

1.3 Understanding 18 DTP Objectives

The Project quite specifically sets out to improve the health conditions of the poorest people of the community, those people living in the fringe and slum areas. The Project also specifies that this will be achieved by improving the water supply and sanitation for these people. Further, the Project specifies that systems provided will be sustainable.

Experience in many parts of the World has established that the health improvement of poorer communities is generally only realised when the integrated provision of a clean water source with sanitation and with hygiene education are provided as a package. A local case in point is the recent World Bank integrated study at Mirzapur², Bangladesh. This programme showed a statistically significant reduction in the incidence of diarrhoeal disease but could not attribute the result to any single component.

Significant health benefits are not likely to be achieved if water supply and sanitation are not implemented in mutual proportion actively coupled to hygiene education with the household as the basic planning unit. Further, water supply and sanitation systems provided need to be

² World Bank, Mirzapur study, Bangladesh complete

operationally sustainable and with necessary maintenance and monitoring arrangements provided to ensure that initial benefits are available in the long term.

This fundamental philosophy, which is comes within the 18 DTP objectives, has not been put into practice at household level as indicated by Table 1.1. It is significant that existing project staff largely inherited the situation found.

1.4 Sanitation Consultancy

This Sanitation Consultancy arose from realisation of the need for a deeper appreciation of sanitation and the related hygiene education for 18 DTP. The period of the Consultancy was from 5 May to 25 June 1991. The Terms of Reference (Appendix 1.1) called for the evaluation of existing Sanitation and Hygiene Education Programmes, recommendations for improvement with supporting guidelines, and assistance with the initial establishment of new material.

The evaluation process was supported by two field trips to the "pilot" town of Narail for an appreciation of the "real" physical, institutional and community situation and some exploratory field investigation of sociological and technical questions. The visit concluded with an "in-house" workshop (Appendix 1.2) of sanitation and hygiene education proposals.

2. SANITATION ASSESSMENT

This section takes the form of an initial brief review of the general status of sanitation in Bangladesh, against which the following brief assessment of the intended sanitation programme as found can be made. This latter extends through into subsequent sections in appropriate detail.

2.1 Sanitation in Bangladesh

The following summary comments represent a non-exhaustive impression obtained from documents of and/or discussions with UNICEF, World Bank, WHO, some NGOs and 12 DTP together with limited field observations.

- Two types of latrine have been used in Bangladesh. The first is the Direct Pit latrine with gooseneck ferrocement pour flush pan developed and used extensively by the UNICEF supported DPHE rural nation wide sanitation programme, the UNICEF slum and urban fringes programme and some NGOs. The second is the conventional Offset Double Pit Latrine pour flush latrine used for several urban projects including 12 DTP.
- The Direct Pit Latrine has been reasonably successful although there is evidence of abuse, damage, lack of cleaning and as a result in some cases, lack of use. Installations were observed to be very basic in some cases although still functional. Production quality of components appears to be quite variable. Sustainability is limited as the owner must either empty the pit for reuse or purchase new costly rings for a second pit.
- Use of the Offset Double Pit was not investigated. It appears to have been mostly used in urban situations within subsidised aid projects, including 12 DTP. Because of its greater expense it is not a likely solution for poorer communities even though it is a fully sustainable solution.
- With the UNICEF/DPHE programme, it has been observed that latrine use and care suffers from the lack of hygiene education. UNICEF are in the process of modifying their programme to provide for household hygiene education visits.
- An underlying fundamental problem for sanitation in Bangladesh is the failure so far to design a "sanitary latrine" at a cost which the poorest communities can afford. For the time being, this can only be achieved with subsidised programmes.
- Because of the problem of cost, the private sector can not compete with service to the poorest section of the community. They can however serve the wealthier section, as happens already.
- There is still scope for further research and development of latrine technology and in particular, to find cheaper materials and methods of installation. It is noted, that much development work has been done in the past and may be at risk of being forgotten at the expense of future work.

2.2 12 DTP

This programme used the expensive Offset Double Pit latrine with contractor installation. No specific effort was made or system provided to ensure the poorest of the community were the recipients. There has

never been an evaluation of the adequacy of the sanitation part of the Project. While there was not time to evaluate the sanitation experience of 12 DTP during this exercise, experience leads to the conclusion that both Offset Double Pit technology and contract installation without direct community involvement are not appropriate for the objectives of 18 DTP which targets the poorest of the community. Nonetheless, at some stage consideration should be given to evaluation of 12 DTP sanitation to record the adequacy of the input.

2.3 18 DTP Guidelines

The sanitation component of the draft "Implementation Guidelines for Hand Tubewell and Latrine Programme", 1 November 1990 (Appendix 2.1) together with the 18 DTP "Non-Technical Items" report¹ of 19... were the primary references for evaluation of 18 DTP sanitation. Following is a summary of principal observations which have contributed to the form of the sanitation programme now proposed.

- Adoption of the UNICEF/DPHE technology and implementation concept of production and sale was an appropriate starting point for 18 DTP objectives and target communities.
- The institutional organisational structure for sanitation was quite complex but also generally appropriate for programme supervision and in keeping with the institutional development objectives and overall setup of 18 DTP.
- The involvement of the community (WSSC) in the identification of beneficiaries was soundly based (and has since proved successful). The potential value of tubewell caretakers supporting sanitation and hygiene education had not been identified.
- The implementation methodology was based on sale from fixed centres. There was no follow-up hygiene education or quality control. A structured and controlled implementation methodology that takes the programme to the community and individual household will be much more effective, especially in the project context of a defined population.
- The promotion of sanitation was based on a general hygiene education programme to the community at large. Promotion and hygiene education have different immediate objectives. They should be taken separately and directly to target community members.
- The hygiene education programme was designed and intended for the general community. There was no specific linkage with the sanitation programme provided for. A specific household sanitation education programme for latrine use and care education is necessary.
- Latrine implementation was to be the responsibility of the Household with help from a trained mistry. A more controlled system of implementation is desirable in the interests of latrine quality and positive promotional feedback.
- The Single Direct Pit proposed, although used widely in Bangladesh, has an inherent lack of operational sustainability among the poor community because of their need to spend more in the future. An improved alternative is proposed.

¹ Non-technical Items report, 18 DTP

- The subsidy system proposed was thought to be unnecessarily complicated. Closer study of the income distribution of the target community indicated that a simpler approach could be used.
- The assumed affordability of beneficiaries did not have a strong supporting rationale. The lenient system of instalment payments proposed reflected both this and the lack of programme involvement at household level.

The important feature of the proposed draft sanitation programme was that it did provide a workable approach, based on proven Bangladesh experience within an accepted institutional organisational framework. Based on this and the experience gained in Narail, the Project Office has developed an expanded implementation methodology designed to overcome the described limitations of the original guidelines. Additional funds were made available in January 1991 to provide for additional hygiene education and sanitation implementation requirements.

The primary objective has been to establish a programme to meet a demand of several thousand latrines in any one Pourashava. The need to adapt for a much smaller number of latrines as required for some Pourashavas, is a separate consideration.

3. SANITATION PROGRAMMES

A well formulated sanitation programme with a physically defined target population, as is the case for 18 DTP, should incorporate several essential features.

- Technical design - latrines need to be technically functional and should have a technically sustainable design.
- Social design - a latrine needs to be socially and culturally acceptable to ensure that all members of the family will use it, including very young children.
- Affordability - latrines need to be affordable for target households and for the Project, for which costs determine potential coverage.
- Promotion - or marketing targeted on the consumer's perception, is an important feature of a structured sanitation programme to help meet programme implementation targets of numbers and time. The "purchase" of a latrine is ultimately an issue of household choice which can not be successfully imposed.
- Methodology - for implementation needs to be established, reasonably efficient with built-in performance monitoring to ensure programme organisational and individual performance and latrine installation quality are achieved.
- Education - is an essential requirement with the primary objective of establishing necessary behavioural habits associated with latrine use and care for all latrine users. This needs to immediately follow latrine installation.
- Supply - of materials and components must be well organised to ensure the latrine demand generated by promotion can be met without unnecessary delays.
- Organisational management - is necessary and must be effective for the coordination of programme activities.

The Sanitation Programme proposals of this report take account of these features.

To simply install latrines will by it's self not result in a successful programme. It is only when households are personally involved, especially with household level hygiene education, that programme sustainability can be achieved. That is, when the latrine is being used by all of the household, is being cared for properly and in the long term, being maintained. A latrine that is not being used or cared for is worse than having no latrine at all, because of the wasted investment and the potential negative promotional influence on other householders.

A properly used, cared for and maintained latrine of sustainable design will provide permanent benefits for the household and contribute to the success of the sanitation programme.

4. PROGRAMME ORGANISATION

The organisational structure required for the sanitation programme needs to accommodate the following factors:

- Have the capacity and flexibility for the implementation of a programme of 2000 to 6000 or more latrines in a Pourashava during the Project period.
- A series of visits to each beneficiary household over a relatively short time period.
- Every beneficiary household represents an independent contracting client. There are not the scale benefits of collective household dealings as for instance, with tubewell implementation.

With these points in mind it has been proposed that the Sanitation Programme needs to be "taken to the community", rather than the community come to the Programme. This is a fundamental tenant of Community Participation Programmes, a major objective of 18 DTP. Important benefits are community acceptance and potential implementation efficiency. Precedent already exists in the form of the ward based Water and Sanitation Surveillance Committees (WSSC) representing their communities. It has been proposed that a Community Sanitation Centre (CSC), with an associated Latrine Production Centre (LPC), be established in each ward, with the ward WSSC having supervision responsibility.

4.1 Institutional Roles

The institutional roles for sanitation requires an organisation compatible with the already modified organisation system for Pourashavas¹ and at the same time allowing for the 18 DTP supervision, monitoring and supply role of DPHE. The sanitation organisation proposed is shown by Figure 4.1. The different organisational roles are described in following sections.

4.1.1 Programme Responsibility

The Project Director (PD) DPHE with overall responsibility for 18 DTP will be responsible for the sanitation programme. He will do this through the Executive Engineer (EE) DPHE to Sub-Divisional Engineers 18 STP (SDE) at Pourashava level. In particular, DPHE will be responsible for:

- Final programme approvals,
- monitoring programme performance at all levels,
- monitoring quality control of installed latrines,
- monitoring performance of latrine production centres,
- establishment of latrine production centres,
- supply of materials for production
- training and programme orientation activities
- supply of programme implementation equipment
- management of 18 DTP funds involved.

The SDE will have field responsibility for most of these activities although with active back-up support from the 18 DTP Project Office (PO). The SDE's responsibilities will involve liason with the Sub-Assistant

¹ Non-Technical Items report

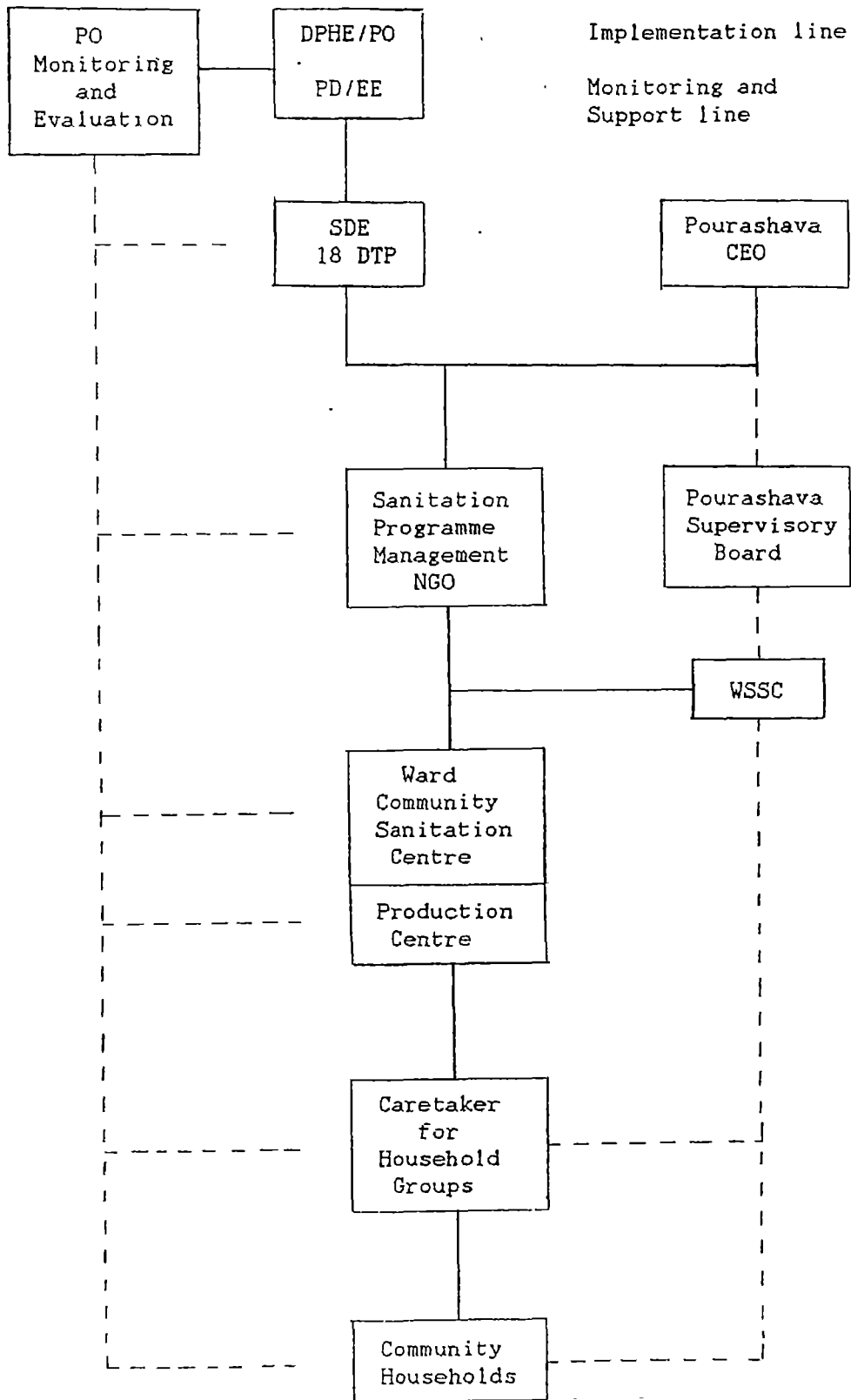


Figure 4.1

Organisational Structure for Sanitation

Engineer (Sanitation) of the Pourashava through the Pourashava's Chief Executive Officer (CEO) and through them to the programme's Sanitation Supervisor (SS). The Supervisor will be employed by an NGO contracted by the Pourashava for the operational management of the sanitation programme. The SDE will directly and independently monitor the technical performance of the programme. The SDE has additional responsibility, as a member of the Supervisory Board to the Pourashava, of advising on sanitation matters brought to the attention of Board. The sanitation responsibilities of the SDE 18 DTP are listed in Appendix 4.1.

The PO has particular responsibility for supporting and monitoring the performance of the sanitation programmes in each Pourashava and coordinating sanitation activities within the overall 18 DTP.

4.1.2 Implementation

The Pourashava will implement the sanitation programme in Pourashava wards with the CEO coordinating. This will however, only be for approvals and support. The contracted NGO will be responsible for the day-to-day operational management of the programme. The SDE will monitor implementation and otherwise support the Programme, acting for the PO.

After Final Approval from the PD, the Pourashava will approve and implement the sanitation programme recommended by the Pourashava Supervisory Board, subsequent variations, annual ward sanitation work plans, sanitation progress reports and attend to all other sanitation matters arising. Specifically, the Pourashava will:

- | | |
|---|----------------|
| - provide land for Community Sanitation/Production Centres, | Administration |
| - maintain set-up Centres | Administration |
| - support with Centre staffing and financial matters, | Administration |
| - support community hygiene education | Health |
| - support technology and latrine production | Engineering |

4.1.3 Operational Management

In each Pourashava an NGO which will be contracted by the Pourashava, subject to DPHE/PO selection approval and will be responsible for the daily operational management of the Sanitation Programme on behalf of the Pourashava. This is a strategy for overcoming the existing lack of Pourashava staff and operational capacity and at the same time, enabling 18 DTP sanitation implementation to get underway without too much delay. Specifically, the NGO would be responsible for:

- implementation of the sanitation programme in each ward according to established ward work plans,
- operational programming of latrine promotion, installation and sanitation education work,
- supervising the implementation work of CSC field staff,
- supervising operation of CSCs,
- supervising the daily operation of production centres,
- organising the supply of materials for production centres from the SDE store,
- monitoring the performance of programme staff,
- provide consolidation training for programme staff,
- reporting to the Pourashava CEO.

How to organisationally involve NGOs in 18 DTP is still being investigated. There appear to be three alternatives:

- " contracting individual NGOs already operating in each Pourashava,
- " contracting a single NGO already working throughout Bangladesh,
- " contract a separate NGO for each batch of six towns.

In each case, the NGO concerned would contract to the individual Pourashava but be subject to direct monitoring supervision from 18 DTP PO. For the last two options, the task of coordinating supervision for all Pourashavas could also be contracted to an NGO. Alternatively, as in the first case, the PO would need to do the coordination.

This latter would necessitate that a Sanitation Coordinator be specifically employed by 18 DTP for the duration of sanitation implementation activities.

All NGO operations, including the payment of approved staff recruited for the programme, would be funded from 18 DTP funds provided specifically for this purpose.

Within each Pourashava, the contracted NGO would be required to employ a full time Sanitation Supervisor to supervise the daily implementation of the Sanitation Programme and other implementation staff required. The Sanitation Supervisor would report to the Pourashava CEO and liaise through the CEO with other Pourashava staff as necessary, with the SDE as required and with ward communities through WSSCs.

4.2 Implementation Staff

The Programme Supervisor would control an implementation team in each CSC, partly employed as NGO contract staff and partly as community contract staff, as shown by Figure 4.2. Work Descriptions and Selection Criteria for each position are provided in Appendix 4.2.

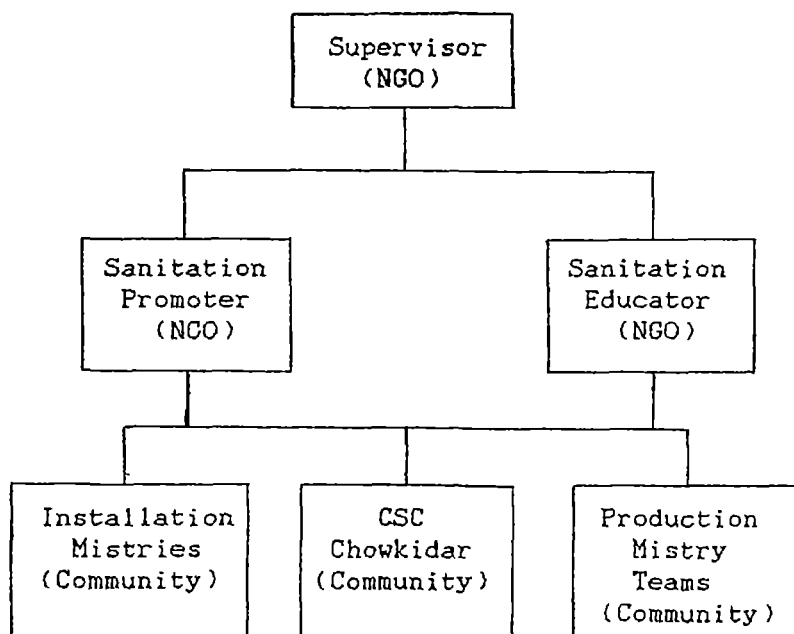


Figure 4.2

Community Sanitation Centre Implementation Team

4.2.1 NGO Contract

- Supervisor responsible for implementation of the Pourashava Sanitation Programme (1 for each Pourashava).
- Sanitation Promoter (Sanpro) responsible for latrine promotion and installation supervision (1 or more for each ward).
- Sanitation Educator (Saned) responsible for latrine use sanitation education (1 or more for each ward).

It is estimated that a Sanpro/Saned team will be able to handle the installation of 300 latrines a year (ie. one every working day). For higher rates of installation, additional team members would be recruited. All positions can be filled by women and in keeping with 18 DTP objectives, priority should be given to women subject to ability and monitored performance. However, the Sanitation Educators must be female to ensure access to household women. It would also be necessary for each sanpro/saned team member to have the ability to back up the other, to ensure implementation continuity.

It is recommended that NGO ward staff be paid on an incentive basis as a ward team which could be two, three or more members. The payment for each member could consist of a nominal base salary, say Tk 750 per month each, with an additional fixed amount per team member for every latrine installed complete by the team. The objective would be to earn a "normal" salary with say 20 latrines installed per month per team member and a "contract" level salary with say 25 latrines installed per month per team member (ie. 300 per year equivalent for a two person team). Additional latrines installed would earn more income. Numbers of latrines installed complete can be readily monitored and will be on record. The team incentive should stimulate collective performance and may be a basis for positive competition between wards. To operate successfully, an incentive based payment must be supported by an effective monitoring system which is a necessary part of any programme.

4.2.2 Community Contract

- Latrine installation mistries
- Production mistry teams
- CSC Chowkidar

The draft Implementation Sanitation Guidelines proposed that community women should be trained for mistry work. It is recommended that the original proposal be implemented for each CSC with the more capable trainees recruited for production.

Several women should be trained as installation and production mistries to provide a source of mistries in each ward to enable women to work part-time if necessary, and ensure implementation continuity. Performance expected should be the same as for male mistries. The ability of women to do this work has been demonstrated by other organisations. In fact, it has been said they produce a better product, having a generally lighter touch.

As recommended in the draft Implementation Guidelines, it is also recommended that both production and installation mistries be paid for work done. Fixed unit rates for paying mistries should be set for each type of latrine component made and latrine installed. Unit rates need to be established from observation of time taken to make components by a reasonably experienced mistry.

For the Production Centre, it is recommended that production mistries have responsibility for providing and paying their own labour. This will encourage them to form reliable and compatible production teams and save the CSC the task of organising labour. The production unit rates should allow for the cost of one mistry and one labourer. Should a mistry wish to work by herself or use more than one labourer, she would earn the same fixed rate.

The primary requirement should be that the quality of product must meet a minimum standard with a minimum acceptable rate of production. Failure to achieve either should be reason for not being offered work in the future. There should also be a minimum standard of quality below which, payment to a "trained mistry" should be refused.

The CSC Chowkidar, living at the Centre for security, should have the additional role of general labourer around the Centre and in particular, helping with moving and loading latrine components. Presumably the Chowkidar could also be a women. The Pourashava should provide a basic salary for the chowkidar which should make allowance for the free family accommodation included.

4.3 Community Participation

Participation of the community at several levels is essential for the functional implementation of the Sanitation Programme. It is also essential that the community accept the Programme and it's implementing workers for it to achieve it's objectives.

4.3.1 Households

The household is the basic community unit as either nuclear or joint families, with several households forming a group and groups making up villages. It is proposed that the sanitation programme should use this community structure by promoting the programme at household group level. Implementation and sanitation education will be at household level with all members of the household involved.

The cultural and physical restrictions on movement for some community women need to be recognised and allowed for by the Programme, when providing opportunities for their direct involvement. The programme should to some extent accommodate their family responsibilities, such as having more women working for shorter daily periods. However, payments should only be on the basis of units of work achieved (ie. "No work, No pay").

4.3.2 Caretakers

It is proposed that the role of hand tubewell caretakers should be expanded so that they can serve as "Group Resource Persons" for the Sanitation and Sanitation Education Programmes. For this purpose they would be given more intensive sanitation education and instruction on latrine maintenance. They would provide a referral source of advice and guidance for the household members of their group. They could also act as a liason person between the group and the CSC/WSSC in the event of sanitation concerns and other matters concerning the group, such as tubewell difficulties.

To fulfil this role, the Caretaker should provide a supporting role during the short period of sanitation promotion, installation and education in her household group. For this purpose, it is recommended

that in future, a condition for becoming a caretaker is that the first latrine in their group must be installed in the Caretaker's household and that it be available for demonstration to members of the household group. It is also recommended that the Caretaker must build a reasonable quality kutchra superstructure but for which, 18 DTP would pay say Tk 200 cash reimbursement. This would be reward for Programme support and may additionally provide group status.

4.3.3 WSSC

The community responsibilities of Ward Water and Sanitation Surveillance Committees (WSSC) have already been established.² Additional to this, the WSSC would identify with the Community Sanitation Centre in their ward and be encouraged to use it as an operational base. The WSSC sanitation functions will be to promote community involvement in the Sanitation Programme, support and monitor the performance of the NGO managed Community Sanitation Centres, and advise the Pourashava Council through the Supervisory Board, on sanitation implementation, sanitation (latrine use) education and other matters relating to the Sanitation Programme in their ward. The WSSC should also bring health related sanitation and water supply issues to the attention of the Pourashava Task Force on health.

4.3.4 Supervisory Board

The role of the Supervisory Board has also been established. In particular, the Board will assist the Pourashava Council by monitoring overall operation of the Sanitation Programme and recommend and advise on related policy, financial and other relevant matters.

4.3.5 Task Force

A Pourashava Task Force is set up to supervise health and environmental issues for the Pourashava in which context, the 18 DTP community wide general hygiene education programme implemented independently of the Sanitation Programme is the concern of the Task Force. At the same time, this should not include the latrine use sanitation education programme, which is an integral part of the implementation combination of latrine promotion, installation and use education all targeted on specific individual households. Because of this interdependent situation, it is proposed that sanitation (latrine use) education as part of the sanitation implementation package, be the responsibility of the Supervisory Board with the Task Force providing an advisory role to Supervisory Board for the specific topic of sanitation (latrine use) education.

4.4 Community Sanitation Centres

4.4.1 Function

For Pourashavas with sufficient sanitation demand, a Community Sanitation Centres (CSC) will be established by 18 DTP in each ward. Each CSC will have design functions of:

- base from which to implement the Sanitation Programme,
- production area for manufacturing sanitation components.

² Non-Technical report, May 1990

Additionally, the WSSC should be encouraged to use the CSC as a focal point for other ward activities. The Pourashava may also find it appropriate to use CSCs as a reference point for some of its ward activities. The community must be encouraged to view "their" CSC as a WSSC resource centre for sanitation matters and maybe later, other community service concerns.

Operational supervision of the Pourashava CSCs will be the responsibility of the NGO Sanitation Supervisor. The most suitable Centre staff member should be made responsible for daily management of the Centre, both for sanitation implementation and production. This will require some organisational skills.

4.4.2 Capacity

The basic operational capacity proposed for a Centre is:

- Latrine installation and sanitation education	6 latrines per week 300 per year
- Production rate	6 latrine units per week
Production potential	10 latrine units per week
- Production storage capacity	10%; 30 latrine units
- Off-set pit unit production	10% per year; 30 units

Production potential provides catch-up capacity following say a delay in supply of materials and also some capacity to meet additional demand.

The capacity of a Centre can be increased to 2 or 3 times the basic capacity if necessary by adding more staff and casting area. Of course, operational management of the Centre would become more demanding.

CSCs will be set up in wards where there is at least 300 latrines to be installed. Where there is less than 900 latrines to be installed in a Pourashava, only one Production Centre will be set up. In these Pourashavas, the base for sanitation implementation will be the Pourashava office.

4.4.3 Establishment

Physical requirements for a CSC are:

- an office for field staff to work from,
- a small store for holding production materials (once weekly supply) and tools,
- a covered production area,
- support items of tubewell, demonstration latrine, water tank and chowkidars house.

To encourage community acceptance and participation in the Sanitation Programme, households need to identify themselves with the Community Sanitation Centre. This will be more readily achieved if the Centre has a form that is comparable to the style of their own houses and which they can be comfortable with. For this reason, it has been proposed that Centres should be of better quality kutcha construction. The institutional image of pucca construction does not achieve the above objectives, nor is it functionally necessary.

The form of kutcha construction would vary between Pourashavas dependent on local materials available. It is recommended that in each case, the experience of the Ward community should be sought through the WSSC and that the community be given the opportunity to decide on the form of construction. In many, if not most cases, they are very experienced in building and maintaining their own houses. Further, under the terms of WSSC duties, it is reasonable to expect the WSSC to supervising Centre maintenance (if necessary with some financial assistance from 18 DTP). The involvement of the community (and WSSC) in Centre establishment, is a very positive form of community participation.

While 18 DTP will set up each Centre, both implementation and production parts, will be the property and responsibility of the Pourashava, and hence the community, during programme implementation and after. The future use of the Centre would be the Pourashava's decision.

For guideline purposes, the following building estimates were made for CSC establishment (office plus production area):

- All kutcha	48,000
- Mud wall/thatch roof	58,000
- Mud wall/GI roof	71,000
- All pucca	90,000

For the Production Centre alone:

- Mud wall/thatch roof	31,000
- All pucca	54,000

The all pucca production centre is a smaller version of the DPHE centre with the addition of support items listed above.

The Pourashava, in consultation with the WSSC, will be responsible for finding a suitable site for the CSC in each ward. The selection would be subject to PO approval. Appendix 4.3 lists site selection criteria together with other data for Community Sanitation Centre and Production Centre design.

5. TECHNOLOGY

5.1 Design

Latrine design needs to provide affordable options which are both socially and technically functional and of acceptable quality. However, for sustainable use effective hygiene education and maintenance instruction for beneficiaries is also required.

Design requirements for the sanitation objectives of 18 DTP to be met are:

Operationally sustainable

- latrine provided complete,
- no parts to be purchased/added in the future,
- no significant future maintenance charges necessary
- reasonable certainty that householder can/will make future changes necessary.

Hygienic containment

- raw excreta contained at all times without smell,
- health risk and aesthetic objection of exposed excreta controlled.
- no health risk when emptying pits
- access for insects and animals controlled

Socially functional

- minimise urine splash from the pan,
- adequate latrine floor space for adults,
- privacy and convenience,
- acceptance by small children,
- fully accessible to household women,
- reasonably attractive for use.
- stable and secure for user confidence

Technically functional

- non-blocking water seal,
- low volume flush required
- reliable hydraulic performance of other parts,
- minimum one year pit storage capacity for ten member family.

Easy to clean

- smooth pan surface,
- latrine floor readily cleaned and free draining.

Household maintenance

- uncomplicated and readily undertaken by Household,
- maintenance work reasonably acceptable to Household.

Affordable

- to the beneficiary if not subsidised,
- to the project if subsidised for maximum coverage.

A preferred technology should meet most, if not all these design requirements. Additional considerations for latrine installation and choice of technology are:

- ground space required (this can be limiting),
- superstructure permanence.

5.2 Alternative Technologies

As Bangladesh is a largely Islamic population practising anal water cleansing and water is mostly readily available, there has been widespread use of the pour flush latrine pan. A low cost ferrocement pan has been developed by UNICEF for this purpose. It is appropriate that this approach also be used in 18 DTP, as has already been proposed.

Alternatives are either more costly or in the case of the VIP latrine, more sensitive to proper design and construction and household maintenance. This particularly applies for the VIP superstructure which is an integral part of the latrine functional design. Accordingly, only pour flush alternatives are considered.

The cost composition of alternatives considered is given in Appendix 5.1 together with pit capacity calculations. Design sketches of each alternative are shown in Appendix 5.2.

5.2.1 "Home made" latrine

This is the simplest latrine, made from kutchha materials and built entirely by the household. It consists of a bamboo or similar platform with a pit say three feet deep. This alternative has been rejected as it:

- is not operationally sustainable,
- does not provide hygienic containment of excreta,
- it is only partially socially functional,
- storage capacity is limiting,
- is difficult to clean,

and so can not meet the sanitation objectives of the Project.

5.2.2 Single Direct Pit (SDP) pour flush latrine

Description

This is the design proposed by the 18 DTP draft sanitation implementation guidelines. It follows the existing UNICEF/DPHE latrine design concept. A ferrocement pourflush gooseneck water seal pan is set in a prefabricated concrete latrine slab which is located on top of up to five prefabricated concrete rings lining a single pit. The pan discharges directly into the pit, which for 18 DTP will have an internal diameter of 3 feet.

Two variations have been considered. A five ring design (SDP-5RL) with effective depth 4.5 feet, the basic UNICEF design depth, for which the pit has a wet solids capacity of 2 and 4 years for 10 and 5 users respectively. For an alternative "Extended 3 Ring" pit design (SDP-E3RL) first proposed by this report, the pit would have an effective depth of 3.5 feet and a wet solids capacity of 1.6 to 3.1 years for 10 and 5 users respectively (ie. 25% less volume than the 5 ring pit).

When the first pit fills, the householder is expected to dig a second pit, purchase additional rings to line it and transfer the existing slab with pan to the new pit. The first pit is meant to be covered with soil and left to decompose for the 2 to 3 years (dependent on number of users) that it takes for the second pit to fill. At this later time, the fully decomposed contents of the first pit are dug out with no health risk involved. The latrine is then reestablished over the original first pit.

The 18 DTP feasibility report provides money for a solids disposal site. This should be used for household solid waste only and not for undecomposed latrine wastes. Use for the latter purpose can be compared to collecting bucket latrine wastes with many of the same objections applying.

Assessment

With consideration for the listed design requirements, the SDP latrine design:

- Does not provide built-in operational sustainability, as the latrine is not installed complete.
 - o When the first pit is full, the household has to purchase and install at his own expense, a new set of concrete rings for the second pit at a total cost of 414. It is assumed that only a three ring pit would be needed for the second pit. This would provide for 1 to 2 years capacity dependent on number of users.
 - o There must be space available for the second pit.
 - o There is no certainty that the second installation will be made.

Limited experience in Bangladesh indicates that households are likely to seek alternative solutions.

- o Dig or pay a sweeper (up to Tk 200) to dig out the contents of the full pit and put this into a burial hole or dispose of it in some other way. This involves directly handling unpleasant raw excreta with a high health risk to both those involved and household members, with the potential of unacceptable unhygienic disposal of the removed contents.
- o Break a drainage hole in the side of the top ring of the existing first pit to drain off the liquid overflow from the pit to a nearby ditch or canal with associated environmental effects and health risk.
- o Abandon the latrine altogether and revert to defaecating in the open as before the latrine was installed.

A recent WHO/DPHE/UNICEF performance survey of SDP latrines¹ found that all these solutions are presently being implemented to a significant extent together with other households who have dug second pits.

- With the described situations, hygienic containment is only ensured during the initial period while the first pit is filling and not necessarily thereafter. The same applies for social and technical functionality.

¹ WHO/DPHE/UNICEF; "Study of Sale and Performance of One Slab-One Ring Latrines" (in Bangladesh), Dec 90 - Feb 91.

- Household maintenance is relatively complicated during the first pit change over when the household has to go through all the actions of installing a second latrine.
- The total cost of SDP latrines after installing the second pit is quite high. Although much of the cost of the first pit will be subsidised, the household will have to pay all the additional cost of the second pit. For example, with the SDP-E3RL latrine costs are:

Initial installation (subsidised)	789
Cost of second pit (household pays)	414
	<hr/>
Total cost	1203
	====

In summary, the SDP alternative can not be considered a reliably sustainable option, does not provide for reliable hygienic containment of raw excreta and it is expensive, especially for the Household.

5.2.3 Double Direct Pit (DDP) pour flush latrine

Description

This alternative is an extension of the SDP latrine. Exactly the same design is used with the same operational details. The difference is that both pits are dug and lined at the same time during initial installation. There are no future purchases required by the householder when he changes pits. The slab with pan is fitted to the first pit and the latrine completed for use. The second pit is temporarily back filled with the soil initially removed so that it is not a safety hazard for children. Alternatively, the empty second pit might be temporarily used for composting organic household waste?

Each pit would have an effective depth of 3.5 feet and for latrine use, a wet solids capacity of 1.6 to 3.1 years for 10 and 5 users respectively.

When the first pit fills, the householder digs out the back filled soil (or composted waste) from the second pit and then transfers the slab with pan from the first to second pit. The excreta in the first pit is covered with a good layer of soil and left to safely decompose. When the second pit is full after a further two or three years, the decomposed and perfectly safe contents of the first pit are dug out and disposed on the fields or dug into a garden. The latrine is then reestablished over the original first pit.

The estimated cost of the DDP is Tk 1168.

Assessment

The DDP latrine design:

- Provides a high degree of operational sustainability since it is a complete initial installation other than the need to shift the slab with pan between pits. It is reasonable to expect that the household will do this. There is not additional expense and need to find and pay a sweeper.
- There is a high degree of hygienic containment of raw excreta. The only time of exposure is during the very short time while the slab is

being shifted. The freshly exposed pit contents can be immediately covered with soil.

- The latrine is continuously socially and technically functional and should always be easy to clean.
- The maintenance work required for pit change over can be readily undertaken and be acceptable to household members with minimum exposure to "offensive" material.
- The DDP design is the least cost option considered.

There may be concern that the lining of the second pit will be vandalised, removed and even sold by some owners thereby removing the sustainability of their DDP latrine. Although this may occur, the perspective of the situation needs to be understood.

- o The latrine is not an institutional installation. It is in the private ownership of the Household who have themselves contributed to the installation cost. Some ownership identification on the part of the Household can be expected.
- o There will be intensive direct education for every household on the use and care of the latrine (including the need for the second pit) which will help to reinforce its value to them leading to an increased awareness of the benefits of the latrine. The Household group caretaker will also be present as a "watchdog" against undesirable actions.
- o The second pit will be back filled with soil and so not readily "vandalised".
- o Lastly, while it is not possible to guarantee that some households will not remove the lining of the second pit, they will be a minority. The majority of households should not be denied a cost effective sustainable latrine because of the unfortunate behaviour of a minority of households.

In summary, the DDP latrine meets all the required design criteria. It incorporates full operational sustainability, provides hygienic containment of excreta, is sustainably technically and socially functional, is easy to clean and can be readily maintained by the householder. Additionally, the cost is acceptable with no future installation cost for the householder.

5.2.4 Offset Double Pit (ODP) pour flush latrine

Description

Two pits are required. The pan is connected through a water seal trap and single short pipe to a junction box. The junction box has two short pipe connections to separate offset covered pits. At any one time the discharge to one pit is sealed off with the two pits being filled and emptied alternatively in the same way as for the DDP. There is an additional space required. The pit capacity of the ODP is the same as for the DDP.

Assessment

The ODP latrine is designed as a fully sustainable option and meets all of the design considerations previously listed with the exception that it is substantially more expensive at TK 2020.

5.3 Comparative Summary

Table 5.1 provides a comparative summary of significant criteria for the alternatives considered. Only the Extended 3 Ring Lined pit design is compared.

The originally proposed SDP with 5 ring lining ranks the same as the 3 ring SDP with the additional disadvantage of extra costs.

On the basis of this assessment it is recommended that the Double Direct Pit (DDP) with the Extended 3 Ring pit lining be adopted for use by 18 DTP. This recommendation should be confirmed by the DPHE Technical Committee which should take into consideration the observations supporting this conclusion. It is also important that the choice be considered within the overall context of the proposed implementation framework of the Sanitation Programme and not in technical isolation.

Table 5.1

Comparison of Technology Alternatives

<u>Design Criteria</u>	<u>SDP</u>	<u>DDP</u>	<u>ODP</u>
Operationally Sustainable	Limited	Yes	Yes
Hygienic Containment	Partial	Yes	Yes
Household Maintenance	Demanding	Reasonable	Easy
Space required	Less	Less	More
Cost to Householder	225+414	250	1202
Subsidy allowed	564	918	918
Cost Total (Tk)	1203	1168	2020

5.4 Construction Design

That intended for the original draft sanitation guidelines should continue. It is technically acceptable, although that does not mean improvements can not be made. Some observations are summarised in Appendix 5.3.

5.5 Installation

5.5.1 DDP Latrine

Physical installation of the DDP latrine is relatively straight forward. However, for the procedure should be standardised for Programme uniformity. This would also be necessary for mistry training.

Once the pits have been dug in the correct locations, the installation is an assembly process using the components supplied. The main concerns are that the pit lining rings are set at the correct height and the top ring is level so that the latrine floor will drain properly and the water seal function correctly. The lining of both pits needs to be installed properly. The latrine pan must also face an acceptable direction.

5.5.2 ODP Latrine

Installation of the ODP latrine would be rather more complex requiring some on-site construction work. The latrine floor slab would require a rectangular brick support wall on which to place and support it. The pits would be installed in a similar manner to the DDP latrine but with covers placed on each just below ground level. The connecting PVC pipe work and pan water trap would need to be placed with continuous free draining slope (1:50 minimum) from pan to pits. A junction box enabling waste flow to be diverted from one pit to the other would need to be provided.

A precast junction box used in the past in Bangladesh has had problems with the discharge seal system leaking and breaking. It is proposed that mistrys should be trained to build junction boxes on-site from bricks and mortar. It is a relatively simple and cheap process as practised in Pakistan. Appendix 5.4 is a design sketch of the process. The discharge seal is made with a 1:15 cement:soil mix which is firm enough to resist discharge flow and will set without cracking. At pit changeover the seal is readily chipped out without damaging the structure of the junction box while a similar seal is easily made for the first discharge pipe.

Selected community mistrys in each Pourashava would be trained to install ODP latrines. However, the household would have to pay them directly for their services as the available subsidy would not cover this cost.

5.6 Special Situations

5.6.1 Self-supporting Soils

In some areas, clay and silty-clay soils may be sufficiently self supporting to avoid the need for pit lining other than near the surface to support the latrine slab and to stop surface run-off entering the pit. At the most only two rings would be needed and probably only one when there is firm non-filled soil up to ground level.

The one ring would be set 6 inches into the ground and be 8 inches above ground level to the top of the slab. Each ward situation would need to be separately considered by the 18 DTP SDE and a policy decision taken whether to offer this option in that ward.

In these situations, pit depth could be safely extended down to the wet season water table depth.

5.6.2 High Water Table

In areas prone to flooding and/or very high water table levels, latrine installation may need to be restricted during the wet season, or at least confined to the higher areas of the ward. In the worst situations, the first two rings can be installed above ground level and the excavated soil from the pit back filled around the latrine rings with additional soil used if necessary. This would effectively raise the ground level and place the latrine floor some eighteen inches higher. The top two rings

should be joined with cement mortar to stop soakage through the join. However, where ever possible, the latrine should be placed on the highest acceptably available ground in these situations.

5.7 Further Development

All latrine designs considered have the major constraint of cost and as such, are not sustainable options in the private sector for poorer communities. It is considered that there is potential to improve this situation with further cost reduction. Specific considerations are:

- The major cost is in the pit lining. A variety of options have been tried over the years in search of the cheapest durable material. One option that may not have been intensively considered is the use of cement stabilised soil as insitu lining or for making blocks. It has been used for house building.
- The Project proposes using RCC latrine floor slabs which are also costly and in particular, very heavy. It would be an advantage if the slabs could be made lighter and less costly, maybe by modifying the existing UNICEF ferrocement slab.
- Still further improvement of the ferrocement pan may be considered.
- A particular deficiency observed in Bangladesh is the absence of an efficient water seal trap for ceramic pans and that pans in the market place could be improved. The UNICEF designed ceramic pan produced in Pakistan and used for the Quetta Sewerage and Sanitation Project is significantly superior and it's introduction to Bangladesh manufacturers would be beneficial.

Further issues are considered in Appendix 5.4. In summary, it is recommended that the following activities should be considered:

- (1) Investigate cheaper pit lining design and materials
- (2) Test installation of the proposed lining
- (3) Test wire mesh reinforcement of the pan gooseneck
- (4) Field assess the use and acceptance of round latrine slabs
- (5) Investigate alternative slab materials for a lighter (and cheaper) design
- (6) Field test cement:clay lining of latrine bases for easier maintenance
- (7) The need for an improved ceramic pan in Bangladesh is identified

Items 2, 3, 4, and 6 should be followed up as part of the existing 18 DTP.

Items 1 and 5 are more involved and it is recommended should be set up as specific studies, maybe as a post graduate exercise with seperate funding. The student would however need to be imaginative and have a practical apptitude. Both local and overseas students should be considered.

Item 7 is a more specialised requirement that would more properly be taken up at institutional level and necessarily involve the private sector.

6. IMPLEMENTATION METHODOLOGY

6.1 Purpose

A structured implementation methodology is required for programme implementation. With this there is Programme understanding and coordination between workers, efficient work organisation which follows an established implementation sequence, contribution to the achievement of programme targets and an organised basis for monitoring programme performance.

The methodology is broken down into steps with the activity of each outlined, results to expect and supporting considerations. Workers concerned with each step are identified providing the basis for Work Descriptions and Selection Criteria together with time, materials and equipment and training requirements.

Figure 6.1 shows a flow chart of the implementation methodology proposed while Appendix 6.1 provides the Activity Sheets for each step.

6.2 Outline

The proposed methodology has four stages. Introduction of the Sanitation Programme to each Pourashava leading to preparation and approval of operational Pourashava Sanitation Programmes. First year Ward work plans are also prepared. Ward implementation of the Programme at household level follows with latrine promotion, application and layout, followed in turn by installation and lastly sanitation education.

6.2.1 Sanitation Programme

The Sanitation Programme would be introduced to the Pourashavas and SDE 18 DTP at one or more workshops where they would have opportunity to collectively discuss and assess the policies and strategies of the Programme and the proposed implementation methodology. They would assess the acceptability of the Programme and make suggestions for changes and improvements within the limits of key policy fixed by 18 DTP.

The PO would make follow-up visits to each Pourashava to ensure they understand the Programme and to discuss details specific to the Pourashava. This would include the appointment of a managing NGO. A Pourashava sanitation programme would be prepared with numbers of Community Sanitation Centres (CSC) and Production Centres (PC) decided (section 4.4.2), their locations identified, staffing requirements determined, community contribution established and beneficiary households described. The Sanitation Programme would be forwarded to the Pourashava Supervisory Board for approval and the PD DPHE as necessary.

CSCs and PCs would be built and furnished by DPHE with NGO contract staff establishing operations. The setting up process would include the preparation of work plans for each centre providing an organisational basis for implementation operations.

6.2.2 Promotion and Application

Programme implementation would proceed by household groups (caretaker group) in accordance with the Ward work plan. Group promotion meetings would be

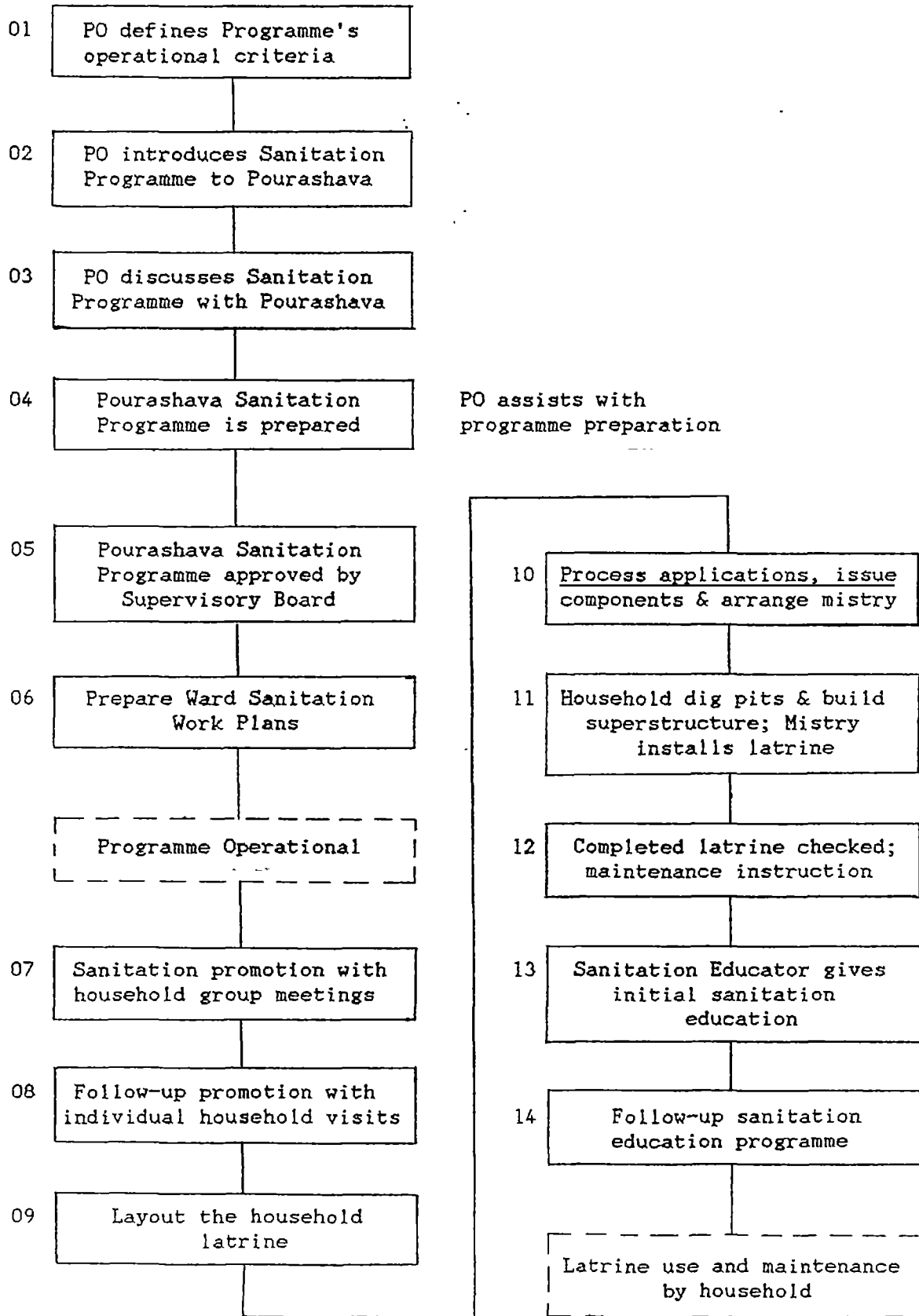


Figure 6.1

Sanitation Programme Implementation Activities for 18 DTP

arranged through group Caretakers with meetings run by the Sanitation Promoter. Follow-up visits would be made to individual households in each group for further explanation and discussion. If the household agrees, latrine layout would be made with consideration for social and technical factors. An application and monitoring form would be put up for the implementation record. The household would sign an agreement incorporated into the form as evidence of acceptance of conditions and responsibilities. The delivery of latrine components would be organised together with a mistry to install the latrine for dates arranged with the household.

6.2.3 Installation and Maintenance Instruction

The household would dig latrine pits in locations agreed with the Sanitation Promoter and in accordance with instructions given. The Caretaker would check on progress. The household would also collect materials from their own sources for building the latrine superstructure. On the agreed date the Sanitation Promoter would inspect the work and if satisfactory, arrange the latrine Installation Mistry for the next day. Delivery of the latrine slab with pan would also be arranged. On the day of installation, the Sanitation Promoter would visit to check on the pit lining before the slab is placed. A later visit would be made to check the completed latrine after the superstructure had been built. On this last visit, the household would receive instruction on the operational care and maintenance of the installed latrine.

6.2.4 Sanitation Education

This is an essential part of the implementation process to ensure the new latrine is used properly by all members of the household, that it is kept clean and that hands are washed after using the latrine. The Sanitation Educator would visit the household for this purpose following a structured programme over the month following latrine completion.

6.3 Supporting Detail

Additional information and guidelines are required for implementation of the methodology. These are considered with reference to relevant report sections and appended draft guidelines or outlines. These latter need to be reviewed and finalised in relation to the final form of the Sanitation Programme.

Programme Preparation - Appendix 6.2 provides guidelines.

Work Planning - Appendix 6.3 provides guidelines.

Promotion - is considered fully in section 7.

Application and Monitoring Record - each household application needs to be recorded together with household data and latrine details. A monitoring record of implementation progress should be available for operational and performance management purposes. It is of practical benefit if this can be kept to a single form. Appendix 6.4 provides a draft double sided form for consideration.

One side provides a data and monitoring record for the household and their new latrine. On the reverse side, there is a simple agreement listing basic conditions and responsibilities. The household would sign this agreement as evidence of acceptance of the conditions and responsibilities involved. CSC staff would witness the signature and the

Sanitation Supervisor approve the agreement. There is also space on the back for a sketch of the location of the latrine within the household compound.

It would be best if the form were printed on stiff paper or light weight cardboard for durability as it should be carried in the field on occasions.

Latrine Layout - technical, religious and social factors need to be considered. Guidelines are provided in Appendix 6.5.

Component Delivery - It is proposed that 18 DTP will provide this service and meet the cost associated. The form of delivery needs to be considered for each Pourashava situation. Alternatives to consider are:

- casual hire of rickshaw
- contract hire of rickshaw with pay per trip or day
- programme purchase of rickshaw with driver on contract pay rate
- other systems?

On average, there would be four delivery trips per day from each CSC. At say Tk 10 per trip, that means Tk 40 per day or Tk 1000 per month for 25 working days. The system needs to be reliable with a backup capacity to ensure that delivery of components does not delay installation.

Installation - the proposed technology and the installation of components is relatively simple with existing experience available to draw on. Observations on construction (and design) are summarised in Appendix 5.3.

Installation Quality - is important for proper latrine function and household acceptance. A check list of quality issues to be considered is given by Appendix 6.6. It is also a basis for monitoring the quality of the Installation Mistry's work. The mistry needs to correct inferior work or mistakes before she is paid.

Superstructure - this must be built to provide the privacy required for latrine use, especially by household women. The superstructure may or may not have a roof, as the household chooses, but it must be possible to shift it to the alternate pit at the time of pit change over. A kutch design is favoured.

Preferably, the superstructure should be built before the latrine slab is supplied to ensure the latrine will be used. However, fitting the reinforced concrete slab would in this case be difficult. As a compromise, it is proposed that the superstructure materials be collected and be seen to be available at the first inspection visit following which the slab would be delivered. At the completion visit, the presence of the superstructure is checked.

Sanitation education should not start until the superstructure is built and the latrine useable. If after say four weeks, a minimal superstructure is not built, then all the latrine components should be taken back for use in another household. The WSSC should be prepared to assist if there is a problem over getting a superstructure built.

Sanitation Education - is considered fully in section 8.

Latrine Maintenance - has been outlined in section 5.3. Maintenance requirements should be redrafted as an information sheet, initially for Programme staff and training purposes and secondarily for informing

caretakers and households. Consideration should be given to preparing a pictorial strip chart of the pit change over procedure for leaving with caretakers and others interested.

Issues to be considered for latrine maintenance are listed by Appendix 6.7.

Community Sanitation Centre Records - need to be kept simple while at the same time providing a clear household and monitoring record. Application/Monitoring forms (Appendix 6.4), working diaries and stock control records should be the basis of CSC implementation administration, supported by Ward work plans and monthly reports.

6.4 Materials Required

Specific materials and equipment are required for the different implementation steps. Those required are listed in Appendix 6.8, as a summary from implementation activity steps.

7. PROMOTION

7.1 Purpose

To implement a sanitation programme, householders (clients) need to be sufficiently informed about the programme and the latrine (product) and be motivated to decide to install (purchase) a latrine. Sanitation promotion is a form of marketing. Promotion is required to ensure a regular flow of applications is maintained to enable latrine installation targets to be achieved.

7.2 Method

7.2.1 Approach

A latrine promotion programme involves several basic marketing considerations.

- Design - must meet the functional needs of households, be acceptable to them and be reliable. These factors have been considered in section 5 - choice of technology. The superstructure has been left to the household to design to their own style.
- Sustainability - is necessary for both structural integrity and operational maintenance. Both have been provided in the proposed DDP latrine design.
- Cost - must be affordable to the household. The proposed basis of funding (section 9) is expected to meet this requirement.

Households should be satisfied about these issues to enable them to make a decision about having a latrine.

7.2.2 Targets

The targets for latrine promotion are the men and women of each household.

7.2.3 Messages

Promotion consists of presenting several simple messages relating to the benefits of the latrine as perceived by household women and men together with supportive basic information. It is about helping people make up their own mind from the basis of their existing experiences.

For this purpose, there needs to be a good understanding of the existing sanitation habits of the target community, both men and women, their religious and cultural practices and attitudes relating to excreta and their perception of the order of importance of these issues.

For 18 DTP, a basic sanitation promotion programme was prepared based on the following basic messages.

- (1) The Sanitary Latrine - an introductory description of the latrine and its use.
- (2) A Sanitary Latrine is Private - privacy is an essential requirement for defaecation. A latrine with suitable superstructure provides this privacy at all times of the day. Women in particular consider this an important requirement.

- (3) A Sanitary Latrine is Convenient - having to defaecating in the open behind trees, bushes etc. is generally not convenient. Women in particular perceive this to be a difficulty, especially in the wet season and at night. There may also be an element of danger at night.
- (4) Easy to Use and Contains Excreta - is to show and inform the household what the latrine (pan and slab) looks like, how it is easy to use and keep clean and how the excreta is contained without smell in the latrine pits. The household find out what they are "buying" and that use of the latrine will result in a cleaner and healthier household environment.
- (5) A Sanitary Latrine Adds Value to Your House - to emphasise that the installation of a latrine is a sustainable investment that can add value (and status?) to the household's property.
- (6) Cleanliness is Next to Godliness - reinforces the general religious significance of the need for cleanliness and the safe disposal of human excreta in Bangladesh communities. This is of significance to both men and women.
- (7) A Healthy Family - is a closing message describing the potential result of installing a latrine which contributes to a healthy family with the containment of human excreta from their household environment.

The seven messages were prepared as seven drawings with each drawing supported by an Activity Sheet outlining the message, describing the drawing and how to present the message with the drawing. Emphasis is placed on pictorial presentation rather than written because of the low literacy rate prevailing among poorer households. Each drawing resulted from the analysis of it's activity sheet. The activity sheets are in Appendix 7.1 with draft copies of the drawings in Appendix 7.2. The drawings are to be prepared as flip charts of sufficient size to be used at small household group meetings.

The low cost of the latrine is expected to be of particular interest to household men. This would be presented verbally, although a table of costs in pictorial chart form (use drawings of items instead of words) could be prepared for presentation with the drawings.

Latrine sustainability with alternate use of the two pits would also be described. It has been proposed that the Caretaker's household would have installed a latrine earlier and that this should be available to demonstrate the sustainable design to the household group.

There had not yet been time for the messages and drawings to be field tested. Their effectiveness needs to be closely monitored during initial application of the promotion programme. The interpretation of individual drawings could be tested in advance but this must be qualified by the fact that the drawings are not meant to "stand alone" without the supporting presentation.

7.3 Implementation

Sanitation Promotion is the first step in the latrine implementation process at household level in accordance with the Programme's implementation methodology (section 6). It is proposed that implementation should involve the two stage process described of a

promotion meeting with each caretaker household group in following the Ward work plan order with follow-up visits to individual households of the group.

The group meeting arranged by the Caretaker, should follow an established format (the message sequence) with the Caretaker acting as meeting host. The presentation by the Sanpro would be verbal using the message drawings as support material followed by opportunity for discussion. The meeting should last for a set period in anticipation of later meeting individual households for further discussion. The Sanpro needs to ask for the names of those households who want a latrine and/or wish to talk more about it and arrange times to visit the households over the next two or three days.

It has been recommended that the Caretaker should be required to have a new latrine installed before promoting the latrine to the group households and that the latrine should be available as a group demonstration unit at the time of promotion. With some groups, it is possible that little additional promotion will be necessary, should the Caretaker have already been discussing the latrine among her household group.

7.4 Additional Development

18 DTP needs to complete development of the Promotion Programme and the supporting materials required.

- Draft one or more "Key single line Statements" to go with each drawing as "reminders" (Appendix 8.4 for Sanitation Education is an example).
- Prepare detailed implementation guidelines for presentation of each message both at meetings and during household visits. Refer to Appendix 8.5, Sanitation Education for an example.

Note: Promotion activity sheets should be completed as the first part of these two exercises.

- Prepare Guideline Procedures for group meeting presentation from time of opening to closing (Appendix 7.3).
- Prepare Guidelines for household promotional visits (Appendix 7.3).
- Prepare Guidelines for Presentation and Communication techniques for meeting and individual promotion and discussion situations, both cooperative and reactionary.
- Test the promotional messages (section 7.2.3).

Note: The various guidelines would be used for both operational and training purposes.

8. SANITATION EDUCATION

The original 18 DTP proposals for Hygiene Education were assessed and it was concluded they would not meet the requirements of the Sanitation Programme. Two separate programmes are now intended. The first is a "Community Hygiene Education" programme similar to the original proposal for the general community to be implemented by existing community workers in each Pourashava. The second is a specific "Sanitation Education Programme" to be implemented as an integral part of the Sanitation Programme for the benefit of households installing new latrines. Only the Sanitation Education programme is considered in this report.

8.1 Purpose

The Sanitation Education Programme is concerned specifically with the proper use and care of the new pour flush latrines. It is not sufficient to simply install latrines. They must also be used properly by all household members, including the very young children and they must be kept clean. Additionally, each household member needs to wash their hands with ash or soap after using the latrine.

The Sanitation Education Programme is designed to educate households through a structured programme of household visits immediately after latrine installation is complete. Without linked sanitation education, many latrines will not be used and cared for properly and some may not be used at all. General community hygiene education programmes are not generally effective for latrine use education¹. Sanitation Education needs to be a mandatory part of the Sanitation Programme.

8.2 Method

8.2.1 Targets

The education targets are all members of households with a new latrine, men, women and children. Men and women should be involved in the education visits, but particularly women because of their influence over children.

8.2.2 Approach

That taken considers the circumstances of target households and the nature of the programme.

- The programme is primarily concerned to establish new behavioral habits in the household more than understanding.
- Simple messages are used with a pictorial and physical demonstration basis. Since a high percentage of target household members are illiterate, there can be no reliance on written messages.
- Messages are introduced in a phased manner to accommodate the learning capacity of household members.
- Follow-up visits are made with monitoring to ensure that messages are implemented properly.

¹ Rural Water and Sanitation Programme, 1991 - 1993, Government of Bangladesh - UNICEF, October 1990.

8.2.3 Messages

The messages for Sanitation Education were prepared in two sets. The first consists of five messages on Latrine Use by the family and the second, four messages on Latrine Use for children. Each message is supported by an Activity Sheet (Appendix 8.1) from which drawings were developed (Appendix 8.2). The drawings for each message will be printed and bound into a flip chart for use during household education visits. Two or three drawings are repeated in some charts to show the involvement of different family members, women, men and children. The messages are:

Latrine Use (Family)

This is the basic education set that is the minimum which each new family should implement.

- (1) All Use the Latrine - all members of the family - men, women and children need to use the latrine.
- (2) Flush the Latrine After Use - the latrine needs to be flushed by each user after use.
- (3) Wash Hands With Soap or Ash After Using the Latrine - to limit the transfer of faecal matter and disease to others.
- (4) Clean the Latrine Each Day - to keep the latrine clean and pleasant to use without smell to help ensure the latrine continues to be used.
- (5) Healthy Family with a Clean Latrine - symbolises the potential benefits of latrine use, latrine cleaning and washing hands.

Latrine Use (Children)

This secondary set is concerned with training young children to use the latrine at as early an age as possible. All children should be using the latrine by the time they are three years old or before. It is reasonable to expect training to start when the child is two years old.

- (6) Put the Excreta of Small Children in the Latrine - to remove the health risk of excreta left by small children about the house before they are trained to use the latrine.
- (7) Small Children Use the Latrine - train young children at an early age to use the latrine to avoid the need to collect their excreta and the health risk associated.
- (8) Wash Hands With Soap or Ash After Using the Latrine - the need is the same as after using the latrine.
- (9) Healthy Family with a Clean Latrine - the same as for the first set.

8.3 Implementation

The Sanitation Education programme would be implemented by the trained Sanitation Educator. She would make up to six visits to each household implementing a structured implementation programme. The Caretaker of each household group should be involved in a support role and monitor household performance between education visits.

For implementation, it is proposed that the messages be presented in three sequential combinations.

- First - messages 1, 2 and 3 covering only latrine use and hand washing would be presented. Both men and women should be present.
- Second - messages 4 and 5 would be added to complete the Latrine Use set.
- Third - messages 6 to 9 would be presented for training children to use the latrine.

Guidelines for implementation of Sanitation Education are in Appendix 8.3 in which the proposed timetable of visits to each household and the involvement of the Caretaker are outlined. While up to six visits to each household are proposed, the actual number required would depend on how quickly household members respond.

8.4 Additional Development

18 DTP needs to continue and complete development of the Sanitation Education Programme and the supporting materials required. This should involve:

- Drafting one or more "Key single line Statements" to go with each drawing as "reminders". Appendix 8.4 provides a sample for Chart number Two.
- Preparing detailed implementation guidelines for the presentation of each message during household visits.

Appendix 8.5 provides an example for Message (Chart) number Two listing the issues to be considered for the message, the education activity (by the Saned) and the Households involvement/response. These guidelines would be used as the basis for Saned training.

- The new Sanitation Education messages and drawings have not been tested. This should be done in advance of use and be monitored during initial use.

9. FINANCIAL

9.1 Latrine

Latrine costs are detailed in Appendix 5.1. 18 DTP meets the cost of all components, their delivery to the household and mistry installation costs. The household meets the costs of superstructure and installation labour (and any costs arising after installation). With this distribution, there is no exchange of money which is an important administrative benefit. This is substantially simpler than the rather complex subsidised payment system originally proposed.

9.2 Programme

9.2.1 Implementation

18 DTP will have two implementation payments to make on a regular basis:

Delivery costs - of components to the household. The form of this payment will depend on the delivery system adopted in each Pourashava (section 6.3).

Installation Mistry payments - need to be made on a regular basis, say two weekly or monthly. Payments would be based on household application and monitoring form records held at each CSC. The CSC staff would prepare a notice of payment in each case which the Supervisor should verify. A payment basis for each latrine installed has been proposed (section 4.2.2).

Requests for payment would be forwarded to the SDE for approval and payment. The method of making payment to the recipient would need to be defined together with systems for monitoring the payment process. Some alternatives are:

- Payment by cheque with the recipients going themselves to the bank.
- Cash payment by the SDE to recipients at each CSC.
- Cash payment by the SDE through the Supervisor to recipients at each CSC.

9.2.2 Production

Payments for the production of latrine components would need to be made to Production Mistries. It has also been proposed that they be paid fixed rates for units produced and that this include allowance for labour employed by the mistry (section 4.2.2). The basis for payment should be a production stock register set up for each Production Centre. A system for payment is already operational with other DPHE production centres. However, it would be efficient to use the one payment system for both Production (18 DTP) and Sanitation Community Centres.

9.2.3 Management

Managing NGO staff would be paid directly by the PO or through a coordinating NGO office if this is set up. This would involve salary and expense payments for CSC staff (Sanitation Promoters and Educators and Sanitation Supervisors (and possibly CSC chowkidars?)).

Each Supervisor should be responsible for making up payment requests. A system of attendance record would need to be established for each CSC. It should be possible to cross reference this against the diary record of

each field staff member. Acceptable expenses together with a system of recording would also need to be identified. The SDE 18 DTP is assumed to be responsible for verifying payment requests.

A system for making payments to NGO staff would need to be established.

9.2.4 Establishment

The cost of setting up the Community Sanitation and Production Centres will be met by 18 DTP. Standard systems of payment would be used.

The supply of equipment for facilities and staff will also need payment.

10.1 PROCUREMENT AND MANUFACTURING

10.1 Procurement

10.1.1 Purchase

Materials for the production of latrine components would be purchased using procedures established for other DPHE Production Centres. Cement and steel rod (and wire mesh?) would be ordered centrally by DPHE, while sand, khola and bricks would be ordered locally in each pourashava. The quantities of materials required would be based on latrine implementation rates planned in each Pourashava.

10.1.2 Storage

Centrally purchased materials would need DPHE controlled storage in each Pourashava with capacity for at least 2 months supply to help maintain continuity of supply to the Production Centres in the wards. The question of whether the 18 DTP SDE would be able to use the same storage facilities as the rural SDE or need separate facilities, would need to be verified.

Locally purchased materials would be stored at each Production Centre.

10.1.3 Delivery to Production Centres

DPHE stored materials should be delivered to each Production Centre on a weekly or more frequent basis to minimise the quantity of costly materials held at each Production Centre at any one time. The Supervisor should be responsible for requesting materials to be issued by the 18 DTP SDE and organising their delivery to the Production Centres. 18 DTP would meet the cost of delivery as part of the cost of supply.

10.2 Manufacturing

10.2.1 Organisation

Each Production Centre would be staffed by community women as Production Mistries and labourers (section 4.2.2) as proposed in the original Sanitation Guidelines. Desirably, the most competent mistry should be given responsibility for overseeing manufacturing work at the centre. Daily supervision and record keeping would be done by either the Sanitation Promoter or Sanitation Educator. The Supervisor would be responsible for overall supervision including the operation of each centre, quality control, the supply of materials and payments. The SDE 18 DTP would monitor the operation of each Production Centre.

For each level of activity, step-by-step operational guidelines should be prepared for implementation and training reference.

10.2.2 Production

The components required for the Direct Double Pit latrine (Technology, section 5) are the latrine pan, latrine slab and concrete rings for lining pits. The manufacturing technique for each item is well established, however the quality of workmanship observed in the field needs to be significantly improved to ensure products of acceptable quality are consistently made. A consistent manufacturing procedure needs to be maintained and should be recorded as manufacturing instructions for each component.

Particular concerns are:

Pan

- Method of coating the mold before manufacture.
- Application of the first layer of 1:1 cement:sand mortar.
- Procedure for applying additional layers of mortar to the mold.
- Method of reinforcing the gooseneck with wire mesh.
- Quality of the join between gooseneck mold and pan mold.

Slab

- Placement of reinforcement.
- Join between pan and slab concrete.
- Slope and finish of slab surface.

Rings - no special concern.

Curing - is of particular importance for all items.

Observations on each of these points, summarised in Appendix 10.1, should be considered when preparing manufacturing instructions and for Production Mistry training in the future.

With the Production Centre design proposed, the pans and slabs would be made under cover while the rings would be made out in the open.

10.2.3 Quality Control

It is very important that components of acceptable quality are consistently produced. A checklist of quality considerations for each component needs to be prepared as a basis for component quality supervision and monitoring.

It is also necessary that there be an operational system for correcting and when needed, rejecting inferior components. This should allow for:

- Correction of production faults (if possible) by the mistry at her own expense.
- Replacements manufacturing of seriously deficient components by the responsible mistry without pay.
- Cancelling the services of a mistry who consistently produces components of unacceptable quality.

To keep track of items made by each mistry, all items made would need to be marked with a non-repeating identification number.

10.2.4 Guarantees

18 DTP should accept responsibility for the replacement of latrine components which fail due to poor manufacture or are damaged during transport to households. Components damaged during installation and subsequently during use, would be the responsibility of the household. Replacement components need to be available for sale to households at production cost.

10.3 Stock Control

A practical stock control system is necessary for each Production Centre with which to manage the receipt and use of production materials and the

production and issuing of manufactured components. A stock register should be set up with the additional function of recording the production and hence payment of each mistry.

The stock register should be divided into two sections with the following records under each:

Materials Received and Used - separate pages for each material.

- Day of register entry
- Amount of material received
- Amount of material used each day
- Source of materials received into store
- Signature of person making entry

Components Produced and Issued - separate pages for each component

- Day of register entry
- Number of items produced each day
- Mistry producing the items
- Identification numbers for items produced
- Mistry's signature/mark in agreement with the entry
- Signature of person making entry

- Number of items issued
- Name or number of person/organisation receiving item
- Signature of person making the entry

On at least a monthly basis, it would be essential for the Sanitation Supervisor to do a stock check at the Production Centre and check that the Stock Register balances when stock on hand is accounted for. If it does not balance, explanations, such as breakages, losses etc. would need to be identified with explanations recorded in the stock register. It may be desirable to do the stock check weekly as a deterrent against abuse of the production system.

10.4 Offset Double Pit Latrine Components

The latrine slab with pan and concrete rings produced for the DDP latrine could also be used for the ODP latrine. Circular concrete covers for the pits could also be made by simply adapting the latrine slab molds.

For all other components and materials it is recommended that the household be required to purchase directly from the local market. The cost of these items would be additional to the maximum subsidised project contribution intended and to supply these from Production Centres, would significantly add to the organisational and administrative load of centre operation.

10.5 Production Sustainability

It has been recommended that Production Centres be set up for the duration of 18 DTP. After this however, the possibility would have been created for production to continue on a market basis if a demand should have arisen for unsubsidised components. The facilities and mistry expertise would be available in the community.

11 TRAINING

All personnel (and organisations) working with the Sanitation Programme will need either job specific training or programme orientation. They need to understand their work and contribution to the Programme to enable them to function effectively and most particularly, to avoid confusion.

The operational guidelines of this report need to be expanded and completed with operation manuals prepared as the basis for training programmes required for the various aspects of the Sanitation Programme.

Supervision staff need to thoroughly understand the work of those they are directly supervising. To achieve this it is recommended that to the extent possible, they should have physically experience of the tasks the staff they are supervising need to do.

Training requirements for the Sanitation Programme and for Programme positions are listed in summary by Appendix 7.1.

11.1 Community People

Installation Mistries

Installation Mistries need to be familiar with the Programme and it's implementation methodology in relation to latrine sociology, function, installation and maintenance and have detailed on-the-job training for the latrine installation process.

Caretakers

They will already be trained for their tubewell caretaking role. For sanitation, they would need additional individual orientation on the Programme and it's implementation with some emphasis on the need and implementation of sanitation education.

WSSC

Members would need additional orientation on the organisation and operation of the Sanitation Programme with emphasis on their support role for CSC operation and community based issues arising during implementation.

Production Mistries

They need to be fully trained in all aspects of the technical production of latrine components. They also need to be familiar with how production operations are managed, the importance of quality control and receive training for the organisation of their own labour.

11.2 NGO Staff

Sanitation Supervisor

The most intensive training programme would be required for these people. The Sanitation Supervisor would need to have a detailed knowledge of all aspects of the Programme without exception.

Sanitation Promoters and Educators

The Sanitation Promoters and Sanitation Educators must understand most aspects of the programme and have a detailed knowledge of all aspects of implementation methodology. Although Appendix 7.1 indicates some variation between the two positions, in practise, it may be that each member should be equally capable of handling either role to provide a backup capacity to each other for ongoing CSC operation. It would also give them more organisational flexibility for their operations.

11.3 DPHE and Pourashava

DPHE

The SDE 18 DTP would be the principal member concerned with the Sanitation Programme. The SDE must have detailed knowledge of the organisation of the Programme and the technical, production and administrative aspects, so that he can carryout required monitoring and supportive administration duties. He would need to understand most other aspects of the Programme.

Pourashava

The different officers involved with the Programme would need to have a good understanding of those parts of the Programme with which they are concerned. In particular, the Pourashava administration need to understand the objectives of the Programme and how to achieve these.

11.4 Trainers and Training

A separate programme of organising and training trainers for the Sanitation Programme would be required. The following proposals are made, but with their adaptation to local circumstances expected at both national and Pourashava levels.

NGO Staff

There needs to be a single source of training for all NGO staff for programme operational uniformity and training efficiency. Unless a Sanitation Coordinating position was provided in the PO, it would be logical to contract out this master training role to an NGO, ideally a coordinating NGO for the Programme.

The Master NGO Trainer would need to develop the required training manual from Programme guidelines. For training, it is suggested that each NGO team for a Pourashava (seven members with 3 CSCs) should be trained together in their own Pourashava where they could also use local situations for practical training exercises. With smaller numbers of staff in some pourashavas, training could be shared with one or more other pourashava teams. Additional training for Supervisors would probably be necessary. This could be done collectively in a convenient regional location.

Training would require the Master NGO Trainer to spend much of her/his time working in the field. Follow-up on-the-job consolidation training would be an important responsibility of the Sanitation Supervisors supported by additional field visits from the Master NGO Trainer. A work description needs to be established for the Master NGO Trainer.

SDE

The 18 DTP SDE (and relevant delegated staff) would need both orientation and specific training for the Sanitation Programme. It would be logical and efficient for them to attend relevant parts of the NGO training programme in their Pourashava. It is assumed that specific SDE workshops for Sanitation could be organised if necessary.

Mistries

The quality of product and workmanship observed at DPHE Production Centres indicates that mistries working in the Pourashava Production Centres should not be relied on for training Sanitation Programme mistries. They would need refresher training by the Programme before using them for this purpose.

It is recommended that a Master Mistry Trainer be contracted for training local mistry trainers for component production, latrine installation and monitoring this work. He must have excellent production technique which he is capable of personally demonstrating during training sessions and if not already capable, would need to learn how to install latrine components. He would need to travel extensively between pourashavas for the first year or so while Sanitation Programmes are set up and would logically, although not essentially, be based in Dhaka. He is presumed to work directly with the PO and would only be contracted for the time his services are required.

At the Pourashava, it is anticipated that a local working mistry would be given the additional role of local Programme Mistry Trainer. This Trainer could be from the DPHE Production Centre, but could also be one of the more promising 18 DTP mistry. The latter option could be an advantage in view of the emphasis on training community women as mistries. However, the Mistry Trainer would need to be able and prepared to work throughout the Pourashava and would be expected to work normally when not training. Alternative payment when training would need to be organised.

Caretakers

Sanitation training for Caretakers would be the responsibility of the CSC staff with supervisory support from the Sanitation Supervisor. A suitable orientation manual should be prepared for CSC use. It is suggested that in each ward, the Caretakers for the next 4 to 6 household groups in the Ward work plan should be orientated (and trained) together. It would be of practical advantage if these groups of Caretakers came from the same village or local area. Part of their orientation should involve installing latrines for their own households. This would enable meaningful sanitation education and orientation to be effected, their suitability as sanitation resource persons to be assessed and their latrine be available for later demonstration to the households of their group.

WSSC and Pourashava

An additional orientation meeting(s) should be organised by the Sanitation Supervisor supported by the SDE 18 DTP to more fully inform both the Pourashava and the WSSCs about the operation of the Sanitation Programme. Unofficial orientation should continue throughout the Programme with regular reporting meetings and organised field visits to observe progress and the Programme at work. An extension of this process

should be the formal opening of each Community Sanitation Centre and Production Centre with the WSSC.

11.5 Training Timetable

The programme for training will depend on the establishment timetable for 18 DTP. A training timetable for 18 DTP needs to be prepared with consideration for the time required to prepare training material and the logistical limitations of master trainers. Variation of the Project establishment timetable may be required to accommodate training limitations.

12 PERFORMANCE MANAGEMENT

12.1 Need

The Sanitation Programme will not achieve its performance targets without a reasonable level of performance management. Most of the field staff will work relatively independently during the day in a loosely supervised community environment. Limited supervision can be supplemented with routine recording and monitoring systems having a factual (rather than observational) basis.

12.2 Methods

Supervision and Reporting

These are the basis for performance management of implementation and production activities. Proposed operational systems incorporate routine recording and inspection systems (eg. Appendix 6.4, section 10.3) for this purpose, with reporting based on recorded progress and circumstances. Performance targets to achieve would have been established by the Ward work plans for each CSC (and hence Production Centres). Each CSC should also maintain a daily CSC diary of activity, observations, problems and issues to be attended to as a supporting record for performance management purposes.

The NGO staff of Sanitation Supervisor, Promoters and Educators are responsible. This is a daily activity.

Monitoring

The performance of the Sanitation Programme in each Pourashava and its supervision would need to be monitored on a regular basis. Principal concerns would be to monitor Programme progress and the achievement of targets, implementation and product quality, the performance of operational systems and the identification and solution of key problems and bottlenecks.

This is the responsibility of the SDE with particular concern for the technical and production parts of the Programme. NGO Coordination would need to monitor other operational aspects of the Programme. Supervision record and reports supplemented by regular in-field observations would form the basis for Programme monitoring.

Assessment and Evaluation

Assessment of the overall 18 DTP Sanitation operations would be the responsibility of the Project Office. Issues of concern should be target and operational performance in each Pourashava, adequacy of Programme concept, structure and methodology, the performance and organisation of management, training and administration systems and development and information exchange within the programme. A particular concern would be the performance of the NGO management and implementation system(s).

Evaluations would be continued at regular intervals as in the past.

13 PROGRAMME IMPLEMENTATION

13.1 Programme Model

The proposed Sanitation Programme is a Project implementation model for a "normal" Pourashava situation with 2000 or more latrines to be installed from three Ward Community Sanitation Centres over an implementation period of two or more years. Apart from basic policies and implementation strategies, the model could be adapted to the implementation circumstances of each Pourashava.

While the model has conceptual precedent in the experience of other sanitation programmes, notably in the muslim communities of Pakistan¹, the form of the model devised for the prevailing circumstances of Bangladesh towns and the 18 DTP organisation would need testing, assessment and as necessary, modification to accommodate initial implementation experience. The existing intention to establish sanitation operations in Narail Pourashava should continue for this purpose.

At the same time, and in fact as soon as possible, the Project Office needs to complete the operational guidelines required for training and subsequent implementation purposes.

13.2 Planning

The objectives of 18 DTP are quite specific with the primary objective to improve the health conditions of the poorest communities. The basic components required for this objective to be realised, the provision of water supply, sanitation and hygiene/sanitation education, are all provided by 18 DTP. However, because of the policy selective targeting of poorest households, the Project would only be expected to fully achieve it's health objectives when the three sectors are implemented in an integrated manner at the level of each household.

In 18 DTP, this has not been done for the first thirteen district towns (batches 1 and 2). For these towns, the Pourashavas were able to allocate funds to each sector without any apparent consideration for their integrated implementation. The result of this is shown by the wide variation of the ratio of latrine numbers to tubewells intended (Table 13.1) with a ratio range of 0 to 11.64, a median ratio of 1.54 and eleven of the thirteen towns with less than 7 latrines per tubewell - a typical minimum to accept.

Preparation of an integrated plan for funding allocation would be preferable. This should involve basic steps of:

- survey and identify the community need for tubewells (numbers of household groups),
- identification of numbers of latrines required for identified tubewell groups,
- identification of piped water supply and drainage needs,
- allocation of funds between the three components of piped water supply, drainage and tubewell water supply and sanitation together.

This would ensure that households receiving tubewell water supply would also have the opportunity to have a latrine linked with sanitation education and so optimise the potential for their health improvement under the provisions of 18 DTP. The allocation of funds for sanitation (and sanitation education) could also be made for households receiving

¹ Quetta Sewerage and Sanitation Project, Quetta, Pakistan. BKH Consulting Engineers, 1989 to 1991.

access to hydrant water supply or those with acceptable access to existing tubewells after providing for households receiving new tubewells.

Table 13.1
Comparison of Latrine vs Tubewell Funding

Batch One and Two Pourashavas

Pourashava	No. of Tubewells	No. of Latrines	Latrines/ Tubewells	No. of CSCs
Narail	827	1273	1.54	3
Manikganj	552	689	1.25	1
Magura	841	201	0.24	-
Shariatpur	352	816	2.32	1
Jhalakati	182	-	0.00	-
Bhola	97	-	0.00	-
Naogaon	1376	5200	3.78	3
Lalmonirhat	350	3168	9.05	3
Nilphamary	241	2806	11.64	3
Panchagarh	544	434	0.80	1
Thakurgaon	165	674	4.08	1
Moulavibazar	296	402	1.36	1
Joypurhat	495	3061	6.18	3

13.3 Batch One and Two Towns

As shown by Table 13.1, only four of the Pourashavas have a fully viable allocation of latrines numbers with three Community Sanitation Centres intended, one in each ward. Even then the ratio of latrines to tubewells for Naogaon is low. Narail is a borderline case. In all the other Pourashavas, only a single Centre would be viable.

The reason for this variation was not investigated but this should be reassessed when 18 DTP activity is initiated in each Pourashava. Consideration might be given to the provision of additional funds for sanitation. If a major need is identified, an option for consideration could be to extend 18 DTP funding to meet this need.

The objective of household health improvement for some of these Pourashavas is likely to be compromised in view of the unbalanced allocation of funds between sectors.

13.4 Batch Three Towns

The 18 DTP programmes for these towns have not yet been determined, with further activity temporarily suspended. It is recommended for these towns, that the methodology for allocating funds to component sectors should be reviewed. It is suggested that an 18 DTP policy requiring a proportionate allocation of funds between tubewell water supply and sanitation on the basis of an acceptable Project ratio should be adopted.

By this means, individual beneficiary households would benefit from an integrated programme and with supporting sanitation education, the potential for health improvement of household members would be greater and so contribute directly to the objectives of 18 DTP.

13.5 Women's Involvement

Provision is made for the involvement of women in all community aspects of the Sanitation Programme as Caretakers, mistries, labourers, WSSC members and as beneficiaries. All NGO staff could be women, although Sanitation Educators must be, for freedom of access to households. Precedent exists for the successful involvement of women in this way.

Community women would need considerable encouragement and support while they gain the confidence and community acceptance needed to carry out the responsibilities of their new positions. This is an important ongoing function of NGO staff and WSSC members. If community women are to be involved to best advantage, programme organisation at Ward level should be flexible, acknowledge initial social limitations on movement within the community that may exist and be reasonably accommodating of existing family responsibilities of household women working with the Programme.

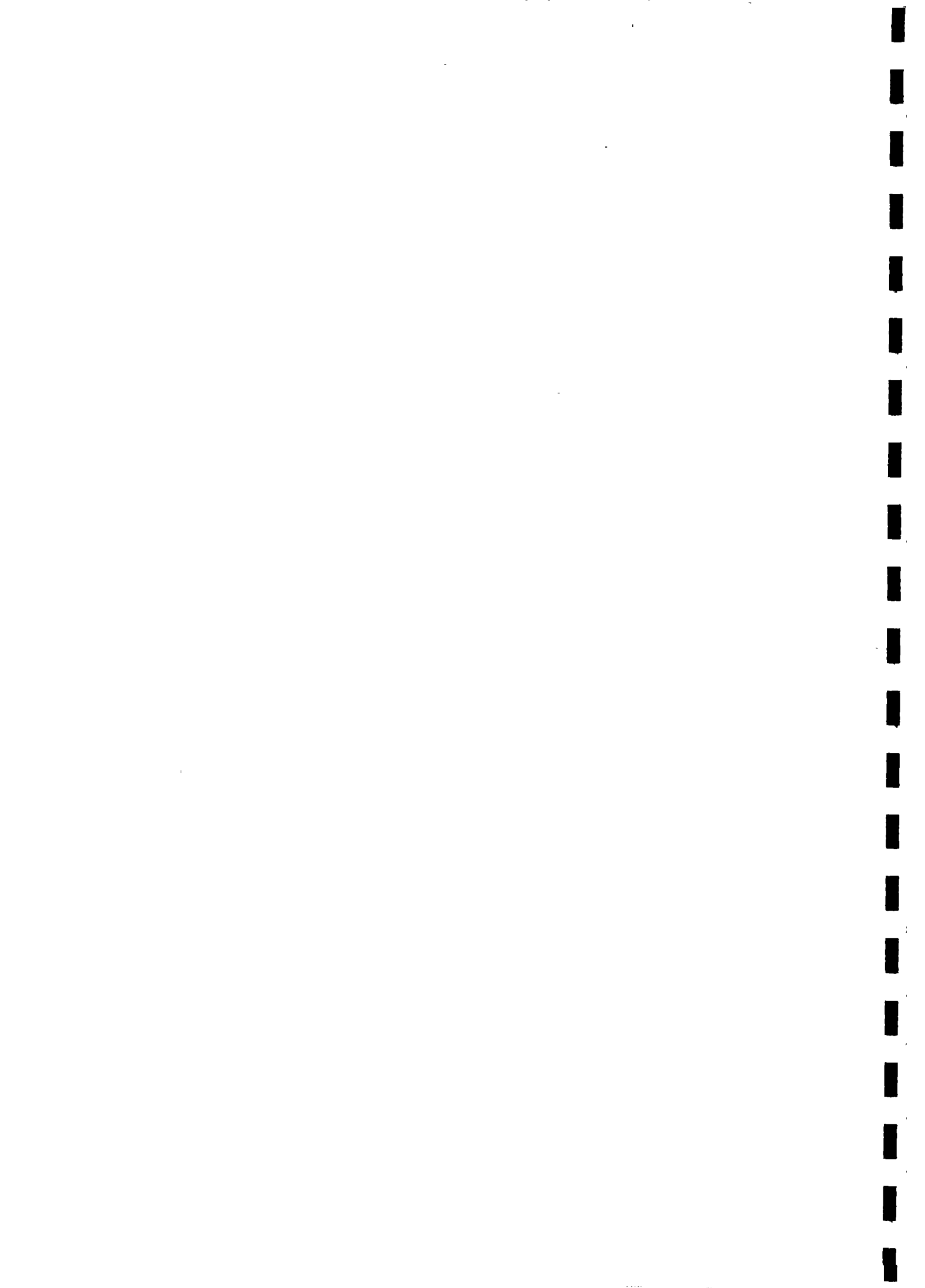
13.6 Programme Sustainability

Because of the subsidy level required, the Sanitation Programme is not directly sustainable after allocated latrines have been installed.

There are however indirect aspects of Programme sustainability which should be encouraged in the course of Programme implementation:

- The household group focus of the Sanitation Programme should increase the level of sanitation and health awareness in the community and so provide a more receptive base for additional health care education and the acceptance (and adoption) of sanitation by other households in the community.
- The Caretaker focus for each household group provides a potential focal point for other self-help activities within the group.
- The expertise for latrine production and installation would be left in the ward community. This would provide both a source of expertise for latrine maintenance support and the potential for future production and installation of latrine components on a private basis for wealthier households and if production costs could be reduced, for poorer households.
- Both programme and future private production might be supplemented by the establishment of other income generating manufacturing activities for community women. The managing NGO and Pourashava should foster this possibility, although not at the expense of production of latrine components for the Sanitation Programme.





APPENDIX 1.1

Terms of Reference for Sanitation Expert

(Period May/June 1991)

TOR for Sanitation Expert (period May/June 1991)

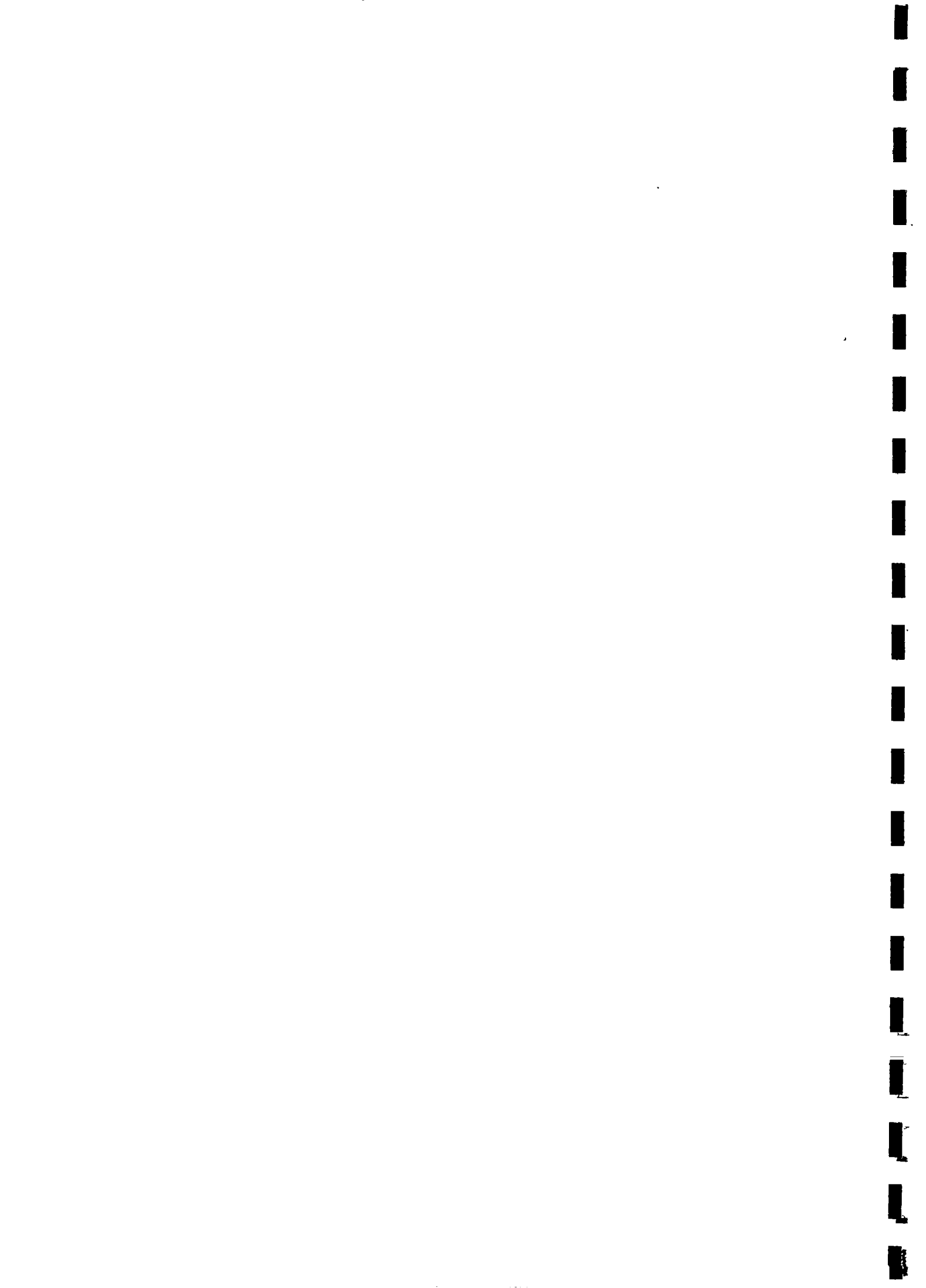
Each district town with a latrine programme of more than 500 latrines will operate a latrine centre. This centre will manufacture, sell and promote latrines and will serve as a demonstration site. The employees at the latrine centre will be mainly female. Preferably a local NGO will be in charge of the daily management. The target group for the latrines are primarily the town's poorest sections and they will be able to purchase a single pit latrine for a subsidised rate. Community based committees (WSSCs) will be involved in the promotion of sanitary latrines' use and maintenance. RC

Sanitation messages have been included in the "Hygiene Education" plan. The aim is to involve NGOs on a regular basis and to promote the use of latrine centres wardwise. Training will be arranged by DPHE/PO for Pourashava staff (Head of Centre) and for the employees (NGO).

Programme implementation will start in one town (Narail) this month.

The Sanitation Expert will:

- 1 - evaluate the latrine programme
- 3 - prepare guidelines for DPHE/PO and Pourashava for functioning of the latrine centre (demonstration, selling, promotion, training)
- 2 - recommend institutional set-up of sanitation component within the present towns administration structure
- 3 - prepare guidelines for the NGOs involved in the operation of latrine centre
- 4 - assist in preparing the "sanitation part" of the Hygiene Education training at field level (WSSC) and at Pourashava staff level.
- 6 - assist in conducting field training in the first batch.
- 7 - prepare training modules for the training of the Head of Latrine Centre.
- 8 - recommendations for latrine programme implementation for second and third batch. ?
- 5 - prepare progress and evaluation system for latrine programme.



APPENDIX 1.2

Sanitation and Hygiene Education Programme

Outline for Workshop Presentation

(20 June 1991)

SESSION 1 - SANITATION PROGRAMME

1.1 Objectives

Primary

- o To improve the health situation of the poorer fringe population of the 18 District Towns by providing for the sanitary disposal of excreta

Secondary

- o Through the integrated provision of water supply, sanitation and hygiene education
- o To provide latrine components for sanitary latrine installation at an affordable cost
- o To involve the community as users and workers with emphasis on women.

1.2 Principal Components Required

- o Technically and socially acceptable and affordable latrine design
- o An effective promotional/marketing system
- o A workable implementation methodology that ensures installed quality
- o Household education for proper latrine use and care
- o Reliable system for supply of latrine components and materials.
- o An effective organisation and management structure

1.3 Latrine Technology

- o Design requirements - socially acceptable, technically functional, socially and functionally sustainable, sanitary, household maintainable and affordable to both the Household and Project.
- o Single Direct Pit - limited sustainability, less hygienic, least cost
- o Double Direct Pit - improved sustainability, minimum space, similar cost
- o Offset Double Pit - too costly, more space

1.4 Implementation Methodology Proposed

- o Establish a Sanitation Programme at ward level (or Pourashava if latrine numbers are small) for selected beneficiaries as the basis for operation with this linked to the tubewell programme (where appropriate).
- o Selection criteria - lowest income groups, greatest sanitation need - community (WSSC) decision (cf. Narail experience)
- o Set up Community Sanitation and Production Centres (as necessary) to service the programme.
- o Use a structured work plan with sequential focus on tubewell household groups (new and where appropriate, existing).
- o Actively promote the "sale" of latrines through household group meetings and follow-up house-to-house visits.
- o Latrines installed with the aid of trained sanitation community mistries with household labouring support.
- o Immediately follow-up household sanitation education with several reinforcing visits.

1.5 Programme Organisation

- o DPHE, with PO support, establishes, operates and monitors the sanitation programme and production centres through the SDEs together with overall guidance and monitoring by PO.
- o The Pourashava supports individual sanitation programmes within its area.
- o The community through the WSSCs (and Caretakers) establish the individual ward sanitation programmes with nominated beneficiaries.
- o An NGO with promotion and education staff are the managing implementors of the sanitation programme working at individual household level.
- o Caretakers to be involved as community/household group resource persons for water supply, sanitation and hygiene.
- o Households participate as beneficiaries and installation workers.
- o Contract trained community staff build components and install latrines.

1.6 Organisational Working Procedures

- o Field implementation and CSC operation (NGO operational staff)
- o Supply of materials (DPHE SDE)
- o Production centre operation
- o Monitoring technical performance and production of components (DPHE SDE)
- o Monitoring programme progress and community acceptance (WSSC, Pourashava and DPHE SDE)
- o Overall monitoring and evaluation of programme performance (PO).

1.7 Financial

- o Level of subsidy - all materials/components, transport to household and mistry fee.
- o Household contribution - superstructure and labour
- o No cash payments by household
- o Transport and mistry payments through SDE

1.8 Training

- o Installation mistries - SDE DPHE/NGO
- o CSC production mistries - DPHE mistries; Master retrainer for DPHE mistries.
- o Caretakers - NGO supervisor/staff (for sanitation and hygiene education)
- o NGO implementation staff - NGO?
- o SDE DPHE - PO (if necessary)
- o WSSC - orientation by PO
- o Pourashava/DPHE workshops

1.9 Conclusions

- o Achieving objectives?
- o Sustainability Project?
- o Sustainability Community?
- o Involvement of Women?
- o Beneficiary acceptance and support?

SESSION 2 -PROMOTION AND HYGIENE EDUCATION

2.1 Promotion

2.1.1 Objectives

- o Marketing - purchase decision by household
- o Target issues which are significant to the beneficiaries
- o Integrated marketing delivery programme

2.1.2 Development

- o Activity sheets for each issue
- o Drawings for flip charts
- o Key statements for each issue
- o Implementation guideline for each issue
- o Training instruction

2.1.3 Implementation

- o Household group meetings -tubewell/caretaker groups
- o Individual household follow-up visits
- o Applications during visit; later by household.

2.2 Hygiene Education

2.2.1 Organisation and Objectives

Latrine Use Education

- o Only education - use and care of latrine
- o Households with new latrines
- o Change and develop new defaecation habits

Community Hygiene Education Programme

- o Combination promotion and education
- o General community target with/without facilities
- o Water use o Sanitation

2.2.2 Development

- o Same principles as for Promotion
- o Pictorial as mostly illiterate

2.2.3 Implementation

Latrine Use Education

- o Series of household visits (up to six) over one month
- o Reinforcement and performance monitoring
- o Pictorial with description
- o Physical demonstration and household participation at latrine
- o Sanitation Educator (sanitation only) with Caretaker support

Community Hygiene Education

- o Periodic household visits by health visitors (with other responsibilities)
- o Other media used - schools, mosques etc.
- o Pictorial and descriptive

2.3 Conclusion

- o Essential parts of sanitation programme

APPENDIX 2.1

Bangladesh - Netherlands Development Cooperation Project

18 District Towns Project

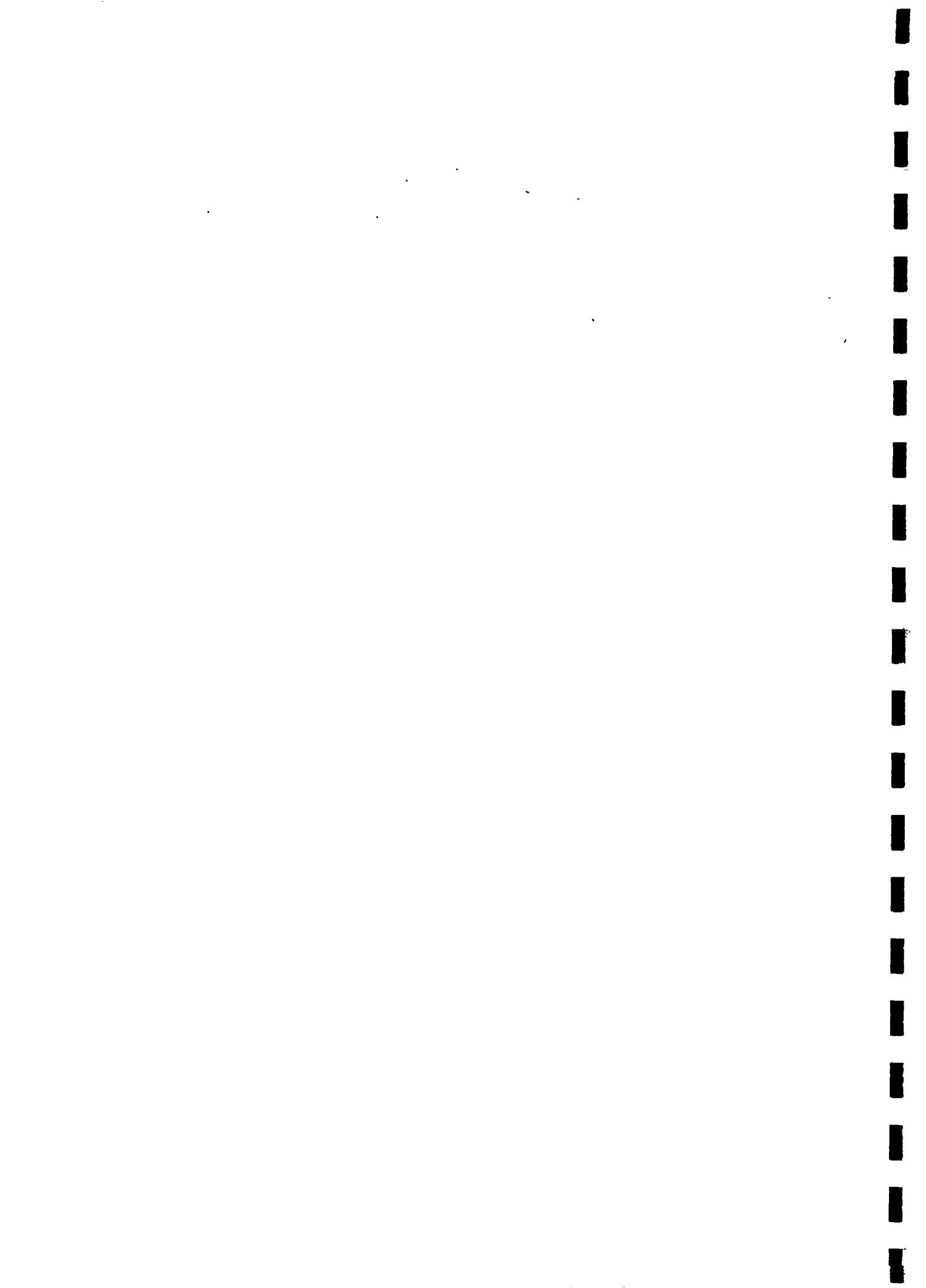
Implementation Guidelines For Hand Tubewell and Latrine Programme

(Parts I & II)

DRAFT

01/10/90

DPHE Programme Office



APPENDIX 4.1

Sub-Divisional Engineer 18 DTP

Sanitation Responsibilities

The Sub-Divisional Engineer 18 DTP (SDE) is the PD's representative in the Pourashava. In this role the SDE will implement the establishment functions of 18 DTP and monitor the implementation performance of the Pourashava Sanitation Programme. Specific tasks of the SDE will be:

1. Contribute to preparation of the Pourashava Sanitation Programme and its approval as a member of the Pourashava Supervisory Board.
2. Build and equip Community Sanitation and Production Centre facilities in accordance with the Pourashava Sanitation programme and 18 DTP operational criteria.
3. Monitor programme implementation performance, which should be in accordance with Ward implementation work plans together with maintenance of Community Sanitation Centre records.
4. Monitor the quality of installed latrines for layout acceptance and to ensure that the standard of installation is acceptable.
5. Regularly monitor the performance of latrine production centres and the quality of components produced. Take necessary actions to correct deficiencies.
6. Organise the training of Production Centre workers and latrine Installation Mistries with refresher training and training of additional workers as and when necessary.
7. Arrange for the regular supply of materials for Production Centre operation from the DPHE bulk store and local sources as appropriate at the request of the Sanitation Supervisor together with maintenance of bulk supplies.
8. Organise the payment of 18 DTP funds for approved purposes and monitor the system of request for payment from the Sanitation Supervisor.
9. Attend all Pourashava Sanitation Programme review meetings.
10. Liaise with the Pourashava and Sanitation Supervisor as necessary for Programme operation, monitoring and review.
11. Prepare a monthly Sanitation Programme progress report for the PD.

APPENDIX 4.2A
Implementation Staff
Work Descriptions

NGO Staff

1. Sanitation Supervisor
2. Sanitation Promoter
3. Sanitation Educator

Community

4. Caretaker
5. Installation Mistry

Work Description

Sanitation Supervisor

The Sanitation Programme for each Pourashava will be coordinated by a Sanitation Supervisor with responsibility for the operation of up to three Community Sanitation Centres and associated Production Centres, one for each ward. Specific tasks for the Supervisor are:

1. Assist with the preparation of the Pourashava Sanitation Programme and the preparation of annual Ward sanitation work plans.
2. Implement the Pourashava Sanitation Programme.
3. Supervise and support the operation of each Community Sanitation Centre and the performance of Centre staff members with particular attention to work planning, actual work done and quality of performance both socially and technically. Specifically:
4. Supervise promotion activities and monitor promotion effectiveness.
5. Supervise the adequacy of latrine layouts and installation quality.
6. Supervise sanitation education programmes and monitor education effectiveness.
7. Supervise the maintenance of household latrine implementation and monitoring records.
8. Supervise the operation of Production Centres, quality control and the maintenance of stock records.
9. Make requests of the SDE for the regular supply and delivery of materials for the operation of Production Centres.
10. Organise payments for Production Mistries Installation Mistries and delivery of latrine components to households.
11. Manage Sanitation Programme staff, give necessary operational approvals with working backup and organise replacement staff.
12. Provide on-the-job consolidation training of staff according to observed needs.
13. Liaise with the Pourashava and SDE as necessary for Programme operation and with the Ward Sanitation and Surveillance Committees on community matters.
13. Collate implementation records.
14. Prepare a monthly Sanitation Programme progress report with supporting records of work achieved, problems arising and work planned for the following month together with any specific recommendations for Programme implementation.

The Sanitation Supervisor reports to the NGO 10 DTP Coordinator.

Work Description

Sanitation Promoter

For the Sanitation Programme to be implemented in an effective and timely manner, it needs to be systematically promoted and latrines installed in a structured manner. These activities require to be organised and their implementation managed. The Sanitation Promoter (Sanpro) is responsible for this organisation and management within his/her Ward (or Pourashava) working area. The Sanpro will work from and contribute to the day-to-day function of the Ward's Community Sanitation Centre and when provided, the associated Production Centre. The specific tasks of the Sanpro are:

1. Organise household group meetings and promote the installation of latrines by group members with follow up one-to-one household promotion visits.
2. Receive and process Household applications.
3. Layout latrines with households members with consideration for necessary technical and social issues and ensure the Households understand their contribution and responsibilities.
4. Monitor the installation work of both the Household and Installation Mistry to ensure quality and rate of progress is maintained and see that deficiencies are rectified.
5. Maintain an up-to-date work programme for both promotion meetings and household visits and latrine installation work.
6. Issue latrine components, organise their delivery to each household by arranged dates and organise Installation Mistries.
7. Make completion inspections of installed latrines and instruct Households on the function and maintenance of latrines.
8. Monitor the day-to-day operation of the Ward Production Centre and receive finished components into Community Sanitation Centre stock. Maintain necessary stock records.
9. Contribute to the organisation, operation and maintenance of the Ward Community Sanitation Centre.
10. Actively support and back up the Sanitation Educator in her work.
11. Together with the Sanitation Educator, liaise with the Ward Water and Sanitation Surveillance Committee on community matters relating to the Sanitation Programme and the Community Sanitation Centre.
12. Keep a daily diary of work activity and maintain implementation records.
13. Prepare a monthly progress report with supporting records of work achieved, problems arising and work planned for the following month.

The Sanitation Promoter reports to the Sanitation Supervisor.

Work Description

Sanitation Educator

It is essential that installed household latrines are used properly by all members of the household and kept clean to ensure the success of the installation. An essential component of this objective is household Sanitation Education. The Sanitation Educator (Saned) is responsible for organising and implementing the household Sanitation Education Programme within her Ward (or Pourashava) working area. The Saned will work from and contribute to the day-to-day function of the Ward's Community Sanitation Centre and when provided, the associated Production Centre. The specific tasks of the Saned are:

1. Organise and implement a Household Sanitation Education Programme with the support of household group Caretakers.
2. Give particular attention to the sanitation education of household group Caretakers so that they can support the Saned and monitor household response.
3. Maintain and implement an up-to-date work programme for Sanitation Education visits.
4. Assist the Sanitation Promoter at household group promotion meetings (and promotion meetings for household women).
5. Carry out latrine "User Satisfaction and Performance" surveys from time to time when requested.
5. Contribute to the organisation, operation and maintenance of the Ward Community Sanitation Centre.
6. Actively support and back up the Sanitation Promoter in her/his work.
7. Together with the Sanitation Promoter, liaise with the Ward Water and Sanitation Surveillance Committee on community matters relating to the Sanitation Programme and the Community Sanitation Centre.
8. Keep a daily diary of work activity and maintain implementation records.
14. Prepare a monthly progress report with supporting records of work achieved, problems arising and work planned for the following month.

The Sanitation Educator reports to the Sanitation Supervisor.

Work Description

Caretaker

Household group Caretakers are selected initially for tubewell maintenance. Their function is extended for the Sanitation Programme as a sanitation resource person in their group. In this role they support both the Sanitation Promoter and Sanitation Educator during the short period of sanitation implementation for their group.

1. Arrange the initial sanitation promotion meeting for her household group at the request of the Sanitation Promoter.
2. Support the Sanitation Promoter during individual household promotion and latrine layout visits and have her new household latrine available for demonstration purposes.
3. Observe the installation of household latrines and advise the Sanitation Promoter of any difficulties arising.
4. Support the Sanitation Educator during household Sanitation Education work and actively monitor the latrine use and care by households in her household group.

She answers to the Sanitation Educator (and the community Water and Sanitation Surveillance Committee in the event of community based problems arising).

Work Description

Installation Mistry

Community women are trained as latrine Installation Mistris to assist Households with installation of their new latrines. She is trained to install the latrine components provided. The tasks of the Installation Mistry are:

1. To line the latrine pits and install the latrine slab with pan.
2. Advise the household about completing the latrine base and superstructure installation and do this work if necessary, by independent arrangement with the Household.
3. Provide a long term latrine maintenance and problem solving service for community households if and as required.

She answers to the Sanitation Promoter (and the community Water and Sanitation Surveillance Committee in the event of community based problems arising).

APPENDIX 4.2B
Implementation Staff
Selection Criteria

NGO Staff

1. Sanitation Supervisor
2. Sanitation Promoter
3. Sanitation Educator

Selection Criteria
Sanitation Supervisor

A: CRITERIA

Age: 25 to 40

Sex: Female or male

Education: Masters or Bachelor Degree.

Experience: 3 or more years organisational experience with community development work.

Employment/Salary: Yearly contract with probation; Tk per month.

Local Requirements: Understand and speak local languages

Special Abilities: Assured personality; knowledge of community cultural and religious structure; demonstrated organisational and staff management and monitoring abilities; self-motivated.

Motivation: Interest in community development with particular concern for the poorer sectors of the community; appreciation of the benefits of women's participation.

Work Requirements: Work at institutional and village level; work both office and community hours as necessary.

B: WORK ORGANISATION

Base: NGO office

Operation: Between Community Sanitation and Production Centres, SDE and Pourashava offices and NGO office. Visit each Community Sanitation Centre at least every second day.

Transport: By bicycle supplied.

Selection Criteria

Sanitation Promoter

A: CRITERIA

Age: 25 to 40

Sex: Female (or male)

Education Bachelor Degree in a social science or Matriculation with working experience.

Experience: 2 or more years related to community development.

Employment/Salary: Yearly contract with probation; Tk per month.

Local Requirements: Understand and speak local languages; know (belong) to the Pourashava.

Special Abilities: Assured personality; knowledge of community cultural and religious structure; organising ability.

Motivation Interest in community development; readily relate to poorer community members; appreciation of the benefits of women's participation.

Work Requirements: Work at village level; work community hours when necessary.

B: WORK ORGANISATION

Base: Community Sanitation Centre

Operation: Mostly in the field with current household groups; twice daily presence at the Community Sanitation Centre.

Transport: On foot locally (and rickshaw as arranged).

Selection Criteria
Sanitation Educator

A: CRITERIA

Age: 25 to 45

Sex: Female

Education: Matriculation or better with required cultural background.

Experience: 2 or more years working with women in rural areas.

Employment/Salary: Yearly contract with probation; Tk per month.

Local Requirements: Understand and speak local languages. Live in the Pourashava, preferably in the Ward working in.

Special Abilities: Mature personality; organising capacity.

Motivation: Active interest in family welfare, the role of women in the community and community development.

Work Requirements: Work at household level.

B: WORK ORGANISATION

Base: Community Sanitation Centre

Operation: Mostly in the field with current household groups; daily presence at the Community Sanitation Centre.

Transport: Locally on foot and rickshaw if arranged.

APPENDIX 4.3

Community Sanitation and Production Centre Design

1. Property Selection

The following factors need to be considered;

- Roughly central in each ward
- Have good road access for delivery and receipt of materials
- Have a total property area of 3000 or 4000 ft²
- Open space although scattered trees an advantage for shade
- Reasonably clear of flooding
- Natural drainage for surface water.

2. Facilities

Building requirements are:

- 1 office room, sanitation staff (2) 12' x 10'
- 1 store room, latrine building materials 12' x 8' and tools

Additional room space may be needed for larger capacity centres with more field staff and materials to store.

Production space requirements are:

- Casting area for four pan molds and slabs 240 ft²
24 ft x 12 ft, Kutcha with compacted sand/earth floor
- Ring casting (1 ring or 5 ring systems), 200 or 450 ft²
mixing, water tank, sand/khola storage,
open uncovered area
- Storage for 30 units, slabs on edge, rings 250 or 650 ft²
stacked 3 high

Allow 100% increase for access and general working space

Total area requirement approximately 3000 or 4000 ft²

Additional area for other community based activities would be an advantage.

Tubewell water and small water tank (6 x 3 and 3 ft deep) for curing pans. Demonstration latrine(s) built by the Project.

Room for chowkidar family to provide a 24 hour presence.

3. Office furnishing

Desks, filing cupboard, chairs, (fans), stationary, tea items,

4. Production requirements

- | | | |
|-------|----------------------|----------------------|
| Molds | 1 master pan | 1 pit cover |
| | 4 working pans | 1 junction box cover |
| | 4 slabs + foot rests | Tools as required |
| | 2 rings | |

APPENDIX 5.1

Costs of Alternative Latrine Technologies for 18 DTP

(As used in the 18 DTP Sanitation Report)
(Sanitation Expert June 1990)

Assumption

The preferred technology alternative is the Double Direct Pit Extended 3 Ring Lined (DDP-E3RL) latrine. The cost of this alternative is used as the primary reference for comparison.

1. SDP-E3RL (Single Direct Pit - Extended 3 Ring Lined)

Installation costs

Square RCC slab with white cement pan	210
3 concrete rings 3 ft diam @ 103/-	309
Spare pit cover - no second pit	-
10 bricks @ 2/50 each	25
Transport 2 trips @ 10/-	20
Superstructure allowance	150
Installation - labour allowance 1 day @ 50/-	50
- mistry 0.5 day @ 50/-	25

Total (Year 1)	789

Change over costs

3 concrete rings 3 ft diam @ 103/-	309
Spare pit cover - no second pit	-
4 bricks @ 2/50 each	10
Transport 2 trips @ 10/-	20
Installation - labour allowance 1 day @ 50/-	50
- mistry 0.5 day @ 50/-	25

Total (Year 2 to 4)	414

Total Costs for complete latrine	1203
	=====

2. DDP-E3RL (Double Direct Pit - Extended 3 Ring Lined)

Square RCC slab with white cement pan	210
6 concrete rings 3 ft diam @ 103/-	618
Spare pit cover - temporarily back fill	-
20 bricks @ 2/50 each	50
Transport 4 trips @ 10/-	40
Superstructure allowance	150
Installation - labour allowance 1.5 day @ 50/-	75
- mistry 0.5 day @ 50/-	25

Total (Year 1)	1168
	=====

3. ODP-E3RL (Offset Double Pit - Extended 3 Ring Lined)

Square RCC slab with white cement pan	210
6 concrete rings 3 ft diam @ 103/-	618
2 RCC pit covers @ 180/-	360
1 junction box concrete cover @ 15	14
36 bricks for slab support and Junction box @ 2/50	90
20 bricks for pits @ 2/50 each	50
PVC 4" drainage pipe 1 10 ft lgth @ 200/-	200
1 plastic water trap @ 50/-	50
5 kg cement for mortar @ 220/- bag	22
0.025 m3 sand @ 280/-	6
Transport 5 trips @ 10/-	50
Superstructure allowance	150
Installation - labour allowance 2.5 days @ 50/-	125
- mistry 1.5 day @ 50/-	75

Total (Year 1)	2020
	=====

4. SDP-5RL (Single Direct Pit - 5 Ring Lined)

Installation costs

Square RCC slab with white cement pan	210
5 concrete rings 3 ft diam @ 103/-	515
Spare pit cover - no second pit	-
4 bricks @ 2/50 each	10
Transport 3 trips @ 10/-	30
Superstructure allowance	150
Installation - labour allowance 1 day @ 50/-	50
- mistry 0.5 day @ 50/-	25

Total (Year 1)	990

Change over costs

3 concrete rings 3 ft diam @ 103/-	309
Spare pit cover - no second pit	-
4 bricks @ 2/50 each	10
Transport 2 trips @ 10/-	20
Installation - labour allowance 1 day @ 50/-	50
- mistry 0.5 day @ 50/-	25

Total (Year 2 to 4) 414

Total Costs for complete latrine 1404

5. Cost Summary

<u>Alternatives</u>	<u>Year 1</u>	<u>Year 2 - 4</u>	<u>Total</u>
DDP-E3RL	1168	-	1168
SDP-E3RL	789	414	1203
SDP-5RL	990	414	1404
ODP-E3RL	2020	-	2020

Note: "Extended 3 Ring Lined" refers to the design provision of 6 bricks on end separating the bottom 2 concrete rings lining the pit to give additional storage volume and wall soakage capacity.

"5 Ring Lined" is the basic design of UNICEF and that proposed in the 18 DTP draft sanitation implementation guidelines.

Pit Volume Calculations

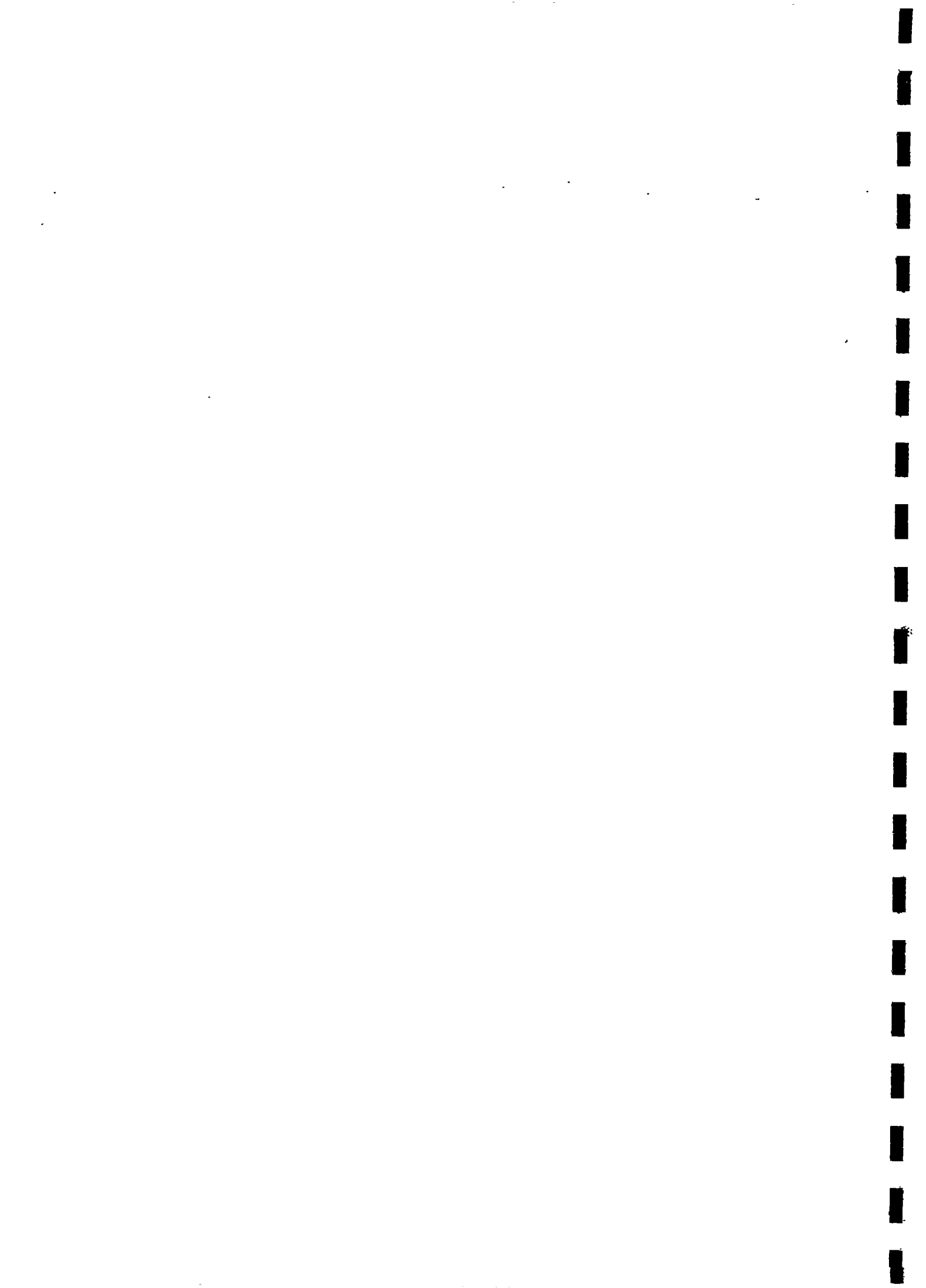
Dimensions

Internal diameter	3 feet	0.91 m
E3RL effective depth	3.5 feet	1.07 m
5RL effective depth	4.5 feet	1.37 m

Performance factors

	<u>E3RL</u>	<u>5RL</u>
Pit volume	0.70 m ³	0.90 m ³
Wet solids accumulation rate	0.045 m ³ /person/year	
Number of users	10 to 5 range	
Storage available in years	1.6 - 3.1	2.0 - 4.0

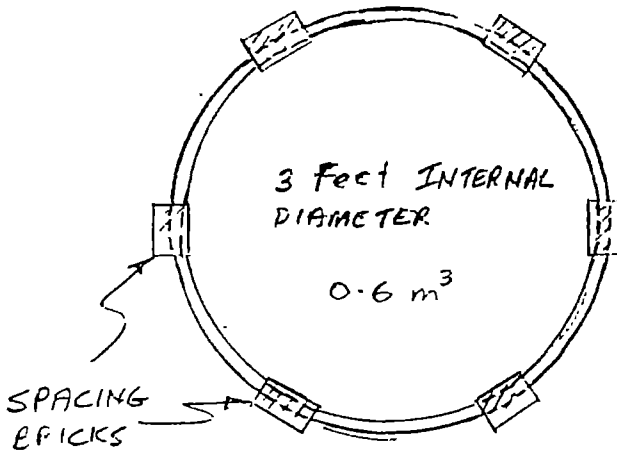
Note: Effective depth is the distance from the bottom of the pan water seal (or pipe discharge to the pit) to the bottom of the pit lining including foundation support bricks plus 6 inches (0.15 m) mean excavated depth below the lining.



APPENDIX 5.2/A

ALTERNATIVE PIT LINING SYSTEMS

EXTENDED 3 RING LINING

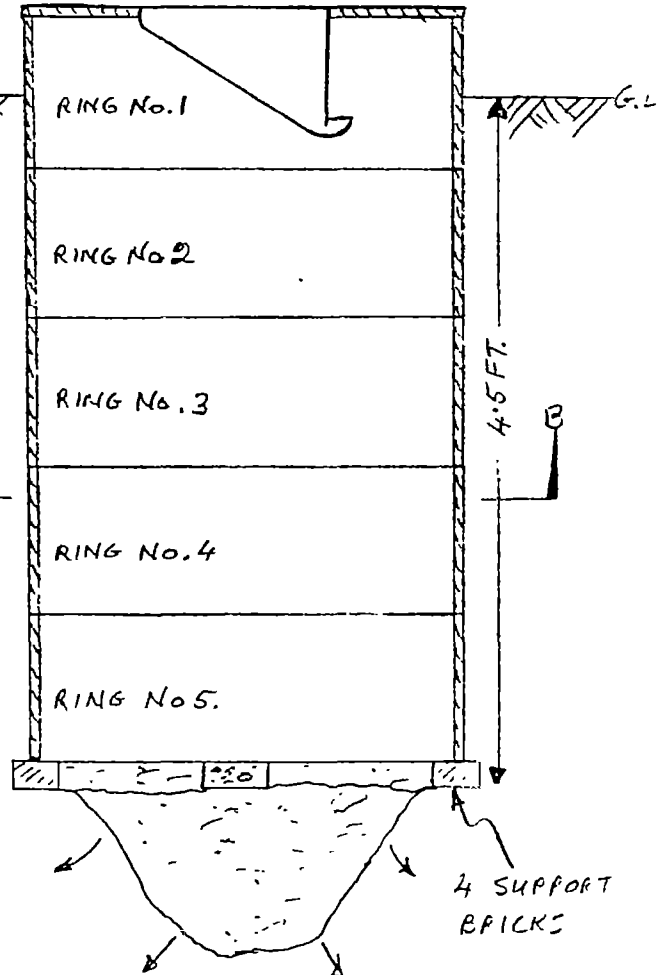
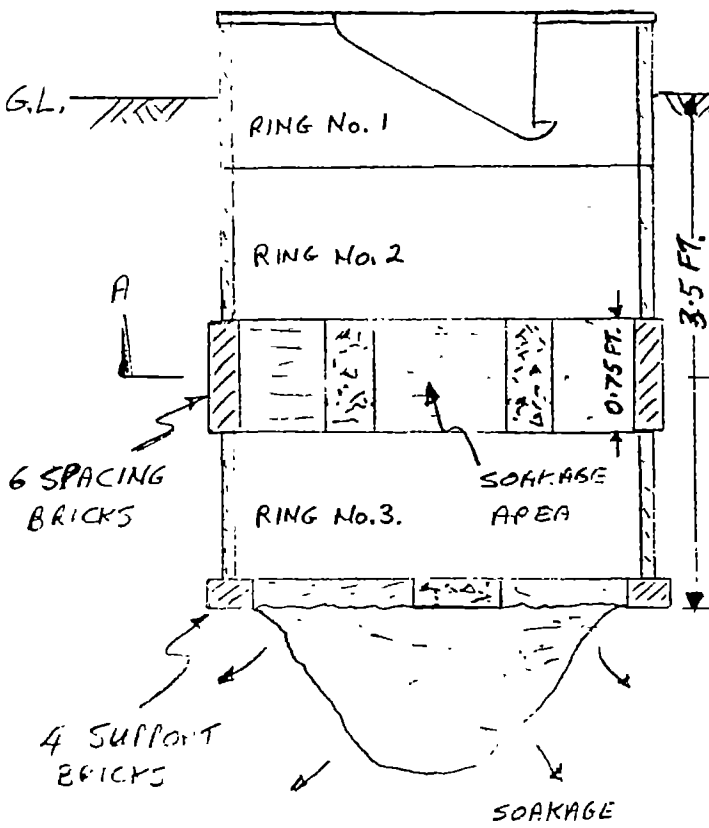


SECTION AA

5 RING LINING



SECTION BB.



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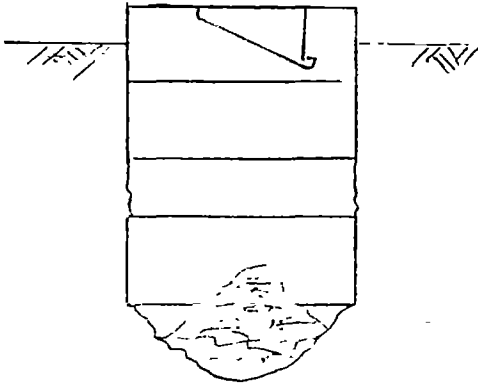
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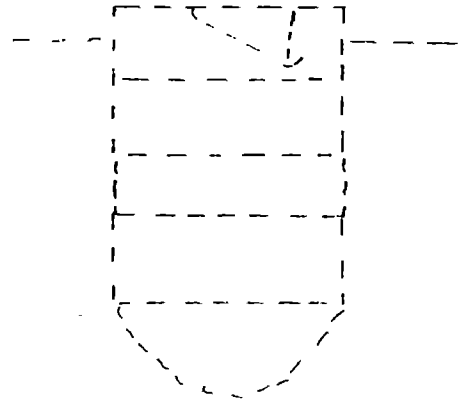
ALTERNATIVE LATRINE SYSTEMS

1. SINGLE DIRECT PIT (SDP)

FIRST CYCLE

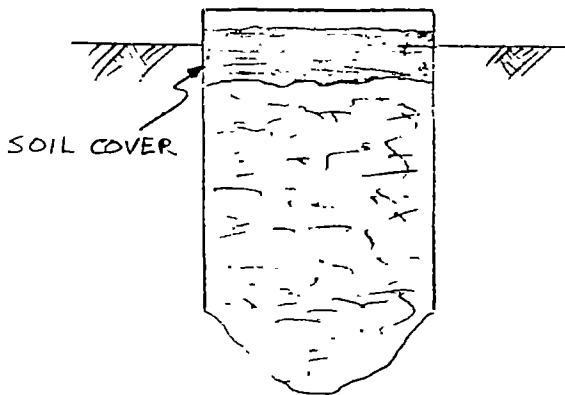


FIRST PIT IN USE

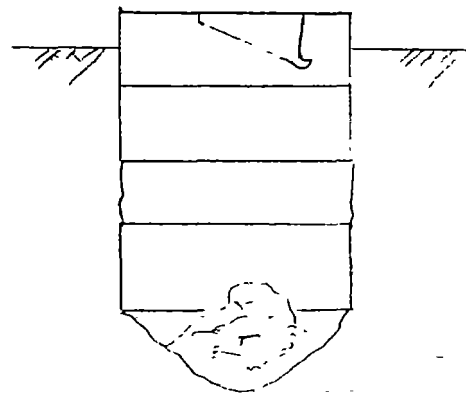


FUTURE SECOND PIT TO BE INSTALLED AT HOUSEHOLD COST

SECOND CYCLE



FIRST PIT FULL. LEFT TO DECOMPOSE

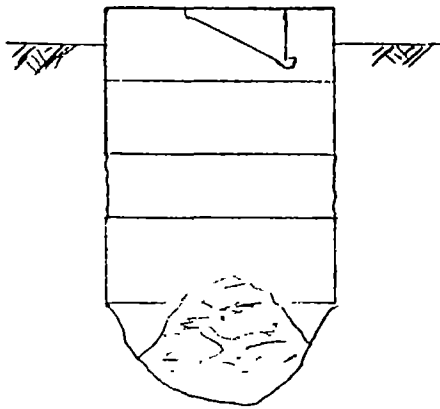


SECOND PIT NEWLY INSTALLED AND IN USE

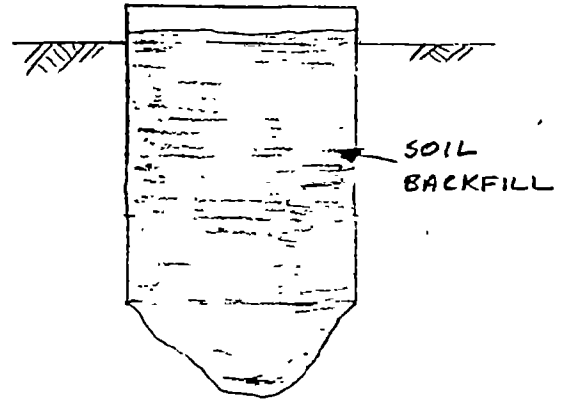
SCALE 1:30

2. DOUBLE DIRECT PIT (DDP)

FIRST CYCLE

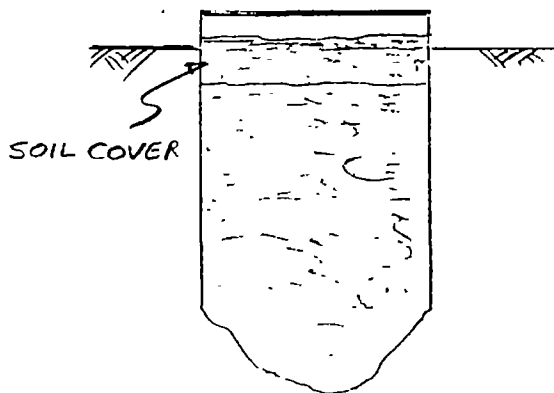


FIRST PIT IN USE

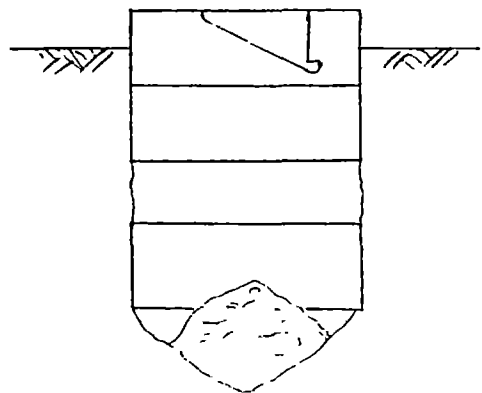


SECOND PIT INSTALLED
TEMPORARILY BACKFILLED FOR
SAFETY

SECOND CYCLE



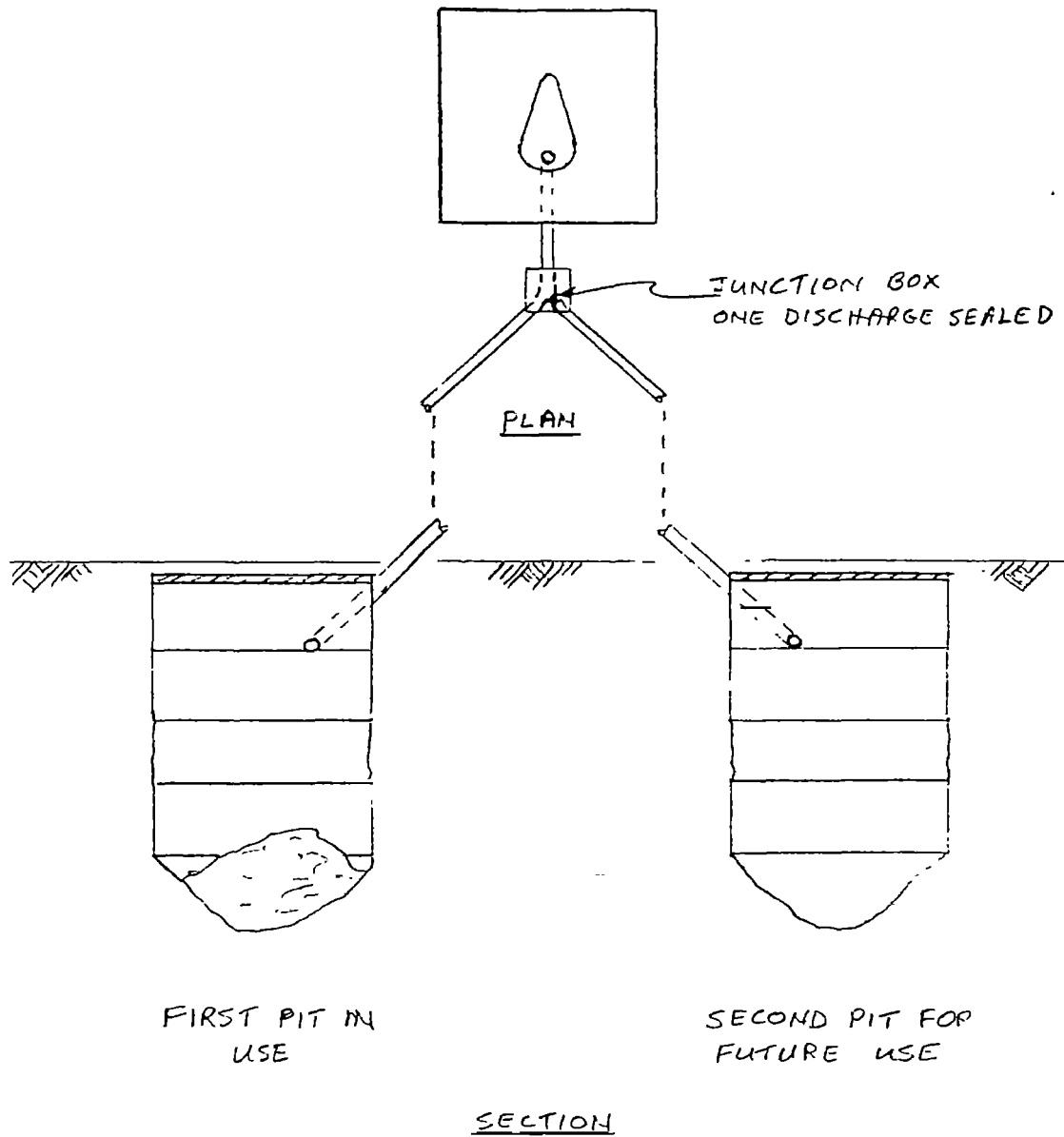
FIRST PIT FULL
LEFT TO DECOMPOSE



SECOND PIT IN USE

SCALE 1:30

3. OFFSET DOUBLE PIT (ODP)



SCALE 1:30

Appendix 5.3

Observations on Latrine Design and Construction

The following observations on design and construction are made in support of the recommended latrine designs.

1. Latrine Pan

Choice

The proposal to use the UNICEF ferro-cement pour flush pan is based on the demonstrated acceptance and functionality of the pan shape coupled to the ease of manufacture for the shape developed over several years (although this does not preclude further improvements).

Lining

It is recommended that white cement be used for the surface layer of the pan for the sociological benefits of attractiveness and acceptance by young children. It is also necessary that care be taken to get a thick enough layer of white cement mortar (1:1) to give a smooth finish. Trial pans that were made demonstrated that good quality can be achieved. The surface finish of existing pans observed in the field was generally quite rough and hence difficult to keep clean. This is a matter of production quality control.

Gooseneck

Probably the weakest part of these pans is the gooseneck. A small percentage are regularly broken in transport and general shifting. Some are also broken after installation when households try to clear blockages. Alternative wire mesh reinforcement placement was investigated on several trial pans but not strength tested due to the closure of testing facilities. The controlled strength testing of the test pans should be completed, results assessed and the alternative placement adopted if appropriate.

Pan/slab Join

The join of the pan to the latrine slab during casting was observed to vary substantially in quality. Care is needed to get a good join between slab and pan.

2. Latrine Slab

Shape

It is intended to use a 39 inch square reinforced concrete slab 2 inches thick. This would be fully functional but will be heavy and quite difficult to move. Each slab will be about 135 kg (310 lb) weight and probably require 3 to 4 people to carry them.

An alternative is to make a 39 inch diameter round slab which would be 15 percent lighter and easier to move by rolling. Existing square forms could be readily modified. There would also be a 15 percent saving in cost (about Tk 30 per slab). The only potential disadvantage would be the lack of coverage in the corners of the normally square superstructure. These areas may be subject to splashing with cleaning water and would be

more difficult to look after. However, all the previous UNICEF slabs have been round and it is suggested that the acceptance of existing installations of these should be observed in the field.

The only advantage of the square slab over a round slab is the issue of corner cover. Is this significant?

Finish

It is important that the slab have a smooth finish by trowelling cement powder into the fresh surface of the new concrete and that a slight slope to the pan be provided.

Material

The use of the flat ferrocement slab used for many years in the UNICEF programme was abandoned because of the need for greater strength with the larger diameter pit being used (36 inches vs 28 inches for the UNICEF latrine pit).

3. Pit Lining:

Lining Material

The use of 1.5 inch thick 12 inch high concrete rings to line latrine pits is a proven technology in Bangladesh. Alternative conventional materials such as bricks, are more expensive and labour intensive for delivery and installation. There is however still believed to be scope for investigating alternative forms of lining (section 5.7) which is of particular relevance, in that pit lining is the most costly item.

A special case is the potential for insitu lining of pits and in particular, lining the top 12 to 18 inches of pits in self supporting clay soils. It is suggested that cement:soil mixes should be investigated for this purpose. An initial trial pit showed promise.

Proposed Design

An "Extended Three Ring" design has been proposed to provide required pit volume at reduced cost. The system also provides additional surface area for soakage which is advantageous in clay soils. Soakage with full ring lining is primarily through the bottom of the pit.

Although this design is new and has not been put to physical test, it is believed to be technically sound. The six bricks proposed for supporting the second ring will only take vertical load. Properly positioned and backfilled rings will be held firmly avoiding lateral movement. The bricks should be placed with their narrow side facing into the centre of the pit, reasonably flush with the inside surface of the concrete ring and "bedded" into the excavated pit wall with puddled clay to hold them in position (the sketch of Appendix 5.2/1 should be amended). The mistry should carry a small amount of cement with her to make a cement:soil mortar of say 1:5 to join the top and bottom ends of each brick with the connecting concrete rings. An alternative to bricks could be to make shaped concrete spacers all of the same length.

In sandy soils, the 9 inch high gap may be too great for the back fill to be self supporting. In this case the bricks can be placed with their wide side facing into the pit centre (still with a 9 inch space between rings) and a loosely woven fibre screen (coconut tree fronds?) placed around the

outside of the bricks and the space backfilled with a dry organic/clay/sand mix for stability. The screen will rot away in time.

It is recommended that the proposed lining be put to practical trial in sample test pits in a variety of soil types to verify it's adequacy, identify any unforeseen installation problems and establish experience for mistry training.

Floor height

The height of the latrine floor above ground level is determined by the height of the top ring. Past practice has put one full ring above ground level so that the latrine slab would be at $12 + 2 = 14$ inches height. It has been suggested that this is necessary to keep the latrine above flood water levels and avoid storm water entering the latrine. An alternative view is proposed.

The latrine slab should in most cases be no more than 8 inches above ground level. This is more than sufficient for stopping free running surface storm water flooding the latrine. To effectively avoid the effects of localised (compound) flooding and general flooding, the latrine must be located on higher ground, the highest available preferably, so that there is a reasonable chance of still being able to use the latrine in high level general floods. If the latrine can only be located in a lower area, the ground level around the latrine should be built up and a drain dug if possible to drain surface water away from around the latrine area. Correct latrine layout is very important (Appendix 6.5).

The higher latrine floor is unnecessarily costly, reduces pit volume, will not always achieve it's objective and could make superstructure building more difficult.

Pit Top Security

With the top ring 6 inches in the ground, it is more securely installed and with it sitting directly on top of the second ring, an initial lined depth of 18 inches is provided. This is probably deep enough to stop rats burrowing into the pits which has been considered a potential problem in sandier soil conditions.

High Water Tables

In clay soils it has been proposed that pits should not be lined other than at the top if there is reasonable confidence in the self supporting capacity of the soils in the area. It is however not recommended that these pits be dug lower than the wet season ground water level to avoid wall collapse as at the water level when the wall material becomes water logged.

Lining Foundation

It is recommended that the bottom ring of a lined pit should be placed on a 6 bricks on their flat to provide a greater bearing surface and additional bricks if the ground conditions are very soft.

4. Superstructure

The latrine superstructure is an essential part of the latrine, primarily to provide privacy to ensure the latrine is used. It is proposed that the style of superstructure and choice of materials should be left for the household to decide. A range of alternatives can be seen with existing latrines. The project only needs to be concerned that at least a minimum design is built.

Observation indicates that the minimum acceptable design is likely to be four corner poles joined on three sides with horizontal sticks over which banana leaves, plastic, jute sacking etc. can be hung with a moveable screen of some sort on the fourth entrance side. Clearly, it is an advantage if local materials available to the household at no cost can be used. For instance growing on their property, recovered from house maintenance work, etc. The household could build a more substantial superstructure with roof if they wish. However, the need to move the latrine slab to the second pit and reestablish a superstructure there, must not be forgotten. For this reason, kutcha designs are preferred.

Most households build and maintain their own houses so they are capable and best suited for building their own latrine superstructures.

5. Latrine Base

The proposed 8 inch high base around the latrine slab should be reasonably substantial and kept in good condition. It is recommended that the household should be encouraged to use the same system they use for the raised floors of their houses. The latrine should be considered as part of the house and maintained in the same way and at the same time.

It is suggested that the use of a cement:clay mix (1:15) covering layer should be investigated for greater permanence and easier maintenance.

6. Further Development Work

By summary from above and with reference to section 5.7, the following are suggested areas of activity for consideration.

- (1) Investigate cheaper pit lining design and materials
- (2) Test installation of the proposed lining
- (3) Test wire mesh reinforcement of the pan gooseneck
- (4) Field assess the use and acceptance of round latrine slabs
- (5) Investigate alternative slab materials for a lighter (and cheaper) design
- (6) Field test cement:clay lining of latrine bases for easier maintenance
- (7) The need for an improved ceramic pan in Bangladesh is identified

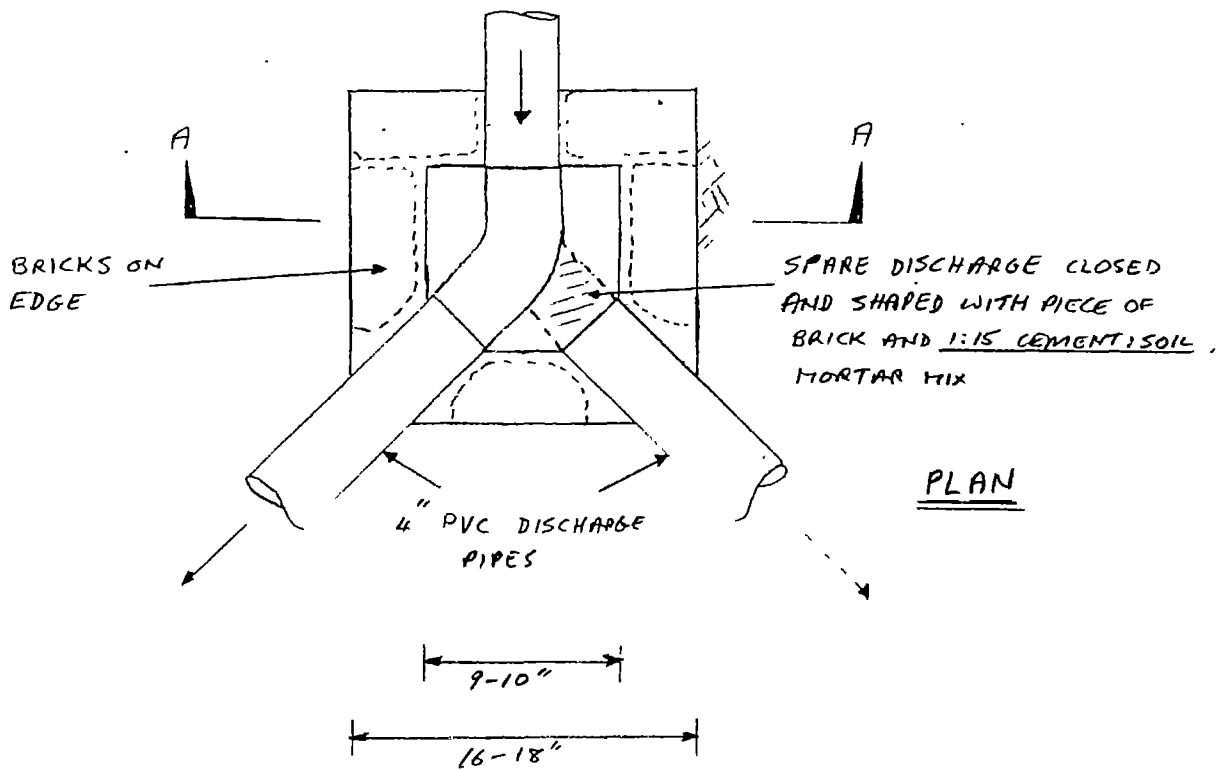
Items 2, 3, 4, and 6 should be followed up as part of the existing 18 DTP.

Items 1 and 5 are more involved and it is recommended should be set up as specific studies, maybe as a post graduate exercise with separate funding. The student would however need to be imaginative and have a practical aptitude. Both local and overseas students should be considered.

Item 7 is a more specialised requirement that would more properly be taken up at institutional level and involve the private sector.

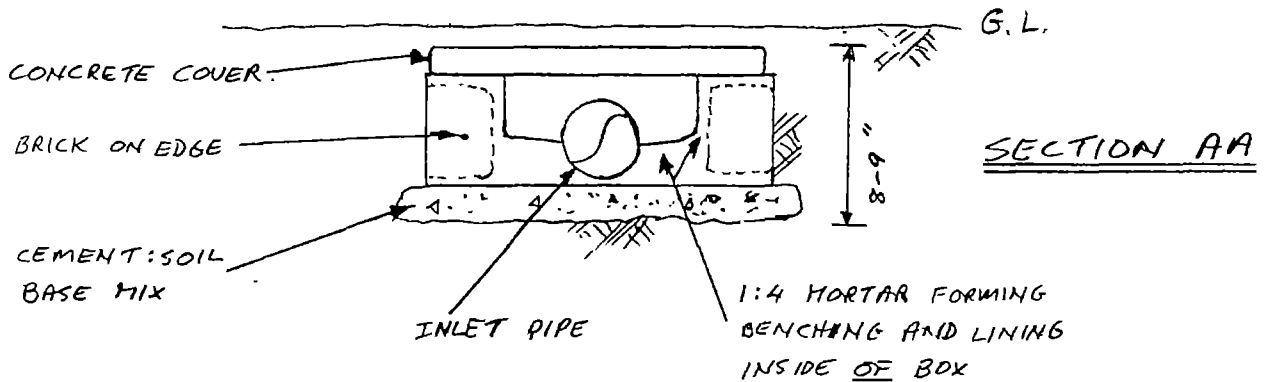
APPENDIX 5-4

DESIGN AND CONSTRUCTION OF ODP JUNCTION BOX



PLAN

APPROX. SCALE 1:10



G.L.

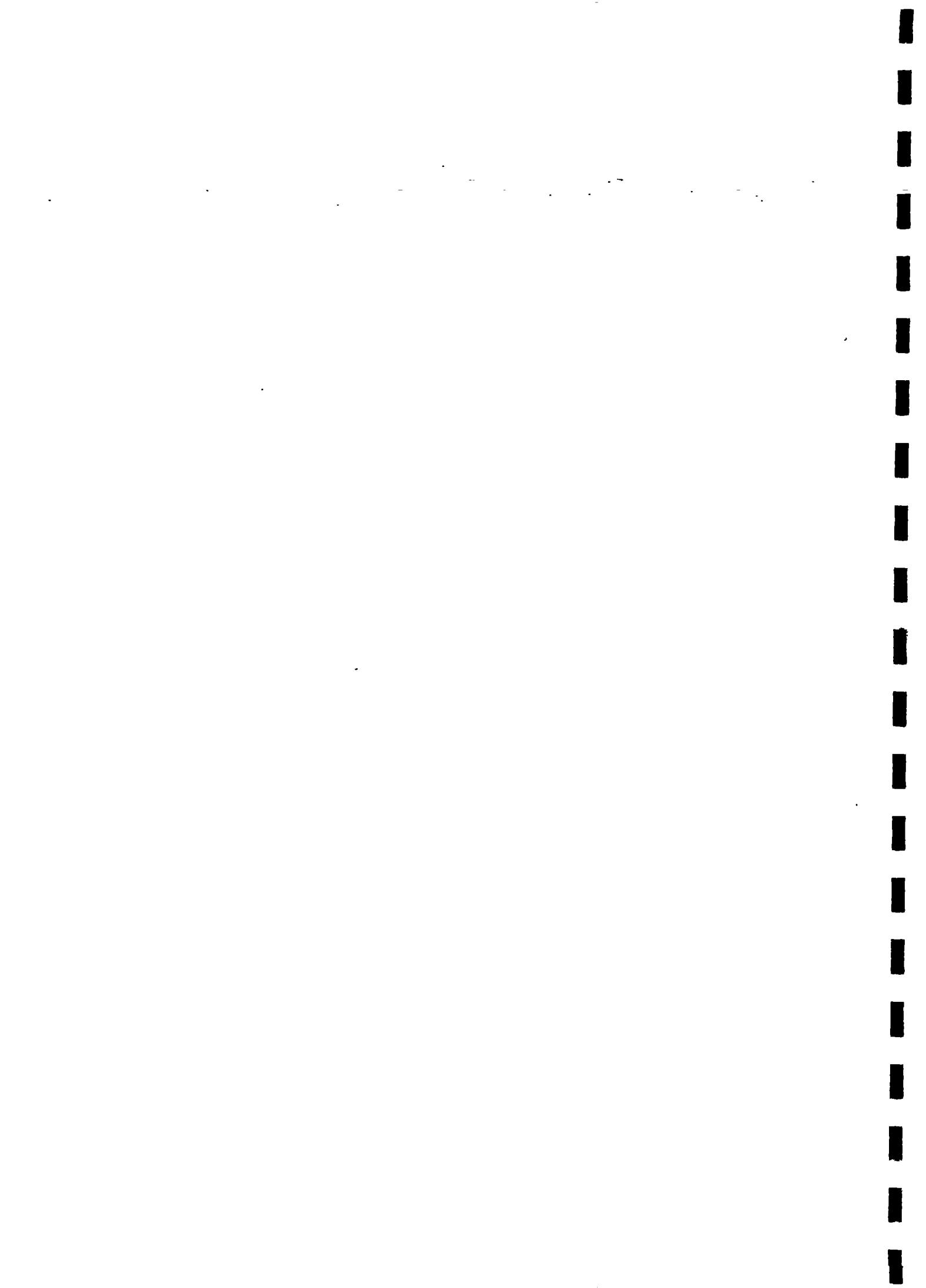
SECTION AA

MATERIALS REQUIRED

- 4 BRICKS
- CEMENT
- SAND
- PRECAST COVER

CONSTRUCTION PROCEDURE

1. DIG HOLE TO GRADE DEPTH 20" x 20"
2. MIX AND PLACE CEMENT:SOIL
3. PLACE 1" MORTAR OVER ALL OF BASE
4. PLACE AND HOLD PVC PIPES IN POSITION
5. SHAPE AND PLACE BRICKS ON EDGE WITH MORTAR
6. BACKFILL TO SUPPORT BRICKS
7. LINE INSIDE BOX WITH 1/2" MORTAR AND TOP OF SIDES LEVEL
8. FORM BENCHING WITH MORTAR USING 4" LONG HALF SECTION OF PVC PIPE AS CHANNEL FORMER. WHILE WORKING ONLY
9. COAT CHANNEL WITH CEMENT PASTE AFTER INITIAL SETTING (1/2 H)
10. NEXT DAY, CLOSE ONE DISCHARGE WITH 1:15 CEMENT:SOIL MIX; USE PIECE OF BRICK TO BLOCK PIPE FIRST; SMOOTH TO CHANNEL SHAPE
11. PLACE COVER, AND BACKFILL TO GROUND LEVEL



Appendix 6.1

18 District Towns Project

Implementation Methodology for Sanitation Programme

Activity Sheets

- Step 01 Operational Criteria Defined
- Step 02 Introduce Programme to Pourashava
- Step 03 Discuss Programme with Pourashava
- Step 04 Prepare Pourashava Sanitation Programme
- Step 05 Pourashava Sanitation Programme Approved
- Step 06 Prepare Ward Work Plan
- Step 07 Promotion - Household Group Meetings
- Step 08 Promotion - Household Visits
- Step 09 Latrine Layout
- Step 10 Applications Processed
- Step 11 Latrine Installation
- Step 12 Completion Check and Household Instruction
- Step 13 Initial Sanitation Education
- Step 14 Sanitation Education Programme
- Step 15 Latrine Use and Maintenance

STEP 01 Operational Criteria Defined

Objective: Definition of operational criteria for the overall Sanitation Programme.

Activity: The Programme has basic policy issues and related implementation strategies set by the 18 DTP and common for all Pourashavas. These are the primary criteria. There are other implementation issues that the Programme would recommend with associated implementation guidelines which would be reviewed by each Pourashava and adapted to the circumstances of the Pourashava and the Ward communities. These encompass secondary criteria. 18 DTP is responsible for formulating these issues.

Actions to Take: To identify and prepare a statement of policies for the Sanitation Programme.

To prepare a summary of the primary strategies on which implementation of the Sanitation Programme is based.

To prepare implementation guidelines as the basis for an implementation methodology to be assessed, adapted and used for each Pourashava Sanitation Programme.

To reach consensus for all components through discussion within 18 DTP/DPHE.

When to Act: During the formulation stage of the Sanitation Programme.

Responsibility: Project Office.

Who Involved: 18 DTP and DPHE HO.

Monitored By: PD DPHE/18 DTP Coordinator

Results: - Sanitation Programme policies listed, primary strategies summarised.
- Implementation methodology with guidelines outlined for Pourashava use and adaptation within limits of policies and primary criteria.

Time to Take:

Requirements: Draft material prepared together with necessary preliminary discussions.

Training: Indirect Project Office training through draft preparation and discussion.

STEP 02

Introduce Programme to Pourashavas

Objective: To introduce the Programme to the Pourashavas, the Pourashavas to understand the policies and primary strategies and confirmation of programme implementation methodology.

Activity: The Programme would be introduced to the Pourashavas collectively in draft guideline form at a workshop run by the PO. This would involve describing the objectives, concept and organisational structure of the programme, policy issues and strategies, the proposed implementation methodology and the nature of the community involvement. Also covered would be supporting requirements concerning administration, staffing, supply of materials, payments, financial aspects and facilities required. This would be the basis for discussion and further programme development during and after the workshop.

Actions to Take: Programme guidelines need to be prepared in draft for all aspects of the Programme sufficient to base the Pourashava workshop on.

Guidelines to be edited and further detailed after the workshop to incorporate conclusions reached. Edited guidelines to be distributed.

When to Act: As soon as basic guidelines are available for the workshop.

Responsibility: Project Office

Who Involved: Pourashava Chairmen, 18 DTP staff, DPHE SDE (and managing NGO(s))

Monitored By: PD DPHE/18 DTP Coordinator

Results:

- Pourashavas understand and accept the Programme incorporating a consensus of their views.
- Edited implementation guidelines distributed

Time to Take: Workshop 1 day

Requirements: Draft guideline material

Training: 18 DTP staff understand the Programme and guidelines.

STEP 03

Discuss Programme with Pourashavas

Objective: To ensure that each Pourashava understands the Programme and its application in the circumstances of the Pourashava.

Activity: Follow-up visits would be made by 18 DTP to each Pourashava to further discuss the Programme and its application in the circumstances of the Pourashava. Specific issues would be numbers of Community Centres and their location, role of WSSCs and identification and working relationship with the managing NGO.

Actions to Take: Follow-up visit to each Pourashava.

When to Act: In accordance with the overall PO 18 DTP Programme and Pourashava readiness.

Responsibility: Project Office

Who Involved: Pourashava, 18 DTP field staff, DPHE SDE and managing NGO and WSSCs.

Monitored By: PD DPHE/18 DTP Coordinator

Results: - Pourashava's understanding of the Programme verified, additional questions resolved, and issues specific to the Pourashava resolved.

Time to Take: 1 day

Requirements: Implementation guidelines distributed

Training: 18 DTP field staff the requirements for Programme implementation.

STEP 04

Prepare Pourashava Sanitation Programme

Objective: To prepare a Pourashava Sanitation Implementation Programme.

Activity: Each Pourashava would prepare a Sanitation Implementation Programme for the Pourashava. This should be coordinated with the implementation programme for new tubewells to be implemented by the SDE. If there are sufficient numbers of latrines already authorised for the Programme (by the Pourashava), then numbers would be made up with households using existing tubewells. Households would be selected in accordance with Programme criteria.

The programme should detail the numbers of latrines to be built each year and the number for each ward.

Every twelve months the Pourashava Sanitation Programme should be reviewed.

Actions to Take: Prepare the Pourashava's Sanitation Implementation Programme.

When to Act: Following on from initial Programme discussions with the Pourashava; preferably on the same day.

Responsibility: Pourashava

Who Involved: WSSC, SDE, NGO, (PO)

Monitored By: PD DPHE

Results: - Pourashava Sanitation Implementation Programme

Time to Take: One day

Requirements: Functional WSSC

Training: Orientation for WSSC, SDE, NGO on:
- Programme familiarisation
- Programme implementation methodology

Sanitation Programme Approved

STP 100

Objective:

Pourashava approves the Sanitation Programme and ward work plans.

Activity:

The proposed Sanitation Programme is presented to the Pourashava Supervisory Board for their approval. The Board should satisfy themselves that the Programme meets the established operational criteria.

Note: Households already approved for new tubewells would only be involved in some Pourashavas. Where households with access to existing tubewells are involved in others, additional PD approval would be required. To avoid confusion, it is proposed that all Pourashava Sanitation Programmes be approved by the PD.

Action to Take:

Review the Sanitation Implementation Programme. Approve the Programme or refer it back as necessary. The Pourashava forwards the Programme to the PD DPHE for Final Approval.

When to Act:

At the next Supervisory Board meeting following receipt of the Pourashava's Sanitation Programme.

Responsibility:

Pourashava Supervisory Board

Involved:

Pourashava and WSSCs

Approved By:

PD DPHE

Notes:

Pourashava Sanitation Programme approved for implementation

Time to Take:

Time to next Board meeting.

Requirements:

Pourashava Sanitation programme prepared

Page

STEP 06

Prepare Ward Work Plan

Objective: To prepare an annual work plan as the basis for implementation work in the ward.

Activity: Following on from the Pourashava Sanitation Programme, work plans would be prepared for each ward. This would provide the intended order of latrine implementation work in the ward by household groups (caretakers) for the year. As latrines should not be installed in household groups without a tubewell (to ensure there is water readily available for flushing and hand washing) latrine installation would in general be expected to follow the tubewell implementation programme. Coordination between tubewell installation work and latrine implementation is indicated. During the wet season, latrine installation may have to be confined to ward household groups on higher ground to avoid seasonally high water table levels and in some cases, inclusion of households with existing tubewells where funding permits.

Ward work plans should be prepared annually and reviewed after six months. The ward work plans are an initial basis for monitoring programme implementation performance.

Actions to Take: Prepare annual work plans for each ward.
Coordinate with the tubewell programme.

When to Act: Following appointment of the managing NGO and Sanitation Supervisor.

Responsibility: Sanitation Supervisor

Who Involved: SDE, WSSCs and Sanpro and Saned if appointed

Monitored By: NGO Coordination

Results: Ward work plans prepared for implementation

Time to Take: 1 day

Requirements: Pourashava Sanitation Programme prepared
Tubewell programme available with list of beneficiaries
(List of additional latrine beneficiaries)
Guidelines for work plan preparation

Training: Work planning for Sanitation Supervisor

STEP 07

Promotion - Household Group Meetings

Objective: To inform household groups about the Sanitation Programme, the benefits of purchasing a latrine and how to get one.

Activity: The Ward Sanitation implementation team, one Sanitation Promoter (Sanpro) and one Sanitation Educator (Saned) would request the caretaker of the next tubewell group to arrange a sanitation meeting for all households in the group. The meeting would take place at/near the caretaker's house where there is a previously installed latrine. The meeting would include both men and women. A second meeting would be held for household women if necessary.

The Sanitation Programme would be promoted by:

- The sanitation team introducing themselves and the Programme and briefly, who are involved.
- Describe the latrine and its marketing benefits and demonstration with the caretaker's latrine.
- Outline how the Programme is implemented, emphasising the sanitation education linkage.
- Describe how to get a latrine, payments required and the household's responsibilities.
- Close the promotion and invite householders to apply for a latrine.

The caretaker actively supports the promotion. The Sanpro lists the names of interested householders and with the caretaker, arranges times for visiting each over the next two or three days.

Actions to Take: Caretaker arranges the household group meeting and a second if necessary for the women.
Promotion meeting held.
List of interested householders made with visiting times.

When to Act: In accordance with the sanitation work plan for the ward.

Responsibility: Sanitation Team, especially the Sanpro.

Who Involved: Caretaker, Sanpro, Saned and household men and women.

Monitored By: NGO Sanitation Supervisor (Supervisor) (and WSSC).

Results: Successful promotion meeting with list of interested householders from the household group.

Time to Take: Three days to arrange the meeting
Thirty minutes for the meeting; one hour total.

Requirements: Promotion flip chart; application forms; simple information leaflets; appointment diary.
Caretaker's new latrine complete and properly used.

Training: For the Sanitation Team - promotion programme and presentation technique.
For caretaker - her promotional support role.

STEP 08

Promotion - Household Visits

Objective: To follow up the group promotion meeting and finalise applications.

Activity: At the agreed time the Sanpro would visit individual household with the caretaker in attendance and meet the householder and women of the house together. After making these arranged visits, the Sanpro would also visit the remaining houses in the group. Only households on the already approved WSSC list would be approached as households entitled to a subsidy.

If a Household has not yet decided to have a latrine, the Sanpro goes through the promotion process again and answers their questions about the programme and latrine. At the same time, the Sanpro encourages the household to consider where they would put a latrine if they were to take one to help demonstrate promotional points. The caretaker's latrine can also be visited.

When a decision is made to have a latrine, an application/monitoring (AM) card is entered up with necessary household details. The latrine may also be laid out (see Step 08).

If no decision is made, the household is left to contact the CSC either directly, or through their caretaker, if they later choose to apply for a latrine.

Actions to Take: Visit each household as arranged with the caretaker in support.

When to Act: Within three days of the group promotion meeting.

Responsibility: Sanpro

Who Involved: Sanpro, caretaker, household men and women (Supervisor and/or WSSC if necessary)

Monitored By: Supervisor (and WSSC)

Results: Application received

Time to Take: Up to 30 minutes with each household

Requirements: Application forms; Caretakers latrine available for demonstration.

Training: Sanpro - latrine promotion technique; latrine installation procedures.
Caretaker - her support role.

STEP 09

Latrine Layout

- Objective:** To assist the Household to decide where their household latrine should be located.
- Activity:** The function of the latrine and where to build it is discussed with the Household (male and female) who select a location for the two pits in accordance with their social, cultural and religious requirements subject to functional considerations checked by the Sanpro. If the household should insist on a functionally unacceptable location, the Sanpro must refer the application to the Supervisor who would, if necessary, refuse it. The caretaker (and WSSC) has an important support/persuasion role to play in this situation.
- The location for the two pits is marked out on the ground and the household is shown how to dig them. A stick for the diameter and another for the depth of the dug hole are cut to length and left with the Household.
- A timetable is agreed with the Household for their completion of pit digging by which time the CSC would have arranged for the latrine parts to be delivered and a community mistry to be available. The household must also have the materials for the latrine superstructure collected and stacked at the house by that date. Alternative forms of superstructure are discussed. The Sanpro records the agreed arrangements in his diary and enters the materials required on the Household AM card.
- Actions to Take:** Locate and mark out the latrine.
Instruct the Household how to dig the two pits.
Agree on a completion date for pit digging and collection of superstructure materials.
- When to Act:** When the application is made or soon after.
- Responsibility:** Sanpro
- Who Involved:** Household (men and Women), Sanpro and (Caretaker)
- Monitored By:** Supervisor
- Results:**
- " Latrine acceptably located
 - " Household instructed for digging
 - " Completion date for digging and collection of superstructure materials agreed to.
- Time to Take:** Fifteen minutes maximum
- Requirements:** Layout patterns; tape measure; Sanpro diary; guidelines for latrine layouts.
- Training:** Sanpro (and Saned) for social and functional layout considerations and procedures
Programme work planning and organisation.

STEP 10

Applications Processed

Objective: To organise the installation process for each latrine.

Activity: At the CSC, household and latrine details are checked on the household AM card; one for each household. This card should record all significant information relating to the installation and subsequent use of the Households latrine. It should record application details, materials required and a record of their issue, all household visits made and monitoring observations, including later sanitation education.

Materials, excluding the latrine slab and pan, are issued and delivered to the household to arrive before the agreed date. The Sanpro would also arrange for a community mistry to be available on the next day. All this information is recorded on the Household AM card.

Actions to Take: Up date the Household AM card
Organise and action the delivery of materials
Arrange for a community mistry

When to Act: The same or next day after finalising the latrine layout.

Responsibility: Sanpro

Who Involved: Sanpro, senior production mistry, community mistry.

Monitored By: Supervisor

Results: All arrangements made for installation of the latrine.

Time to Take: During one day

Requirements: Stock of latrine materials; Transport system organised from the CSC; Community mistries available.

Training: Sanpro - for programme systems; work organisation.

STEP 11

Latrine Installation

- Objective:** To complete construction of both pits.
- Activity:** The household dig the two pits within the time agreed at the marked locations and to the size required as shown by the lengths of the sticks left with them. The Caretaker should check that the pits are dug in the agreed location and there are no obvious errors. If there are problems, the Caretaker should contact the CSC.
- On the agreed date the Sanpro would visit the household and check that the pits have been dug correctly and that materials for the superstructure have been collected. If all is in order, the Sanpro sends the community mistry to the house next day to install the pit linings and arranges for the latrine slab with pan to be delivered. If superstructure materials are not present, the latrine slab is not delivered and installation does not proceed. It would be the households responsibility to advise when superstructure materials are available.
- The mistry makes any minor corrections to the pits and lines them with the supplied concrete rings and bricks and then places the latrine slab in position on the first pit. The household provides supporting labour for the mistry and backfills the second pit after it has been lined.
- On completion, the household would finish the above ground base of the latrine about the pit top and install the superstructure over the next two or three days with similar procedures to those used for building their house. A day for final inspection on completion is agreed to.
- Actions to Take:** Household dig the two pits on the agreed locations.
Sanpro checks the digging and superstructure materials on the completion date.
The mistry lines the two pits and fits the latrine slab and pan.
The Household builds the latrine base and superstructure about the first pit and backfills the second pit.
- When to Act:** When the layout is agreed and on other agreed dates.
- Responsibility:** Household
- Who Involved:** Household and installation mistry (and Caretaker)
- Monitored By:** Sanpro
- Results:**
 - Two pits dug and lined and slab with pan fitted.
 - Latrine base and superstructure built for first pit. Second pit backfilled.
- Time to Take:** Overall seven days maximum
Pit digging two days; pit lining and slab fitting one day; latrine base and superstructure up to three days.
- Requirements:** Basic tools for the mistry
- Training:** Mistry - latrine installation

STEP 12

Completion Check and Household Instruction

Objective: To check that pits are lined acceptably and that the completed latrine is functional.

Activity: This involves two visits.

For the first visit, the Sanpro would visit the Household on the day the mistry is working and check that the pits are lined properly. If necessary, the mistry must correct any deficiencies. Installation of the latrine would then be completed.

For the second visit, after full completion, the Sanpro checks that the pan is fully functional and correctly installed and in particular that the water seal is complete, that a reasonable latrine base has been built and that the superstructure meets minimum requirements of privacy. Any significant problems need to be corrected.

The Household is again instructed how the latrine works and how to change pits when the pit being used fills. This includes how and when to dig out the previously used pit and the backfilled unused second pit.

Actions to Take: Sanpro visits and inspects the pits and completed latrine.
Household is instructed how the latrine works and future maintenance required.

When to Act: On the scheduled day for each visit

Responsibility: Sanpro

Who Involved: Household, Sanpro (and Caretaker)

Monitored By: Supervisor

Results:

- Latrine installation completed.
- Household instructed how to maintain the latrine.

Time to Take: Ten minutes first visit.
Thirty minutes for instruction visit

Requirements: Tape measure; instruction material showing how latrine works and change over; instruction leaflet to leave.

Training: Sanpro - checking procedures; latrine O&M, Household instruction technique.

STEP 15

Latrine Use and Maintenance

Objective: Long term sustained use and maintenance of latrine

Activity: The household responds to the instruction and education of the Sanitation Programme by all using the latrine correctly with very young children trained to use the latrine as soon as they are old enough. The latrine is cleaned daily and does not smell. The latrine base and superstructure are maintained and care taken not to damage the latrine pan. Over the years, use is alternated between the two pits with the decomposed contents of each pit dug out and used prior to each change over. Latrine installation mistries would be trained to assist with change over maintenance work at the Households request and mutually agreed rate of payment.

Actions to Take: Latrine is used and maintained properly

When to Act: Daily and as necessary

Responsibility: Household

Who Involved: Household (and latrine installation mistry)

Monitored By: Caretaker

Results:

- All of the household use and flush the latrine.
- All wash their hands after each latrine use.
- Young children are trained to use the latrine.
- The latrine is cleaned each day.
- The latrine and superstructure are kept in good condition.
- Latrine use is maintained by alternate use of the two pits every two or three years.

Time to Take: Every day

Requirements: Cleaning brush, ash or soap and bodna

Training: New children as they become old enough
Visitors and new household members as required

Appendix 6.2

Guidelines for Sanitation Programme Preparation

For the preparation of each Pourashava Sanitation Programme, the following factors would need to be considered. They would also be expected to represent the framework of the written form of the Programme. The Programme would be an expansion of the sanitation Component of the Pourashava Action Plan.

1. Sanitation Need

A statement of the order of need for sanitation for the poorer and poorest members of the Pourashava community needs to be made. Information should be available from the preceding tubewell household survey.

2. Servicing Capacity

The amount of funds available for sanitation in the Pourashava will determine the number of latrines that can be provided by 18 DTP. These need to be stated.

3. Distribution of Need

18 DTP is quite specific in giving water and sanitation priority to the poorest of the community first. Firstly, in those Pourashavas where sanitation funding is limited, the poorest members of the community need to be identified by the Pourashava through the WSSCs. Secondly, decisions need to be made about the distribution of sanitation beneficiaries between the three Pourashava wards. An equal allocation could be made to each ward but strictly, if a ward has a substantially greater number of poor households than the other wards, then it should receive a greater allocation of funds. A clear decision should be made on this matter by the Pourashava.

4. Community Sanitation Centres (CSC)

These are the operational base for implementation of the Sanitation Programme with normally, one in each ward. The location of each CSC should be investigated and finalised as part of the Sanitation Programme.

In some cases, where there is insufficient demand or funds available or due to the demand distribution between wards, a CSC may need to serve more than one ward or only the one centre be needed for the whole Pourashava.

5. Production Centres

The number of Production Centres and their location would be determined by the number of latrines to be built and CSCs to be established (section 4.4.2).

6. Selection of Beneficiaries

It has been proposed that the primary beneficiaries should be from those household groups selected for the tubewell programme with the poorest groups being selected if sanitation funding is limited. Selected beneficiaries should be listed by household group (caretakers) as part of Programme preparation. Household groups should be considered collectively and not as individual households. The household group is the proposed basic implementation unit.

Where sanitation funding provides for more latrines than available tubewell beneficiaries, then the Pourashava would need to identify additional household groups with existing tubewell access similar to that intended for

new tubewells. Water must be readily available for latrine use. These additional beneficiaries would need to be identified as part of the proposed Sanitation Programme.

7. NGO and Staffing

The managing NGO to operationally implement the Programme needs to be identified together with the numbers of NGO and community staff needed for the Community Sanitation Centres, Production Centres and household installation work. These should be listed.

8. SDE Support

The readiness of the SDE 18 DTP to support the Pourashava Sanitation Programme needs to be identified together with the availability of operational and materials storage facilities for this purpose.

9. Specific Considerations

Other circumstances specific to the Pourashava of significance to the Sanitation Programme need to be identified and incorporated within the Programme as appropriate.

10. Programme Timetable

The proposed Sanitation Programme should be summarised into a timetable (action plan) showing establishment and implementation activities together with coordination involvement such as with the tubewell programme.

11. Future Additions

As a concluding feature, there is opportunity to identify additional requirements for the programme such as the need for additional funding to enable outstanding identified sanitation demand to be met subject to initial demonstration of the effectiveness of the Sanitation Programme.

Appendix 6.3

Guidelines for Ward Work Plan Preparation

It is very desirable that each CSC team works to a Ward Work Plan so that they have a clear plan of action to work to week-by-week with established monthly performance targets to be met. This is important for Programme implementation performance and efficiency. Each Work Plan would be an extension of the Pourashava Sanitation Programme, and would take the form of an ordered list of household groups for implementation coupled to a progress chart for monitoring performance.

1. Plan Period

It has been proposed that a work plan should be prepared each year. The start and finish months need to be selected. It would be useful if the start/finish time was during a slack period of the year.

The first Work Plan may be for less than twelve months to allow for setting-up time for centres and staff. This information should be available from the Sanitation Programme. The start of implementation will also be dependent on when the tubewell programme starts up because of the policy that sanitation must not proceed without tubewell water firstly being available.

2. Beneficiaries

The Sanitation Programme would have identified the ward beneficiaries by household groups who are eligible for a latrine. The Work Plan needs to incorporate this list with the list divided up into beneficiaries for each year of implementation.

3. Implementation Sequence

An orderly areal sequence for implementation should be established. If implementation is done sequentially for household groups in the same local area, promotion would be expected to benefit and more importantly, it would be considerably more efficient and convenient for the implementation team. There travel distance would be minimised in a situation where transport within the ward is quite difficult.

The proposed implementation sequence for household groups needs to be coordinated with the tubewell implementation sequence. Work plans for sanitation and tubewell implementation should be worked out together for mutual benefit. For both it is anticipated that work should concentrate in the dry season on the low areas subject to flooding and high water tables and in the wet season on the higher less susceptible areas of the ward. Other local factors would also need to be considered.

The result would be a list of household groups in the expected order of implementation.

4. Progress Chart

A Progress Chart should be prepared for the work plan year (or shorter period) listing the household groups to be approached, month by month. Against this, actual performance achieved should be plotted, recording for instance, household groups approached, numbers of latrines installed complete week by week. Meeting and reporting times could also be shown. A similar chart could be set up for associated Production Centre performance.

LATRINE APPLICATION AND MONITORING FORM

..... Pourashava

A. Household Information

Name Caretaker
Ward No. Village
Women Men Children 10-4 Children 3-0 Total
Religion Occupation
Owner Tenant Owner agrees? Type of House

B. Latrine Information

No. of Latrines Single Household Shared by Households
Location of pits
Flood Risk..High Med Low Pit Build Up...Yes No Depth of pitsft
Latrine Materials Pit Rings Slab & Pan No. Bricks
Problems and/or comments

C. Implementation & Monitoring Record

Group Promotion19... Promotion Visit19...
Application Agreed19... Layout Made19...
Components for19... Materials Issued19...
Mistry for19... Mistry Name
Pit Digging Check19... S'structure materials19...
Slab/Pan Issued19... Pit Instal. Check19...
Instal. Complete19... Maintenance Instruct.19...

Sanitation Education Programme

Visit 119... Visit 219... Visit 319...
Visit 419... Visit 519... Visit 619...

D. Notes:

.....
.....
.....
.....
.....

I of Village, Ward
Number of Pourashava agree to the installation of a
pour flush latrine for the use of our household members subject to the following
conditions and responsibilities:

1. That the 18 District Town Project will provide free of cost all manufactured components for Double Direct Pit latrine(s) including delivery costs and the costs of a mistry to instal the components. These components will remain the property of the Project until the completion of the Sanitation Education Programme for the household after which, the complete installed latrine will be the sole property of the household.
2. The household will contribute to the installation by digging the pits as instructed and at the positions agreed to, assist the Installation Mistry with all required labour, build the latrine base above ground and build a superstructure of independent style that will ensure all users have sufficient privacy for use of the latrine.
3. The superstructure materials will be available by the time the latrine pits have been dug. Latrine components will not be installed until these materials are available. If a superstructure is not built within 2 weeks of completing the latrine, the latrine components installed can be removed by the 18 District Town Project.
4. A full programme of Sanitation Education for the use and care of the latrine and related personal heigiene can be given to all household members within the 6 weeks following completion of latrine installation.
5. Our household group caretaker for sanitation is
6. There shall be no money exchanged between the household and the 18 District Town Project.

Accepted for the Household

.....

Date19....

Position

Witnessed by:

Approved by:

Sanpro

Supervisor

Latrine Location Sketch:

Guidelines for Latrine Layouts

1. Objective

To locate the latrine in a socially and technically suitable place which the household are happy with.

2. Who is Involved

The Sanitation Promoter (Sanpro) and Household must be present with preferably the Caretaker for the group also present. If the Sanpro is a male and there is a problem of access to the women of the household, then it may be necessary for the Saned to be present.

3. Responsibility

The Sanpro is responsible for the technical correctness of the layout and the Household for the social acceptance of the latrine's location and orientation.

4. Resources Needed

The Sanpro needs to have with her/him:

- Pair of canvas or plastic latrine pit patterns.
- Ten foot steel tape.
- Latrine Application Form.

5. Support Activities

- Time arranged for the (promotion and) layout visit.

6. Procedure

6.1 Field Work

- (a) Location discussed with Household - the Sanpro discusses in general how to locate the latrine with the Household (men and women). The general layout of the compound is observed and the location of any existing latrine facilities noted.
- (b) Location discussed with Household Women - the Saned does this if there is a problem of access to household women.
- (c) Location decided - the household's preferred location for the latrine pits is decided. At the same time:
 - The Sanpro will have indicated if there is any very obvious technical reason why a site can not be used.
 - The latrine pit patterns are laid out to give the Householder a visual image of how the latrine pits will be located and also used for marking out the pits for digging.

(d) Social factors - that need to have been considered are:

- Convenience for women and small children
- Visual security for small children (they can see familiar surroundings from the latrine)
- Socially acceptable location for adult use in terms of visual and sound (during use) considerations.
- Available space in the compound both now and with other building intended.

The chosen location may well be a compromise in respect of these factors.

(e) Religious consideration - is the orientation of the latrine pan relative to Mecca. For Bangladesh:

- * Front must not face Mecca - to the West
- * Back must not be toward mecca - face to the East
- * For some, the front must not be in the direction of the head at burial - to the South

* The only certain direction is to face the North although the household will have the final say.

(f) Technical factors - the Sanpro assesses the technical acceptability of the preferred location. Layout factors to be considered are:

- Both pits must be dug with their edges 3 feet away from all clay (or pucca) compound and house walls.
- The pits must be dug with a minimum of 3 feet of undisturbed soil between them.
- Dig pits at least 30 feet from a tubewell if the water table does not reach the pit and 50 feet for situations where the water table will enter the pit during the wet season.
- Pits should be dug 10 feet from trees if possible to avoid pit damage with tree roots.
- Above an open embankment wall, pits must be dug back from the wall a minimum of the height of the open embankment wall to avoid soakage water coming out through the wall.
- Pits need to be located on high ground to keep the latrine pan above flood water levels as much as possible so that it can continue to be used and the latrine structure can be kept in good condition.
- If pits can only be located in a lower lying parts of the compound, use the soil dug from the pit plus other soil available if necessary to build up the ground around the latrine and so raise the latrine pan as high as possible. The top two lining rings must be joined with cement mortar. Make sure surface storm water can drain away readily.
- Pits must not be dug in lanes or in compounds where vehicles may drive over them.

6.2 Office Work

On completion of the layout, enter the relevant details of the latrine on the household application form:

- Sketch of compound and location of the latrine pits.
- Latrine components to be issued.
- Date for completion of pit digging by household, delivery of latrine components and households collection of superstructure materials.
- Special notes.

Enter delivery date and pit digging completion date in the Sanpro's diary

7. Results

With completion of the Layout, the following is achieved:

- Latrine location established.
- Components needed identified.
- Installation schedule established.

Appendix 6.6

Installation Quality Checklist

It is important that all latrines installed are properly functional and of a reasonably uniform quality. The inspections built into the implementation methodology provide for the necessary control.

A. Pre-installation inspection (Step 10)

To check pit digging and the collection of superstructure building materials.

1. Are the two pits dug in the agreed layout positions?

If the location of a pit has been moved and it is in a functionally unacceptable position, then it would be necessary dig it in an acceptable position.

If the household disagrees, the WSSC (and Supervisor) should be involved to persuade the household. If necessary, the latrine should be stopped rather than install it in the wrong place. The negative promotional impact of a failed latrine is to be avoided.

2. Have the pits been dug to the correct dimensions?

- Check the dug diameter allowing for lining (40 inches minimum).
- Check the dug depth is correct (42 inches at the sides for a normal pit). It will not be deeper, but may be shallower in a low lying location where the ground about the latrine is to be built up.

3. Are the two pits at least 3 feet apart to minimise soakage flow between pits?

4. Is each pit at least 3 feet from clay or pucca walls?

Note: If faults are found the household need to be shown the corrections required.

5. Are the intended superstructure building materials stacked in the compound and will they be adequate for the style of superstructure intended?

Note: If materials are not available or inadequate, then latrine installation should not proceed until they are available.

B. Check on Pit Lining Installation

The Sanitation Promoter visits each household to inspect newly lined pits before the Installation Mistry places the latrine slab in position. The following are checked:

1. Is the bottom ring set properly on foundation bricks supplied?
2. Are the spacing bricks positioned properly and supported/packed against the excavation wall?
3. Are the three rings placed properly in vertical line?
4. Are the rings backfilled properly?
5. Is the bottom of each pit free of rubbish and appropriately excavated of loose soil?

Note: If problems are found, they must be corrected by the mistry who made them before installing the latrine slab and before the household backfills the second pit.

C. Completion Inspection

To check that the latrine is complete, that the quality of work both by the mistry and household is acceptable and to enable sanitation education to proceed.

1. Is the latrine slab placed at the intended level (pit lining is correct height)?
2. Is the latrine slab level and set properly (not rocking) on top of the pit lining?
3. Check that the pan is not damaged.
4. Check that the water seal is sealing properly and does not leak.
5. Is the pan facing in an acceptable direction?
6. Has the ground level been raised correctly about the (or each) pit if this was intended?
7. Has the latrine base about the pit lining above ground level been formed well?
8. Is the superstructure in place providing the required minimum of privacy?
9. Is there a cleaning brush and bodna available for the latrine?
10. Has the spare pit been backfilled properly and safely?

Appendix 6.7

..... Considerations for Latrine Maintenance Guidelines

- Unblocking the latrine pan water seal.
- Don't put rubbish, stones and soil pieces in the latrine pan.
- How to tell when a pit is nearly full and change over to the second pit is necessary (ie. pan won't flush properly, lift slab and look, or distance down to pit contents if an inspection hole is provided in the latrine slab).
- Pit change over procedure:
 - Digging out and preparing second spare pit
 - Who and how to dig out the pit; for some previous experience refer to the Mirzapur study¹.
 - Disposal of decomposed pit contents.
 - Moving the latrine slab with pan.
 - Reestablishing the pan water seal.
 - Moving and erecting the superstructure over the second pit.
 - Esablishing the latrine base around the slab.
 - Covering the contents of the old pit with soil.
- Maintenance of the latrine base and superstructure; encourage the attitude that the latrine is a physical extension of the house.
- Maintenance of convenient access to the latrine.

¹ World Bank, Mirzapur study, Bangladesh

Appendix 6.8

Materials Required for Sanitation Implementation

- STEP 01 Draft material prepared together with necessary preliminary discussions.
- STEP 02 Draft guideline material
- STEP 03 Implementation guidelines distributed
- STEP 04 Guidelines for work plan preparation.
Functional WSSC
Tubewell implementation work plan
List of tubewell beneficiaries
(List of additional latrine beneficiaries)
- STEP 05 Pourashava Sanitation programme prepared
- STEP 06 Promotion flip chart; application forms; simple information leaflets; appointment diary.
Caretaker's new latrine complete and properly used.
- STEP 07 Application/monitoring forms; Caretakers latrine available for demonstration.
- STEP 08 Layout patterns; tape measure; Sanpro diary; guidelines for latrine layouts.
- STEP 09 Stock of latrine materials; Transport system organised from the CSC; Community mistries available.
- STEP 10 Basic tools for the mistry
- STEP 11 Tape measure; instruction material showing how latrine works and change over; instruction leaflet to leave.
- STEP 12 Sanitation Education flip chart.
Household latrine complete
Caretaker well educated on latrine use and care.
Caretaker's latrine properly used and cared for.
- STEP 13 Flip chart; functional household latrine
Latrine brush, ash or soap and bodna available
- STEP 14 Cleaning brush, ash or soap and bodna

Appendix 7.1 . . .

Sanitation Promotion

- ONE THE SANITARY LATRINE
- TWO A SANITARY LATRINE IS PRIVATE
- THREE A SANITARY LATRINE IS CONVENIENT
- FOUR EASY TO USE AND CONTAINS EXCRETA
- FIVE A SANITARY LATRINE ADDS VALUE TO YOUR HOUSE
- SIX CLEANLINESS IS NEXT TO GODLINESS
- SEVEN A HEALTHY FAMILY

Note: Activity sheets for each chart are to be completed by the Project Office, Dhaka

A7.2

Sanitation Promotion

CHART ONE

Message: THE SANITARY LATRINE

Objective Identification of a sanitary latrine.

Purpose: To introduce the idea of a sanitary latrine and the promotional theme to follow.

Key Statements:

Nos. of Sketch: 1

Descriptions: Latrine with door open; standard form.

Methodology:

Interactions:

Result: Promotion presentation opened and topic identified.

Requirements:

Training:

Sanitation Promotion

CHART TWO

Message:	A SANITARY LATRINE IS PRIVATE
Objective	For women (and men) to recognise and accept the personal advantage of privacy provided by the superstructure of a sanitary latrine while attending to their personal sanitation needs.
Purpose:	To present the benefits of sanitation privacy in such a way as to persuade household members that it would be an improvement over their present circumstances which they would like to have.
Key Statements:	
Nos. of Sketch:	2
Descriptions:	(a) Latrine with a woman entering through partly open door; hand reaching back to close the door; woman facing into the latrine; latrine shown with no background; no water container. (b) Latrine as above with door closed.
Methodology:	Present as part of a combined promotional presentation. Follow up with discussion about existing experiences and whether they have a privacy problem. What do they have to do to get privacy. Go and look at situations and then show possible solutions - "if the latrine was over here for instance".
Interactions:	Observes; later discussion
Result:	Women (and men) convinced that it would be a good reason for having a new latrine.
Requirements:	
Training:	

Sanitation Promotion

CHART THREE

Message: A SANITARY LATRINE IS CONVENIENT

Objective For women (and men) to recognise the advantage of convenience provided by a sanitary latrine handy to the house.

Purpose: To show the benefits of sanitation convenience in terms of closeness, shelter in the rain, avoidance of mud and safety at night so as to show women that it is better than having to wait and/or have to go in the bushes or use a kutch latrine.

Key Statements:

Nos. of Sketch: 1

Descriptions: (a) Latrine at the end of a kutch house with front verandha; stepping stones from the house to the latrine; women on the stones opening the latrine door to go in; puddles of water in front of the stones; raining if this can be shown.

Methodology:

Interactions:

Result: Women (and men) convinced that the convenience of a latrine is a reason for having one.

Requirements:

Training:

Sanitation Promotion

CHART FOUR

Message: EASY TO USE AND CONTAINS EXCRETA

Objective For the household to have a minimal understanding of how the latrine works; that it is easy to use and confines excreta from view, insects and animals.

Purpose: To show how the latrine works, excreta is confined away from animals and insects so that they can not carry excreta back around the house.

Key Statements:

Nos. of Sketch: 1

Descriptions: A close up of a latrine; component parts shown; bodna, broom and water container shown.

Methodology:

Interactions:

Result: Household appreciates the benefit of having no exposed excreta around the compound and the convenience of a clean smell free latrine.

Requirements:

Training:

Sanitation Promotion

CHART FIVE

Message: A SANITARY LATRINE ADDS VALUE TO YOUR HOUSE

Objective To show that latrine ownership is of social benefit for the household.

Purpose: To establish that latrine ownership can provide status value to the household compared to those who do not have a latrine.

Key Statements:

Nos. of Sketch: 1

Descriptions: Latrine with door closed; householder showing two friends the latrine; three grouped around outside the latrine.

Methodology:

Interactions:

Result: Status of householder raised in the eyes of friends who are encouraged to consider having a latrine.

Requirements:

Training:

Sanitation Promotion

CHART SIX

Message: CLEANLINESS IS NEXT TO GODLINESS

Objective To use the Islamic reference on cleanliness as a decision making factor.

Purpose: To establish a relationship between the cleanness of the latrine and the importance of personal cleanness as a good muslim.

Key Statements:

Nos. of Sketch: 1

Descriptions: (a) An muslim religious leader is standing before a latrine talking to a small group of men pointing to the latrine.

Methodology:

Interactions:

Result: Household acceptance of the religious significance of having a latrine.

Requirements:

Training:

Sanitation Promotion

CHART SEVEN

Message: A HEALTHY FAMILY

Objective To close and encourage a decision from the householder to purchase a latrine.

Purpose: To close the promotional presentation and to indicate the health benefits of having and using a latrine.

Key Statements:

Nos. of Sketch: 1

Descriptions: (a) Healthy family from Sanitation Education

Methodology:

Interactions:

Result: Decision by household to purchase a latrine or at least to have positive thoughts in favour of purchase.

Requirements:

Training:

Appendix 7.2

Sanitation Promotion Sketches

- ONE THE SANITARY LATRINE
- Typical latrine with open door.
- TWO A SANITARY LATRINE IS PRIVATE
- Women entering the latrine.
- Latrine with closed door.
- THREE A SANITARY LATRINE IS CONVENIENT
- Latrine close to house.
- FOUR EASY TO USE AND CONTAINS EXCRETA
- Latrine pan shown close up.
- FIVE A SANITARY LATRINE ADDS VALUE TO YOUR HOUSE
- Householder showing friends his latrine.
- SIX CLEANLINESS IS NEXT TO GODLINESS
- Religious leader discussing sanitation with
a group of householders near a latrine.
- SEVEN A HEALTHY FAMILY
- A healthy family in front of their latrine.

Note: Copies of sketches are not included. These are being finalised by 18 DTP.

Appendix 7.3

Sanitation Promotion

Factors to Consider for Guideline Preparation

The following factors (and others?) need to be considered when preparing relevant guidelines for Sanitation Promotion.

1. Group Meetings

- * Caretaker (group)
- * Where and when is the meeting to be held
- * Mixed men and women at meeting?
Need for a women's meeting?
- * Materials and equipment required for the meeting.
 - flip chart
 - application forms
 - Sanpro diary
 - other?
- * Is the caretakers latrine available?
- * Meeting procedure
 - Opening and introductions
 - About the latrine programme and CSC (general)
 - The seven messages (separate guidelines for each)
 - The cost message
 - How the latrine is installed (very briefly)
 - The latrine agreement (on application form)
 - Questions and discussion
 - Closing
 - Looking at the Caretakers latrine
 - List of applications and visit dates
- * Time allowed for each stage of the meeting

2. Household Visits

- * Name of household
- * Date and time for visit
- * Materials for visit (Activity steps 08 and 09)
- * Caretaker available?
- * Visit procedure
 - Purpose of visit
 - Household's questions of the latrine and/or programme
 - Discussion and explanations
 - Look at caretaker's latrine?
 - If they decide to have a latrine, then
 - o filling in the Application form
 - o continue with layout (Appendix 6.5)
 - o agreement conditions and responsibilities
 - o signing the agreement
 - o arranging installation dates
 - If they do not decide to have a latrine, then
 - o advising CSC or Caretaker later

Appendix 8.1

Sanitation Education

Latrine Use (Family) Activity Sheet

- ONE ALL USE THE LATRINE
- TWO FLUSH THE LATRINE AFTER USE
- THREE CLEAN THE LATRINE EACH DAY
- FOUR WASH HANDS WITH SOAP AND ASH AFTER USING THE LATRINE
- FIVE HEALTHY FAMILY WITH A CLEAN LATRINE

Latrine Use (Children) Activity Sheet

- SIX PUT THE EXCRETA OF SMALL CHILDREN IN THE LATRINE
- SEVEN SMALL CHILDREN USE THE LATRINE
- EIGHT WASH HANDS WITH SOAP OR ASH AFTER USING THE LATRINE
- NINE HEALTHY FAMILY WITH A CLEAN LATRINE

Note: Activity sheets for each chart are to be completed by the Project Office, Dhaka.

Latrine Use (Family) Activity Sheet

CHART ONE

Message: ALL USE THE LATRINE

Objective: For all members of the family (or household) to use the latrine. All members, means adults, both men and women and all children from an early age, both girls and boys.

Purpose: To encourage/persuade all family members to learn to use the latrine as a natural daily habit.

Key Statements:

Nos. of Sketch: 2

Descriptions: (a) Man opening the latrine door holding a bodna; latrine seen through opening; water storage container outside next to latrine door with soap container beside it.
(b) Older girl doing the same; same detail.

Note: Only two members of family (male and female) shown to keep the visual presentation uncluttered.

Methodology: Show chart; refer to and point out all members of the family; restate the promotion messages for having a latrine; discuss any family concerns about why individuals might not use the latrine.

Interactions: Observation and listening; children act out the sequence for adults (and themselves)?

Result: All family members use the latrine at all times for defecation (and urination).

Requirements:

Training:

Latrine Use (Family) Activity Sheet

CHART TWO

Message: FLUSH THE LATRINE AFTER USE

Objective That all users will flush the latrine after every use.

Purpose: So that all excreta and urine is removed from the latrine pan to leave the latrine without smell and visual objection for the next user

Key Statements:

Nos. of Sketch: 2

Descriptions: (a) Man standing to side of latrine (inside with door open); holding bodna by spout; rapid flow of water from large opening into pan; water storage container and soap container outside.
(b) Older girl doing the same; same detail.

Methodology: Show chart; briefly describe the need; demonstrate flushing action and amount of water needed; all family members practice and demonstrate flushing ability.

Interactions: Observation and listening; family members show they can flush properly

Result: All family members flush the latrine properly after every use leaving no excreta in the pan and the latrine pleasant for the next user.

Requirements:

Training:

Latrine Use (Family) Activity Sheet

CHART THREE

Message: . WASH HANDS WITH SOAP AND ASH AFTER USING THE LATRINE

Objective For all family.. (household) members to develop the habit of washing their hands with soap or ash after every time they go to the latrine.

Purpose: To ensure that all users of the latrine remove any faecal matter that may be on their hands after using the latrine and so reduce opportunity for the transfer to others any faecal related diseases which they may have. "Going to" the latrine means using and cleaning.

Key Statements:

Nos. of Sketch: 3

Descriptions: (a) Woman washing the hands of small child (2 to 3 years)
(b) Older girl washing hands.
(c) Man washing hands

Use the sequence of three drawings to show soap in one, ash in a second and rinsing hands
Check the availability of soap for target households.

Methodology: Show chart; briefly describe the need; demonstrate hand washing action and use of soap and ash; family members demonstrate hand washing technique

Interactions: Observation and listening; all practise and demonstrate hand washing;

Result: All family members wash their hands as a habit after going to th latrine.

Requirements: Find soap or ash container from household (eg half coconut); source of ash; consider providing a cake of soap; bodna for pouring water.

Training:

Latrine Use (Family) Activity Sheet

CHART FOUR

Message: CLEAN THE LATRINE EACH DAY

Objective To establish the practice of the family (household) latrine being cleaned with brush and water at least once every day.

Purpose: To keep the latrine clean with no buildup of excreta in the pan (or floor). Latrine remains pleasant to use without smell. All members of the family continue to use the latrine.

Key Statements:

Nos. of Sketch: 1 (2)

Descriptions: (a) Woman standing in the latrine bending toward the pan; brush in one hand cleaning the pan; water from bodna (small spout) pouring into the pan at same time; water container and soap container outside.

Note: A second sketch showing a man cleaning the latrine is not recommended. The single sketch helps to emphasize that this is a routine, not an individual user activity and initially, the Woman is the most reliable person for this function.

Methodology: Show chart; briefly describe the need; demonstrate cleaning action and use of water; the women (and other family members) demonstrate and try cleaning.

Interactions: Observation and listening; practise and demonstration of cleaning process; others involved at demonstration stage?

Result: Latrine is cleaned at least once each day. The pan remains clean with no buildup of excreta or persistent smell.

Requirements:

Training:

Latrine Use (Family) Activity Sheet

CHART FIVE

Message: HEALTHY FAMILY WITH A CLEAN LATRINE

Objective To symbolise that proper use and care of the family (household) latrine will contribute to family health and happiness.

Purpose: To provide a positive close to the hygiene education session.

Key Statements:

Nos. of Sketch: 1

Descriptions: Family group standing in front of their latrine

Methodology: Show chart with discussion of benefits.

Interactions: Discussion and questions.

Result: Satisfactory conclusion to hygiene education presentation.

Requirements: None.

Training:

Latrine Use (Children) Activity Sheet

CHART SIX

Message: PUT THE EXCRETA OF SMALL CHILDREN IN THE LATRINE

Objective To remove and safely dispose the excreta left by small children about the house by picking it up and putting it in the latrine.

Purpose: To remove the health risk of excreta left by small children about the house.

Key Statements:

Nos. of Sketch: 2

Descriptions: (a) Very small child defecating; mother approaching with means of removing the excreta
(b) Mother putting the excreta in the latrine pan

Methodology: Show chart; briefly describe the need; demonstrate how to pick up excreta safely; put it in the latrine; flush it away.

Interactions: Observe and listen; show how to pick up excreta and put it in the latrine

Result: The excreta of small children removed from the house and yard whenever noticed. Potential for contamination from small children's excreta substantially reduced.

Requirements: Means of picking up excreta.

Training:

Latrine Use (Children) Activity Sheet

CHART NINE

Message: HEALTHY FAMILY WITH A CLEAN LATRINE

Objective To symbolise that proper use and care of the family (household) latrine will contribute to family health and happiness.

Purpose: To provide a positive close to the hygiene education session.

Key Statements:

Nos. of Sketch: 1

Descriptions: Family group standing in front of their latrine

Methodology: Show chart with discussion of benefits.

Interactions: Discussion and questions.

Result: Satisfactory conclusion to hygiene education presentation.

Requirements: None.

Training:

Sanitation Education

Latrine Use (Family) Drawings

- ONE ALL USE THE LATRINE
- Man enters the latrine to use it.
 - Girl enters the latrine to use it.
- TWO FLUSH THE LATRINE AFTER USE
- Man flushes the latrine.
 - Girl flushes the latrine.
- THREE WASH HANDS WITH SOAP AND ASH AFTER USING THE LATRINE
- Women washes the hands of a small child.
 - Man washes his hands.
 - Girl washes her hands.
- FOUR CLEAN THE LATRINE EACH DAY
- Women cleaning the latrine pan.
- FIVE HEALTHY FAMILY WITH A CLEAN LATRINE
- Healthy family group in front of latrine.

Latrine Use (Children) Sketches

- SIX PUT THE EXCRETA OF SMALL CHILDREN IN THE LATRINE
- Small child defaecating in open.
 - Mother putting excreta in latrine pan.
- SEVEN SMALL CHILDREN USE THE LATRINE
- Mother carrying small child to latrine.
 - Small child being trained to use latrine.
- EIGHT WASH HANDS WITH SOAP OR ASH AFTER USING THE LATRINE
- Mother washing hands of small child.
- NINE HEALTHY FAMILY WITH A CLEAN LATRINE
- Healthy family group in front of latrine.

Note: Copies of sketches are not included. These are being finalised by 18 DTP.

Sanitation Education - Implementation Guidelines

1. Composition

The flip charts will be used in three combinations:

- Latrine use - 3 charts with messages of:

ALL USE THE LATRINE
FLUSH THE LATRINE AFTER USE
WASH HANDS WITH ASH OR SOAP AFTER USING THE LATRINE

- Latrine use and cleaning - 5 charts with messages of:

ALL USE THE LATRINE
FLUSH THE LATRINE AFTER USE
WASH HANDS WITH ASH OR SOAP AFTER USING THE LATRINE
CLEAN THE LATRINE EACH DAY
HEALTHY FAMILY WITH CLEAN LATRINE

- Training very young children to use the latrine - 4 charts

PUT THE EXCRETA OF SMALL CHILDREN IN THE LATRINE
SMALL CHILDREN USE THE LATRINE
WASH HANDS WITH ASH OR SOAP AFTER USING THE LATRINE
HEALTHY FAMILY WITH CLEAN LATRINE

2. Implementation Pattern

A series of up to six visits will be made to each Household over a four week period. The interval between visits will increase through this period.

Visit 1 - Day 1 (As soon as the latrine is finished)

- Latrine Use
- introduction with demonstration; general coverage.
 - Sanitation Educator leads; Caretaker observes

Visit 2 - Day 3

- Latrine Use and Cleaning
- intensive coverage; demonstration; active participation
 - Sanitation Educator leads; Caretaker participates

Visit 3 - Day 7

- Latrine Use and cleaning
- reinforcing and checking understanding; observation
 - Sanitation Educator observes; Caretaker leads
- Train Child
- introduction; demonstration/participation
 - Sanitation Educator leads; Caretaker observes

Visit 4 - Day 12

- Latrine Use and cleaning - monitoring understanding; observe practice
- Sanitation Educator monitors; Caretaker leads
- Train Child - reinforcement; active participation
- Sanitation Educator leads; Caretaker participates

Visit 5 - Day 21

- Both - monitoring and correcting
- (Sanitation Educator observes); Caretaker leads

Visit 6 - Day 28

- Both - monitoring and correcting
- Sanitation Educator participates; Caretaker participates

Between the organised visits, the Caretaker will be encouraged to make social visits to each household, discuss use of the latrine and sanitation hygiene practices and encourage corrections of new latrine practices where relevant. For this function the caretaker will need extra personal education when the programme first starts in her household group. She also needs to receive the first latrine in the group so that she can reinforce her learning with first hand experience. The extent to which such reliance can be made of individual caretakers will depend on the Sanitation Educators assessment of the Caretaker's social attitude, willingness and responsiveness to her Sanitation Education.

3. Training

Sanitation Educators will need to be trained as a group in each Pourashava at the start of the Sanitation Programme with follow-up reinforcement training in the field, initially as a group and later individually. Initial training may combine Sanitation Educators from two or three Pourashavas. Principal subjects are:

- .. The need for Sanitation Education and the fit in the Sanitation Programme
- .. Understanding the messages
- .. How to present the messages
- .. Assessing and reacting to household members
- .. Observation and monitoring effectiveness of the education

Sanitation Education

Key Single Line Statements

Example for Chart Two

CHART TWO

FLUSH THE LATRINE AFTER USE

* Flush the latrine after every use.

* Use one bodna of water

* Pour quickly from large opening

* Leave the latrine pan clean

* You may be the next user

APPENDIX 8.5.

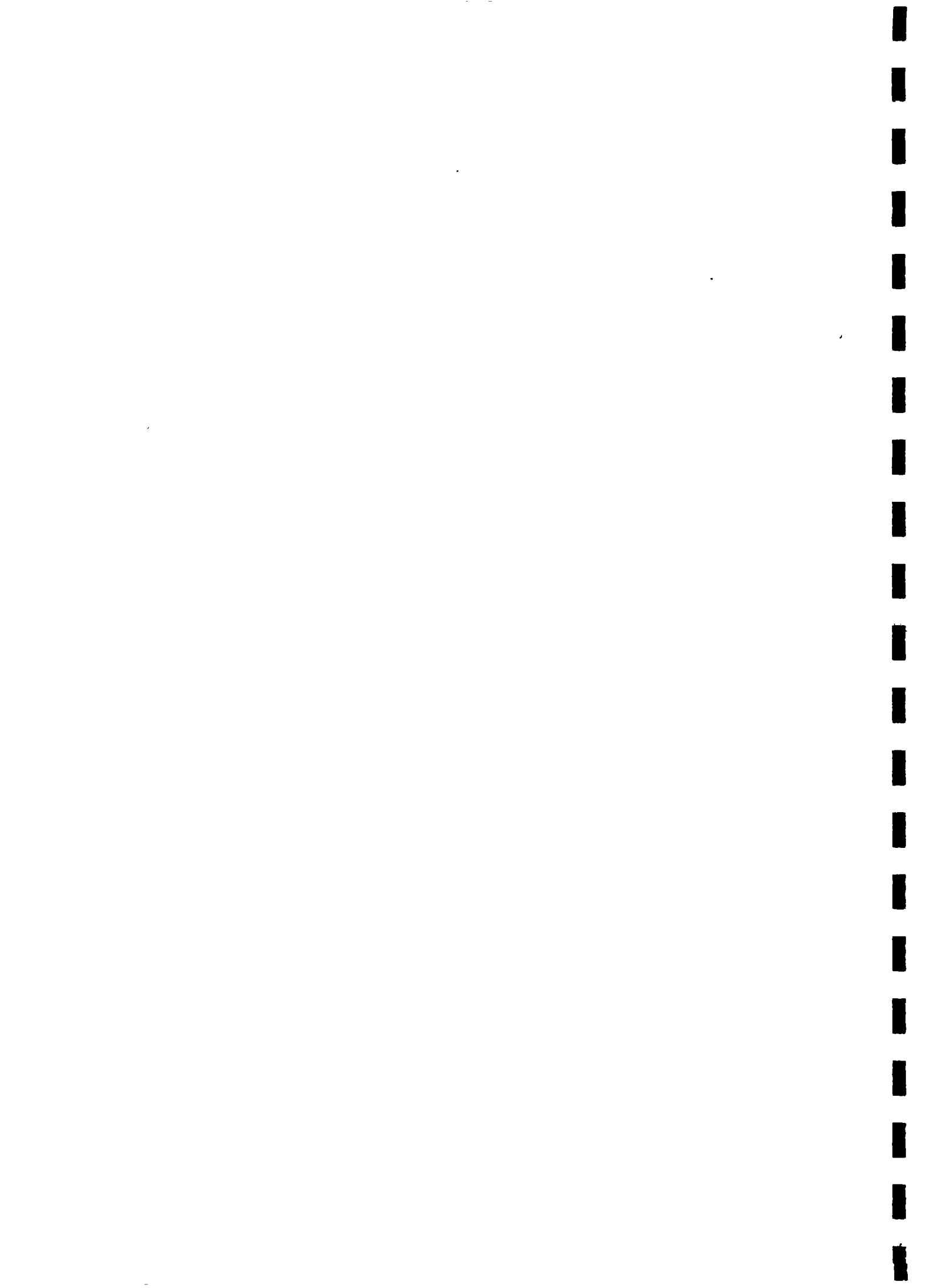
LATRINE USE (FAMILY)

CHART TWO : FLUSH THE LATRINE AFTER USE

REQUIREMENT : WATER CONTAINER, BODNA, COW MANURE

LOCATION : IN COMPOUND IN FRONT OF LATRINE

LESSON	EDUCATION	HOUSEHOLDERS
1. Every user flushes the latrine after use	Initial demonstration Who should flush Questions	Replies Answers
2. Why is the latrine flushed ? - unpleasant for next user - unislamic and offend next user - excreta will stick to pan and be hard to clean - excreta and urine left in pan will smell	Review and confirm	Discuss relevance if interest shown
3. How to flush - fill bodna from water container - use one bodna full - pour quickly from large opening	Demonstrate all stages (use cow manure to represent faeces)	Members try flushing - women, men and children
4. <u>Do not</u> put anything else in latrine pan - this will block the water seal - fill the pit too quickly	Show what <u>not</u> to put in	Observe and listen
5. If excreta won't flush - use a <u>SOFT STICK</u> to break it up - than flush again - never jab with a hard stick which can break the water seal. The latrine will than smell - children ask parent's help	Find a soft stick show <u>how</u> does not hurt water seal Stress what not to do	Get members to find soft sticks Observe only
6. Leave the pan flushed and clean for next user	Question why ?	Final discussion



Appendix 10.1

Observations on the Production of Latrine Components

The following points should be considered when preparing for Production Mistry training.

1. Pan

- (a) Mold making - molds to get a very smooth finish. Particular care should be taken with the master female mould. With the second male moulds, consideration should be given to rubbing each down to get a smooth finish without ridges and marks. An emery stone as used by manufacturers of concrete pans can be used for rubbing down.

The small amount of extra time taken at this stage will benefit all pans made from the mould.

- (b) Pan making technique - a "best method" needs to be decided on before training starts with a Master Mistry Trainer selected who knows how to use this method and has been observed making several demonstration pans correctly.

- (c) Mould preparation - the mould needs to be free of all discolouration which may stain the white cement. Waste oil must not be used on the mould.

A separation layer of beeswax in dissolved in kerosene works well

- (d) White cement layer - for the lining layer of 1:1 white cement:sand, finely screened sand needs to be used. It is not sure that blue whitening powder is necessary.

Only mix enough white cement mortar for one pan at a time so that fresh mortar is always used although greater volumes of dry mix may be prepared in advance.

Always make sure at least one-eighth (3 millimetres) thickness of white cement mortar is applied all over the mould. Use too much rather than not enough to avoid having the sandy mortar (1:3) of the next layer coming through the white cement layer. Be particularly careful to get sufficient thickness on curved parts of the mould.

Apply the white cement mortar from the bottom of the mould and work from mortar already applied rather than up to mortar already applied to reduce the chance of air spaces being trapped at the surface.

The condition of the white cement layer determines the quality of the finish of the completed pan.

- (e) Grey mortar application - use the technique used by the trainer at the DPHE Dhaka training school. He applies the grey 1:3 mortar over the white cement layer and immediately follows this with dry 1:3 mix thickly applied by hand to absorb excess moisture and avoid the tendency for mortar to slump. His technique should be observed closely. In some, and possibly many instances, this technique is not being used in the field.

The mortar near the top of the mould should initially be applied more thinly to allow for a tapered join with the mortar later applied for the gooseneck and be cut back about 0.5 inches below the top of the mould on the front and

sides (see f). The back side (inside the gooseneck) needs to be finished evenly to the top of the mould.

- Fresh mortar should be prepared for each mould. Only one mould should be made at a time.
- (f) Applying the gooseneck mould - once positioned, clay needs to be worked into the join between the moulds to give a smooth surface join to provide a smooth finish inside the gooseneck.
- (g) Wire mesh reinforcement - where to apply the wire mesh still needs to be decided following strength trials on test pans made.

The thickness of mortar under the mesh needs to be thinner so that when the covering mortar is applied excessive mortar thickness is avoided. The mesh needs to be in the middle of the mortar, not near the surface.

- (h) Finish - emphasis must be placed on getting the best quality finish on the inside surface of the pan.

The outside finish only needs to be reasonable. It does not matter if there are some trowel marks showing. Too much effort, and hence wasted production time, is spent on getting a nice outside finish which has no function, or benefit when positioned "inside a pit".

2. Floor Slab

- (a) Setting up the pan and slab mould - care needs to be taken to firmly position the slab mould and the pan about a quarter of an inch (5 - 6 mm) all round below the top edge of the slab mould to provide drainage into the pan.
- (b) Join of slab and pan - this is poorly made on most floor slabs observed. The outer surface of the pan must be wet where the join is to be made and should have a thin layer of cement paste applied just before the join is made. Care should be taken to place concrete to the full 2 inch depth of the slab all around and work it in against the pan surface for a good bond.
- (c) Reinforcement - must be placed on an initial one inch layer of concrete and not before so that proper cover is obtained. Experience indicates that this requires careful monitoring. The steel should also be wired together and placed as a reinforcement frame.
- (d) Finish - the surface of the slab needs to be finished with dry cement trowelled into the surface to act as a filler between the surface sand grains of the concrete to provide a smooth free draining and easily cleaned surface. Footrests can then be bedded in the fresh concrete.

The surface join with the pan needs to be finished with care to give a smooth join.

The inside of the pan MUST BE COMPLETELY CLEANED OF ALL CONCRETE DRIPS AND STAINS IMMEDIATELY AFTER THE SLAB IS FINISHED to maintain the quality of finish of the pan. There can be no excuse for not doing so and action should be taken against any mistry leaving a pan with cement on it. It can not be cleaned off later.

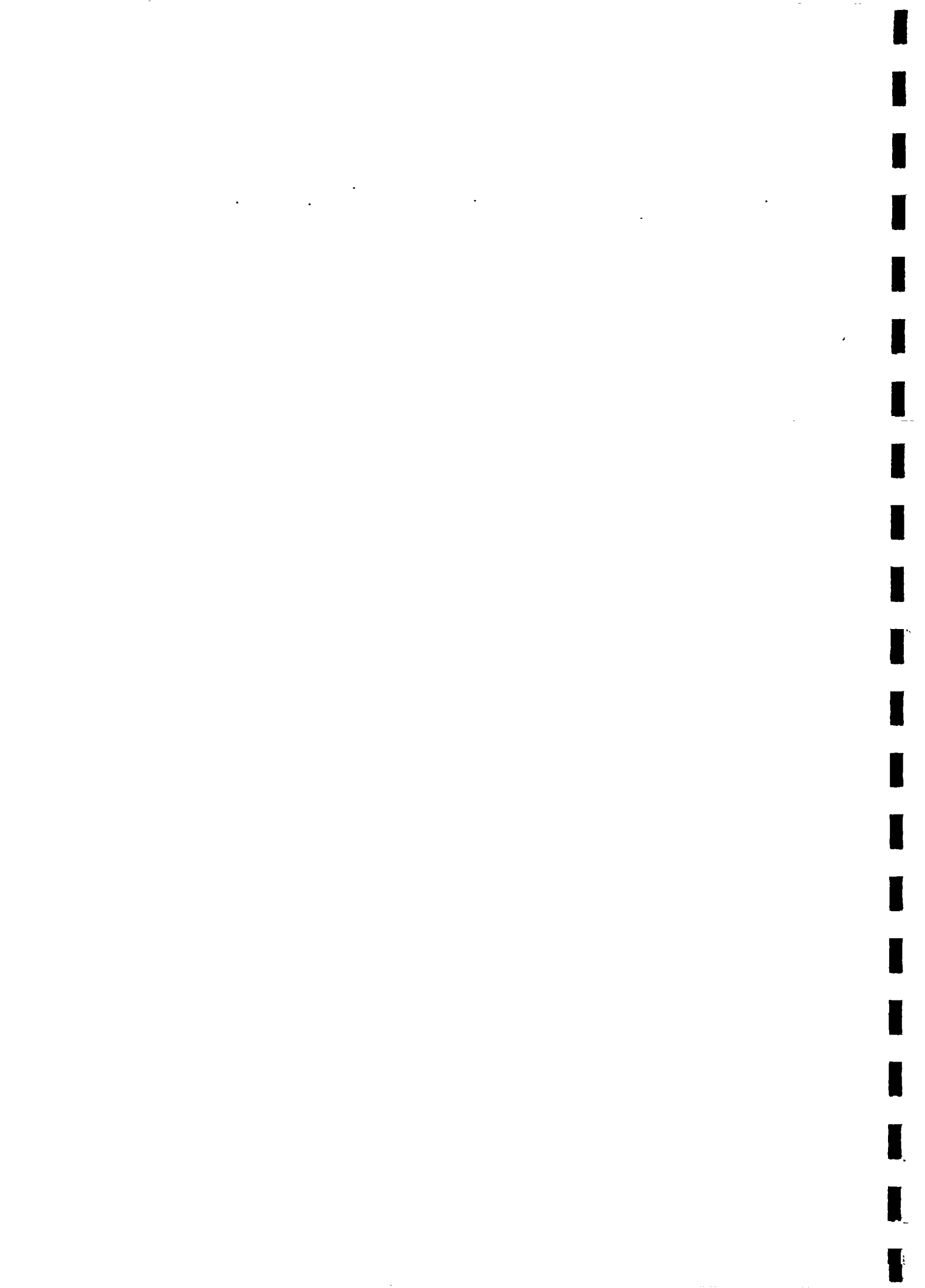
3. Concrete Rings

The production of concrete rings is relatively straight forward providing a good concrete mix is placed properly in the mould and reinforcement loops are centrally placed between the walls of the mould.

4. Curing

This is most important for the development of strength of products and needs to be supervised and monitored closely.

- (a) Pans - should be cured in a water tank for the first 7 days after production and kept wet under plastic for another 7 days if not used in making a slab.
- (b) Slabs - need to be kept wet for at least the first 7 days and preferably 14 days after production. Before lifting they must be kept wet under wet jute or plastic. After lifting, they need to be stacked for curing under plastic or jute and watered as necessary throughout the day. This could be a task for the chowkidar to do. After curing, they would be moved to a stock storage location.
- (c) Rings - should be cured in the same way as slabs.



APPENDIX 11.1

Training Requirements for 18 DTP Sanitation

Comparative Levels of Training

Subject/Activity	SDE	SS	SP	SE	IM	PM	C
<u>The Programme</u>							
Objectives and purpose	*	*	+	+	o	-	
Organisation - Institutional	*	*	+	+	o	o	
Organisation - Community	*	*	*	*	o	-	+
Community involvement							
- Community motivation	+	*	*	+	-	-	o
- Household motivation	*	*	*	+	-	-	+
- Women's involvement	+	*	*	*	o	o	+
<u>Implementation</u>							
Operational concept and policies	*	*	*	+	-	-	o
Implementation methodology							
- Promotion	+	*	*	+	-	-	o
- Latrine sociology (M and F)	*	*	*	*	o	-	o
- Latrine technology/function	*	*	*	+	o	-	o
- Latrine layout	*	*	*	+	o	-	o
- Application processing	+	*	*	+	-	-	-
- Delivery of components	*	*	*	+	o	-	o
- Household work	*	*	*	+	+	-	o
- Mistry installation	*	*	*	+	*	-	
- Installation inspection	*	*	*	+	*	-	
- Supervision	*	*	*	+	o	-	-
Household Education							
- Maintenance instruction	*	*	*	+	o	-	o
- Sanitation education	+	*	+	*	o	-	+
- Supervision	+	*	+	*	-	-	-

- Notes: (1) * Detailed knowledge required
 (2) + Need to understand
 (3) o Need to be familiar with activity
 (4) - No training required

SDE Sub-Divisional Engineer
 SS Sanitation Supervisor
 SP Sanitation Promoter
 SE Sanitation Educator
 IM Installation Mistry
 PM Production Mistry
 C Caretaker

Continued ...

Subject/Activity	SDE	SS	SP	SE	IM	PM	C
<u>Support Activities</u>							
Work organisation							
- Planning and performance targets	*	*	*	*	o	o	
- -							Diary use and record keeping
							+
							*
							*
* -	o	-					
- CSC management	+	*	*	+	-	-	-
Staff management							
- Work performance	+	*	+	+	+	+	-
- Community relations	+	*	*	*	o	-	+
- Motivation and personal	+	*	+	+	-	o	-
- Selection of community staff	o	*	+	+	-	-	-
- Consolidation training	*	*	+	+	-	-	-
Production Centre Operations							
- Operational organisation	+	*	+	+	-	o	-
- Production methodology	*	*	+	o	-	*	-
- Quality control	*	*	+	+	o	*	o
- Supply of materials	*	*	+	+	-	o	-
- Stock control	*	*	+	+	-	+	-
Performance monitoring							
- Work records and reporting	*	*	*	*	-	-	-
- Progress assessment	*	*	+	+	-	-	-
- Implementation	+	*	+	+	o	o	-
- Technical adequacy	*	*	*	+	+	+	o
- Production quality	*	*	+	+	o	+	o
- Problem solving (operational)	*	*	+	+	o	o	-
- Programme supervision	+	*	+	+	o	o	-
- Evaluation	*	*	+	+	-	-	-

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