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A Monitoring and Evaluation Manual for Low-Cost Sanitation Programs in India

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PREFACE

This manual is one of a series of informal Technical Notes prepared by TAG[1]/ on various aspects of water supply and sanitation programs in developing countries.

The initial emphasis of TAG was on the promotion of policy shifts from high-cost to low-cost on-site sanitation technologies. This emphasis is now being shifted progressively to a focus on institutional development for on-site low-cost sanitation program delivery.

The Note was originally prepared as an internal discussion document. Its wide distribution does not imply endorsement by the sector agencies, government, or donor agencies concerned with programs, nor by the World Bank or the United Nations Development Programme.

It is a monitoring and evaluation manual based on field work done by the author in India in January-February 1983. It is meant to provide a methodological framework within which Indian institutions may develop more detailed evaluation designs; and within which implementing government agencies may establish monitoring systems. Discussions were held with TAG-India[2]/ and international institutions concerning the project evaluation and the design and establishment of a monitoring system.

TAG will be interested in receiving comments and suggestions on the paper, and, in general, information on the costs of technology and of delivery and support systems and information on experience in program implementation. All communications should be addressed to the Project Manager, UNDP Project INT/81/047, Water Supply and Urban Development Department, The World Bank, 1818 H Street, NW. Washington, DC 20433.

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1/ Technology Advisory Group operating under UNDP Interregional Project INT/81/047 - executed by the World Bank.

2/ The staff of the TAG regional office in India.

I. INTRODUCTION

1.01 In 1978 the Government of India sought the assistance of the United Nations Development Programme (UNDP) Global Project GLO/78/006 (now renumbered INT/81/047) to develop a national program of low-cost, on-site sanitation. Major funding was also provided by UNDP through IND/81/014. The World Bank, through its Technology Advisory Group (TAG) was chosen to be the executing agency for the provision of technical assistance to prepare feasibility studies for and construct demonstration latrines in small and medium-sized towns (under 100,000 population) throughout India. Since the inception of TAG-assisted activities, feasibility studies have been executed for over 200 towns in 21 states and union territories, and over 60,000 latrines have been built.

1.02 A complete description of the India urban on-site sanitation programs is provided in **Manual on the Design, Construction, and Maintenance of Low-cost Pour-flush Waterseal Latrines in India.** [1]/

Purpose of this Manual

1.03 In early 1983, after four years of project experience, TAG decided to evaluate the progress of the urban programs it had helped to inaugurate. Such an evaluation, it was thought, would help identify potential problem areas, and the results would form the basis for a monitoring system which would review program operations on an on-going basis.

1.04 In January 1983 the author of this document went to India to discuss the urban program with national, state and local officials, TAG India staff, and members of local communities, in an attempt to determine - on a preliminary basis - what were the outstanding difficulties and problems facing the program.

1.05 Based on this preliminary assessment, the author designed a detailed evaluation which would look into these problems and difficulties in depth. This manual is the working document for that evaluation and for the establishment of a monitoring system based on it.

1.06 Financing for the execution of the evaluation is currently being sought.

Application of this Manual

1.07 Application of the principles and methodology of the evaluation is expected in other countries of South Asia--most notably Bangladesh and Nepal --countries in which low-cost sanitation programs are underway and which employ the same basic technical design and implementation plan as that used in India.

1/ A.K. Roy et al., TAG Technical Note No. 10, 1984, World Bank.

1.08 Furthermore, it is thought that this manual can have wide-spread application outside the region as well, for its analytical approach--looking at the financial, administrative, and management aspects of program implementation; the socio-economic and cultural constraints of individuals within the target population; and the quality of design and construction of the latrine itself--should apply to all low-cost sanitation programs regardless of technical option, region, or country.

1.09 Owing much to the basic design of the Minimum Evaluation Procedure (MEP) of the World Health Organization (WHO), the evaluation is an attempt to assess the determining factors related to problems as well as to the identification of those problems and their implications. As such it should provide a useful methodological complement to the MEP.

1.10 The Manual should also be read as a companion piece to the recently published TAG Technical Note No. 11 entitled **Monitoring and Evaluation of Communication Support Activities in low-cost Sanitation Projects.** 2/ The two documents read together provide a comprehensive analytical approach to assessing the many elements of low-cost sanitation programs.

ORGANIZATION OF THE MANUAL

1.11 Following a discussion of preliminary findings in the implementation of urban pour-flush latrine programs in India, this manual presents in summary form, the conceptual framework for and basic components of the evaluation (Section II), and proposed monitoring system (Section III). A full description of all procedures suggested for implementation of both evaluation and monitoring, including questionnaires, procedural notes, design of analytical framework, etc., will be found in Annexes I-VI.

PRELIMINARY FINDINGS IN INDIA

1.12 The India urban programs are, for the most part, implemented by municipalities. Funds for the conversion of existing "dry" latrines (either bucket privy or simple defecation areas) and for the construction of new latrines, come from the state governments, both in the form of loans and grants. Construction is done by small contractors paid and supervised by the municipalities. The loan portion of state funds is partially recovered from individual households who enter into liberal credit terms with municipalities.

1.13 The latrine in most common use throughout India is the pour-flush latrine, and specifications have been established for 5-, 10-, and 15-user units.

1.14 There is also a small community latrine program in urban India in which public latrines are constructed in convenient, accessible locations.

1.15 Following are the major problems and constraints which appear to affect program operations and which will be studied in the course of the proposed evaluation:

2/ TAG/TN/11. Heli E. Perrett, 1984, World Bank.

INDIVIDUAL LATRINES

Financial constraints

1.16 **Lack of State funds:** Although certain states, such as Uttar Pradesh have made funds available to municipalities for project implementation, and have taken steps to ensure additional financing from non-State sources (e.g., the Housing and Urban Development Corporation [HUDCO]) and the Life Insurance Corporation of India), many others have not. Thus, municipalities, many of which are operating under strict budgetary constraints, are often unable to generate the resources necessary to mount project activities in complete accordance with TAG guidelines. As a result, given limited financing for individual families, low or non-existent allocations for promotion, publicity, and administration, few households have been able to benefit from the scheme.

Operational problems

1.17 Municipalities which have received State funds (or Government of India [GOI] funds from the "scavenger-free" program) have encountered certain operational problems which have slowed both dry-latrine conversion and new latrine construction:

(a) **Unit cost:** The estimated local cost of latrines and/or the price paid to contractors to install them may be frequently underestimated, thus leading to: (i) a lack of interest on the part of large contractors, used to relatively high rates of return and economies of scale related to large construction jobs; and (ii) slow rates of installation on the part of small contractors who, although content with lower rates of return, are reluctant to give up other contracts and devote full time to latrine construction.

(b) **Promotion/Publicity:** Informational efforts required to present the basic elements of the scheme--technical, financial, and practical--have been lacking on the part of: (i) municipalities which have not allocated more than minimal resources to this activity; (ii) contractors who, feeling limited by the above-mentioned rates of return and often inadequately and insufficiently trained in social and economic aspects of the scheme, have done little promotion on their own initiative.

(c) **Lack of local-level planning and management:** Few people have been hired or designated to oversee implementation of the scheme; little comprehensive planning, targetting, management and administrative supervision have been done.

Socio-economic constraints are:

(d) **Cost:** Although previous investigations have suggested a willingness on the part of those persons interviewed to spend one

or two percent of monthly income on debt-servicing of latrine loans, no data are available concerning actual performance--that is, whether all income groups are equally able and willing to spend that amount, given equal levels of knowledge and understanding and favorable attitudes towards pour-flush (PF) latrines.

(e) **Socio-cultural variables:** Although individual families might have the financial resources to install a PF latrine, they might not be disposed to do so given traditional beliefs and practices about open-air defecation and easy access to such open spaces, and measures of resistance concerning location of leaching pits within household premises.

COMMUNITY LATRINES

1.18 The following problems associated with Community Latrines (CLs) built outside the Project (e.g., by the Sulabh Sauchalaya Sansthan) are likely to affect Project latrines once they are built (few CLs have been constructed at present):

(a) lack of twenty-four hour water supply;

(b) lack of adequate lighting; and

(c) lack of proper maintenance.

1.19 The absence of State and other institutional funds has been a major contributing factor to slow progress in CL construction, but the unit cost factors thought to inhibit individual latrine construction may not apply to CL construction, since that construction should involve larger economies of scale and hence greater rates of return for contractors.

1.20 Cost-to-consumer factors have been found to inhibit CL use, particularly in the case of CLs built for community (as opposed to transient) use. Few community residents have been willing to pay for CL use.

II. EVALUATION

2.01 An evaluation designed to determine the nature and extent of operational problems and socio-economic constraints affecting municipalities which have secured funding will provide information useful for both the current program and its likely extension into other towns and states.

2.02 The evaluation will comprise the following components:

(a) **Financial/Administrative Survey,** designed to focus primarily on the question of unit cost and its relation to contractor performance; and secondarily on questions of project management and administration and use of funds designated for this management and administration.

(b) **Socio-Economic (Household) Survey,** executed at municipal level through household surveys, to determine: (a) ability of individual families to pay for PF latrines; (b) extent to which families without PF latrines know about and understand the scheme; (c) particular hesitations and resistances of families to adoption of the scheme; (d) the way in which existing PF owners utilize and operate their unit; and (e) user assessment of design, construction, and performance of the latrines.

(c) **Technical Survey,** designed to assess quality of construction of individual units and the degree to which they meet design specifications.

(d) **Community Latrine Survey,** which will study the following:

(i) design and construction; functioning;

(ii) maintenance;

(iii) operations (lighting, water, security, etc.);

(iv) cost and administration (unit costs, service and maintenance contracts, operating costs, etc.);

(v) utilization (type of user, time of use, number of users, etc.).

2.03 The first three components--all dealing with individual latrine conversion and construction--are interrelated. The Household Survey, for example, will provide data on the degree of awareness and understanding of PF latrines, and the source or sources that provide information important for that increase in awareness and/or understanding. As a result, these data should indicate both quality and extent of municipal promotion and publicity efforts.

2.04 Household Survey data on functioning of individual latrines can be associated with Technical Survey data in order to permit a clearer understanding of relationship between unit design, quality of construction, correct use, and type and extent of utilization.

2.05 Data from the Financial/Administrative Survey may be relevant for an understanding of construction defects identified in the Technical Survey; low unit costs may contribute to unauthorized cost-cutting by contractors, resulting in structural defects.

2.06 The evaluation will be further characterized by the following:

(a) Only municipalities with State, GOI, or other institutional funding will be studied--i.e., those municipalities able in principle to execute the Project according to project guidelines (concerning, for example, promotion and publicity, technical supervision, project planning and targetting, and management and administration).

(b) Only those municipalities having implemented project activities for at least six months at the time of evaluation will be studied. This time criterion will ensure that the evaluation is measuring truly inherent project problems, and not simply those start-up problems which affect even the best of programs.

2.07 The selection of these criteria can be justified as follows:

(a) Project guidelines apply to all states--that is, the suggested technical design, operational procedures, and financing plan (i.e., recommended consumer cost limits) were designed to be applicable throughout India.

(b) Those States and municipalities with adequate financing should have been able to execute the project according to project guidelines and can be evaluated on the basis of performance relative to them.

(c) The project guidelines are not expected to change dramatically--that is, any municipality provided with adequate funds (either its own, from the State, or from GOI) will be expected to perform according to project guidelines.

(d) An analysis of those towns which have had adequate funding, and have been in operation for at least six months (enough time to have been able to work out any start-up difficulties) should be a fair test of the project guidelines and the ability of municipalities to implement them.

2.08 Details of implementation of the evaluation are included in Annex IV.

2.09 Details of the estimated cost of evaluation are included in Annex V.

FINANCIAL/ADMINISTRATIVE SURVEY 3/

2.10 The objective of the Financial/Administrative Survey is to assess operational aspects of the Project with particular emphasis on the relationship of unit cost to contractor performance; and on the relationship between project administration and management and performance. As such, the survey should include the following components:

Unit cost

2.11 The questions of this section are designed to determine the way municipalities establish official rates for each category of latrine to be built (i.e., 5-, 10-, and 15-user latrines). Establishment of such rates is important because: (a) no targets can be set without calculations considering both available resources and estimated costs per unit; (b) contractor tenders cannot be realistically assessed without comparison to prior, officially-assessed (by the municipality, Public Works Department [PWD], and TAG) estimates; (c) only with carefully calculated rates can individual municipalities assess the realistic nature of those rates, given other public works and contractor interest.

2.12 It appears unlikely that most municipalities will have established their rates with the care and precision deemed necessary, particularly taking into account local variations in cost. Many will have simply taken TAG rates in the feasibility report; others may have added physical contingencies. It must be determined, as precisely as possible, how official rates have been established; and, as importantly, what such rates would be even if they have not been calculated.

2.13 The question of the utilization of physical contingencies is important to help determine whether or not municipalities are using all the resources at their disposal to set realistic costs. Firstly, it will be important to determine whether or not municipalities have received instructions from the State concerning establishment of latrine construction rates, and whether the application of physical contingencies is included in these instructions. It is possible, for example, that a state simply transfers a given amount of rupees to a municipality for latrine construction, without specifying how that money is to be spent--that is, without indicating suggested rates, breakdown of costs, etc. Although a municipality may be aware of the provisions made in TAG state feasibility reports for physical contingencies, it may not have received official authorization to add such contingencies to its costs.

2.14 Secondly, it will be important to determine how physical contingency rates are set by municipalities if, in fact, they do apply them. TAG suggests a range of 10-20% depending on various conditions, but it can be assumed that many municipalities simply add a certain percentage without a justifiable rationale.

3/ See Annex I for questionnaires, and notes on methodology and implementation.

Contracting

2.15 (a) It has been hypothesized that:

(i) If contracted rates are below estimated actual rates, overall performance for conversions and new construction will be poor.

(ii) Even if contracted rates adequately reflect actual costs, because of small economies of scale and hence reduced profits (PWD profit margins have been based on larger jobs), economic incentives may be insufficient for all but the smallest contractors, and they, although completing the work, may not do so within stipulated time periods.

(iii) Unless contractors are paid regularly and on time, regardless of the contracted amount, their performance will be slack.

(b) Questions in this section, therefore, are designed to determine:

(i) whether or not the amount agreed upon and paid to contractors reflects actual costs of latrine conversion or new construction (including PWD-established profit margins); or is below cost; and

(ii) whether contractors are paid according to their contract and on time.

Financial Considerations

2.16 The objective of this section of the Financial/Administrative survey is to assess municipal project performance. The best way to do this is to compare the total amount available for latrine construction with the total amount actually used. Since it is assumed that few municipalities will have actually set fixed latrine construction targets by category (e.g., 5-user, new, outside-the-premises; 10-user, converted, outside-the-premises, in the roadway, etc.); and since averaging costs is risky as the expected distribution of latrine construction cannot be determined (e.g., the proportion of conversions to total construction, etc.), a comparison of money received and money spent will be an adequate indicator of overall performance.

2.17 Information on actual numbers of individual latrines built per month will be useful in determining approximately how much was spent on each category of latrine per month; to give some idea of the total number of latrines that can be expected to be built by a certain month; and to determine if there are any seasonal factors related to latrine construction. In addition, such information may be useful in determining whether contractors favor building larger latrines (i.e., 10-, 15-user) for which they might expect better economies of scale and higher rates of return.

2.18 The allocation of engineering cost funds is considered important for project success, since these funds are to be used for personnel, promotion and publicity, and for technical supervision. It will be important, therefore, to determine:

(a) the amount of funds available for engineering costs for the previous Fiscal Year;

(b) whether this amount reflects the approximately 9 percent of total construction costs estimated by TAG;

(c) what these funds have been used for;

(d) whether they have been spent judiciously--that is, according to a predetermined and planned budget; and

(e) what, on the basis of this experience, would be an adequate allowance for engineering costs as a percentage of construction costs.

Administrative Considerations

2.19 The objective of this section is to provide information on the number of applications received relative to latrine construction. If, for example, there are far more applications pending than the average monthly performance in terms of construction, this may be an indication that either administrative procedures are inefficient or that contractor incentive is lacking, or both. Information collected concerning length of time applications are pending will help to identify the problem more carefully.

2.20 Additional information concerning municipal personnel attached to the project, their responsibilities and actual performance will help to assess the impact of these personnel on project performance.

Promotion/Publicity

2.21 Although the major evaluation of promotional efforts will be made through a survey of households and an investigation into the depth and breadth of their awareness and understanding about PF latrines and the municipal latrine program, only through assessment of actual municipal activities can one determine why individual families are not receiving adequate information.

SOCIO-ECONOMIC (HOUSEHOLD) SURVEY [4]/

Objectives

2.22 In order for a family to agree to install a PF latrine, it must:

(a) know about PF latrines and about municipal programs available to provide financial and technical assistance;

(b) be convinced that the PF system is a better one than the sanitation used at present; and

(c) feel that the cost of installation of a PF system is within the family's existing budget limits.

4/ See Annex II for questionnaires, and notes on methodology and implementation.

2.23 The Socio-economic survey, therefore, is designed to determine that:

(a) municipal promotion/publicity/information programs have been effective in their attempts to inform and educate town residents about PF latrines;

(b) prevailing attitudes towards traditional defecation methods are changing among most socio-economic segments of the population.

(c) latrine costs are reasonable enough to assure widespread adoption among most socio-economic segments of the population.

2.24 The Socio-economic survey is also designed to determine, among families who have adopted PF latrines, whether or not:

(a) units are being used and are functioning properly;

(b) their utilization rate is high.

Methodology

2.25 To accomplish these objectives, the survey is broken down into three parts:

(a) survey of PF users;

(b) survey of users of dry-latrines;

(c) survey of households with no sanitary facilities.

2.26 All three groups will be further broken down into three income categories. Answers to all questions will be analyzed according to these three major groupings.

2.27 With this methodology answers to the following types of questions will be provided:

(a) Can only higher socio-economic groups of the population afford PF latrines?

(b) How important are other socio-economic variables not subject to change through project interventions (i.e., education, caste, family size) in the adoption process?

(c) Can households with no sanitary facilities--usually the poorest families of the community--afford the construction of a new PF latrine, which is more expensive than a conversion?

TECHNICAL SURVEY 5/

2.28 The Technical Survey of PF latrine installations should provide information concerning, among other things:

5/ See Annex III for details.

(a) the degree to which they have been built according to specifications, given soil conditions, depth of water table, space considerations concerning location of leaching pits, and location of pits relative to household premises (inside, outside);

(b) the degree to which design has been appropriate for actual use and utilization;

(c) the quality of materials used in construction;

(d) the quality of the workmanship involved in construction.

2.29 Such information, related to information obtained in both the Financial/Administrative and Household Surveys, should permit correlations between:

(a) unit cost and contractor performance;

(b) municipal information efforts, actual latrine use, and proper functioning of unit.

2.30 The Technical Survey, then, must have the following components:

(a) an inspection of above-ground latrine work, such as installation of pan, functioning of waterseal (smell, choking, etc.);

(b) an inspection of leaching pits, either under construction or opened for inspection; inspection of switching boxes;

(c) an inspection of centrally-produced materials, particularly pit covers;

(d) a review of all hydrological data pertaining to water tables, and a correlation of those data with individual pit construction data (diameter of pit; depth of pit, etc.);

(e) surface measurement of: (i) distance of one pit from the other; (ii) distance of pits from latrine under varying conditions (inside premises, outside premises).

2.31 Particular attention should be paid to:

(a) water table levels;

(b) spacing of honeycombing, relative to soil type;

(c) separation of pits (distance between pits);

(d) proper construction of upper four courses of leach pit brickwork (solid construction, not honeycomb);

(e) quality of construction of concrete covers (with emphasis on composition of materials and placement and positioning of reinforcing rods);

(f) sludge accumulation rate.

2.32 A complete Technical Survey list will have to be drawn up by TAG engineers.

COMMUNITY LATRINE SURVEY 6/

2.33 An evaluation of community latrines (CLs) should have the following components:

(a) Financial/Administrative Survey--designed to determine:

(i) whether or not funds have been allocated for CLs;

(ii) at what rate they have been built (if at all);

(iii) unit cost for CLs;

(iv) price paid to contractors;

(v) type of maintenance contract in effect (if any);

(vi) user fees (if any).

(b) Technical Survey--designed to determine:

(i) quality of construction and conformity to design;

(ii) adequacy of functioning; (with particular emphasis on the ability of the leach pits to handle the higher loading rate);

(e) quality of construction of concrete covers (with emphasis on composition of materials and placement and positioning of reinforcing rods);

(f) sludge accumulation rate.

(iii) adequacy of ancillary facilities such as: lighting, water, maintenance, upkeep, security, etc.;

(iv) appropriate location (as regards convenience, security).

(c) Observation Survey--designed to determine:

(i) type of user (sex, age);

6/ See Annex III for details.

(ii) number of users;

(iii) time of use.

2.34 The above surveys will give sufficient information to evaluate the CL program. Although exit surveys are possible to collect information on opinions of individual users concerning the facility, they are not highly reliable and will produce little in the way of useful information. This contention is based largely on experience with CLs in other projects which has indicated that latrines will be used if they: (a) are well-lighted, have adequate water, and are well maintained; (b) are conveniently located; and (c) are nominally priced for transient users and free for residents. All of these factors can be determined from the proposed three surveys alone.

2.35 Other factors which have been mentioned and can be studied via the above surveys are:

(a) separate stalls for men and women;

(b) partitions between stalls (half-partitions may be preferable to facilitate conversation among community residents).

III. MONITORING

OBJECTIVES AND GENERAL DESCRIPTION

3.01 A Monitoring System, based on the results of the evaluation and on its investigative methodology and set up at municipal, state, and national levels, will be important to:

(a) identify key problems which may be hindering project progress; and

(b) measure overall project performance.

3.02 A Monitoring System designed to do the above should enable:

(a) collection of information on construction performance and spending;

(b) analysis of that information to indicate which states and municipalities face difficulties;

(c) field-level analysis to identify particular problems and assess their magnitude; and

(d) provision of technical assistance to facilitate the resolution of these problems.

3.03 It is recommended, therefore, that the following system be adopted:

(a) **Municipal Monitoring System** in which local officials keep simple, but ordered, daily, monthly, and yearly financial and administrative records concerning project activities.

(b) **State Monitoring System** in which data collected from municipal records are tabulated and analyzed; and in which State-level personnel make periodic but frequent supervisory visits to municipalities.

(c) **National Monitoring System** in which State records are collected and tabulated to provide useful information on national and foreign investment for future Project activities.

3.04 Thus, under this system, the municipalities are largely responsible for the maintenance of accurate current records; the States for supervision and technical assistance; and the Center for overall project surveillance and national planning.

3.05 Such a system, to be effective, must:

(a) use simplified record systems, especially at municipal level;

(b) provide adequate financing to ensure regular field visits by state personnel;

(c) select State-level personnel as much for their experience in management and administration as for their technical (engineering) background.

3.06 Such a Monitoring System will have a number of constraints:

(a) **Finances:** most states will have few resources to allocate to monitoring activities.

(b) **Strategy:** although most States have accepted some kind of monitoring system for Public Works activities, these may have been restricted to simple progress review, and may not have included a more active problem analysis and problem resolution component.

(c) **Priorities:** few municipalities may be willing to spend money--even state- or GOI-allocated funds (engineering cost funds)--for administrative tasks imposed from outside.

(d) **TAG assistance:** now that IND/81/014 has terminated (1984), fewer TAG technical resources will be available to explain the proposed system and to help in its establishment.

(e) **GOI participation:** the GOI, involved in only a small way in a basically State-sponsored project, cannot be expected to provide active support and technical assistance to individual States, although certain mechanisms do exist at the Center to accommodate project monitoring needs.

(f) **State Project size:** most States--with the exception of Uttar Pradesh and, to a lesser extent, Maharashtra and Andhra Pradesh--have small State- or GOI-funded Project schemes. These State governments, therefore, would not be interested in monitoring systems until they have secured additional financing to ensure a larger State program.

3.07 It is recommended, therefore, that the following steps be taken:

(a) That the States selected in the evaluation be also selected as priority States for monitoring and that TAG attempt to establish a Monitoring System in them. The designation of these States as priority States is logical, given the fact that the activities in State project monitoring will be based on the results of the evaluation.

(b) That GOI, Ministry of Public Works and Housing, nominates one of its Assistant Public Health Environmental Engineering (PHEE) Advisers to oversee the promotion and establishment of a monitoring system in these three States.

(c) That any new towns receiving state funding in these States be instructed (via TAG and the Directors of Local Bodies of the states) to keep project records according to the forms suggested in this manual.

IMPLEMENTATION

Municipal Level

3.08 It is expected that all municipal level monitoring will be done by project officials. A full-time person in charge should be designated for the scheme and paid for out of engineering charges allowable to the municipality from State funds. This person, assisted by a clerk, should be able to undertake the responsibility for completing these forms and acting on the information provided without additional personnel deputations.

State Level

3.09 As has been suggested above, the major responsibility of the State monitoring staff should be regular visits to all project towns of the State. Specifically, State staff while on town visits should do the following:

(a) Collect information about financial position, expenditures, and monthly performance.

(b) Review and study all forms completed by the municipality, indicate existing or potential problem areas, and make recommendations and suggestions concerning program improvement.

(c) Visit: (i) latrines under construction; (ii) households in which a PF latrine has been installed; (iii) households with dry latrines and households with no latrines. The purpose of these visits is the same as that for the Household Survey and Technical Survey of the above-detailed evaluation: to determine whether latrine construction is proceeding according to technical specifications; to determine whether installed latrines are functioning properly; and to find out whether or not those families targetted for PF installation have indeed been approached by the municipality or have received project information.

(d) Keep an official record of each town visit, indicating problems observed, progress seen, additional visits required by what technical or administrative personnel, etc.

3.10 A secondary responsibility of State monitoring staff will be the synthesis of town-wise information to enable eventual correlation of project variables with project performance. Most of this information collected will be forwarded to Delhi, where it will be tabulated on a national basis.

National Level

3.11 The office of the PHEE Adviser, Ministry of Works and Housing, will be responsible for national monitoring, and one of the Assistant PHEE Advisers should be designated as National Project Monitor.

3.12 The overall responsibility of this monitor should be close surveillance of project progress in order to interest and attract possible GOI and foreign investment in the scheme.

3.13 It is envisaged that project supervision and technical assistance be done at the state level, and that national level personnel be concerned only with policy, planning, and strategy issues.

3.14 National monitoring staff, therefore, should:

(a) tabulate and analyze data coming from each state;

(b) prepare yearly progress reports/financial statements indicating degree of progress against established targets and types of investment required in particular states;

(c) make any detailed analysis of State data (e.g., to explore correlations between performance and physical, socio-economic, and demographic variables) that time and resources permit.

Budget implications

3.15 Since it is assumed that municipal record-keeping will be funded by the States as part of engineering cost funds and national monitoring activities will be restricted and will be a part of existing staff responsibilities, and will require no travel, the primary expenses of a Monitoring System will be incurred at the State level, and will be:

(a) Personnel costs.

(b) Transport, per diem, etc.

3.16 As has been suggested above, it is expected that if a State has 15-20 active, funded muncipalities, and that number is growing yearly, the full-time services of one professional, trained in finance, management, and administration (with an engineering background preferred) and one administrative assistant will be required.

3.17 That professional can be expected to travel one week out of every month, or 72 days per year, covering each town 3-4 times per year.

3.18 The yearly costs to each State including two staff members, 72 days travel, plus office costs should not exceed Rs.85,000 per year. Capital costs for a vehicle should be considered.

Recommended record-keeping

3.19 Five basic prototype forms for municipal and State use are attached as Annex VI.

EVALUATION
FINANCIAL/ADMINISTRATION SURVEY
IMPLEMENTATION DETAIL

General

1. The objective of the financial/administrative survey is to collect information on operations and financial management of the Project. Given the expected difficulty in obtaining pertinent current and past records (due to administrative and management problems to be studied), the Financial/Administrative Survey should be executed in a more "subjective" way than the Household Survey. That is, whereas the latter can and should be administered according to a predetermined interview schedule, from which the interviewer should not depart, the former should be far less rigid, allowing the interviewer to pursue courses of questioning that may be evident only after the interview has begun.

2. In the Financial/Administrative Survey, means of obtaining information is far less important than the information itself.

3. Only a professional trained and experienced in public administration, management, and finance--able to study both written records and official recollections and make necessary inferences, extrapolations, and final assessments concerning the actual situation in a given muncipality--should be responsible for the execution of this Survey.

4. Such a professional can be expected to review a variety of documents concerning the implementation of the Project, and synthesize data observed in a way that will be consistent with the overall analytical framework set forth in this Manual.

5. The interview schedule, then, should be considered only as a methodological guide--an instrument which provides both a conceptual and analytical framework, but which need not be followed either in the manner in which the questions are phrased or in the order in which they are posed. In addition, it is expected that many more questions than the ones suggested here will be needed in order to obtain the information required.

Notes for Unit Cost Questions

6. Paragraph 11 (a) and (b). These questions, and accompanying Form C-1, are intended to get detailed information concerning the unit cost of both converted and newly constructed latrines, and, as importantly, to determine how municipalities arrive at unit costs on which tenders are to be based. Although some municipalities may go through careful procedures to ensure that unit costs accurately reflect local market conditions (for materials and labor), others may rely on PWD District estimates which, as averages, may not take into consideration certain anomalies in pricing structures, labor costs, etc., caused by demographic or other variables (e.g., proximity to a large town whose higher prices may influence smaller towns nearby). Still other municipalities may rely only on TAG estimates, which are the most general of all, but serve as valuable overall guidelines for correct cost determination.

7. Interviewers, therefore, must be careful to record unit costs developed by municipalities. They--the interviewers--should not derive their own figures or make independent calculations but should rely entirely on municipal estimates. Furthermore, it will be important for interviewers to record municipalities' justification and rationale for setting costs either higher or lower than PWD rates.

8. Form C-1 should be partially completed before the interviewer arrives in the municipality: all columns indicating 'TAG' and 'PWD' should be completed from existing documents and records.

9. Paragraph 11 (c) and (d). Scrutiny of ways in which municipalities adjust base costs for physical contingencies will also be important, for such adjustment will be often necessary to align unit costs with local demand. Information concerning physical contingency costs should be related to information collected for questions #6 and #7, above, with particular regard to ways in which municipalities adjust their unit costs above or below suggested TAG and PWD rates.

10. In various places in the questionnaires information is requested related to particular fiscal years (shown as FY**). The person completing the form should specify the actual year for which the data is recorded and should also show the date on which the fiscal years begins (if other than April 1).

FORM C-1: COST COMPARISONS FOR INDIVIDUAL LATRINES, BUILT WITHIN THE PREMISES (IN RUPEES)

	5-user						10-user						15-user					
	CONVERTED			NEW CONSTRUCTION			CONVERTED			NEW CONSTRUCTION			CONVERTED			NEW CONSTRUCTION		
	TAG	PWD	MUN.	TAG	PWD	MUN.	TAG	PWD	MUN.	TAG	PWD	MUN.	TAG	PWD	MUN.	TAG	PWD	MUN.
I. Materials																		
-Pan trap																		
-Pipe																		
-Cement																		
-Bricks																		
-etc.																		
-etc.																		
SUBTOTAL I																		
II. LABOR																		
-																		
-																		
SUBTOTAL II																		
III. TOTAL																		

Unit cost questions

11. (a) What is the estimated cost of a 5-, 10-, and 15-user individual latrine:

(i) converted from a dry latrine; and

(ii) newly built;

both constructed within the premises? (Complete Form C-1)

(b) How were these rates established?

(i) Based on TAG Feasibility Report (19** prices) _____

_____

(ii) Based on TAG Feasibility Report adjusted to current prices

_____ (19** + appropriate price contingencies)

(iii) PWD District rates _____

(iv) Based on combination of TAG estimates (either [i] or [ii] above) and prevailing PWD district rates _____

(v) Other _____ Explain _____

_____

(c) Are physical contingency costs included in the above rates?

Yes ____ No ____

(d) If not, are they added at another time? Yes ____ No ____

If yes, when and how? Explain _____

_____

Notes for Contracting Questions

12. Paragraph 19. (a) and (b). It is assumed that more than one Request for Tenders is issued in the course of one fiscal year per municipality. Therefore, information should be collected for each Tender Request: that is, an indication of date, type of work to be done, number of latrines to be built, etc.

13. Details should be obtained from the tender notices themselves, for they are in principle to include all items on which bids are to be based and the total estimated cost of all work.

14. Sub-questions (ix) and (x) of Question (b) (para. 19) refer to the municipality's final decision on contractors who have bid: in some instances only the contractor with the lowest bid will have been chosen; in others, negotiations will have been held with contractors other than the lowest bidder in an attempt to get a number of contractors to work at the lowest cost. Information concerning this final negotiation and contracting process will be helpful in determining how municipalities, through negotiation, either raise or lower the price paid to contractors.

15. Paragraph 19. (c). It has been hypothesized that smaller contractors are more willing to work on latrine construction because they are not used to the higher margins of profit, based on large economies of scale, realized by larger contractors. Amounts of Rs.50,000, Rs.50-100,000 and over Rs. 100,000 indicated here are only suggestions. A final categorization will have to be made by TAG based on a review of local small- and medium-scale industry.

16. Paragraph 19. (d). It is assumed that most contractors will be given contracts indicating a specific number of latrines to be built, at a given cost, over a specific length of time. However, it is also possible that contractors are given open-ended contracts. That is, that they may build as many latrines as they want, and will be paid for work completed. Finally, there may be agreements which combine the two--where contractors may do as much work as they want, but must complete a certain minimum within a given length of time.

17. It will be important to standardize information collected from these varied contractual agreements in order to be able to compare performance, and therefore average per month construction figures are useful. If no time periods are stipulated, the interviewer should simply indicate the actual number of latrines built since contract signing, and the average number built per month.

18. Paragraph 19. (e) and (f). Information concerning payments to contractors should be categorized according to length of delay in payments. An arbitrary division of "less than one month," "one to four months," and "four months plus" has been given, but should be changed if felt appropriate, given standard delay times in small towns in India.

Contracting Questions

19. (a) Were tenders invited for FY**? Yes ____ No ____

(b) For each tender notice, list separately:

(i) Date tender notice published _____

(ii) Tender item:

a. new construction _____

b. conversions _____

c. 5-user _____

d. 10-user _____

e. 15-user _____

(iii) Number of latrines specified in tender (if any) _____

(iv) Total estimated cost published in tender notice _____

(v) Unit cost _____ (based on published total cost divided by number of units requested).

(vi) Items included in tender notice (i.e., labor and materials) to be provided by contractors:

a. bricks

b. mortar

c. etc.

d. labor

(vii) Number of contractors who bid _____

(viii) Amount of bids:

_____

_____

_____

etc.

(ix) What was the accepted bid? _____

(x) What was the final negotiated amount (if different from [ix])? _____. Per unit amount _____

(xi) Was this rate above ____ below ____, or equal to ____ the estimated municipal rate indicated on Form C-1?

(c) What is the estimated yearly volume of business (latrine and other) done by each contractor contracted by the municipality:

Contractor	Under 50,000	(in Rs.) 50-100,000	100,000+
1.			
2.			
3.			
etc.			

(d) What were the terms of the contracts given out in terms of number of latrines to be built, the time period during which they were to be built, and the performance of each contractor?

1	2	3	4	5	6
Contractor (Name)	Number of latrines to be built under contract	Time period of work (in months)	Average number of latrines to be built per month	Actual number of latrines built per month	% 5 of 4
1.					
2.					
3.					
4.					
5.					
Etc.					

(e) How are contractors paid?

(i) at termination of contract _____

(ii) after a certain percentage of latrines have been built or converted _____

(iii) upon presentation of individual bills _____

(iv) other _____

(f) How quickly are they paid?

Contractor (Name)	Paid		
	less than one month after (e) (i), (ii) or (iii)	one to four months after (e) (i), (ii) or (iii)	four months plus
1. _____			
2. _____			
3. _____			
4. _____			
Etc.			

Notes for Financial Questions

20. Paragraph 27. (a) through (d). This series of questions intends to determine the total amount of money available to a given municipality for FY**/** for individual latrines only. Care must be taken to ensure that funds allocated for Community Latrines and Engineering Costs are not included.

21. Paragraph 27. (f) through (i). Adequate records may not be available concerning the allocation and disposition of Engineering Cost funds. However, the interviewer is expected to pursue the questions, attempting, through use of municipal records, to determine how such funds have been spent.

Financial Questions

22. (a) Total amount available for FY**/** for individual latrine construction and conversion, excluding engineering costs _____

(b) Was this money available at the start of the Fiscal Year?
Yes _____ No _____

If not, when _____.

(c) Monthly spending target for individual latrines (para. [a] above divided by 12) _____.

(d) Expenditure record:

April (Year)	_____	October	_____
May	_____	November	_____
June	_____	December	_____
July	_____	January (Year)	_____
August	_____	February	_____
September	_____	March	_____

(e) How many individual latrines were built per month?
(Complete Form C-2)

(f) How much money for engineering costs was given to the municipality by the State for use in FY**/**? _____

(g) What percentage of your total latrine construction budget does this represent? _____

(h) How was it allocated?

(i) personnel costs: Rs. _____

(ii) promotion/publicity: Rs. _____

(iii) general use (i.e., all project funds consolidated)

_____

(iv) other _____ Explain _____

_____

(i) How was it spent? (In Rs./month)

April	_____	October	_____
May	_____	November	_____
June	_____	December	_____
July	_____	January	_____
August	_____	February	_____
September	_____	March	_____

Notes for Administrative Questions

23. It is recommended that the following procedure be followed to determine repayment rates: take a random sample of 25 individual latrine loan agreements and record:

(a) the number (percent) that has made no repayment;

(b) the number that has made some repayment;

(c) the average proportion of repayments made at date of review;

(d) the total number of installments made as a proportion of the total number to be made.

24. Questions concerning use of revenues generated by loan recovery are intended to determine whether:

(a) a specific prescription has been given by the state in terms of use and/or disposition of funds; whether or not municipalities understand and follow that prescription;

(b) whether yearly revenues from loan recovery are appreciable.

Administrative Questions

25. (a) How many applications are pending--that is, received by the municipality, but for which no construction has been done--on the day of visit by the interviewers? _____

(b) Of these, how many have been approved for a loan? _____

(c) What is the date of the longest pending application whose loan has been approved? _____ (date).

(d) Of those applications for which loans have been approved, but where construction has not begun, how many clearly indicate that a municipal official has approved the application and site-plan? _____

(e) Of these, how many are accompanied by a sketch, indicating site-plan? _____

(f) Of these, how many site-plan sketches include dimensions? _____

(g) Who is in charge of the day-to-day operations of the project?

(i) Name _____

(ii) Title _____

(iii) Salary (or salary grade) _____

(iv) Percentage of time allocated to Project work:

a. full-time _____

b. part-time _____

c. other _____

(v) Date assumed project responsibilities

(h) Has he ever been formally trained in project activities, implementation, administration? Yes_____ No_____. If yes, give details:_____

_____

_____

(i) Based on loan arrangements available in a given municipality (e.g., 2-year, 3-year, 5-year repayment schedules), how many loans are being repaid according to schedule?_____

(j) What is the total amount of money you have collected as repayment of latrine debt in FY**/**?_____

(k) How is this money used?

(i) returned to State _____

(ii) used for project expenses _____

(iii) other _____ Explain _____

_____

FORM C-1: COST COMPARISONS FOR INDIVIDUAL LATRINES, BUILT WITHIN THE PREMISES (IN RUPEES)

	5-user						10-user						15-user					
	CONVERTED			NEW CONSTRUCTION			CONVERTED			NEW CONSTRUCTION			CONVERTED			NEW CONSTRUCTION		
	TAG	PWD	MUN.	TAG	PWD	MUN.	TAG	PWD	MUN.	TAG	PWD	MUN.	TAG	PWD	MUN.	TAG	PWD	MUN.
I. Materials																		
-Pan trap																		
-Pipe																		
-Cement																		
-Bricks																		
-etc.																		
-etc.																		
SUBTOTAL I																		
II. LABOR																		
-																		
-																		
SUBTOTAL II																		
III. TOTAL																		

Notes for Promotion/Publicity Questions

26. Form C-3 requests detailed information on promotional materials that may have been developed by municipalities.

27. As for the Administrative Questions, see page 31, answers to questions concerning promotion and publicity must be based on documented evidence, and reference to the evidence made in the interviewer's report.

Promotion/Publicity Questions

28. (a) What are the promotion/publicity materials that have been produced by the municipality? (Complete Form C-3)

(b) Is any face-to-face publicity or promotion done (e.g., household visits, group discussions, etc.)? Yes_____ No_____

If yes, describe _____

_____

_____

_____

_____

FORM C-3: PROMOTION/PUBLICITY MATERIALS PREPARED FOR PROJECT, 1981-1983

MATERIALS	DATE PREPARED	NUMBER OF COPIES	NUMBER DISTRIBUTED	FREQUENCY OF DISTRIBUTION	ACCURACY (1-10)* OF CONTENT
Slides					
Handbills					
Newspaper Advertisements					
Etc.					
Etc.					

*1-2 Gross Errors)
3-5 Major Errors) to be assessed by interviewer, briefed/trained in project
6-8 Some Important Errors) components/elements.
8-10 Basically Correct)

Notes for Financial/Administrative Survey

Analytical Framework

29. As has been suggested above, the objective of the Financial/Administrative Survey is to determine which factors most contribute to poor program performance. It is likely that three major factors (discussed in detail above) related to Project operations (as opposed to socio-economic constraints on the target population) negatively affect progress:

(a) Low unit cost.

(b) Little promotion, publicity, and information.

(c) Little effective administration, management, and planning.

30. Progress can be defined as rates of PF installation relative to a fixed target, such as the total number of dry latrines in a municipality; and rates of spending allocated funds relative to monthly spending targets.

31. A municipality having 1000 dry latrines to convert at the beginning of FY**/** which has only built 25 has made less progress than another municipality having the same target number of dry latrines which has built 100.

32. Similarly, a municipality with an allocation of Rs.100,000 for FY**, of which only Rs.50,000 was spent at the end of that year, has made less progress than another municipality, with the same allocation, which has spent Rs.75,000.

33. Therefore, it is recommended that the total number of towns studied in the Financial/Administrative Survey be broken down into categories according to the two criteria for progress delineated above. For example:

Category I: Towns which have spent under 25% of their yearly allocation;

Category II: Towns which have spent between 25 and 50% of their yearly allocation;

Category III: Towns which have spent above 50% of their yearly allocation;

or

Category I: Towns whose latrines converted: target dry-latrines ratio is under .05;

Category II: Towns whose latrines converted: target dry latrines ratio is between .05 and .25;

Category III: Towns whose ratio is above .25.

34. It is important to note that the classification into categories will be based on actual distributions. That is, for example, if the range of spending were 50-100% of yearly allocations, or the rates of construction were at levels of .25 and above, then the categories should be revised accordingly.

35. Each of the above-mentioned negative factors influencing progress will have to be given certain objective values in order to permit acceptable statistical correlations. For example, "Low unit cost" will have to be defined--perhaps any cost under 90% of prevailing District PWD rates.

36. "Little promotion and publicity" will have to be determined largely from the results of the Socio-economic Survey (see Annex II). For example, towns of whose households only 10-25 percent are aware of a latrine conversion program can be considered to have done little promotion and publicity. Municipalities with rates of 50 percent or higher might be considered in a "good" promotion and publicity category. In addition, since the Socio-economic household survey will include many questions attempting to probe understanding and attitudes as well as simple awareness, "little" and "good" promotion and publicity categories can refer to levels of understanding, rather than awareness.

37. "Little effective administration..." can be quantified as follows:

Category I: Towns where no staff member (other than the chief executive officer or Chairman) has been designated to assume responsibility for the Project;

Category II: Towns in which a staff member has been designated, but works under 25 percent of his/her time on the Project;

Category III: Towns in which the designated employee devotes more than 25 percent time;

and/or

Category I: Towns whose average monthly pending number of latrine applications exceeds the average number of latrines built per month by 50-100 percent;

Category II: Towns whose average monthly pending applications exceeds construction by 25-30 percent;

Category III: Towns whose average pending applications exceeds construction by less than 25 percent.

38. A review of municipal budgets and analysis of engineering cost funds will help to quantify the first set of categories, on the previous page.

EVALUATION: SOCIO-ECONOMIC SURVEY

Socio-economic Survey

1. The socio-economic survey is divided into three parts: (a) a survey of households which have accepted and are using pour-flush latrines; (b) those households which use only dry latrines; and (c) those households with no sanitary facilities at all.[7]/

Pour-flush Latrine users

2. Commencing at paragraph 8, Section (a) is designed to collect information that will allow a categorization of all families into three socio-economic groups and will allow associations between certain socio-economic variables and PF adoption.

3. It is important to note that the final categorization into socio-economic groups should be made on Section (a) information and Section (e) information. That is, not only should income and expenditure data be used as criteria, but also electrification, water connections, type of house and neighborhood, etc.

4. In terms of the PF-user survey, Section (b), latrine usage, attempts to determine utilization of PF latrines by age and sex grouping. Form H-1 has been set up in such a way as to facilitate the probing of family members interviewed about exclusive latrine usage while at home. Although it is obvious that while family members are away from home they will use other sanitary facilities, it is important to determine whether the same members, while at home, use the PF latrine exclusively, or prefer to defecate or urinate in the open. A probing into the number of times the latrine is used per day, by user, can help to provide information which will be correlated with latrine functioning, and, by extension, latrine design, quality of

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7/ The Household Survey, as opposed to the Financial/Administrative Survey, will be of the classic or traditional type; that is, consisting of a questionnaire to be administered to individual family members by an interviewer who has been selected and trained specifically to conduct the survey.

The questions indicated here, however, must be reviewed carefully - both for technical accuracy, appropriateness, reliability, accuracy of translation into local languages, internal consistency, etc., by the selected research institution. Although the questions presented in this Manual are more than simply sample ones, they must be considered tentative until final review by the research institution. Furthermore, the organization of the questionnaire with particular regard to question sequence should be reviewed and modified if necessary.

construction, etc. An analysis of the reasons why family members choose not to use the PF latrine should help indicate whether a real felt need for the facility existed before installation, or whether, because of liberal financing and grant arrangements, families with some flexibility in disposable income simply chose to install the latrine for non-functional reasons (e.g., status). Information from Form H-2, reasons for not using latrine, can also help determine the need for health education, focusing perhaps on the social and community importance of reducing the incidence of open-air defecation.

5. Section (c) of the PF Survey, construction and performance, attempts to provide information concerning perceptions of PF users of the quality of construction and materials and the quality of performance of their facility.

6. Section (e) requires information about family income and expenditure, and can follow standard consumption survey formats, of which there are many in India.

7. In dry-latrine households (see para. 9) Section (b), type of dry latrine/attitudes towards dry and other latrines, is designed to probe attitudes toward present, non-PF sanitary systems used, and to judge awareness, knowledge and favorability of attitudes towards PF latrines. Section (b) questions should provide information not only on attitudes of the surveyed population, but the degree to which information about PF latrines has reached them.

8. The survey of households with no latrines is similar to that for households with dry latrines, and attempts to probe knowledge, attitudes and practices related to defecation and the use of sanitary facilities.

Household Survey Questionnaire: Pour-flush users

9. (a) General characteristics of household and neighborhood

(i) State _____
(ii) Town _____
(iii) Ward No. _____
(iv) House No. _____
(v) Name of head of household _____
(vi) Location of household:

a. Ground floor ____
b. First floor ____
c. Second floor ____

(vii) Ownership:

a. tenant _____
b. owner _____

(viii) If owner, municipal tax paid yearly: Rs. _____

(ix) If tenant, rent paid yearly: Rs. _____

(x) Number of members in the family:

a. Adult Male _____
b. Adult Female _____
c. Children _____
d. Total _____

(xi) Occupation of head of household:

a. Service _____
b. Business _____
c. Independent _____
d. Other (specify) _____

(xii) Religion:

a. Hindu _____
b. Muslim ____
c. Other (specify) _____

(xiii) Caste:

a. Name _____
b. Scheduled caste _____
c. Scheduled tribe _____
d. Non SC/ST or other caste _____

(xiv) Character of Neighborhood*

a. slum _____
b. lower class _____
c. middle class _____

(xv) Character of Neighborhood*

a. Congested _____
b. Non-congested _____

(xvi) Width of street (in metres) _____

(xvii) Character of house*

a. Pukka _____
b. Semi-Pukka _____
c. Kutcha _____

(xviii) Is it electrified? Yes ____ No _____

(xix) Domestic water supply:

a. well inside the house _____
b. handpump/electric pump _____
c. piped water supply _____
d. public standpipe _____
e. outside well/river/pond _____
f. other (specify) _____

(xx) Distance from water source (metres) _____

(xxi) Location of latrine:

a. inside room _____
b. in covered area or verandah _____
c. outside covered area but within premises _____
d. outside premises _____
e. other (specify) _____

(xxii) If latrine not located on ground floor, which floor? __

---

*Specific criteria for designating a neighborhood as "slum", or "congested", or a house "semi-pukka" will have to be established.

(xxiii) Location of pits:

a. inside room _____
b. inside covered area _____
c. outside covered area, but within premises _____
d. outside premises _____

i. under road/lane _____
ii. other (specify) _____

(b) Latrine Usage

(i) Who uses the latrine? (Complete Form H-1)

(ii) If any group indicated on Form H-1 does not use latrine exclusively while at home, why? (Complete Form H-2)

(c) Construction and Performance

(i) Satisfaction with construction and performance:

a. material used

i. good _____
ii. bad _____
iii. acceptable _____

b. quality of work

i. good _____
ii. bad _____
iii. acceptable _____

c. design and technology

i. satisfied _____
ii. not satisfied (explain) _____

_____

d. performance (flushing)

i. satisfactory _____
ii. unsatisfactory _____

FORM H-1: LATRINE UTILIZATION INFORMATION

USER: AGE/SEX	EXCLUSIVE AT HOME USE YES	EXCLUSIVE AT HOME USE NO	NUMBER OF TIMES USED PER DAY	DEFECATION ONLY	URINATION AND DEFECATION	IF NOT EXCLUSIVE HOME USE, WHERE DEFECATE
MALE 1-3						
4-5						
6-10						
11-15						
ADULT						
FEMALE 1-3						
4-5						
6-10						
11-15						
ADULT						

FORM H-2: REASONS FOR NOT USING LATRINE EXCLUSIVELY WHILE AT HOME, BY AGE/SEX GROUP

AGE/SEX	**REASONS FOR NOT USING**
MALE 1-3	
4-5	
6-10	
11-15	
ADULT	
FEMALE 1-3	
4-5	
6-10	
11-15	
ADULT	

(ii) Defects noticed:

a. emits bad smell _____
b. fixtures defective (specify) _____
c. fixtures not durable (specify) _____
d. pipe chokes too often _____

(iii) General assessment of facility

a. good _____
b. bad _____
c. acceptable _____

(iv) How much water do you use after each use (in litres) _____

(v) Do you use your additional water for the cleaning of the latrine?

Yes ____ No ____

(vi) If so, how much (in litres) _____

(vii) Do you use any detergents, soaps, or cleaners to clean your latrine? Yes ____ No ____ If so, which _____

(viii) Do you use latrine for waste water disposal (sullage)? Yes ____ No ____ If so, how much per day (in litres) ____

(ix) How many times a day do you pour waste water down the latrine? _____

(x) When you throw material other than human waste down the latrine, does it flush properly?

a. yes _____
b. no _____
c. never throw anything down ____

(xi) (For women only.) When you throw sanitary napkins or other feminine hygiene materials into latrine, does it flush well?

a. yes ____
b. no _____
c. never throw anything down ____

(xii) Is there anything you put in the latrine to help its functioning or to preserve its appearance? Yes ____ No ____

If yes, explain _____

(xiii) If someone in your family asked your advice about whether or not to build a PF latrine, what would you tell them are the most serious problems? _____

_____

(xiv) Who did the construction of your latrine?

a. private contractor _____
b. municipality _____
c. self _____
d. other (explain) _____

(xv) How long did the construction take, from first day worked until work completed, including all delays?

a. 1-2 days _____
b. 2-4 days _____
c. 5-10 days _____
d. 10+ days _____

(xvi) Did construction cause you any inconvenience?
Yes ____ No ____ Describe _____

_____

(xvii) Did a municipal official supervise the work done, if done by contractor? Yes ____ No ____

(xviii) Did a municipal official ever visit you before, during, or after actual construction work done? Yes ____ No _____

(xix) Did you discuss the site plan for the latrine with a municipal official before construction, either in your home or at the municipal office? Yes ____ No ____ If yes, where _____

(d) Cost/Financing

(i) What is the total cost of the latrine to you? Rs. _____

(ii) Did you deposit any money before construction?
Yes ____ No ____ If so, how much? Rs. _____

(iii) Are you currently receiving a loan from the municipality to help defray the cost of the latrine? Yes _____ No _____

(iv) What is your repayment schedule?

a. monthly _____
b. quarterly _____
c. other (explain) _____

(v) How much do you pay in each installment? Rs. _____

(vi) How much have you repaid? Rs. _____. Don't know _____

(e) Income/Expenditure

To be completed after review of pertinent Indian Household Consumption Survey and other social research formats.

(f) Filling the Pits

(i) How long were you told it would take, from the date of construction, for your first pit to fill completely?

a. less than 1 year _____
b. 1-2 years _____
c. 2-4 years _____
d. more than 4 years _____
e. not told _____

(ii) How can you tell when the pit is full?

a. latrine backs up _____
b. bad smell from latrine _____
c. latrine won't flush _____
d. other (explain) _____
e. don't know _____

(iii) Is your first pit full yet? Yes _____ No _____

(iv) If no: What will you do when your first pit is full?

a. get the municipality to clean it out _____
b. clean the pit yourself _____
switch to the second pit and begin to use it _____
other (explain) _____
e. don't know _____

(v) If yes: When your first pit was full, what did you do?

a. Did the municipality clean it out? _____
b. Did you clean the pit yourself? _____
c. Did you switch to the second pit and use it? _____
d. Did you follow any other procedure? Explain _____
_____

(vi) Once you have shifted to the second pit, how long should you wait before having the first pit cleaned?

a. don't wait; do immediately _____
b. 6 months - one year _____
c. 1 - 2 years _____
d. other (indicate) _____
e. don't know _____

(vii) Has the municipality told you that it will clean your pits?
Yes ____ No ____

(viii) If yes: do you think they will actually do it?
Yes ____ No ____

(ix) How much will they charge you? Rs. _____

(x) If the Municipality does not do the cleaning, how much do you think it will cost you to do the cleaning? Rs. _____

(g) Attitudes towards dry latrines

(i) Why did you convert from a dry latrine or construct a new PF latrine?

a. dissatisfied with scavenger service _____
b. scavenger service too expensive _____
c. convenience _____
d. health/hygiene reasons _____
e. dissatisfied with system (smell, flies, etc.) _____
f. lack of privacy _____

Dry Latrine Users

10. (a) General characteristics of household and neighborhood

This section requires the same information as Section (a) of the Household Survey for PF users. Questions #d(i)-(xx) of Section (a) of the PF user survey should be used for this section.

(b) Type of dry latrine/attitudes towards dry and other latrines

(i) What type of latrine do you have?

a. dry earth _____
b. receptacle (pail, bucket) _____
c. without receptacle _____
d. well type _____
e. other (indicate) _____

(ii) Location of latrine

a. within covered area _____
b. outside covered area _____
c. outside premises _____

(iii) Are you satisfied with your present latrine system?
Yes ____ No ____

(iv) If not, why not?

a. insanitary _____
b. offensive (smell, flies, etc.) _____
c. lack of privacy _____
d. expensive (i.e., scavenger costs) _____
e. poor service from scavenger _____
f. other (explain) _____

(v) If money were no object, what would you do to improve your present system? _____

_____

(vi) If money were no object, what system would you have, including a remodeled or improved dry latrine?

a. remodeled/improved present system _____
b. flush toilet _____
c. PF latrine _____
d. other (explain) _____
e. no opinion _____

(vii) Aside from money, state some reasons which might keep you from converting to another system:

a. inconvenience _____
b. don't trust other systems _____
c. other (explain) _____

(viii) Have you ever heard of a PF latrine? Yes_____ No_____
(If no, go to Question #xx)

(ix) Please describe what a PF latrine is _____

_____

a. correct_____
b. incorrect_____

(x) Where did you hear about the PF latrine? (Check only if response given--if answer is "do not know" or "do not remember" go to question (xi).

a. municipal officials/representatives _____
b. mass media _____

i. radio _____
ii. newspapers _____
iii. cinema slides _____
iv. handbills _____
v. other mass media (specify) _____

c. friends, family _____
d. other (specify) _____
e. don't remember _____

(xi) Probe each item of Question (x): that is, if in answer to question (x) response was "do not know" or "do not remember", ask the following:

a. did you hear of PF latrines from municipal officials/representive:
Yes ____ No _____

b. did you hear of them from the radio?
Yes ____ No _____

c. did you read about them in the newspaper?
Yes ____ No _____

d. did you see them from cinema slides?
Yes ____ No _____

e. did you read about them from hand bills?
Yes ____ No _____

f. did you hear from any other non-personal source?
Specify _____

g. did you hear about them from a family or friend? _____

h. did you hear from any other source? Specify _____

(xii) If you have heard about PF latrines, why haven't you installed one?

a. expense _____
b. disruption _____
c. happy with present sanitary arrangement _____
d. distrust municipal schemes _____
e. lack of space _____
f. difficulty in getting water for flushing _____
g. landlord not willing to carry out the work _____
h. as a tenant, I cannot do so even if I want to _____
i. PF latrine pits often collapse _____
j. the latrines choke too often _____
k. the fixtures are often defective _____
l. the fixtures are not durable _____
m. personal inconvenience _____
n. smell _____
o. cultural inhibitions _____
p. social habit _____
q. general apprehensive about PF _____
r. other (specify _____

(xiii) If main reason is expense, what do you think it would cost you?

a. Rs. 0-100 _____
b. 100-200 _____
c. 200-500 _____
d. 500-1000 _____
e. 1000 + _____
f. don't know _____

(xiv) How much would you be willing to pay, on a monthly basis for the PF latrine, assuming the total cost of the unit were subsidized through loan/grant provisions from the municipality?

a. Rs. 1-2 _____
b. 2-5 _____
c. 5-10 _____
d. 10 + _____

(xv) If you agreed to have a PF latrine built, where would you put the pits?

a. within the premises, in covered area _____
b. within the premises, but outside covered area _____
c. outside the premises _____

(xvi) If within the premises in covered area, would you object if the pits were put under:

a. verandah; Yes ___ (would object) No ___ (no objection)
b. kitchen; Yes ___ No ___
c. bedroom; Yes ___ No ___

(xvii) Will seepage from the pits cause pollution of your drinking water supply? Yes ____ No ____ Don't know ____

(xviii) Will seepage from pits damage the foundation of your house? Yes ____ No ____ Don't know ____

(xix) If you were to have a PF latrine built, whom would you prefer as a contractor?

a. yourself _____
b. municipality _____
c. hire private contractor _____
d. have municipality hire contractor _____
e. other (specify) _____

(xx) What is your estimated family average monthly income?

_____

(xxi) What are your estimated family monthly expenditures?

_____

No latrines

11. (a) General characteristics of household and neighborhood

Repeat Questions #(i)-(xiii) of Section (a) of the PF-user Household Survey (see para. 9).

(b) Place of defecation

(i) Where do you defecate when at home?

a. neighbor's latrine _____

b. common private latrine _____

c. public latrine _____

d. back yard _____

e. drains _____

f. road (street) sides _____

g. open space _____

h. other (specify) _____

(c) Attitudes toward dry and PF latrines

(i) Are you satisfied with your present sanitary arrangement?
Yes _____ No _____

(ii) If no, why not?

a. lack of privacy _____

b. health/hygiene _____

c. offensive (smell, flies, etc.) _____

d. inconvenient _____

i. too far to go to defecate _____

ii. problems in rains _____

iiii. other (specify) _____

(iii) Repeat Questions #(v)-(xx), Para 10: Section (b): Household Survey: Dry latrines.

Notes for Analytical framework

12. As discussed in the main body of this Manual, the Household Survey has been designed to determine:

(a) the effect of key socio-economic variables on PF adoption;

(b) the degree to which families are aware of and understand PF latrines;

(c) the degree to which those families with PF latrines use them correctly and utilize them fully.

13. The Household Survey sample will be broken down as follows:

(a) Three user groups

(i) PF users
(ii) Dry-latrine users
(iii) Families with no sanitary facilities.

(b) Three socio-economic groups

(i) High
(ii) Medium
(iii) Low.

This breakdown will be useful primarily for determining how PF latrine adopters are different (if, in fact, they are) from the populations from which they come (i.e., dry-latrine users and families with no sanitary facilities). It has been hypothesized that PF users are of a higher income group and correspondingly have higher rates of literacy, education, and social mobility than those populations from which they come - suggesting that municipalities may have to adjust the cost of the latrines to consumers through additional subsidies and redirect and intensify promotion/publicity/information efforts to compensate for the target population's lower socio-economic status.

14. On the other hand, it may be found that no significant difference occurs--that PF users are not better off either financially or socially than their peers, suggesting that the major intervening variables may be time and not money or education.

15. In either case the structure of the sample should permit this kind of analysis.

16. Such a breakdown will also be useful in enabling Project planners to understand the adoption process better. Did those families who finally adopted PF latrines have access to more or better information than their peers? Were they more active in their search for information than more passive peers?

EVALUATION: TECHNICAL AND COMMUNITY LATRINE SURVEYS

Community Latrine Questions

1. (a) Financial/Administrative

(i) Have any CLs been built in municipality? Yes ____ No ____

(ii) Dates of completion:

CL #1 _____
CL #2 _____

(iii) How many seats do they have?

	4	8	16
CL #1			
CL #2			

(iv) What was the cost of each latrine?

The cost of a CL determined by the municipality should include:

(a) amount paid to contractor for labor and materials; plus

(b) all materials furnished by municipality.

Monthly costs for water, electricity, etc., may have to be approximated.

Maintenance costs, if not done through contracts, may have to be estimated, although records should be available.

User fee information may not be readily available, although it is hoped that records are kept concerning total revenues.

CL #1 _____
CL #2 _____

(v) Is this amount above ___, below ___, or equal to ___ that calculated according to PWD District rates?

(vi) How much is paid monthly for:

a. water _____
b. electricity _____
c. upkeep (cleaning) _____

d. maintenance (repair) _____
e. security (chowkidar) _____
f. other _____

(vii) How is maintenance/upkeep work done?

a. contracted out _____
b. municipality hires sweeper, chowkidar, etc. _____

(viii) If contracted, what does contract include? _____

_____

(ix) If sweeper hired directly, how much time is he/she expected to put in per day? _____

(x) How much is charged per individual latrine use?

(xi) How is it collected? _____

(xii) What are your total monthly revenues from community latrines? _____

(xiii) Do you also hire a chowkidar? Yes ____ No ____ If yes, how much is he paid per month _____

(xiv) If there is no chowkidar, does this mean that the latrines are without any municipal or municipally-contracted personnel for the night? Yes ____ No ____. If no, explain:

_____

_____

(xv) If there is no attendant during the night hours, have you had any problems with theft, vandalism or unauthorized usage at any of your facilities?
Yes ____ No ____

2. (a) Technical Survey Schedule:

(i) Functioning:

a. clogging _____
b. smell _____
c. other _____

(ii) External construction (pan, trap, footrests, etc.); _____

(iii) Pit construction, functioning (sludge accumulation, ponding of effluent, etc.);

(iv) Maintenance:

a. lighting:

i. type _____
ii. working satisfactorily or not?_____

b. water:

i. type _____
ii. working satisfactorily or not?_____

c. overall appearance:

i. appearance _____
ii. smell _____

(v) Design:

a. men/women's accommodations (common or separate):_____
b. partitions (whether provided; type) _____
c. other _____

3. The CL under surveillance should be observed for one full day (24 hours) and observation can be broken down into 6 shifts of 4 hours each. The one day should be selected at random. The observer should carefully note numbers of users by sex, and make a determination of age, by category.

4. Once during each shift, the CL should be checked for water availability, functioning of lights, chowkidar, fee collection, etc.

24-HOUR OBSERVATION SCHEDULE

	SHIFT					
SERVICE	1	2	3	4	5	6
Water						
Lights						
Chowkidar						
USERS						
Male 0-1						
2-5						
6-10						
11-15						
Female 0-1						
2-5						
6-10						
11-15						
Adult						
TOTALS						

Technical Survey

Analytical framework

5. There may be a correlation between low unit cost and improper construction of latrines: that is, contractors realizing little profit from underpriced latrine construction work may tend to use inferior materials and do inferior work. There may also be a correlation between inadequate management and administration and improper construction of latrines: that is, a municipality without adequate personnel may not do required latrine construction supervision.

6. To list these hypotheses, it will be necessary to determine whether or not a higher proportion of improperly constructed latrines are found in municipalities with low unit cost and poor administration/management. Therefore it will be necessary to define a "poorly constructed" latrine with explicitly specified criteria. For example, if a design specification is x and an acceptable range is x plus/minus 2, then "poor construction" might be x + 2 and above or x - 2 and below. If there are 10 key design specifications, then total "poor construction" may be defined as any latrine failing on two or more specifications.

7. Although it is advisable to have three categories of quality of construction (i.e., "poor," "average," and "good"), each time a new category is added sample size increases.

8. Care must be taken in the determination of category criteria, for the ultimate validity of results depends on such classifications.

EVALUATION: IMPLEMENTATION GUIDELINES

IMPLEMENTATION

Sample size and selection[8]/

1. For the Financial/Administrative Survey (see Annex I), it is recommended that a census of all towns in those states receiving State or GOI financial assistance be surveyed (the total number per state is not expected to exceed 15-20). A sample (census) of this size will allow for a reliable analysis of performance within each state and will also permit reliable comparisons of performance among the states.

2. For the Household Survey, it is suggested that 200-300 interviews per state will allow for reliable results concerning user and income categories by State.

3. It is important that the towns selected for the Household Survey adequately represent the two or three major categories of performance (i.e., "good", "average", "poor"--see paras. 1, 2, and 3, Analytical Framework, Annex I) suggested for the Financial/Administrative Survey. It is recommended, therefore, that once the Financial/Administrative Survey has been completed, and all towns categorized, 50% of all towns in each category be selected, at random, for the Household Survey. That is, in a state which has 12 operating towns, falling equally into three categories, two towns from each category should be selected at random for the Household Survey.

4. This procedure is important to permit correlations with high degrees of confidence between the two surveys.

5. In each town selected for the Household Survey, a stratified random sample should be taken to ensure acceptable numbers of households in each category (three user, three income categories). This can be done by using the following types of information:

(a) Municipal registers based on the TAG-sponsored 100% survey in which all households in Project towns were surveyed and the status of their sanitary facilities assessed.

(b) Tax rolls: these can give some indication of expected income levels.

(c) Water and electricity connections: these can be determined by ward from municipal records, and can also give an indication of economic status.

8/ Although this evaluation is intended to be part of a manual for use on any project, it is recommended that the States of Uttar Pradesh, Andhra Pradesh and Maharashtra should be used for a prototype evaluation process. It has been reported that these three States have both State- and GOI-funding (for scavenger-free towns).

(d) Subjective assessment by municipal officials, by ward: certain areas are known to be "slums", average, or middle-class neighborhoods.

6. In order to enable correlations among the Financial/Administrative, Household, and Technical Surveys, it is recommended that the Technical Survey be done in all towns selected for the Household Survey. A total of 120 PF latrines should be inspected per state. This sample size is based on an expected analysis of four categories only: "correct" and "incorrect" construction; and towns in which unit costs were correctly established and towns in which they were lower than prevailing PWD rates.

7. This sample size of 120 is predicated on a number of factors. Firstly, that quality of construction, accuracy of installation, and quality of materials will not vary according to either size of latrine (i.e., 5-user, 10-user, or 15-user) or location of pits (inside-the-premises, outside-the-premises). That is, chances of inferior workmanship or error in design applications are equal in cases of large or small latrines; or in those built inside the premises or outside the premises. If it is desired to explore the premise that contractors are more likely to do inferior work (use inferior quality materials, rush job completion, etc.) when the chance of profit is less (in smaller jobs, such as 5-user latrines), then the sample size will have to increase proportionately to ensure representation in both categories (inside-, outside-the-premises).

8. Since it is expected that very few community latrines will have been built, a 100% survey (census) should be taken.

Survey Procedures

9. As has been suggested above, the Financial/Administrative Survey should be done first. Ideally, the Survey team would comprise one Evaluator--a professional trained and with experience in management, finance, and administration--and one TAG member. The primary interviewer would be the Evaluator hired by TAG (through a contracted research institution). The TAG member would be the official liaison between the Evaluator and municipal officials.

10. It is expected that three days should will be needed per town--one travel day and two interview days.

11. The Household, Technical, and CL Surveys should be done by a team of five people per state: one supervisor, three interviewers, and one engineer. The Supervisor would be responsible for the execution of all aspects of the Household and Technical Surveys. The three interviewers would do the household interviews. The engineer would do the technical survey. The entire team would participate in the CL Survey.

12. If it is assumed that the Household Survey is to be done in six towns per state, and that, say, 240 household interviews are to be divided equally, then 40 interviews per town are to be done. If each interviewer can do three or four interviews per day, each town could be covered in three to

five days. If 120 PF latrines are to be inspected per state in six towns, then the engineer would have to inspect 20 latrines per town, at four per day, and could complete town work in approximately five days.9/

13. Since there is not expected to be a CL in every town, the engineer and three interviewers could do the technical inspection and 24-hour observation survey during the course of the other surveys.

14. It is estimated, then, that the team will spend approximately five days in each town.

15. The supervisor, in addition, will be responsible for visiting each town prior to the actual surveys in order to select the sample. To do this, he/she should visit selected towns after the Financial/Administrative Survey (at which time municipal officials, already having cooperated with the initial Evaluation Team, should continue to do so with the Household Survey Team).

Overall implementation strategy

16. It is recommended that one institution be contracted to be responsible for the final design and implementation of the evaluation. This would ideally be a Delhi-based institution, and would delegate a team of professionals--including a financial/administrative expert, a sociologist, and others with requisite field survey experience--to be in full charge of the evaluation.

17. This institute would then recruit and train, in each of the three states selected for the evaluation, one financial/administrative interviewer; three household interviewers per state; one engineer/interviewer per state, and one supervisor.

18. The household interviewers should be chosen and trained with care. They should be fluent in the local language and should come from the state in

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9/ It is likely that only a small percentage of householders will agree to have their pits opened for inspection--even if it is to be the pit not in use; most people would consider it an intrusion to have their courtyard dug up, even if the pits were quite accessible. Therefore, although the sample of five latrines per town should be done randomly from the total list of PF latrines in each town, a large number of randomly selected alternates should be chosen as well.

Once the sample households have been chosen, the surveyor--a trained engineer, fully briefed on all technical specifications and variations of the design and installation of the PF latrines--should make his inspections, first observing outside features, then opening the pit, and making internal observations and measurements. At the end of the day, he should check all measurements against ward-by-ward hydrological data that he will have obtained prior to the commencement of his field inspection.

which the survey is to be undertaken. They should have prior survey experience if possible. The supervisor for each state must have had prior field survey experience.

19. A member of the central institute team should visit each state at least once during the implementation of the evaluation. TAG regional advisers should plan to spend full time on the evaluation during the two to three weeks of its actual implementation.

20. Supervisors must take great care to ensure that all household survey forms are completed properly; that appropriate survey and interview methods are respected; and that the sample households are selected according to the methodology established.

21. All four surveys--financial/administrative, household, technical, and community latrine--should be pre-tested in two towns selected at random. All surveys should be done according to prescribed sample selection and implementation methodology. Modifications in questionnaire and procedures can then be made.

Analysis and data processing

22. The institute selected by TAG should be responsible in conjunction with TAG for data processing and analysis. Household survey information should be coded and computerized, while technical and financial/administrative surveys need not be (although it would be advisable to computerize technical survey information in order to enable computerized correlations of sociological data with technical data).

23. The institute will have prime responsibility for finalizing the analytical framework, doing all the statistical analysis, and interpreting results. TAG's role will be more advisory, except for preparation of the final report, which is expected to be TAG's responsibility.

EVALUATION: BUDGET

Budget - for Survey, etc., in three States (1983 prices)

1. **Financial/Administrative Survey**

(a)	Fees [10]/: 1 interviewer @ Rs. 300 per day for 45 days = (calculated as follows: 15 towns per state @ 3 days per town--1 travel, 2 work).	Rs. 13,500
(b)	Travel	
	1 Roundtrip: Delhi-State @ Rs. 1,500	Rs. 1,500
	Travel to 15 towns @ Rs. 100 per town	Rs. 1,500
(c)	Per diem	
	45 days @ Rs. 100 per day	Rs. 4,500
	Subtotal	Rs. 21,000
		x 3 states
	TOTAL (1)	Rs. 63,000

2. **Household Survey**

For 240 interviews, 6 towns, 3 interviewers:

(a)	Fees: 240 interviews @ 3 per day per interviewer = 80 days + 18 travel days @ 1 per town x 6 towns x 3 interviwers= 98 days @ Rs. 100	Rs. 9,800
	1 supervisor @ Rs. 200 per day for 36 days (6 towns x 5 days per town = 1 day per town travel)	Rs. 7,200
(b)	Travel	
	6 days per interviewer x 3 interviewers and 1 supervisor = 24 days @ Rs. 100	Rs. 2,400

10/ All fees include overhead costs.

(c)	Per diem:	
	36 days x 4 (3 interviewers + 1 supervisor) @ Rs. 100	Rs. 14,400
	Subtotal	Rs. 33,800
(d)	Supervisor pre-evaluation visits	
	1 visit to 6 towns @ 3 days per town including travel = 18 days @ Rs. 200	Rs. 3,600
	(i) Travel: 6 towns @ Rs. 100 per town	Rs. 600
	(ii) Per diem: 18 days @ Rs. 100	Rs. 1,800
	Subtotal	Rs. 39,800
		x 3 states
	TOTAL (2)	Rs.119,400

3. **Technical Survey**

For 120 latrines per state, 6 towns = 20 latrines per town:

(a)	Fees: 1 engineer for 5 days per town x 6 towns + 6 days travel = 36 days @ Rs. 200	Rs. 7,200
(b)	Travel: 6 towns @ Rs. 100 per town	Rs. 600
(c)	Per diem: 36 days @ Rs. 100 per day	Rs. 3,600
	Subtotal	Rs. 11,400
		x 3 states
	TOTAL (3)	Rs. 34,200

4. **Community Latrine Survey**

To be done by engineer, interviewers and supervisor--all costs included in No. 2 and No. 3 above except:

(a)	24-hour observation: overtime costs	Rs. 1,000
(b)	Technical Survey: overtime costs	Rs. 500
	Subtotal	Rs. 1,500
		x 3 states
	TOTAL (4)	Rs. 4,500

5. **Delhi Costs**

Calculated for development, implementation, analysis, report writing:

(a)	Fees:	
	1 Project Director @ 1/2 time for 8 months (estimated life of evaluation) @ Rs. 9,600 per month	Rs. 38,400
	1 Technical Director @ 1/4 time for 8 months @ Rs. 9,600 per month	Rs. 19,200
(b)	Travel:	
	2 visits per state (3) = 6 visits x 2 people = 12 visits @ Rs. 1,500 per roundtrip	Rs. 18,000
(c)	Per diem: @ 5 days per visit x 12 visits = 60 days @ Rs. 100	Rs. 6,000
(d)	Internal travel: @ Rs. 500 per visit x 12 visits	Rs. 6,000
(e)	Training A	
	3 state supervisors + 3 financial/administrative evaluators = 6 people x 3 days = 18 days training:	
	(i) Fees: 9 @ Rs. 300	Rs. 2,700
	(ii) 9 @ Rs. 200	Rs. 1,800
	Subtotal	Rs. 4,500

(iii)	Per diem: 18 days @ Rs. 200	Rs. 3,600
(iv)	travel: 6 roundtrips @ Rs. 1,500	Rs. 9,000
(v)	Other training costs:	Rs. 2,000
	Subtotal	Rs. 19,100

(f) Training B

3 household survey interviewers + 1 engineer per state x 3 states = 12 people x 3 days = 36 days.

(i)	Fees:	
	a. 27 person/days @ Rs. 100 (interviewers)	Rs. 2,700
	b. 9 days @ Rs. 200 (engineers)	Rs. 1,800
	c. 9 days @ Rs. 200 (supervisors)	Rs. 1,800
(ii)	Per diem: 45 days @ Rs. 100	Rs. 4,500
(iii)	Travel: 15 roundtrips, to-from state capital @ Rs. 100	Rs. 1,500
(iv)	Other training costs:	Rs. 1,000
	Subtotal	Rs. 13,300

(g)	Computer Costs	Rs. 20,000
(h)	Miscellaneous	Rs. 10,000
	TOTAL (5)	Rs. 150,000
	TOTAL 1 - 5	Rs. 371,100
	+ 15% Contingencies	Rs. 55,665
	TOTAL (1983 prices)	Rs.426,765

Time Frame

2. (a) The following time frame is expected after an institution has been selected:

(i)	Development (finalization of surveys, final design of questionnaires, sample selection methodologies, analytical framework, training, etc.)	2 months
(ii)	Implementation:	
	a. Financial/Administrative	2 months
	b. Household	2 months
(iii)	Analysis/Report:	2 months
	TOTAL	8 months

MONITORING FORMS

Monitoring Forms

1. The forms in this Annex are meant to serve as general protypical examples of the types of record-keeping procedures recommended at municipal and state level.

2. Form M-1 is a Municipal Construction Register into which pertinent data concerning the construction of latrines are entered.

3. Amount owed refers to the amount to be repaid to the municipality, as per debt agreement.

4. Repayment refers to the repayment schedule agreed upon by the municipality and the householder (here indicated as quarterly). Information should be collected concerning the amount of debt repaid in installments and whether each installment was paid on time.

5. Form M-2 is a standard yearly budget form.

6. Form M-3 is a monthly balance sheet on which details are given concerning expenditures by construction and administrative category.

7. Form M-4, State-level Financing Monitoring Form, is intended to register information concerning municipal balances and expenditures by month--information collected from municipal forms.

8. Form M-5 monitors actual latrine construction.

9. In addition, it has been suggested that the information collected for Form M-4 be expanded to include more detailed information about individual municipalities to facilitate possible correlation between socio-economic and other variables and Project performance.

10. Finally, it is expected that, based on the results of the Evaluation, each Project monitor will collect more subjective information concerning:

(a) type and quality of promotion and publicity efforts;

(b) type and quality of municipal planning and technical supervision;

(c) adequacy and accuracy of unit pricing, contracting, etc.--all related to evaluation results.

FORM M-1 PF LATRINE: CONSTRUCTION REGISTER

FY _____

NAME BY WARD	ADDRESS	CONVERTED/ NEW	SIZE 5-, 10-, 15-	DATE APPLICATION FILED	DATE WORK BEGUN	DATE WORK COMPLETED	AMOUNT OWED	REPAYMENT (QUARTERLY) 1	2	3	4
WARD 1											
1.											
2.											
3.											
Etc.											
WARD 2											
1.											
2.											
3.											
Etc.											
WARD ...											
Etc.											

FORM M-2: YEARLY BUDGET

FY _____

1. BALANCE PREVIOUS FY: Rs. _____

2. AMOUNT RECEIVED CURRENT FY: Rs. _____

3. DATE RECEIVED: _____

4. TOTAL AVAILABLE: Rs. _____

5. AMOUNT ALLOCATED FOR COMMUNITY LATRINE: Rs. _____

6. AMOUNT ALLOCATED FOR INDIVIDUAL LATRINE: Rs. _____

7. ADMINISTRATIVE EXPENSES (ENGINEERING COSTS): Rs. _____

   A. PUBLICITY: Rs. _____

   B. PERSONNEL: Rs. _____

   C. OTHER: Rs. _____

FORM M-3: MONTHLY BALANCE SHEET

BALANCE/ACTIVITIES	INDIVIDUAL LATRINE	COMMUNITY LATRINE	ADMINISTRATION
APRIL 1 BALANCE Rs._____	Rs._____	Rs._____	PUBLICITY Rs._____ PERSONNEL Rs._____ OTHER Rs._____ TOTAL Rs._____
APRIL EXPENDITURES	Rs._____	Rs._____	Rs._____ PUB._____ PERS._____ OTHER _____
APRIL CONSTRUCTION	No. OF LATRINES _____ 4 _____ 8 _____ 16 _____	No. OF LATRINES	_____ PUB. DESCRIBE OTHER _____
MAY 1 BALANCE Rs._____ ETC.	Rs._____ ETC.	Rs._____ ETC.	Rs._____ ETC.

FORM M-4: STATE LEVEL FINANCIAL MONITORING

TOWN	FY**/** BALANCE	FY**/** ALLOCATION	TOTAL AVAILABLE FUNDS			EXPENDITURES BY IND., CL, ENG.												
			IND	CL	ENG	A	M	J	J	A	S	O	N	D	J	F	M	TOTAL
1																		
2																		
3																		
4																		
Etc.																		

FORM M-5: STATE LEVEL CONSTRUCTION MONITORING

FY _____

TOWN	TARGET LATRINES		MONTHLY PERFORMANCE (per month)												
	IND	CL	A	M	J	J	A	S	O	N	D	J	F	M	TOTAL
1															
2															
3															
Etc.															

LIST OF PUBLICATIONS BY
THE TECHNOLOGY ADVISORY GROUP (TAG)
UNDP INTERREGIONAL PROJECT INT/81/047

WP/01 A Model for the Development of a Self-help Water Supply Program; by Colin Glennie.

WP/02 Ventilated Improved Pit Latrines: Recent Developments in Zimbabwe; by Peter Morgan and D. Duncan Mara.

TN/01 Methods for Gathering Socio-Cultural Data for Water Supply and Sanitation Projects; by Mayling Simpson-Hebert.

TN/02 Planning of Communication Support (Information, Motivation and Education) in Sanitation Projects and Programs; by Heli Perrett.

TN/03 The Ventilated Improved Double-Pit Latrine: A Construction Manual for Botswana; by John van Nostrand and James G. Wilson.

TN/04 Pit Latrine Ventilation: Field Investigation Methodology; by Beverley Ryan and D. Duncan Mara.

TN/05 Social Feasibility Analysis of Low-cost Sanitation Projects; by Heli Perrett.

TN/06 Ventilated Improved Pit Latrines: Vent Pipe Design Guidelines; by Beverley Ryan and D. Duncan Mara.

TN/07 Community-based Workshops for Evaluating and Planning Sanitation Programs: A Case Study of Primary Schools Sanitation in Lesotho; by Piers Cross.

TN/08 Rural Ventilated Improved Pit Latrines: A Field Manual for Botswana; by John van Nostrand and James G. Wilson.

TN/09 Handbook for District Sanitation Coordinators; by Kebadire Basaako, Ronald D. Parker, Robert B. Waller and James G. Wilson.

TN/10 Manual on the Design, Construction and Maintenance of Low-cost Pour-flush Waterseal Latrines in India; by A.K. Roy.

TN/11 Monitoring and Evaluation of Communication Support Activities in Low-cost Sanitation Projects; by Heli Perrett.