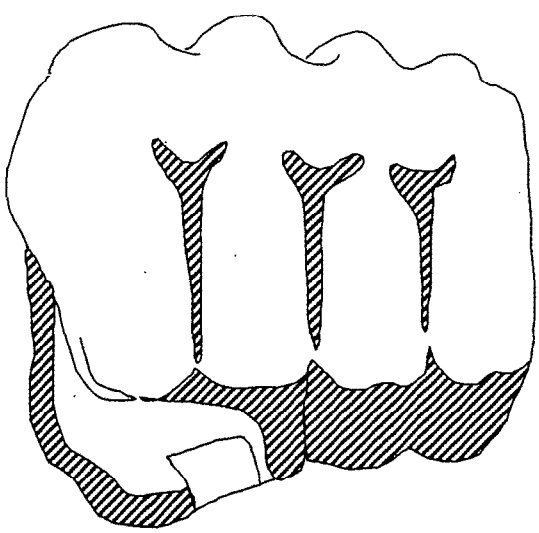
PUBLIC HEALTH ENGINEERING DEPARTMENT, N.W.F.P.

MANUAL FOR THE IMPLEMENTATION OF THE STRATEGIC INVESTMENT PLAN

THE INTEGRATED CONCEPT



PAK/GERMAN PROMOTION OF PHED, N.W.F.P.

Community participation is not just digging trenches. It means to work with a community as a partner who takes part in decision making.

Water is not free for all. The community has to take over some of the costs. People only would pay if they choose an affordable system. Detailed information to the people on feasible systems + their running costs is the first step in the process.

PUBLIC HEALTH ENGINEERING DEPARTMENT, N.W.F.P.

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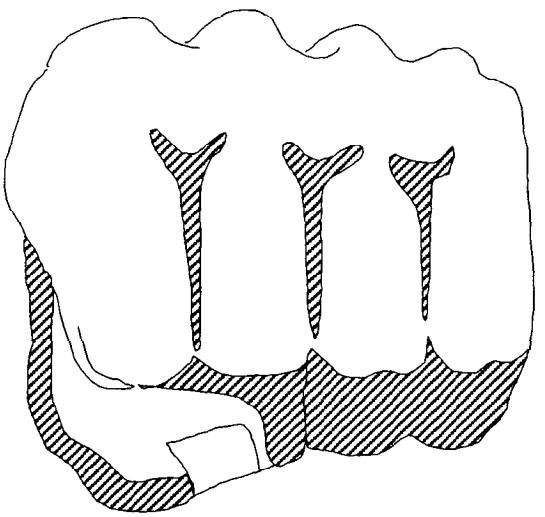


PAK/GERMAN PROMOTION OF PHED, N.W.F.P.

FOREWORD

The Government of Pakistan, in its efforts to improve the quality of life and the health of the rural population, decided to adopt a new strategy on rural drinking water supply and sanitation. The major components of the new strategy were formulated during the National Sector Policy Conference, held in April 1988 in Islamabad:

- future water supply schemes are to be combined with sanitation and hygiene education measures;
- the users need to contribute to the schemes either in cash, kind or labour and by taking over operation and maintenance as far as possible;
- the appropriate vehicle for achieving these goals is to involve the community in the scheme.

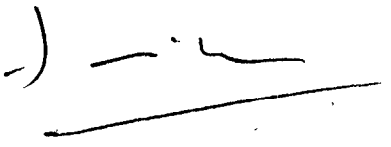
These three changes to the implementation of water supply schemes were then included in the Strategic Investment Plan (SIP) for NWFP. A proposal for close cooperation between the line departments (PHED, LG&RDD, DoE, DoH) was also included.

Since **practical guidelines** for implementing the new government strategy were not available, the Secretaries of the respective line departments agreed in a meeting on 29.03.1991, chaired by the Secretary P&D, that practical guidelines were to be developed in the form of an Integrated Concept for PHED's integrated rural water supply and sanitation schemes. This task was to be carried out by PHED staff and personnel seconded by line departments with the assistance of the Pak-German Promotion of PHED, NWFP Project.

The draft manual was completed by June 3, 1990. So far it has been tested in several KfW financed PHED schemes.

This new version will now be applied under the current PHED Annual Development Programme (1992-93) in three selected districts.

I hope that that this manual will prove to be a useful tool for my PHED colleagues in the implementation of the new government strategy in ADP schemes and for successful cooperation with the other agencies working towards the goals of the Strategic Investment Plan (SIP).



Secretary IRR & PHED,
North West Frontier Province

CONTENTS

PART I. MANUAL

PART II. GUIDELINES

PART III WORKING MATERIALS

Materials not yet finalized

- Manual for on the job training of village caretakers/operators/valvemen
- Checklist for construction activities to be monitored by the VDO
- Sample ownership certificate
- Proforma for daily record keeping by operators and valvemen
- Teaching kit for health educators
- Training guidelines for health educators
- Pictorial checklist for women's monitoring activities
- Promotional leaflet in English and Urdu on the role of women in water supply and sanitation

EXECUTIVE SUMMARY

The Integrated Concept is a manual designed to help the field engineers of PHED to implement the Strategic Investment Plan in PHED rural water supply and sanitation schemes in North West Frontier Province.

This paper is a step by step guideline, showing how PHED technical personnel should proceed jointly with future users as equal partners in the planning and execution of ADP schemes.

There are two phases:

1. In the **Project Preparation Phase,** the steps cover the development of the project at both village and departmental level, from the selection of the project area by DDAC, the approval of funds by P&D, until the preparation of design and cost estimates by PHED.

2. The **Project Implementation Phase** includes organization of works, start of construction and finally operation and maintenance, with regular monitoring of the facilities installed.

These two phases show how the beneficiaries of PHED water supply and sanitation schemes can take part in each step from planning through implementation until they take over the facilities.

Special emphasis is given to certain components of the process in annexures:

- Guidelines on the Role of Line Departments
- Guidelines on Village Development Organizations
- Guidelines on Community Operation and Maintenance
- Guidelines on Women s Participation through Hygiene Edu cation
- Guidelines on School Sanitation

These annexes provide details about:

- How village development organizations (VIDOs) can be set up by LG&RDD to become representative bodies for

sustainable village development; and how such village organizations can plan, build and maintain their water and sanitation facilities with the assistance of PHED.

- How the users can select the various components of their future systems and those operation and maintenance tasks which they are willing and able to take over.

- How women in the village can contribute to those project activities, such as latrine construction, etc. in which they can be involved.

- How hygiene education can help the users to learn how to safeguard their drinking water from contamination and to use their sanitation facilities properly.

- How awareness can be created among school children on the effective and proper use of water and sanitation facilities, and personal and environmental hygiene.

- And finally, how the line departments can support PHED during implementation of water and sanitation schemes.

  - LG&RDD in village organization (VDO formation);

  - DoH in women's participation and hygiene education;

  - DoE in school sanitation.

ABBREVIATIONS USED:

AD	Assistant Director
ADP	Annual Development Programme
CPC	Community Participation Coordinator
DC	Deputy Commissioner
DDAC	District Development Advisory Committee
DEO	District Education Officer
DHO	District Health Officer
DoE	Department of Health
FMT	Female Medical Technician
KAP	Knowledge, Attitude, Practices
LG&RDD	Local Government and Rural Development Department
LHV	Lady Health Visitor
MPA	Member Provincial Assembly
O&M	Operation and Maintenance
PHED	Public Health Engineering Department
P&D	Planning and Development Department
RCS	Revenue Collection system
RDWSC	Rural District Water and Sanitation Committee
SDEO	Sub-Divisional Education Officer
SDO	Sub-Divisional Officer
SIP	Strategic Investment Plan
VDO	Village Development Organization
WPC	Women's Participation Coordinator
X'EN	Executive Engineer

This is the second edition of the PHED Integrated Concept, a manual for implementation of the Strategic Investment Plan (NWFP). After it has been tested is PHED's Annual Development Programme, it may be further revised to meet changing conditions.

All the activities in the manual are described in a "how to" step-by-step fashion. The idea is simply to tell the reader how the users of PHED rural water and sanitation schemes can be made equal partners in a scheme from its start, until they take over operation and maintenance.

LG&RDD is in the process of establishing a Directorate for Community Development. Until their personnel have been posted and trained on starting village development organizations, this task has to be carried out for ADP. schemes by specialized personnel hired by gtz to work in the PHED. Similarly, until the required hygiene education can be fully provided for village women by the Department of Health and for school children by the respective schools, PHED has to bridge the gap by developing materials and helping with training and monitoring staff from the line departments.

PART-I

THE MANUAL

STEP BY STEP

PROCEDURES

In the following section, the activities required to involve the users in future PHED schemes from planning through implementation to operation and maintenance as envisaged in the Strategic Investment Plan for NWFP are outlined in a step-by-step fashion.

The boxes under each step show how it differ from the PHED's present procedure.

PHASE I. PROJECT PREPARATION

STEP 1. SELECTION OF PROJECT AREA

1.1 Briefing of the MPA on the new government policy on water and sanitation (SIP & Integrated Concept) by the PHED Community Participation Coordinator at circle level*. Request for the selection of village(s);

1.2 The MPA proposes village;

1.3 DDAC approves the selection and informs PHED;

1.4 SDOs (water supply + sanitation) undertake a preliminary survey (identification of water sources, capacity, collection of samples for water quality analysis, etc.). If the scheme is not feasible the MPA should be requested to select another village;

1.5 As a result of 1.4, the SDO identifies feasible system alternatives; and

1.6 Obtains the MPA's support from them.

REQUIREMENTS

1. Briefing leaflet on the new government policy on water and sanitation + Integrated Concept.
2. The MPA follows a set of criteria when selecting the village.
3. The preliminary survey focuses on identifying feasible alternatives.
4. The preliminary survey is part of the village profile.
5. SDO-Sanitation at each division level.
6. PHED-CPC at each circle level.

*see **Part-3 working material:** main responsibilities of community and women participation personnel of **PHED**, NWFP

STEP 2. COORDINATION AMONG LINE DEPARTMENTS AT DISTRICT LEVEL FOR SUPPORT TO PHED

2.1 The X'EN requests the Deputy Commissioner to establish a Rural District Water and Sanitation Committee (RDWSC) as a mean of support for PHED from the line departments at district level; (If district sanitation committees already exist, its responsibilities should be expanded to cover water supply as well);

2.2 The D.C. calls a meeting with X'EN, DHO, DEO, AD-LG&RDD PHED-CPC and WPC at circle level;

CPC briefs the district officers on:

- the new government policy on water and sanitation;
- PHED manual for the implementation of the policy;
- need for the formation of RDWSC.

2.3 The district officers of the line departments agree on joint action at district level to support PHED in VDO formation and hygiene education.

2.4 The district officers of the line departments notify their staff at district and village level to support PHED.

REQUIREMENTS

1. D.C. to act as coordinator of the committee.
2. CPC (circle office) follows the briefing leaflets on the new government policy + Integrated Concept during the meeting.

STEP 3. VILLAGE ORGANIZATION

3.1 The PHED-CPC at the circle office requests the Directorate for Community Development (LG&RDD) to initiate the formation of VDO's in the villages selected by the MPA;

3.2 The social organizers of the Directorate are mobilized (including briefing by PHED);

3.3 The villagers with assistance from social organizers of the Directorate, form their village development organization (VDO);

3.4 The Directorate informs the PHED-CPC (circle level) that VDOs have been formed;

3.5 In the first meeting with the newly established VDO, both PHED-CPC (circle level) and the SDO, with the assistance of social organizers (Directorate), inform the villagers about:

- ➢ new government policy on water and sanitation;
- ➢ feasible water supply alternatives for the village;
- ➢ community operation and maintenance;
- ➢ the need for a written agreement on cooperation between PHED and VDO.

REQUIREMENTS

1. Directorate for Community Development of LG&RDD is fully operational and forming VDO's.
2. The social organizer (Directorate) and the villagers follow guidelines on VDO formation.
3. At the first VDO meeting the following are used:
   - ➢ information leaflet on the Integrated Concept.
   - ➢ the villagers follow an Urdu Leaflet on the Integrated Concept/new government policy.

STEP 4. SELECTION OF SYSTEM AND SYSTEM COMPONENTS

4.1 The SDO selects posters of feasible systems (e.g. tubewell & hand pump) and system components (e.g. house connections & community tank) and adjusts the data to village conditions.

4.2 The VDO choose their final water system and components after discussing:

- ➢ posters of feasible alternatives;
- ➢ pros and cons;
- ➢ operation and maintenance tasks;
- ➢ operation and maintenance costs;
- ➢ and what they are willing to take over.

4.3 In the written agreement between PHED and the VDO **the VDO agrees to:**

- ➢ prepare the village profile jointly with PHED;
- ➢ motivate the villagers to support the VDO;
- ➢ assist in planning and design;
- ➢ assist in solving the problems faced by women;
- ➢ contribute to the implementation of the scheme in different ways such as, land, labour, materials, matching grants etc;
- ➢ carry out operation and maintenance or pay for services provided by PHED and/or the private sector;
- ➢ adopt a revenue collection system (RCS) to cover future O&M costs.

and PHED agrees to:

- ➢ provide technical support;
- ➢ provide regular water quality control;
- ➢ partly finance the programme;

- ➢ jointly plan, design and construct the water and sanitation facilities with the villagers;
- ➢ provide complementary maintenance services;
- ➢ identify jointly with the VDO areas in which it need support (training etc.).

4.4 On the basis of the written agreement, the VDO, with support from social organizers, initiates its legalization process with the Community Development Directorate, LG&RDD.

REQUIREMENTS

1. The following materials are available to the SDOs and they have been trained how to use them;
   - ➢ posters of alternative systems and components with basic cost figures;
   - ➢ guidelines on how to adjust the basic data of the systems to their own situation;
   - ➢ pros and cons of the feasible alternatives;
   - ➢ checklists for O&M tasks;
   - ➢ operation and maintenance costs.
2. Sample of the written agreement.

STEP 5. PREPARATION OF THE VILLAGE PROFILE

5.1 The Sub-Engineer, jointly with the VDO collects information and prepares the village profile;

5.2 The X'EN and SDO-WS utilize the information to prepare the design and rough cost estimates for the water system chosen;

The SDO-Sanitation utilizes the information to prepare the PC1 and cost estimates of the sanitation facilities (drains, latrines).

REQUIREMENTS

1. Proforma for data collection for the village profile is available to the field engineers and VDO.

STEP 6. IMPLEMENTATION OF WOMEN'S PARTICIPATION AND HYGIENE EDUCATION PROGRAMME

6.1 The PHED-Women's Participation Coordinator (circle level) requests the DoH to initiate the health/hygiene education programme for village women;

6.2 The DoH's staff supported by the WPC (circle level), initiates the programme by arranging a medical camp for village women and children run by its local or district level female health staff;

6.3 The VDO selects a women volunteer and a suitable meeting place for women;

6.4 The VDO provides a list of the first group of village women to receive health/hygiene education;

6.5 Health/hygiene education sessions are conducted for women by DoH;

6.6 The participating village women identify areas in which they can take part in project activities;

6.7 The WPC (circle level) trains village women to carry out the activities they have selected.

REQUIREMENTS

1. Guidelines on women's participation and health/hygiene education are available for DoH personnel.

2. Permanent Women's Participation Coordinators (WPC's) are posted in PHED head office + at circle offices.

3. Training of DoH's personnel on the procedures for project related health/hygiene education is conducted by PHED-WPC.

4. A training Kit for project related health/hygiene education and activities is prepared.

STEP 7. PREPARATION OF DESIGN AND COST ESTIMATES FOR THE SELECTED WATER SYSTEM AND SANITATION FACILITIES

7.1 The VDO and SDO agree on the location of the facilities and the first component (water supply/sanitation) to start with;

7.2 SDO's (WS/Sanitation), in consultation with the X'EN, prepares the PC1, design and rough cost estimates of the system selected on the basis of proposals made by the VDO;

7.3 The X'EN submits the cost estimates and PC1 (to the competent authority) for administrative approval;

7.4 The design office scrutinizes the estimates and gives administrative approval;

7.5 The SDO's (WS/Sanitation), in consultation with the X'EN, prepare detailed estimates and submit them to the design office for technical sanction;

7.6 The design office technically scrutinize the estimates before technical sanction is given by the competent authority.

7.7 The design office sends the approved design and cost estimates to the X'EN for tendering.

REQUIREMENT

1. Joint decisions by the VDO and PHED is included in the final design of the system.

PHASE II. PROJECT IMPLEMENTATION

STEP 8. ORGANIZATION OF WORKS

8.1 The X-EN prepares the tender documents on the basis of the PC1;

8.2 The X-EN calls tenders and awards the contract to the contractor;

8.3 The SDO arranges a meeting between the contractor and the VDO to ensure their cooperation during the construction phase;

8.4 The contractor mobilizes machinery, manpower and material on site.

REQUIREMENTS

1. Minutes of meeting between the contractor and the VDO recorded by the SDO and signed by all parties.

2. The VDO clause in the contractor's contract is based on the minutes of the meeting between the VDO and the Contractor.

STEP 9. CONSTRUCTION OF FACILITIES

9.1 The VDO starts activities, as per written agreement, such as, filling of stagnant ponds, leveling streets and providing rights of way, etc;

9.2 The contractor starts construction activities in accordance with the contract made with PHED;

9.3 The VDO nominates the requisite number of people for on the job training in such fields as administration, pump operation, etc;

9.4 The SDO/Sub-Engineer, with the support of PHED-CPC arranges any necessary on the job training for VDO nominees;

9.5 The VDO assists the SDO/Sub-Engineer to monitor construction work;

9.6 The VDO regularly reports back to the SDO on the progress of work and SDO takes any necessary action.

REQUIREMENTS

1. VDO to complete all the required activities such as land ownership agreements, rights of way, before construction activities start.
2. Basic technical skills for VDO nominee.
3. Manual for on the job training by SDO/Sub-Engineer for village caretaker/operator/valveman.
4. Checklist of activities to be monitored by the VDO.

STEP 10. IMPLEMENTATION OF SCHOOL SANITATION PROGRAMME

10.1 The SDO-Sanitation, jointly with the VDO undertakes a survey of the village, including schools, to assess sanitation needs (part of village profile);

10.2 The SDO and circle level coordinators inform the DEO (M & F) about the programme;

10.3 The SDO, the motivators and the VDO arrange a meeting with the principals and teachers of each school and inform them about:

- PHED's school sanitation programme including construction of facilities and training on hygiene practices;
- procedures for cooperation between PHED and the concerned school authorities;

10.4 A written agreement is made between the SDO, the DEO, the Principal and the VDO on cooperation and the school sanitation programme starts;

10.5 Teachers are trained in communicating hygiene practices and use of latrines and water supply to their students, (in boy's schools by PHED-CPC and in girl's schools by PHED-WPC);

10.6 Start of hygiene activities in school by teachers;

10.7 The SDO-Sanitation starts construction of facilities through a contractor when the school authorities are ready to operate and maintain them;

10.8 After completion, the facilities are handed over to the school authorities for routine operation and maintenance;

REQUIREMENTS

1. Guidelines on School Sanitation
2. Written agreement between the school & PHED.
3. School sanitation survey proforma included in the village profile.
4. Sanitation motivators (M+F) for each sanitation Sub-Division at divisional level.
5. Long-term lobbying by PHED for the inclusion of effective hygiene education in the teachers and school curricula

STEP 11. COMMUNITY OPERATION AND MAINTENANCE

11.1 The SDO-O&M and VDO discuss and identify with the help of O&M checklists, which O&M tasks are to be carried out by the VDO, which by private contractor and which by the O&M-Sub-Division;

11.2 A written agreement is made between the VDO and the SDO-O&M regarding the management of O&M tasks to be carried out by all parties involved, including the payment procedures;

11.3 The XEN/SDO hands over the completed scheme to the VDO by jointly signing an ownership certificate;

11.4 The SDO-O&M helps the VDO to adopt a water revenue collection system (RCS);

11.5 The SDO-O&M assesses further training needs for the caretaker/operator and inform the PHED -CPC (circle level);

11.6 The PHED-CPC (head office) arranges any necessary training with the concerned agency/department.

REQUIREMENTS

1. The following material is available to the SDO:
   - ➢ guidelines on community operation and maintenance;
   - ➢ O&M checklists;
   - ➢ sample ownership certificate;
   - ➢ sample O&M agreement;
2. Operation and Maintenance Sub-Division at divisional level to be equipped with a Mobile Maintenance Unit.

STEP 12. FOLLOW UP

Monitoring of the completed facilities is done jointly by the concerned O&M-Sub-Division and the VDO.

12.1 The VDO-operator and valveman keep daily records on the functioning of the system at village level;

12.2 The VDO-operator and valveman send the monthly data to the office of the O&M-Sub-Division;

12.3 The SDO-O&M identifies any problem by analyzing the monthly data;

12.4 The SDO-O&M discusses the problem with the VDO to agree on necessary action;

12.5 The Mobile Maintenance Unit inspect the site and prepare a cost estimate for the repair;

12.6 The VDO hires the services of O&M Sub-Division or a private contractor, either through PHED or directly, to carry out the necessary repairs to the machinery.

REQUIREMENTS

1. Operation and Maintenance Sub-Division at each Division office.

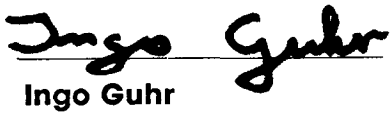
2. Checklist for daily/monthly record keeping by caretaker/operator and valveman.

ACKNOWLEDGMENTS

At the end of the actual MANUAL, we would like to express our deep gratitude for the continued encouragement, guidance and cooperation extended by the Secretary IRR & PHED, Mr. Paracha, and the Chief Engineer, PHED, Mr. Nazeer Hussein Afridi.

Our thanks also go to Mr. Udo Kachel, Dorsch Consult, the members of the Project Coordination Cell, and to our very cooperative PHED colleagues, among them Mr. Abdul Aziz, former SE, Mr. Jamil, former Director Design, Mr Waheed Bakhsh, Acting Director Design, Mr. Rehmatullah Khan, X'EN Peshawar, Mr. Aslam Khan, X'EN Sanitation Division, Mr. Jalil, SRO PHE Lab., Mr. Bahramand, SDO Peshawar, and Mr. Irfan, SDO Nowshera, who all contributed their valuable practical experience during the whole process of concept development and testing in the field. Only their support, as well as the contributions received from representatives of LG&RDD, DoH and DoE and from colleagues from various other institutions and projects working in this field, such as Unicef and ARC made the preparation of this report possible.

We will continue to need your cooperation as more schemes of the ADP follow the Integrated Concept. Please inform us if any changes which you think should be included in the next edition of this manual.

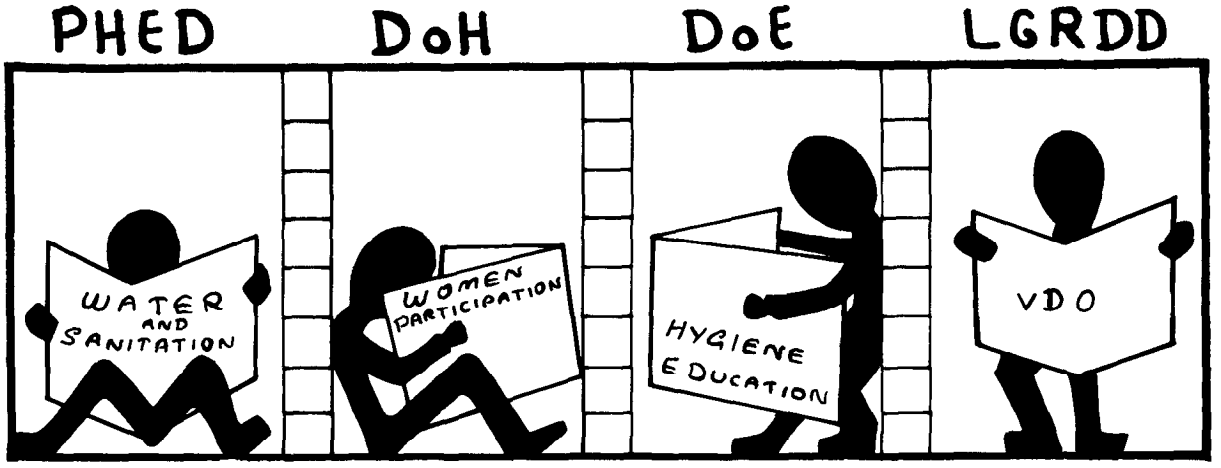


Ingo Guhr
Community Development
Adviser

Zakaullah Khan
Community Participation
Specialist

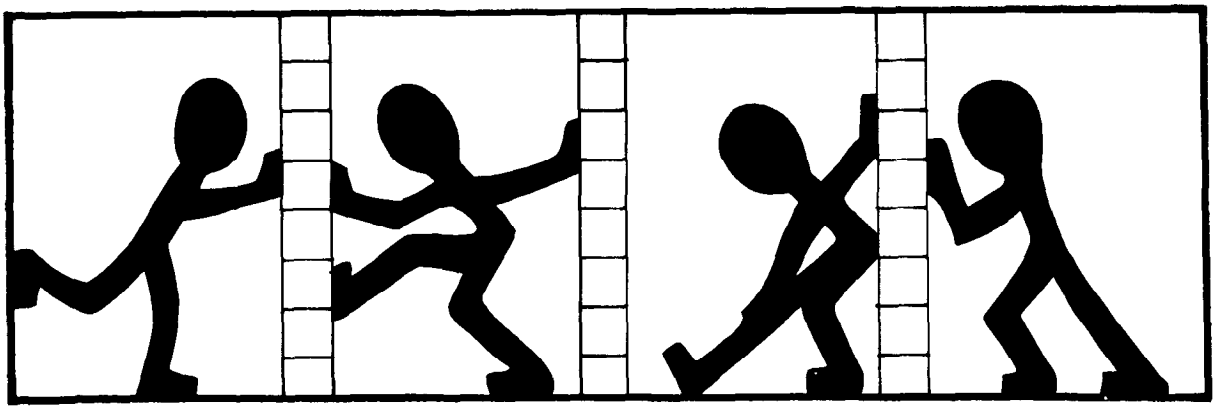
PART-II

GUIDELINES

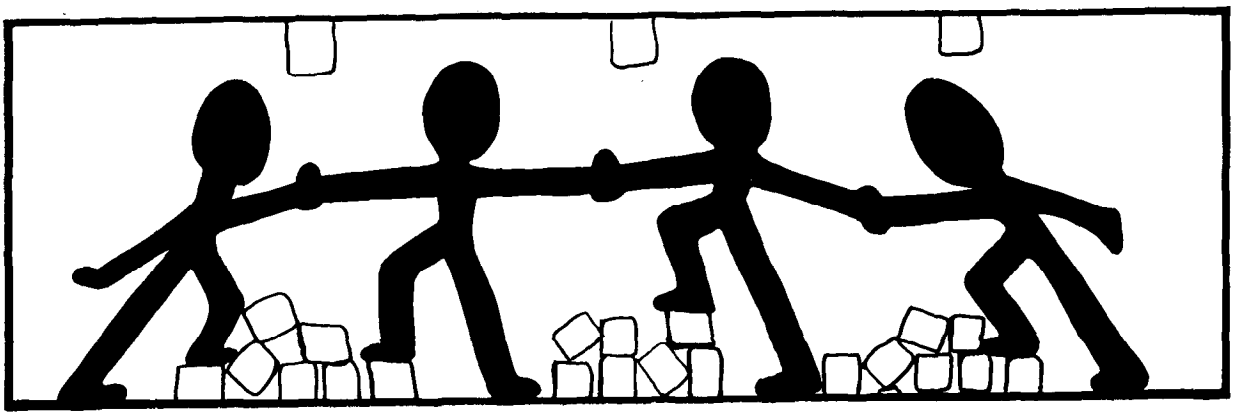


WE ARE STILL SEPARATED BOXES

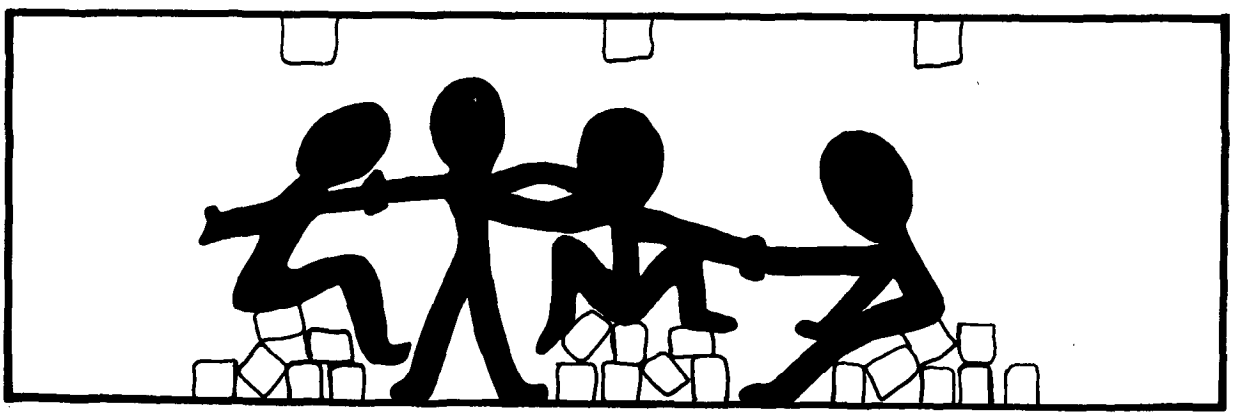
WHERE DO WE GO FROM HERE ?



BREAK DOWN THE WALLS



AND PLAN JOINT ACTION



AND WORK TOGETHER !

GUIDELINES

FOR
ROLE OF LINE DEPARTMENTS

PHED is to implement integrated rural water supply and sanitation schemes with full users' involvement. According to the new government policy outlined in the Provincial Strategic Investment Plan, NWFP, the line departments (LG&RDD, DoH and DoE) are to support PHED through village organization and hygiene education during the execution of these schemes.

Presently, however, the 3 line departments referred to above do not have sufficient well trained staff to contribute a large scale to PHED water supply and sanitation programme.

The proposals made here show the PHED's requirements for the implementation of the integrated schemes. To meet these requirements, the line departments need to specify which of their existing staff can take over some of the support tasks and for which tasks additional staff are needed.

1. SUPPORT FROM P&D

1.1 The required input from the Planning and Development Department is to:

- convince politicians that the beneficiaries should take over operation and maintenance of the facilities constructed;
- extend the scope of sanitation committees which already exist at village, district and provincial level of include water supply and hygiene education;
- take immediate measures to ensure cooperation between the respective line departments in integrated rural water supply and sanitation schemes; starting by inviting the line departments to a coordination meeting on the PHED Integrated Concept.

2. SUPPORT FROM LG&RDD

2.1 The main tasks of the Local Government and Rural Development Department are to:

- establish a Directorate for Community Development to initiate the formation of village development organizations (VDOs) to under the sustainable village development.
- legalize established VDOs;
- coordinate between the VDO and other line departments and agencies to ensure support for the village organization;
- provide training in management and book keeping, etc to VDO nominees.

2.2 Manpower requirements:

- establishment of a Community Development Directorate at the head office, with at least 2 social organizers based in each district where PHED is executing integrated schemes;
- training of VDO nominees at LGRDD's existing training facilities;

3. SUPPORT FROM DOH

3.1 The main tasks of the Department of Health are to:

- organize medical camps as a measure of access to village women;
- provide health and hygiene education (water and sanitation related) to different groups is the village (women, school teachers);
- train hygiene motivators at village level, such as TABs, Ustaza, Imams, school teachers, etc;
- regularly monitor and evaluate the programme.

3.2 Female staff requirements:

- 1 Female Medical Officer, 2 female paramedics, 1 Dai (local staff) to organize medical camps at village level;
- FMT/LHV/male hygiene educators to train school teachers, in areas where PHED is providing water supply and sanitation.

4. SUPPORT FROM DOE

4.1 The main task of the Department of Education is to:

- include hygiene education in school curricula;
- assist DoH in training teachers in hygiene education;
- improve sanitary facilities in village's schools where the PHED Integrated Concept is being implemented;

- regularly monitor facilities.

4.2 Manpower requirements:

- existing teaching staff to be trained by DoH.

5. THE CHANGING ROLE OF PHED UNDER THE INTEGRATED CONCEPT:

5.1 The main tasks of the Public Health Engineering Department include:

- extending of the role of the provincial steering committee for sanitation to include water supply and hygiene education;
- applying the Integrated Concept in ADP schemes;
- coordinating support from line departments;
- briefing all parties involved on the Integrated Concept;
- surveying (i.e technically feasible alternatives + village profile jointly with the VDO);
- designing + preparing a rough cost estimate of the system selected by the villagers;
- initiating and supervising the construction of facilities jointly with VDO's;
- providing technical training to VDO nominees;
- carrying out monitoring jointly with the VDO;
- establishing O&M-Sub-Division with a Mobile Maintenance Units in each PHE division.

5.2 Existing PHED personnel to be trained:

- executive engineers to be trained in implementation of the Integrated Concept;
- sub-divisional officers and sub-engineers;

- designers and draftsmen to be trained in water supply and sanitation low-cost technology.

5.3 Additional personnel required

- monitoring cell at PHED headquarters consisting of one executive engineer and two sub-engineers; (monitoring construction; processing data and submitting it to PHED management)

- for each Mobile Maintenance Unit, **one mechanical engineer** in-charge and **one mechanic, one electrician, one welder** and **one driver** as field staff;

- *(to carry out trouble shooting; on-site repairs; arranging* major repairs by the private sector; monitoring of completed systems; liaison with the Monitoring Cell)

- **one PHED's Women Participation Coordinator** (WPC) at PHED head office and one at each circle level (for coordination with DoH at provincial level; briefing of women on the Integrated Concept; coordination between women's groups and the VDO).

- one Community Participation Coordinator (CPC) at PHED head office for coordination at provincial level and concept updating training; one Community Participation Coordinator at district level to implement of the Integrated Concept.

It will be a lengthy process until all factions in a village are represented in the VDO. Therefore, cooperation between PHED and a VDO should start as soon as an initial agreement has been made. Later on this VDO should gain more support and become a representative body for sustainable village development.

Water or sanitation committees often desolve after the scheme. Therefore, village development organizations are to be strengthened for undertaking further village development and for maintaining the water and sanitation facilities.

GUIDELINES

FOR VILLAGE DEVELOPMENT ORGANIZATIONS (VDOs)

The PHED is to implement integrated rural water supply and sanitation schemes in cooperation with VILLAGE DEVELOPMENT ORGANIZATIONS (VDOs). These village organizations are to be established through the Local Government and Rural Development Department (LG&RDD) before PHED staff start work.

A VDO is defined as a **representative body responsible for undertaking sustainable village development.**

1. ESTABLISHMENT OF VDO BY LG&RDD

The LG&RDD is presently in the process of establishing a Directorate for Community Development. The Directorate will be responsible for setting up VDOs in areas of the Province where the PHED and other nation building departments implement their schemes.

The formation of VDOs is to be based on existing community organizations. However, only organizations which are working efficiently are to be considered.

1.1 The Directorate for Community Development (LG&RDD) initiates the formation of VDOs through its social organizers by:

- holding introductory meetings in the village;
- informing the villagers about:
  - the future water supply and sanitation programme.
  - the new government strategy of user involvement in schemes;
- explaining the need for a village representative body (VDO) and the procedures involved in setting one up;
- explaining the role and functions of a VDO;
- explaining the rules of cooperation between the VDO and the concerned department.

1.2 The villagers form their VDO with the assistance of social organizers (Directorate).

1.3 The Directorate officially informs the relevant SDO PHED through the PHED-CPC that the VDO has been formed.

1.4 The SDO/Sub-Engineer, along with the social organizers, conducts the first meeting with the VDO by:

- holding a detailed discussion on the programme;
- and the nature and extent of future cooperation.

1.5 The Executive Engineer (PHED) and the VDO sign a written undertaking on cooperation during construction and after completion of the scheme.

1.6 The PHED and VDO start with the physical activities of the scheme in accordance with the agreement reached.

After going through the process of developing a water and sanitation scheme jointly with PHED, the VDO is expected to be strong enough to undertake further village development. Therefore, greater input than that required to simply form a "water committee" has to be provided, in order to strengthen the VDO into an on-going village body.

2. CONDITIONS

2.1 **Membership**

Members of the VDO should:

- be resident in the village;
- be at least 18 years old;
- be willing to pay a membership fee;
- elect their own office bearers and obey the constitution;
- not be a member of any organization which contravenes the rules and regulations of the VDO.

These conditions are flexible and subject to change according to the needs and views of the VDO.

2.2 The VDO can initially start working with PHED if it is supported by at least 25% of village households. At this stage the VDO has to sign a written agreement on cooperation with the PHED and start the mobilization necessary to gain enough village support to become representative body responsible for sustainable village development.

2.3 The PHED offers a water and sanitation package consisting of water supply and the different components of sanitation facilities.

If the VDO is not fully organized or does not have the support of the majority of the village, small components of the PHED package (latrines etc.) are to be implemented in the initial stage of the project.

Major components like tubewell are to be implemented later provided that support from the village is present in the form of:

- contributions by the VDO to the first component of the scheme as previously agreed;
- expanding membership of the VDO;
- legalization of the VDO;
- interest in supervision of the work.

2.4 Administrative Set-up

The organization will consist of a General Body and an Executive Body (elected by the General Body).

- **Duties and Powers of the General Body:**
  - to frame the general policy of the organization and approve the schemes;
  - to elect the Executive Body of the VDO after the termination of its tenure;
  - to assess the progress of the organization at quarterly meetings and present recommendations for improvements;
  - to settle issues which the Executive Body cannot solve by consensus.
- **Duties and Powers of the Executive Body:**
  - to implement the policy of the organization;
  - to prepare and implement programmes for the year;
  - to prepare monthly progress/financial reports;
  - to hold quarterly meetings the General Body to present the progress/financial reports and accordingly approve programmes for the following year;

- to amend the constitution as advised by the registration authority (LG&RDD);
- to hold elections on due dates (after 2 years);
- to prepare accounts statements on an annual basis, etc.

During the process of planning and implementation, the LG&RDD and the PHED have to identify areas where the VDO needs further support, such as training in operation and maintenance and book keeping etc.

3. FUNCTIONS OF AN ESTABLISHED VDO

The functions of a VDO as a permanent village body are to:

3.1 Act as a link between villagers, government departments and external agencies.

3.2 Make decisions on behalf of the villagers.

3.3 Manage finances, records, etc and prepare and publish monthly/quarterly/annual income and expenditure statements.

3.4 Plan and execute sustainable village development schemes through self help financing or grants from other agencies by:

- identifying existing problems of the village;
- proposing solutions (planning, cost estimates, etc.);
- identifying existing village resources (technical, financial, materials, etc.);
- securing additional resources if required;
- constructing individual schemes such as water supply/ drainage, etc;
- carrying out regular operation and maintenance of the facilities constructed;

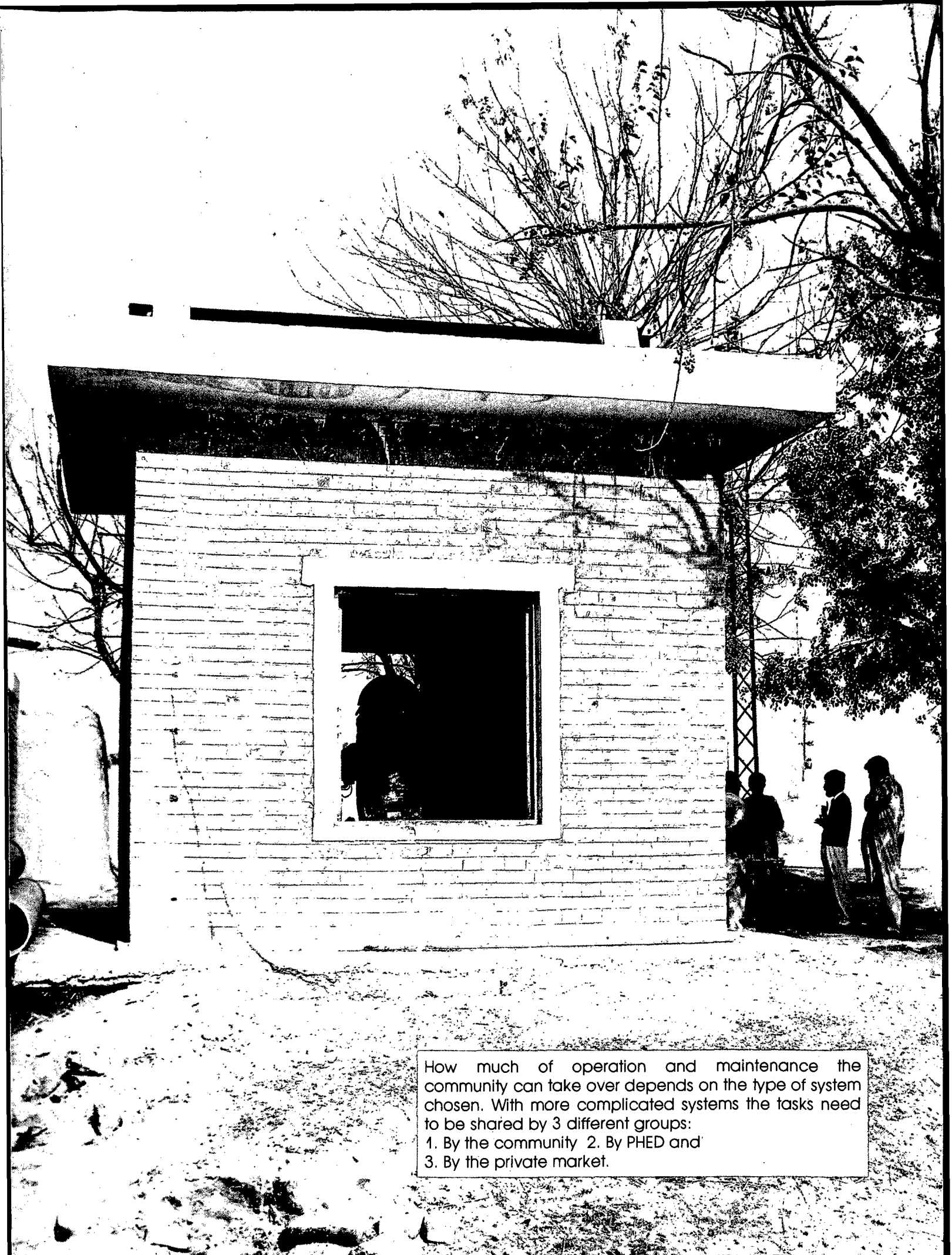
3.5 Ensure that village women take part in activities leading towards a solution to their problems in water supply, sanitation and other areas.

4. LEGALIZATION OF VDOs

There is a need to recognize the VDO by legalization, as it requires a financial and resource base (funds, grants, credits, savings) to carry out future development schemes.

The LG&RDD, as the coordinating body, needs to register VDOs with the Directorate for Community Development.

Existing by-laws applicable to Community Based Organizations (CBOs) need to be reframed by the LG&RDD and properly covered by legislation.



How much of operation and maintenance the community can take over depends on the type of system chosen. With more complicated systems the tasks need to be shared by 3 different groups:
1. By the community 2. By PHED and
3. By the private market.

Hand pumps require less and easier maintenance. However, they only should be chosen provided water contamination does not take place.

GUIDELINES

FOR COMMUNITY OPERATION AND MAINTENANCE

According to the new government policy, the community will be involved in pianning new schemes and should own, manage, operate and maintain the facilities constructed.

They will be fully responsible for the functioning of the units (pumps, distribution networks, reservoirs, and drainage facilities). They should either carry out the operation and maintenance themselves or pay for it to be done.

Before the schemes are constructed, the PHED officer will give the village development organization an overview of which of the tasks involved in operating and maintaining the facilities will have to be carried out by the community. O&M checklists have been drawn up to facilitate discussion with the users on O&M tasks.

They will then decide which tasks will do themselves and which they will pay for. A written agreement should be the result of this discussion. It will be signed by the relevant X'EN and the VDO.

The three groups involved are to share this work in the following way:

1. ROLE OF THE VDO

The VDO, as owner, has to manage, operate and maintain their schemes to ensure the water supply. They will:

(a) operate the schemes by:

- regularly supervising the staff and preparing daily records;
- sending a monthly monitoring report to the PHED's O&M Sub-Division;
- ordering any materials and spare parts required.

(b) finance the scheme by:

- regularly collecting water charges;
- paying the staff and the electricity bills;
- paying any maintenance bills to the private contractor/PHED (the PHED O&M Sub-Division has to work at reduced rates for the community);
- preparing financial reports.

(c) maintain the scheme by:

- collecting all information from the staff and users about the operation of the units and any complaints they may have;
- identifying the repairs required, or involving the PHED to locate any fault;
- carrying out all maintenance which the VDO has agreed to take over;

- hiring private contractors to carry out that part of the maintenance which the VDO is not able to do;
- assisting the PHED and the contractor, as far as possible, to carry out the maintenance by providing local labour and transport.

2. ROLE OF THE PHED O&M SUB-DIVISION

The PHED will offer:

- regular supervision of the operation of schemes;
- a mobile maintenance service, available on request to identify maintenance required;
- to carry out minor repairs to keep schemes in operation;
- preparation of cost estimates for any maintenance required;
- supervision of maintenance carried out by contractors;
- provision of spare parts/pumps which are not available in the local market;
- to carry out regular water quality control and evaluate monitoring reports sent to the relevant PHED O&M Sub-Division.

3. ROLE OF THE PRIVATE CONTRACTOR

Private contractors should be involved in maintenance either through the PHED or directly by the VDO:

- to carry out all major maintenance, e.g. repair of machinery, distribution networks and civil works;
- to carry out all maintenance under the conditions defined in the PHED Annual Maintenance and Repair Contract.

Women are responsible for water provision, family care and family hygiene. They know best –better than men – which problems they are facing. Their ideas should be included when planning new facilities and they should contribute to the programme in areas they choose.

Access to women in traditional societies only is possible with the consent of men. Medical camps organized for women at the beginning of a water supply and sanitation programme allow to brief them and to collect information on the actual diseases of that area.

GUIDELINES

FOR WOMEN'S PARTICIPATION AND HYGIENE EDUCATION

The PHED is to implement integrated rural water supply and sanitation schemes of which women, due to their responsibility for water and sanitation, are the main beneficiaries. Hygiene education is an integral part of these schemes.

The INTEGRATED CONCEPT does not allow for curative health care. It only can create awareness and understanding, with a view to preventing some of the common water and sanitation related diseases. Nor does it have the scope to promote the social and economic development of women. It can only assist in solving the problems which village women face as a direct consequence of a lack of safe water and proper sanitation.

1. SCOPE OF WOMEN'S INVOLVEMENT

In their households, women are responsible for water provision, for family care and for family hygiene. They know best - better than men - which problems they are facing. Consequently, the knowledge and skills of women should form basis for planning water supply and sanitation facilities. Women should be encouraged to:

- identify problems related to water supply and sanitation;
- take part in developing solutions;
- contribute to the programme in the areas they choose.

2. METHODOLOGY

2.1 RATIONALE

- Women's participation in the INTEGRATED CONCEPT is similar to community participation. Just as the users are involved in all steps from planning to operation and maintenance, women are to be involved in those steps to which they can contribute.

- In such cases, the VDO is to initiate gatherings of selected women from the village. These women will meet and develop proposals which are then integrated by the VDO into the appropriate step of the programme. Wherever required, the assistance of the Department of Health (DoH) will be sought.

2.2 STRATEGY

Access to women in a traditional society is possible only with the consent of men. To facilitate access to village women, the DoH will provide personnel from their existing establishment (school health services, mobile dispensaries and village level health facilities).

- The first step is to obtain the commitment of the VDO to support women's involvement. The PHED Women Coordinators at circle level will attend VDO meetings to introduce plans for in-

volving women in water and sanitation schemes and to brief the VDO on their role in the womens programme and the arrangements to be made for it.

- The VDO will then select a woman volunteer to liaise between the PHED, the village women and the DoH. She will be briefed by the PHED Women's Coordinator circle level.

- With the VDO's consent, and at the request of the PHED, the DoH will organize a medical camp for women and children in the village. The date, time and location will be decided by the VDO and the woman volunteer after consultation with the village women. During the medical camp women will be briefed on the water supply and sanitation programme and data on the actual diseases of those present will be collected.

- The VDO and woman volunteer will select two groups of women to receive health/hygiene education. The PHED and the DoH will arrange an introductory session with the groups to be conducted by the PHED women coordinator, circle level, and health educators from the DoH.

- The health educators will be drawn from existing female paramedics and will be provided with a teaching kit and given orientation as necessary by the DoH and the PHED. Mobile teams would be most effective.

- During the first session, the women will discuss their problems related to water, sanitation and health. They will also discuss their role in spreading health and hygiene messages and choose the first topic for health education. At this stage, a KAP (knowledge, attitude and practice) interview should be conducted with each of the selected women to serve as a baseline for evaluating the improvement in of health and hygiene knowledge and practices after the sessions.

- During subsequent meetings, the women are given more health education of their choice. Then, hygiene education related to the effective use of the facilities built can follow. At the same time, they can start discussing their own input to the water and sanitation programme.

- They can then develop proposals for their own contribution such as selection of sites for standposts, latrines etc.

- The number of sessions will vary according to the specific needs of the women; they should result in the active involvement of women in project activities.

- The proposals and contributions of the women are then to be integrated into the programme by the VDO. The second group of women will be made up of those who can actively and regularly participate in project-related activities.

- Monitoring and evaluation of women's participation will be carried out by the women themselves, the VDO, the DoH and by the PHED women coordinator at circle level.

- The PHED Woman Participation Coordinator at Head Office will be responsible for overall planning, implementation, monitoring and evaluation of women's participation.

EXAMPLE: **WOMEN'S CONTRIBUTIONS TO SAFEGUARDING THE FUNCTIONING OF A SYSTEM**

Women who regularly fetch water from a community standpost or hand pump can be involved in monitoring the functioning of the system and the cleanliness of its surroundings.

Women can also learn to perform routine maintenance of their household handpumps, taps and latrines.

3. FEMALE STAFF REQUIREMENTS

3.1 Existing local and district level female staff from the DoH for the medical camp (including a Female Medical Officer) and later as health educators (Lady Health Visitors [LHVs] and Female Medical Technicians [FMTs]).

3.2 One female PHED representative (Women Participation Coordinator [WPC]) at the PHED Head Office to plan and coordinate with line departments and agencies at provincial level, supervise and train circle level women coordinators and DoH staff; and develop materials.

3.3 PHED Women Coordinators at circle level to assist the DoH in organizing the medical camp and supervising and training female health educators. They will be involved in training village women in project-related activities. They will be responsible for monitoring and evaluating the women's programme and briefing the VDO and the woman volunteers. They will coordinate with line departments and other agencies at district level.

3.4 One village woman volunteer to be jointly selected by the VDO and PHED to organize meetings and coordinate with village women, health educators and women coordinators (circle level).

3.6 Two groups of village women in each village where the PHED implements water and sanitation scheme. They will participate in health/hygiene education sessions, spread the messages and take an active role in project-related activities.

GROUP I

Group I will consist of women who are well known in the village and have regular contact with the other women, eg. TBAs, ustaza, lady instructors and others who are "change influencers".

GROUP II

This group will consist of village women selected by Group I, and will be expected to carry out some activities for the project e.g. take care of facilities, construct the superstructure of latrines and drainage systems in houses.

- All these women will attend sessions on health/hygiene education and project-related activities.
- These session attenders/motivators will, in the course of their daily routine, spread the health/hygiene messages and motivate other women to use, operate and maintain their facilities properly.

4. TEACHING MATERIALS

The required materials are to be completed by the end of 1992.

4.1 A **set of trust-building health education sessions on common diseases.** Women will choose from a variety of topics, according to the need they express needs. These could include:

- diarrhoea
- worm infestation
- jaundice
- goiter, etc.

4.2 Similarly, a **set of project-related hygiene education sessions** about the impact of and proper use of the new facilities is being prepared. Topics include:

- cleanliness and protection of water sources (public standposts, handpumps etc.)
- clean collection and transport of water
- clean storage and drawing of water
- latrine promotion, etc.

4.3 A **set of project-related activity sessions** about the construction, maintenance and repair of facilities is also under preparation.

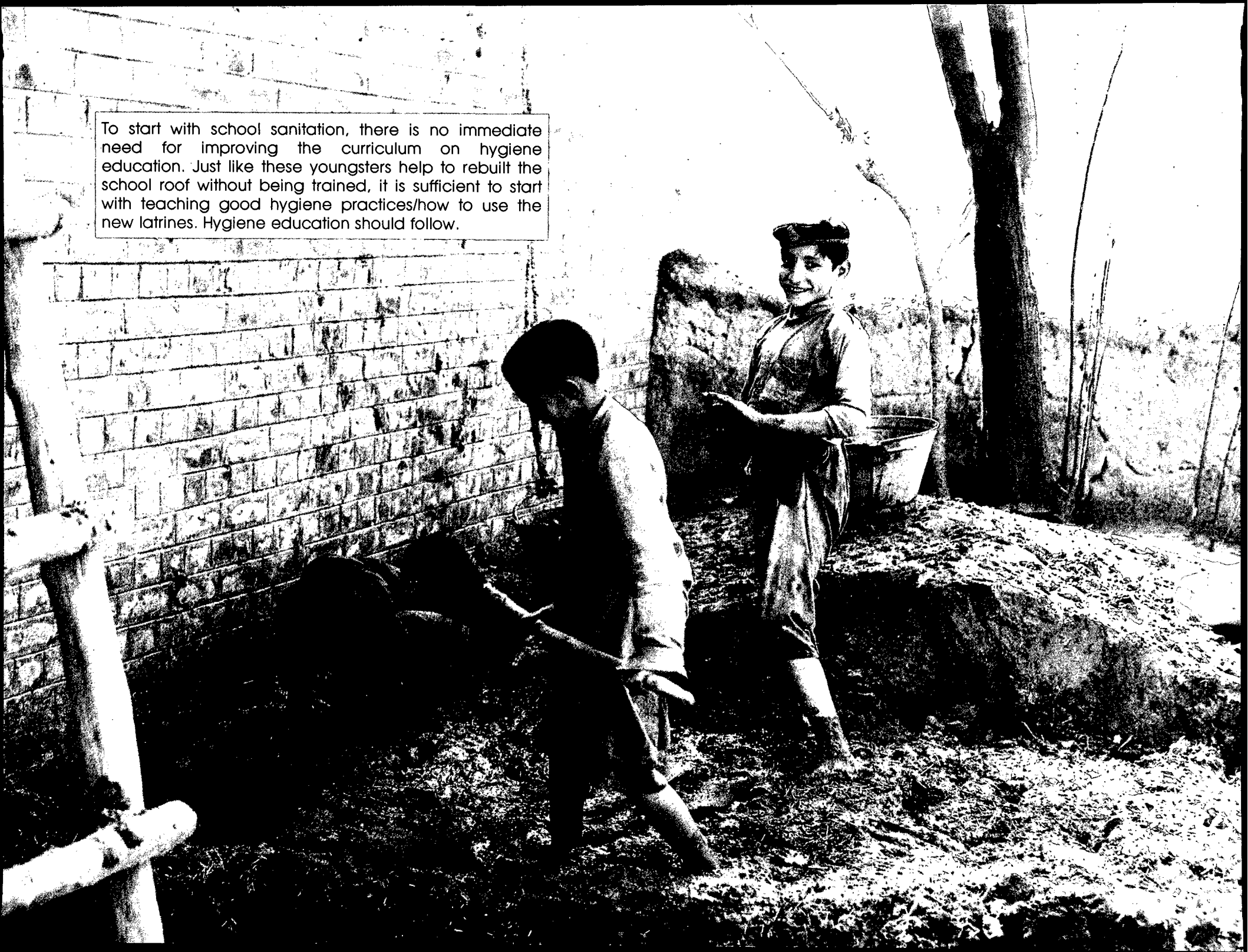
4.4 These sessions will be incorporated, with guidelines and accompanying teaching aids, into a **teaching kit for health educators.** Visual aid and other materials will be adapted from existing resources available to the PHED/DoH or provided by the DoH.

4.5 **Training guidelines for introducing the teaching kit to health educators** are under preparation.

4.6 An **information leaflet** in Urdu has been designed to brief VDOs about the women's programme.

4.7 A **promotional leaflet** in English and Urdu will be designed to explain the role of women and the need for hygiene education in water supply and sanitation schemes.

According to 1989-90 statistics only about one third of government schools had water supply. Latrines were much less. The opportunity of introducing hygiene practices at an early age is not utilised. PHED can help to overcome this shortcoming.


To start with school sanitation, there is no immediate need for improving the curriculum on hygiene education. Just like these youngsters help to rebuilt the school roof without being trained, it is sufficient to start with teaching good hygiene practices/how to use the new latrines. Hygiene education should follow.

GUIDELINES

FOR SCHOOL SANITATION

School sanitation and hygiene education is to be part of future PHED integrated rural water supply and sanitation schemes.

On the following pages, a provisional approach to be adopted for school sanitation and teaching hygiene practices has been outlined. It needs further elaboration and testing. However, these preliminary guidelines should be sufficient to initiate a programme.

1. OBJECTIVES OF THE PROGRAMME

The major objective of the programme is to promote improved hygiene practices (good habits) among school children related to the effective use of PHED water supply and sanitation facilities.

Related objectives are:

- To provide proper latrine facilities to all schools in NWFP (no recorded statistics are available on latrine coverage but even where they have been installed they are rarely operational).
- To provide water supply to schools lacking this facility; (1989-90 statistics reveal that of 6,808 government boys primary schools, only 2,126 had water; of 3,241 government girls primary schools, only 1,199 had water).
- To teach school children and teachers how to use and clean their latrines.
- To provide appropriate advice in places where there is no latrine.
- To teach children and teachers how to keep water clean, including safe handling and storage of drinking water.
- To teach children and teachers how to keep their environment clear (drains, surroundings, etc).
- To teach children about personal hygiene related to water and sanitation facilities; i.e. how to keep the body clean (nails, hands, teeth, feet, ears, hair, etc).
- To lobby for the inclusion of hygiene education in teacher training and school curricula, provision of funds for operation and maintenance of facilities and regular monitoring by the education authorities.

2. TARGET GROUPS

2.1 School Children

- Access is easy because schools are existing formal channels for information;

- children are receptive to new ideas and accustomed to learning;

- moreover, they are an important channel for propagating messages among other students and their family members;

- at present little relevant information is included in school curricula.

2.2 **Teachers**

- Teachers themselves need to be able to use and clean facilities, to know and understand good hygiene practices and to be able to communicate this knowledge and related skills to their students.

3. METHODOLOGY

3.1 **Briefing of DoE personnel by PHED Circle Level Coordinators**

- To inform the DEOs (Male and Female) in the districts concerned about the programme and request them to ask the staff of schools in villages where the PHED will be working for their cooperation.

- To inform the school principals and teachers about:-

  * the PHED school sanitation programme;

  * and PHED's intention to start teaching hygiene practices to school children with the assistance of the DoH.

- To ask for their support in improving school sanitation including provision of latrines, water supply, drainage and carrying out health/hygiene education among school teachers and children.

- To sign an agreement between the school principals, the SDEO, the VDO and the PHED ensuring their cooperation in implementing the school sanitation programme. This agreement should include provision for monitoring the condition of facilities, monitoring and evaluating hygiene habits, funding for soap, lotas, drinking water containers,

cleaning equipment, etc and sanctioning of funds for labourers to remove compost from VIP latrines.

3.2 School Sanitation Survey by the PHED, assisted by the DoE

Before hygiene education and construction of water and sanitation facilities starts in a school, it is important that the SDO, with help from the VDO and relevant DoE staff, carries out a school sanitation survey, covering:

- the existing state of latrines and other sanitary conditions (i.e. drains, garbage, etc.);
- the existing state of the drinking water supply;
- problems with water supply and sanitation;
- the number of children in the school; and expected increase in numbers; the number of latrines required;
- site selection criteria;
- existing toilet habits of teachers and children;
- existing hygiene knowledge, attitudes and practices among teachers and children.

3.3 Briefing of teachers by PHED Circle Level Coordinators

To teach the teachers about latrine and water supply use, environmental and personal hygiene and how to communicate this information to their students.

3.4 Hygiene education activities in schools

The Principal will appoint a teacher(s) to be responsible for monitoring students' personal hygiene, and the school environment, water supply and sanitation facilities.

Hygiene lessons will teach children to participate in keeping their school clean.

3.5 Latrine and water supply construction

The provision of facilities will depend on the readiness of the school to operate them and keep them clean after completion.

The PHED will arrange for a contractor to construct and install the latrines and water supply facilities.

During construction of the latrines, teachers can show their pupils the various components of latrines and their functions and repeat messages about their proper use.

3.6 Inclusion of hygiene education in curricula by DoE/ Bureau of Curriculum and funds for operation and maintenance of facilities

In the long term, the PHED secretary, managers, community participation cell, and teachers themselves need to lobby for the inclusion of hygiene and water/sanitation education teacher training and school curricula. (1) Moreover, schools at present lack the basic requirements of soap, lotas, etc. Even if teachers and children can clean their facilities, there is eventually a need for outside assistance with latrine pit emptying. Provision must be made in the education budget for this.

4. TEACHING MATERIALS (TO BE DEVELOPED)

The topics listed below are included in a **small illustrated booklet** under preparation by UNICEF which can be used to orient teachers and for teachers to use in the classroom. Ultimately, lessons on personal hygiene, school cleanliness and the other topics listed need to be integrated into the **school curriculum.**

RECOMMENDED TOPICS FOR CHILDREN AND TEACHERS

LATRINE USE

Why we need latrines

Excreta is dangerous, smelly and it attracts flies: if it is not disposed of properly it can get on to our hands and our food.

If it gets in our mouth it can make us sick.

A latrine is more convenient and private for defecating and urinating than going outside.

How the Ventilated Improved Pit (VIP) latrine is made

VIP latrines are most appropriate for places where very little water is available. The components of this latrine are:

- A superstructure to provide privacy.
- A pit for the excreta.
- A slab for squatting, with a key hole placed above the pit.
- A wire gauze window for ventilation. The gauze allows air movement and prevents entry of flies .
- An exhaust pipe fitted with its lower end inside the pit and the upper end projecting well above the latrine. The air in the upper part of the pipe is heated by the sun. The hot air rises and draws the foul smelling air upwards from the pit latrine.
- The upper end of the exhaust pipe is covered by a wire gauze which stops flies and other insects getting inside the pit.

How the VIP latrine works

The excreta (and urine) drops straight into the pit below. When it is full, the slab pit has to be removed and the compost dug out to be used as manure.

How the Double Pit Compost Pour Flush Latrine is made

(You may have one at home). It is made of:

- A superstructure.
- A porcelain pan with a water seal. The water seal prevents foul smells from entering the latrine.
- A pipe system for carrying the excreta.
- A junction box, with removable lid, which directs the excreta to either one of the two leach pits.
- Two brick-lined leach pits, with removable lids, for the excreta.

How the Pour Flush Latrine works

The excreta in the pan is flushed with the help of water and is pushed through the pipes. It reaches the junction box where it is directed to either one of the pits. The opening to the other pit is blocked at the junction box. When the first pit is filled the excreta is directed towards the second pit by unblocking the pipe in the junc-

tion box and blocking the opening to the first pit. After six months the exreta in the first pit becomes composited and therefore harmless. The pit lid should thus be opened and the compost shovelled out and used as manure.

How to use the latrine

Permission from the teacher to go to the latrine
Which direction to face
Where to put your feet - raised portion of pan or slab
Squat over the hole in the slab or pan
Aim for the hole
How to wipe and/or wash bottom (what to use, which direction, disposal)

In the case of pour-flush latrines, flush the excreta by pouring a potful of water into the pan. The excreta will disappear and pass into the pit.

How to clean the latrine

Cleaning it for the next person
What to do if you miss
After leaving the latrine close the door
Tell the teacher if something is broken

Washing hands

Oral-faecal chain
How to wash hands thoroughly using soap and water

WATER SUPPLY Washing hands (as above)

How to use the handpump/standpost/tap

Keep surroundings clean
Pump with long strokes
Only pump or run sufficient water for your purpose
Turn off the tap when you have finished
Tell the teacher if something is broken

Drinking water

Transporting and storing safely
Use a separate covered container
Use a drinking cup tied on a string
Rinse the cup after use

Washing takti boards

Do not drink water used for washing takti boards

Waste water

Where does it go
Hazards of standing ponds
Do not waste water unnecessarily
Turn off the tap
Drain/vegetable garden/soakpit

KEEP YOUR SCHOOL CLEAN AND SAFE

Classroom

Shaking mats
Sweeping floor
Ventilation and light: open, clean windows/open doors
Blackboard
Shelves
Litter disposal

School playground

Picking up litter and disposing of it
Getting a pit dug
Burning rubbish
No spitting
Sharp objects
Cleaning out drains

WHERE THERE IS NO LATRINE

What to do when not at school

Not in a public place
Not near running water
Not near food (crops)
Cover it with soil
Wash hands

PERSONAL HYGIENE

Washing body parts

When and how to wash:
Hair: brushing/combing
Face: eyes; ears; nose; mouth; teeth
Hands: cutting nails
Feet: wearing shoes
Private parts

Washing clothes

Underwear
Outer clothes
Shoes

RECOMMENDED ADDITIONAL TOPICS FOR TEACHERS

OPERATION AND MAINTENANCE

How the latrine/water supply is constructed
What can go wrong
What to do about it (self help or a procedure to follow)

ORGANIZING THE SCHOOL AS A HEALTHY ENVIRONMENT

Cleaning rotas
Supervision
Housekeeping (soap, brooms, brushes, lotas)
Repeat all messages frequently to students

PART-III

WORKING MATERIALS

The working materials attached are examples. They are not representing the complete set. Some of the materials still need modifications which only can be done during their application.

INFORMATION LEAFLET, Urdu

NEW GOVERNMENT POLICY

to be used for informing the villagers on the new government policy, facilities that can be provided to their village, and the procedures for cooperation.

حکومت کی نئی پالیسی

گاؤں کے لوگوں کے معیار صحت کو بلند کرنے کے لیے حکومت نے مندرجہ ذیل پالیسی تشکیل دی ہے۔

۱۔ پینے کے صاف پانی کے ساتھ ساتھ صحت وصفائی کی سہولتیں بھی فراہم کی جائیں۔

۲۔ گاؤں والوں کو سکیم کی منصوبہ بندی سے لے کر دیکھ بھال تک شامل کیا جائے۔

۳۔ حکومت کی مالی مشکلات کے پیش نظر جتنا ہو سکے سہولتوں کی دیکھ بھال گاؤں والوں کے سپرد کی جائے۔

سہولتیں

آپ کی سکیم کے تحت آپ کے گاؤں کو چار سہولتیں فراہم ہو سکتی ہیں۔

۱۔ پینے کا صاف پانی

۲۔ گھروں کے اندر بیت الخلاء (لیٹرین)

۳۔ گلیوں میں نالیوں کی تعمیر

۴۔ صحت وصفائی کی تعلیم

طریقۂ کار

۱۔ گاؤں والے اپنی ایک نمائندہ تنظیم بنائیں گے (دیہی ترقیاتی تنظیم) جو گاؤں والوں کی محکمہ کے ساتھ بات چیت میں نمائندگی کرے گا۔

۲۔ دیہی ترقیاتی تنظیم گاؤں میں پینے کے پانی کی ممکنہ متبادل سہولتوں میں سے اپنے لیے ایک کا انتخاب کرے گی۔

۳۔ دوران تعمیر محکمہ کو نگرانی اور دیگر کاموں میں مدد فراہم کرے گی۔

۴۔ مکمل ہونے پر سہولتوں کی دیکھ بھال کا انتظام سنبھالے گی۔ اور خرچہ پورا کرنے کے لیے گاؤں والوں سے پانی کی مقررہ فیس وصول کرے گی۔

۵۔ تنظیم اپنا بینک اکاؤنٹ کھولے گی۔ اور حکومت کے ساتھ اپنے آپ کو رجسٹر کروائے گی۔

۶۔ سہولتوں میں کسی خرابی کی صورت میں محکمہ تنظیم کی تکنیکی مدد کرے گی۔

پبلک ہیلتھ انجینئرنگ ڈیپارٹمنٹ صوبہ سرحد

INFORMATION LEAFLET

PHED, NWFP INTEGRATED CONCEPT

to be used for the briefing of PHED colleagues, village leaders, politicians, etc.

INFORMATION LEAFLET

PHED, NWFP INTEGRATED CONCEPT
For: Briefing of PHED Engineers + Community Leaders

1. NEW GOVERNMENT POLICY:

The National Sector Policy Conference in April 1988 and the Strategic Investment Plan (NWFP) emphasized that in future:

- Water supply, sanitation and hygiene is to be combined;
- Beneficiaries are to be involved in the scheme;
- Beneficiaries need to take over operation and maintenance; The DoH, DoE and LG&RDD are to support PHED in the implementation of the integrated schemes.

2. THE CONCEPT (MANUAL):

The Concept (Manual) is a step by step guideline showing, how PHED and the VDO jointly can plan and build water and sanitation facilities following the new government policy.

PROCEDURE:

- MPA selects the village;
- SDO ascertain the technical feasibility;
- Villagers from a village Development Organization;
- VDO select an affordable water supply system from those feasible;
- VDO & PHED sign a cooperation agreement;
- PHED construct the facilities;
- VDO take over operation and maintenance.

3. COMMUNITY OPERATION & MAINTENANCE:

VDO carry out O&M through:

- ➢ its own hired personnel
- ➢ private market/PHED maintenance unit.

4. WOMEN INVOLVEMENT:

Hygiene education for women/other village groups is an integral part of the concept.

PROCEDURE:

- ➢ Arrangement of medical camp for women + children;
- ➢ Selection of village women volunteer;
- ➢ Women meetings on health/hygiene education;
- ➢ Women take part in activities where they can.

5. COOPERATION AMONG LINE DEPARTMENTS:

The Integrated Concept also defines the role line departments in support to PHED:

PHED : construction of facilities.

LG&RDD : village organization (VDOs).

DoH : hygiene education for women/other groups.

DoE : hygiene education into school in school curricula

INFORMATION LEAFLET (English, Urdu)

WOMEN'S INVOLVEMENT IN WATER SUPPLY AND SANITATION SCHEMES

to be used for the briefing the VDO on the women involvement programme in the village.

LEAFLET NO. 1

WOMEN'S INVOLVEMENT IN WATER SUPPLY AND SANITATION SCHEMES

ACCORDING TO THE GOVERNMENT'S NEW POLICY FOR WATER SUPPLY AND SANITATION women should be involved with water supply and sanitation scheme because:

- Women are mainly responsible for collecting water for the family
- As mothers they teach their children about keeping themselves clean
- They look after the sick family members so they are concerned with health as well
- 80% of diseases are related to poor quality and insufficient quantity of water poor sanitation and lack of hygiene. If women learn how to prevent these diseases the financial, physical and mental burden caused by sickness can be greatly reduced benefiting the family and the whole community.

HOW THIS CAN BE DONE

In our society direct contact with women is not possible without permission from their men. So for **the following women's programme we would like your permission and cooperation:**

1. MEDICAL CAMP

PURPOSE

During the medical camp sick women and children could receive treatment and at the same time we would tell them about the women programme.

YOUR ROLE

If you agree please give us a date, time and place for medical camp and inform the women about it.

2. HEALTH/HYGIENE EDUCATION

PURPOSE

First of all women can learn about health and how they can prevent themselves and families from getting diseases.

Then we would like to teach the women about personal and household hygiene.

Afterwards we would like to ask them what they can do for their programme: they might be interested in learning how to maintain a handpump in their own house or how to keep the surroundings of a water tap clean or how to build a latrine. This will all depend on what they want.

YOUR ROLE

If you agree please find a woman volunteer for us. She can act as a contact between VDO, women and the project, and she can help us in the medical camp and with your assistance find women groups for health/hygiene education.

Integrated Concept

خواتین کی شمولیت آبنوشی اور حفظانِ صحت کے پروگرام میں

حکومت کی نئی پالیسی

خواتین کو آبنوشی اور حفظانِ صحت کے پروگرام میں شامل کیا جائے گا کیونکہ :۔

- خواتین گھروں میں آبنوشی کی فراہمی کی ذمہ دار ہے ۔
- بحیثیت ماں وہ بچوں کو گھر کے اندر حفظانِ صحت کی تعلیم دیتی ہے ۔
- وہ گھروں میں خاندان کے بیمار افراد کی خدمت کرتی ہے اس طرح تعلق صحت سے بنتا ہے۔

اگر خواتین ان امراض کے بچاؤ کے بارے میں سیکھ جائیں تو ان کا اور پورے معاشرے کا مالی، جسمانی اور دماغی بوجھ کم ہو سکتا ہے ۔

یہ کیسے ممکن ہو سکتا ہے

ہمارے معاشرے میں عورتوں سے مردوں کے اجازت کے بغیر رابطہ کرنا ممکن نہیں ہے مذکورہ پروگرام کیلئے ہمیں آپ کی اجازت کی ضرورت ہے ۔

میڈیکل کیمپ

مقصد

میڈیکل کیمپ کے دوران بیمار بچوں اور عورتوں کا علاج کیا جائے گا اور اس دوران خواتین کو ان کے پروگرام کے بارے میں آگاہ کیا جائے گا۔

آپ کا تعاون

میڈیکل کیمپ کے لیے جگہ، وقت اور تاریخ کا انتخاب کرنا اور بیمار خواتین اور بچوں کو آگاہ کرنا

صحت کی تعلیم

مقصد

سب سے پہلے اگر آپ چاہے تو خواتین کو امراض سے بچاؤ کی تعلیم دی جا سکتی ہے۔ پھر اُن کو صحت کی تعلیم دی جا سکتی ہے اور آخر میں اگر خواتین چاہے تو اُن کو گھروں میں نلکے کی دیکھ بھال، لیٹرین، برتن اور کپڑے دھونے کی جگہ بھی بنانا سکھایا جا سکتا ہے۔ یہ سب خواتین پر منحصر ہے ۔

آپ کا تعاون

گاؤں کی ایک خاتون کا انتخاب کرنا ہوگا جو میڈیکل کیمپ کے لیے گاؤں کی خواتین کو اکٹھا کرے گی وہ خواتین کے آئندہ اجتماعت کے لیے بھی ہمارے لیے رابطہ کا ذریعہ ہوگی ۔ ان اجتماعت کے لیے خواتین کو قابلِ قبول ایک جگہ بھی آپ کو منتخب کرنی ہوگی ۔

CRITERIA FOR SELECTION OF VILLAGE(S) BY THE MPA

UNDER THE PHED INTEGRATED CONCEPT

to be handed over to the MPA when he agrees to select the Village(s).

CRITERIA FOR SELECTION OF VILLAGE(S) BY THE MPA UNDER THE PHED INTEGRATED CONCEPT

1) Present need in water and sanitation

   - ➢ low service coverage;
   - ➢ hygienically poor water and sanitation conditions:
   - ➢ no other water supply and sanitation programmes in the village(s).

2) Experience of the villagers with other communal activities in the village.

3) Willingness of the villagers to cooperate and contribute during and after the implementation of the scheme.

4) Village (s) assure the MPA to take over part or all operation and maintenance.

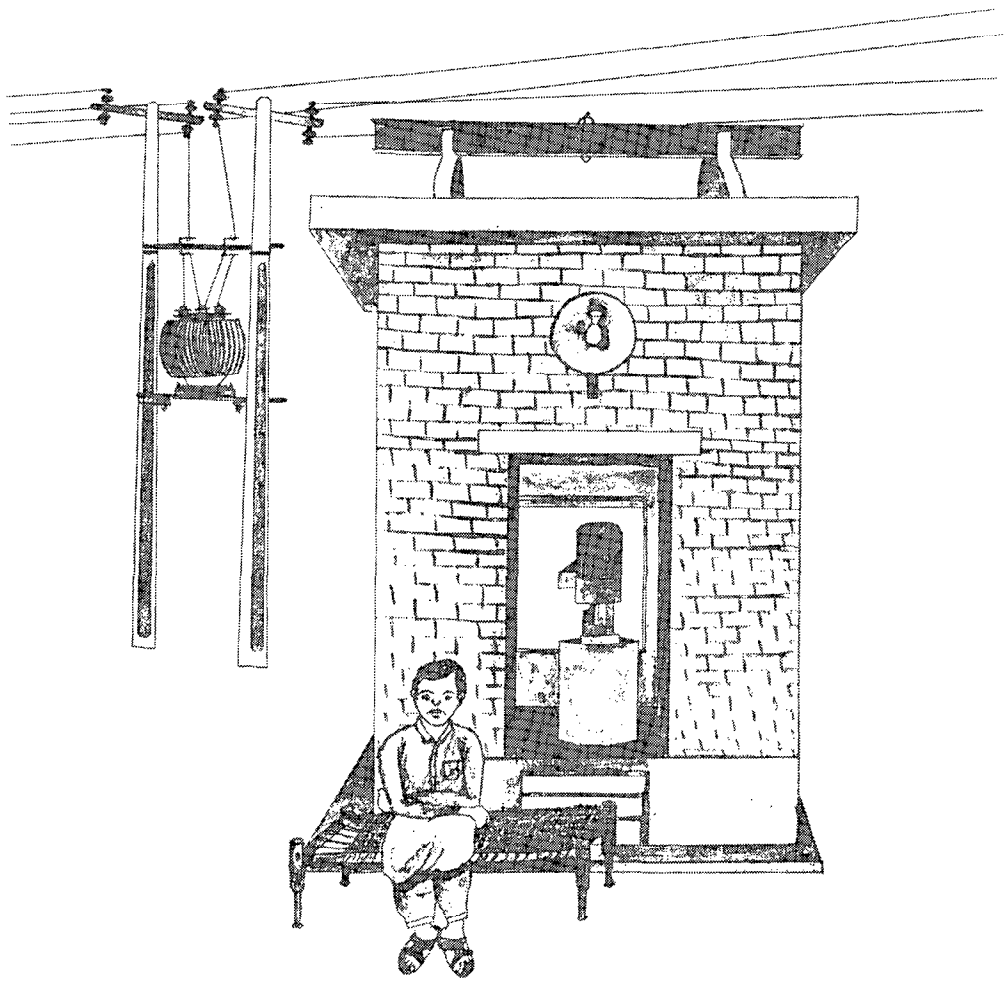
POSTERS OF ALTERNATIVE SYSTEMS AND SYSTEM COMPONENTS

to be used for discussions with village development organizations so that they can choose the most economic system from those feasible.

The costs are to be filled in according to the latest figures.

ٹیوب ویل

Tubewell

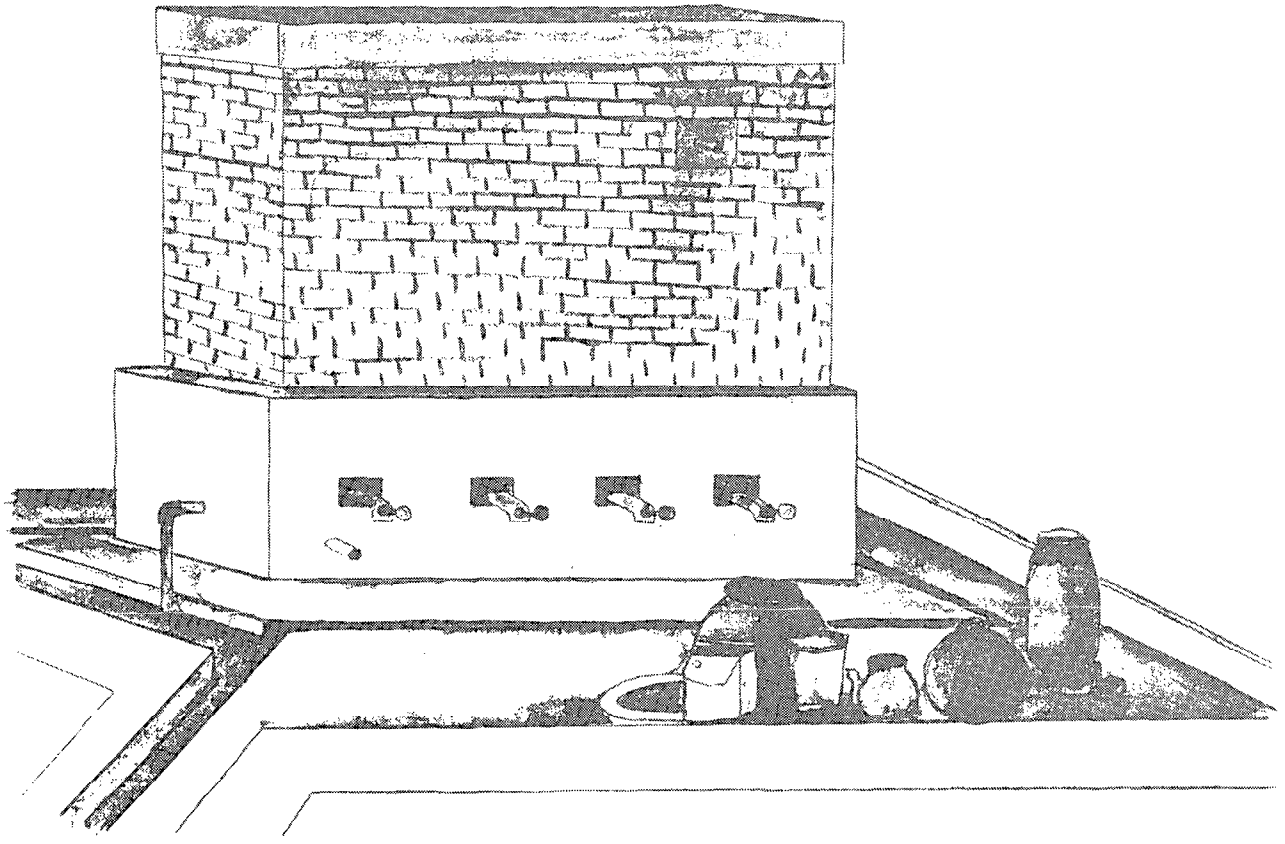


محکمے کا کُل خرچ	روپے	دیکھ بھال کا خرچ (ماہانہ)	روپے
۱۔ ٹیوب ویل کی تعمیر	=	۱۔ بجلی کا خرچ	=
۲۔ پمپ کرنے والی مشین	=	۲۔ آپریٹر/لائن مین/چوکیدار کی تنخواہ	=
۳۔ بجلی کی تنصیب	=	۳۔ مشین اور ملحقہ پُرزوں کی مرمّت	=
۴۔ پمپ ہاؤس اور چوکیدار کا کمرہ	=	۴۔ دوسرے سول کام	=
		کُل ماہانہ خرچ	=
کُل خرچ	=	کُل ماہانہ خرچ فی گھر	=

پبلک ہیلتھ انجینئرنگ ڈیپارٹمنٹ صوبہ سرحد

عوام کے استعمال کے لئے پانی کی ٹینکی

Community tank



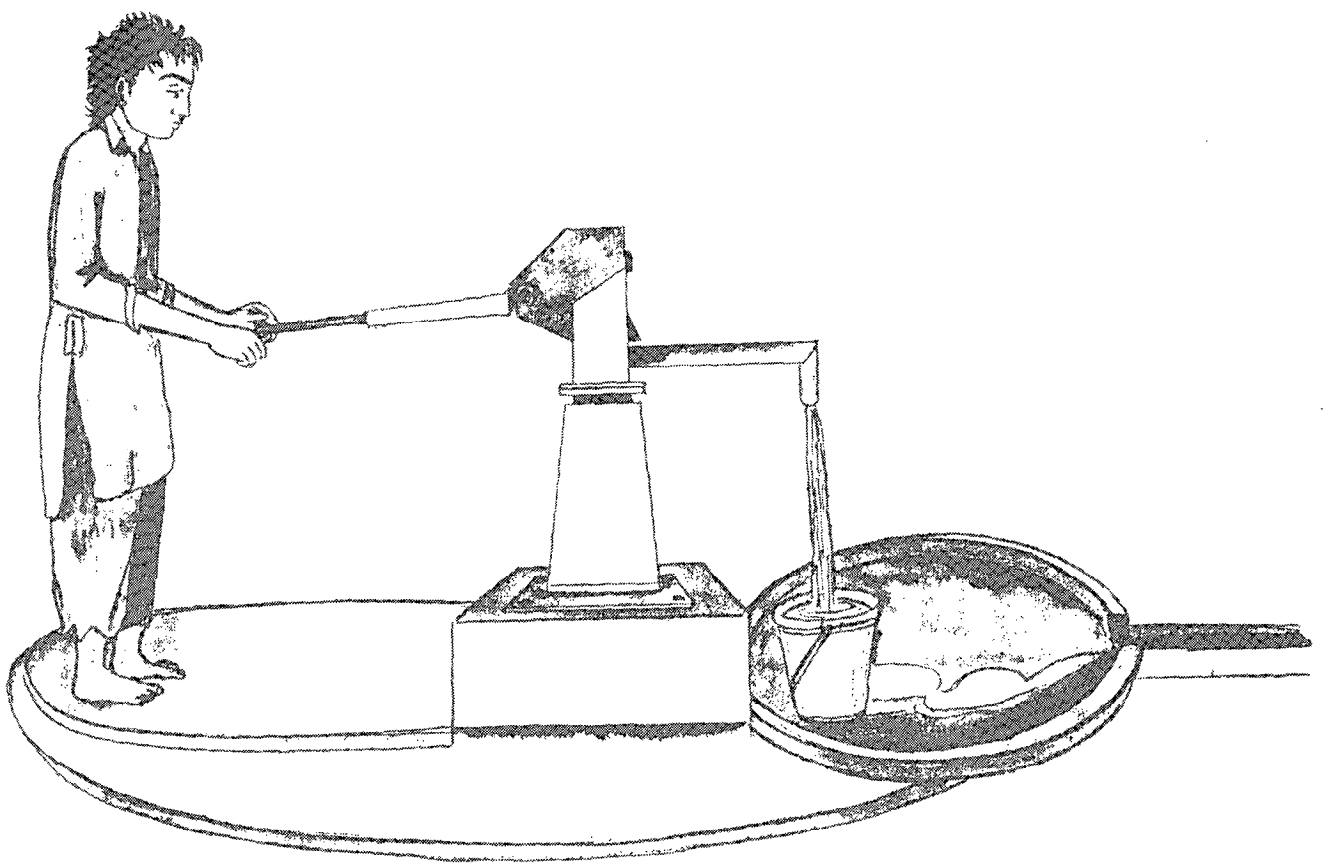
محکمے کا خرچ	روپے
۱- گھروں کی تعداد فی ٹینک	=
۲- گنجائش فی ٹینک	=
۳- کُل خرچ برائے تعمیر فی ٹینک	=
۴- کُل تعداد ٹینک گاؤں کے لئے	=
۵- محکمہ کا کُل خرچ برائے تعمیر ـــــ عدد ٹینک	=

دیکھ بھال کا خرچ	روپے
۱- نالیوں، چبوترے اور اردگرد کی صفائی (۱۵ دنوں کے بعد)	=
۲- ٹینک، نلکوں، نالیوں اور چبوترے وغیرہ کی مرمّت (سالانہ/چار مہینے بعد)	=
۳- خرچ برائے فی ٹینک	=
۴- کُل خرچ برائے ـــــ عدد ٹینک	=
۵- خرچہ فی گھر (سالانہ/ماہانہ)	=

پبلک ہیلتھ انجنیئرنگ ڈیپارٹمنٹ صوبہ سرحد

عوام کے استعمال کے لئے اصلاح شدہ کنواں پر انڈس دستی پمپ

Indus handpump on community borehole



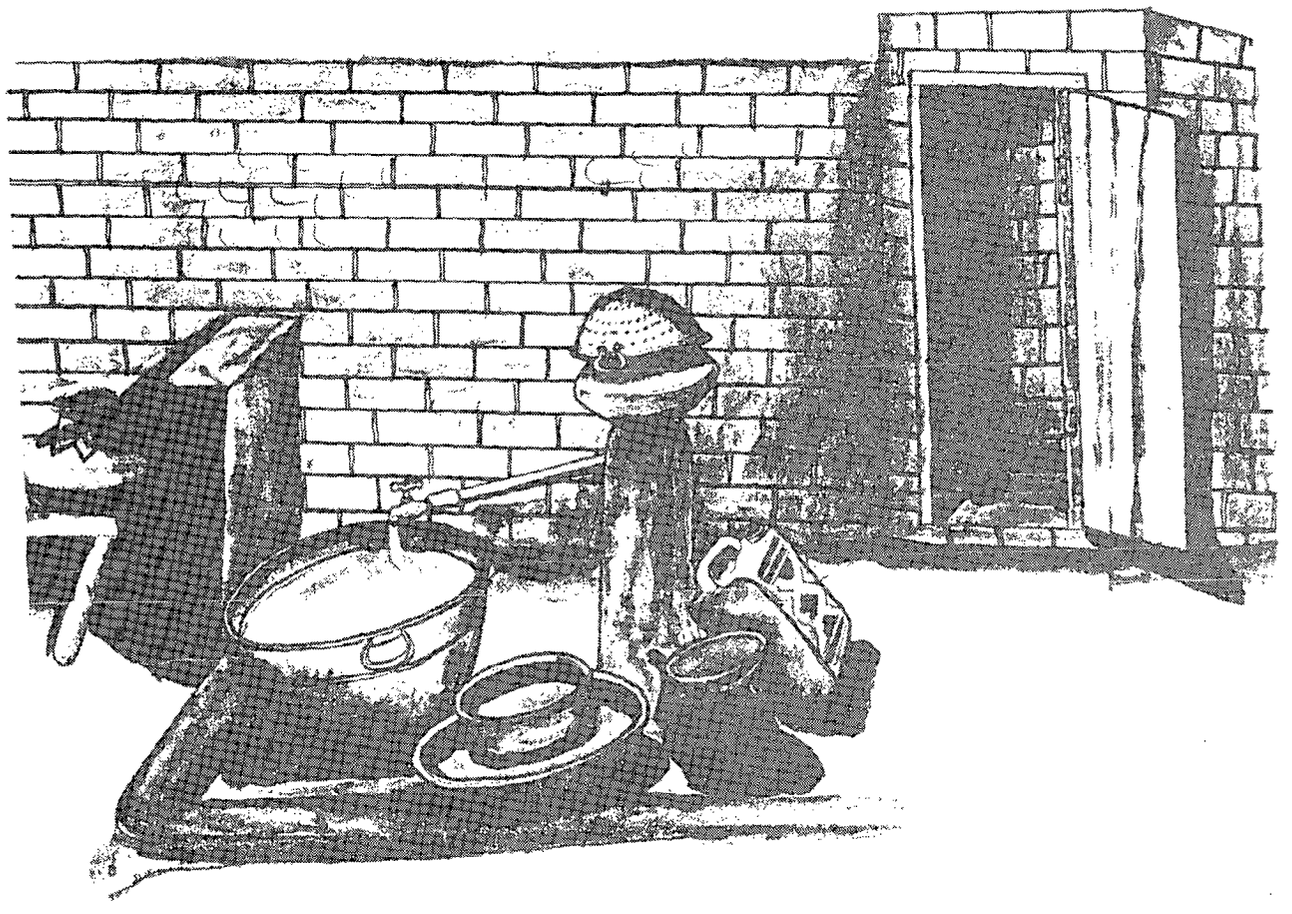
خرچ تعمیر		روپے
۱۔ زمین میں سوراخ کرنا (افٹ)	=	
۲۔ دستی پمپ کا مہیا کرنا اور لگانا	=	
۳۔ کُل خرچ فی پمپ	=	
۴۔ زمینی سوراخ کی تعداد	=	
۵۔ پمپ کی کُل تعداد	=	
۶۔ کُل خرچ گاؤں کے لئے	=	

خرچ دیکھ بھال (ماہانہ فی پمپ)	=
۱۔ پمپ/چبوترے/نالی کی مرمّت (مکینک)	=
۲۔ سپیئر پارٹس وغیرہ	=
۳۔ اشیاء مرمّت	=
کُل خرچ ماہانہ فی پمپ	=
گھروں کی تعداد فی پمپ	=
کُل خرچ فی گھر فی پمپ	=

پبلک ہیلتھ انجنیئرنگ ڈیپارٹمنٹ صوبہ سرحد

گھریلو پانی کا کنکشن

House connection



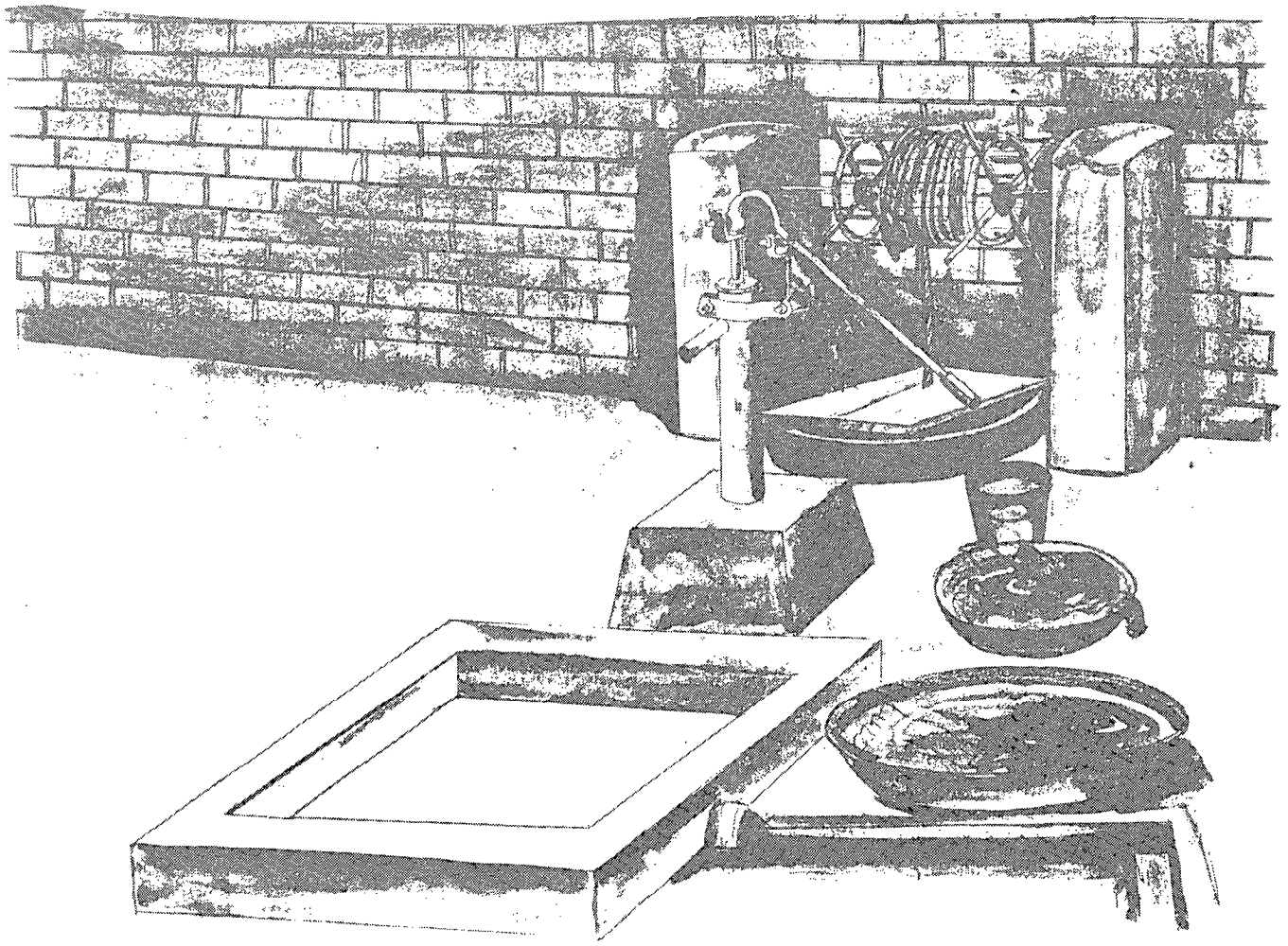
محکمے کا خرچ		روپے
۱۔ مین پائپ لائن کا خرچ	=	
۲۔ خرچ فی گھریلو کنکشن	=	
کُل خرچ	=	

دیکھ بھال کا خرچ		روپے
۱۔ پائپ، نلکے، چبوترے اور نالی وغیرہ کی صفائی	=	
۲۔ ماہانہ خرچ فی گھریلو کنکشن	=	

پبلک ہیلتھ انجنیئرنگ ڈیپارٹمنٹ صوبہ سرحد

گھریلو کنوئیں پر مقامی دستی پمپ

Local handpump on household improved dugwell



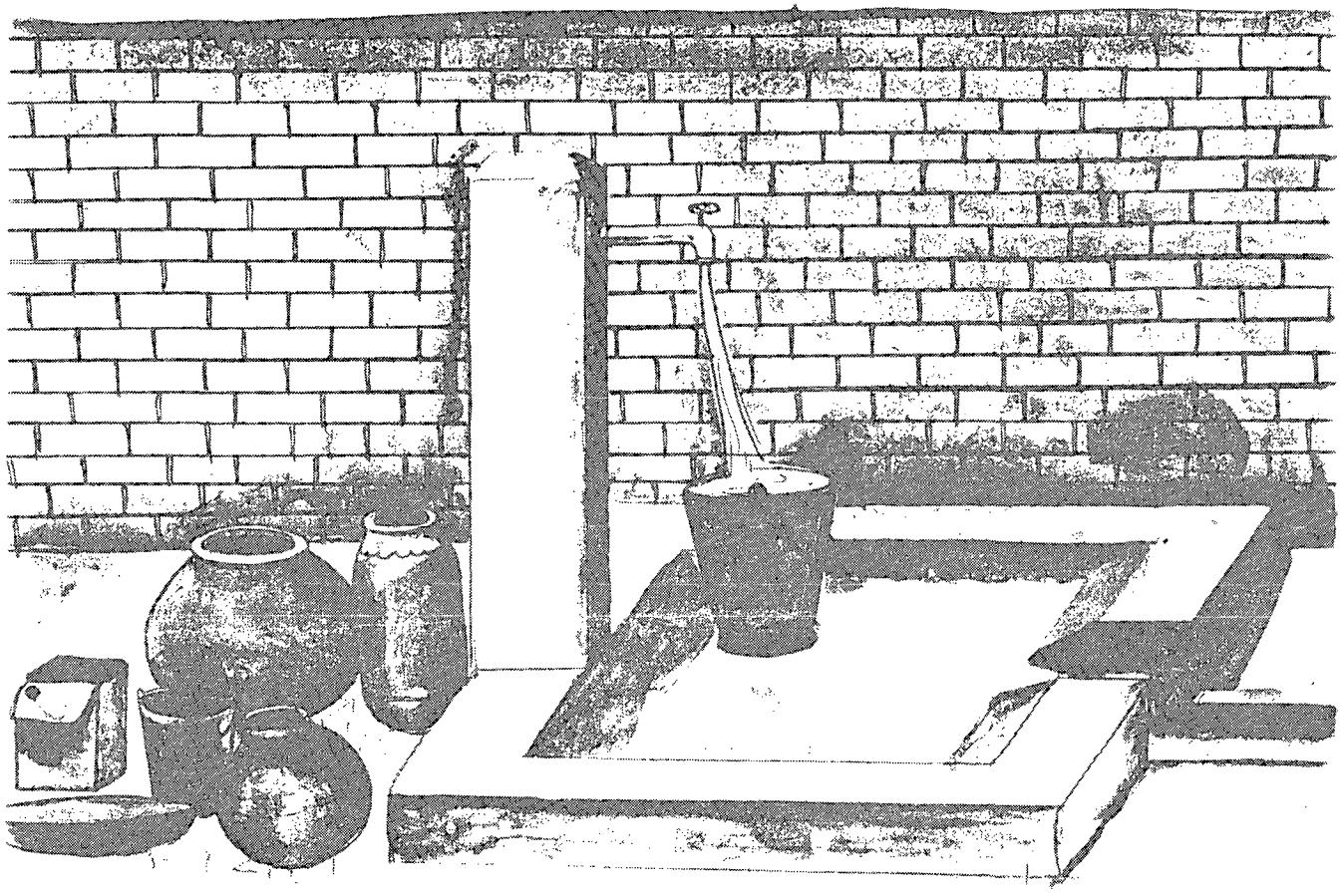
خرچہ تعمیر		روپے
۱۔ کنوئیں کی مرمت	=	
۲۔ مقامی دستی پمپ کا مہیّا کرنا اور لگانا	=	
۳۔ پائپ اور فٹ والو کا مہیّا کرنا اور لگانا	=	
۴۔ کھُرہ بنانا اور نالی کی تعمیر	=	
۵۔ خرچ فی پمپ/گھروں کی تعداد	=	
۶۔ کُل خرچ	=	

خرچ دیکھ بھال		روپے
۱۔ خرچ مزدور برائے مرمت کنواں/چبوترا/نالی	=	
۲۔ سپیئر پارٹس وغیرہ	=	
۳۔ اشیاء برائے مرمّت	=	
۴۔ کُل خرچ	=	
۵۔ گھروں کی تعداد	=	
۶۔ کُل دستی پمپ وخرچہ	=	

پبلک ہیلتھ انجنیئرنگ ڈیپارٹمنٹ صوبہ سرحد

پانی کا نلکہ

Stand post



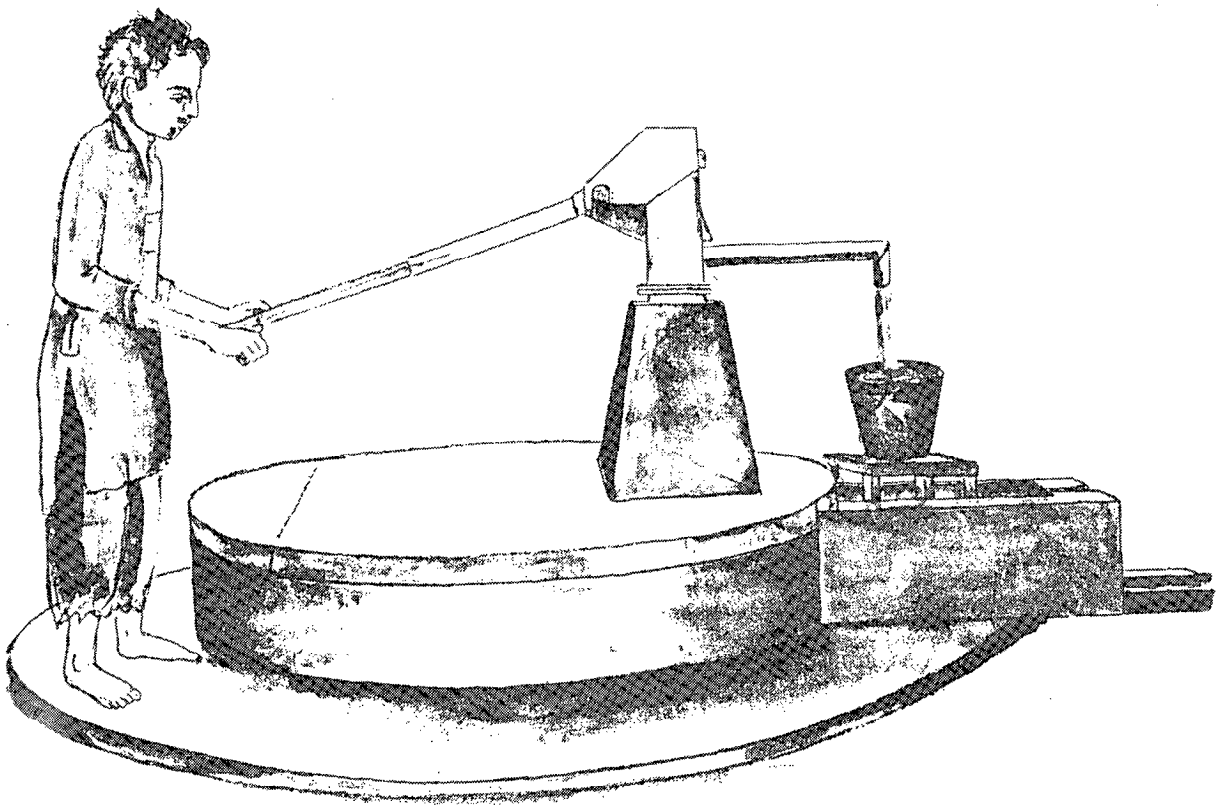
خرچ تعمیر		روپے
۱۔ پائپ لائن کا خرچ	=	
۲۔ ایک پانی کے نلکے پر خرچ	=	
۳۔ پورے گاؤں کے لئے تعداد	=	
۴۔ عدد نلکوں پر کُل خرچ	=	
۵۔ کُل خرچ برائے پائپ لائن اور عدد نلکے	=	

خرچ دیکھ بھال		روپے
۱۔ چبوترے/نالی/اور ارد گرد کی صفائی (۱۵ دن)	=	
۲۔ چبوترے/نالی اور نلکے کی مرمت	=	
۳۔ کُل خرچ	=	

پبلک ہیلتھ انجنیئرنگ ڈیپارٹمنٹ صوبہ سرحد

عوام کے استعمال کے لئے زمینی سوراخ پر انڈس دستی پمپ

Indus handpump on community improved dugwell



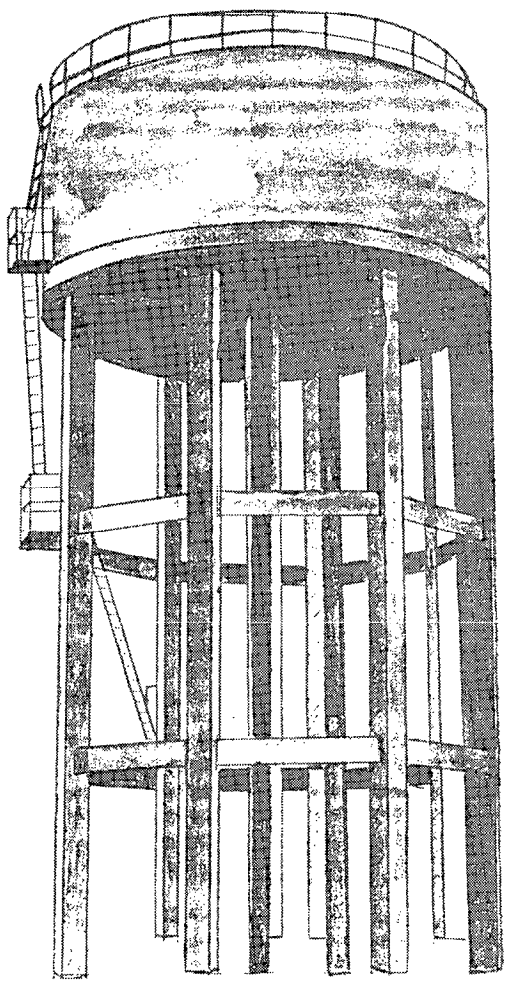
خرچ تعمیر (اوسطاً فی پمپ)	روپے
۱۔ کنوئیں کو بہتر کرنا (۔۔ فٹ)	=
۲۔ ہینڈ پمپ کا مہیّا کرنا اور لگانا	=
۳۔ کُل خرچ (فی پمپ)	=
۴۔ کنوؤں کی تعداد	=
۵۔ پمپ کی تعداد	=
۶۔ کُل خرچ (گاؤں کے لئے)	=

خرچ دیکھ بھال (ماہانہ)	روپے
۱۔ پمپ/کنوئیں/چبوترے/نالی کی مرمت (مکینک)	=
۲۔ سپیئر پارٹس وغیرہ	=
۳۔ اشیاء مرمت	=
کُل خرچ برائے فی پمپ	=
۴۔ گھروں کی تعداد فی پمپ	=
۵۔ کُل خرچ فی گھرانی پمپ (ماہانہ)	=

پبلک ہیلتھ انجنیئرنگ ڈیپارٹمنٹ صوبہ سرحد

پانی ذخیرہ کرنے کے لئے اُونچی ٹینکی یا اُونچا ذخیرۂ آب

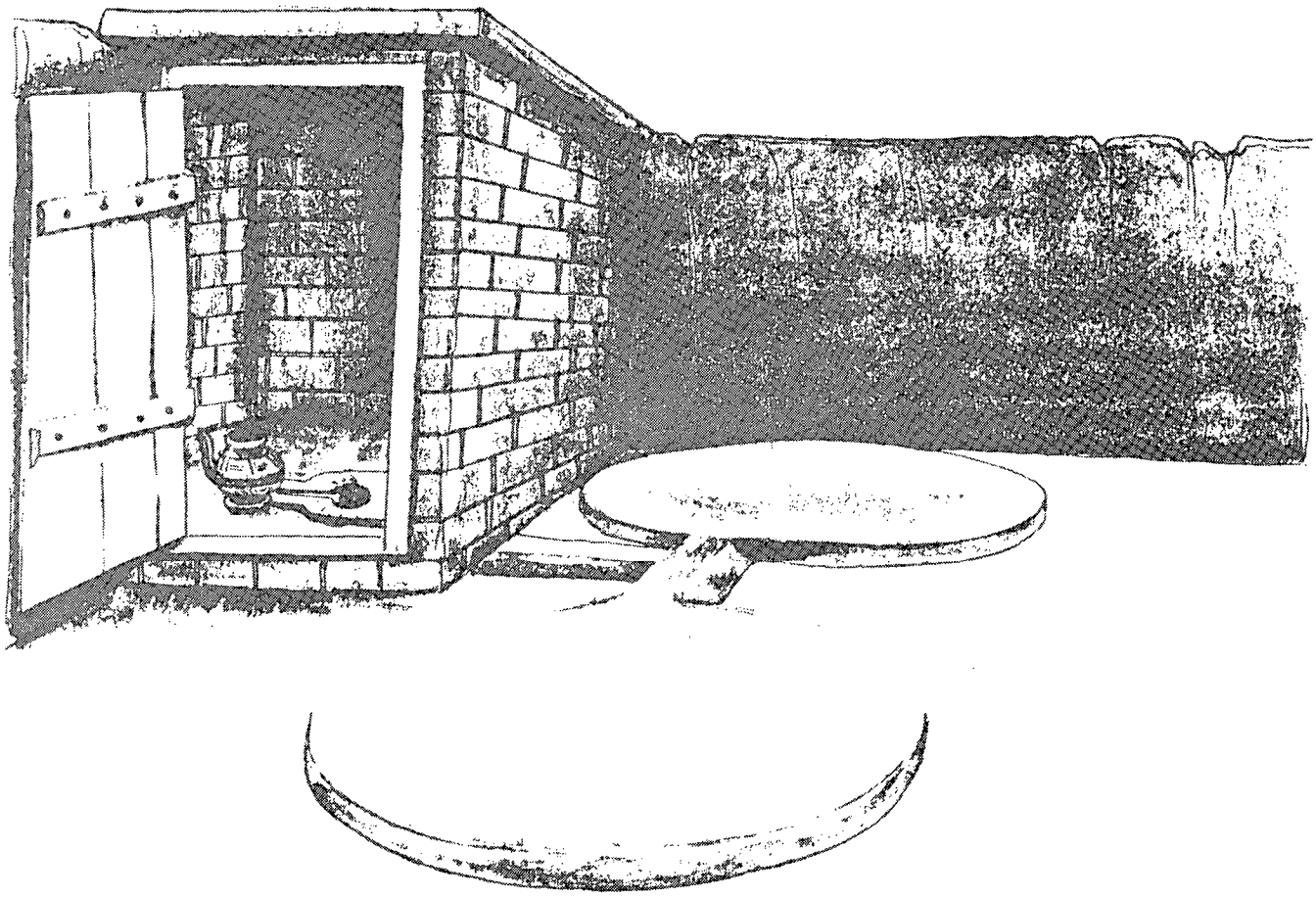
Overhead reservoir



تعمیر	روپے	دیکھ بھال	روپے
۱۔ بالائی ٹینکی کی گنجائش	=	۱۔ مرمت بالائی ٹینک	=
۲۔ محکمہ کا کُل خرچ برائے تعمیر	=	۲۔ صفائی بالائی ٹینک	=
		۳۔ کُل خرچ	=

پبلک ہیلتھ انجنیئرنگ ڈیپارٹمنٹ صوبہ سرحد

Double pit latrine



AVERAGE CAPITAL COSTS AND STANDARD PARAMETERS FOR PHED WATER SUPPLY SYSTEMS AND SYSTEM COMPONENTS

to be used for adjusting the basic data of the systems to the actual conditions of the village.

TUBEWELL

Estimated average capital costs

(All rates according to 1990/1991 cost estimates)

STANDARD CRITERIA	UNIT	AREA		
		CENTRAL	NORTHERN	SOUTHERN
CAPITAL COST	RS			
tubewell construction	(1)	2,25,000	1,87,000	4,07,000
pumping machinery		1,50,000	1,20,000	2,09,000
electrification		1,20,000	90,000	1,35,000
pumphouse and chowkidar hut		90,000	90,000	90,000
TOTAL COST		5,85,000	4,87,000	8,41,000
DESIGN POPULATION	No of People			
Present: 1991		6,000	2,000	5,000
In 20 year @ 3% growth rate: 2011		10,000	3,400	8,000
DAILY DEMAND	Gallons/day	15	15	10*
Present: 1991		90,000	30,000	50,000
In 20 years: 2011		1,50,000	51,000	80,000
DISCHARGE OF PUMP	Gallons/hour	12,000	5,000	5,000
HEAD	Feet	250	300	400
MOTOR	HP	25	20	25
DEPTH OF BOREHOLE	Feet (2)	300	250	600
AVERAGE COST FOR TUBEWELL CONSTRUCTION PER Rft.	(1)/(2)	750	750	680

* according to the service level
- — house connection 15 gln/day
- — community tank 10 gln/day
- — standpost 10 gln/day

GRAVITY FLOW - SPRING TAPPING

Estimated average capital costs

STANDARD CRITERIA	UNIT	CENTRAL
CAPITAL COST spring tapping construction incl. cutt-off wall	RS	80,000
DESIGN POPULATION Present: 1991 In 20 years @ 3% growth rate: 2011	No of people	3,000 5,400
DAILY DEMAND capita/day Present: 1991 In 20 years: 2011	Gallons/day	 30,000 54,000
DISCHARGE	Gallons/hour	4,000

GRAVITY FLOW - INFILTRATION GALLERY

Estimated average capital costs

STANDARD CRITERIA	UNIT		REMARKS
LENGTH OF GALLERY	Feet	200	
CAPITAL COST infiltration gallery construction	RS	1,00,000	calculated on the basis of 500 Rs per foot of gallery
DESIGN POPULATION	No of people		average number of people served by In gravity flow system (A'bad Division)
Present: 1991		3,000	
20 years @ 3% growth rate: 2011		5,400	
DAILY DEMAND @ 10 Gallons/ capita/day	Gallons/day		
Present: 1991		30,000	
In 20 years: 2011		54,000	
DISCHARGE	Gallons/hour	4,000	

* according to the service level
- — house connection 15 gln/day
- — community tank 10 gln/day
- — standpost 10 gln/day

OVERHEAD RESERVOIR - ALL AREAS

Estimated average capital costs

STANDARD CRITERIA	UNIT			
DESIGN POPULATION	No of people	8,000	20,000	40,000
DAILY DEMAND @ 15 Gallons/ capital/day	Gallons	1,20,000	3,00,000	6,00,000
CAPACITY OF OVERHEAD RESERVOIR @ 1/6th daily demand		20,000	50,000	100,000
CAPITAL COST	RS	7,00,000	12,00,000	20,00,000

SURFACE TANK - ALL AREAS

Estimated average capital costs

STANDARD CRITERIA	UNIT			
DESIGN POPULATION	No of people	2,700	5,500	13,500
DAILY DEMAND @ 15 Gallons/ capita/day	Gallons	40,000	80,000	2,00,000
CAPACITY OF SURFACE TANK @ 1/4 daily demand for pumping scheme*	Gallons	10,000	20,000	50,000
CAPITAL COST	Rs	1,00,000	1,50,000	3,00,000

* 1/2 daily demand for gravity scheme - capital cost according to the capacity

DISTRIBUTION SYSTEM - ALL AREAS

Estimated average capital costs

STANDARD CRITERIA	UNIT	TYPE OF SERVICE		
		STANDPOST	COMMUNITY TANK	HOUSE CONNECTION
LENGTH OF PIPE	Feet	20,000	25,000	35,000
CAPITAL COST *	RS	7,00,000	8,50,000	12,00,000

* capital cost depends on the pipe material, distribution systems with GI-pipes for the northern areas are more expensive than PVC and AC-pipes

COMMUNITY TANK - ALL AREAS

Estimated average capital costs

STANDARD CRITERIA	UNIT		
DESIGN POPULATION	No of people	200	400
NO OF TAPS		3 - 4	up to 6
DAILY DEMAND @ 10 Gallons/ capita/day	Gallons	2,000	4,000
CAPACITY OF COMMUNITY TANK @ 1/4 daily demand for pumping scheme *	Gallons	500	1,000
MAXIMUM DISTANCE FROM USER	Feet	500	800
CAPITAL COST	RS	12,000	20,000

* 1/2 daily demand for gravity scheme

STANDPOST - ALL AREAS

Estimated average capital costs

STANDARD CRITERIA	UNIT	
DESIGN POPULATION with daily demand @ 10 Gallons/ capita/day	No of people	200
MAXIMUM DISTANCE FROM USER	Feet	200
CAPITAL COST	RS	800 *

* depending on the type of standpost - one or two taps - UNICEF-type capital cost about 2000 Rs

HOUSE CONNECTION - ALL AREAS

Estimated average capital costs

CAPITAL COST	RS	500 - 2000

INDUS HANDPUMP ON COMMUNITY WELL

(NEW BOREHOLE)

Estimated average capital costs

STANDARD CRITERIA	UNIT		REMARKS
DESIGN POPULATION	No of people	200	maximum recommended number of users per handpump
CAPITAL COST	RS		
borehole construction including drainage & RCC		36,000	calculated for borehole of 150 ft depth
supply and installation of Indus handpump including rising main and accessories		18,000	recommended by the manufacturers, DACAAR for water table of depth 20 - 170 feet
TOTAL COST		54,000	

INDUS HANDPUMP ON COMMUNITY WELL

(IMPROVED DUGWELL)

Estimated average capital costs

STANDARD CRITERIA	UNIT		REMARKS
DESIGN POPULATION	No of people	200	as above
CAPITAL COST	RS		
improvement of dugwell		20,000	average depth of dugwell is 60 ft
supply and installation of Indus handpump		12,000	as above
TOTAL COST		32,000	

LOCAL HANDPUMP ON HOUSEHOLD WELL

(NEW BOREHOLE OR IMPROVED DUGWELL)

Estimated average capital costs

STANDARD CRITERIA	UNIT	FOR ALL AREAS		REMARKS
CAPITAL COST	RS			
borehole construction or well improvement				cost borne by household
supply and installation of local handpumps including labour		2,000	1,300	alternative figures supplied
supply and installation of pipe and foot valve		500	300	average depth about 60 ft
Khurea construction including side drain		400	500	
TOTAL COST		2,900	2,100	
DESIGN POPULATION		1 family		

CHECKLISTS FOR OPERATION AND MAINTENANCE TASKS

to be used for explanation to the VDO which tasks have to be carried out so that they can decide what they will do themselves and for what they are going to pay for.

OPERATION AND MAINTENANCE CHECKLIST

WELL + HUT	C	O	TURBINE MOTOR/PUMP	C	O	SUBMERSIBLE MOTOR/PUMP	C	O	OVERHEAD RESERVOIR	C	O
DAILY Cleaning - Drains around - Hut and surrounding			**DAILY** Lubricate the pump before starting Check rotor of the pump (for free rotation) Check - water table - voltage/ampere - phases - delivery of the water - pressure Doree/gland not leading			**DAILY** Check for any abnormal noise Check - water table - voltage/ampere - phases - delivery of the water - pressure			**DAILY** Clean the surrounding area and drains etc.		
FORTNIGHTLY			**FORTNIGHTLY** Check motor control unit. Check discharge of pump Check the quality of water Check for any abnormal noise			**FORTNIGHTLY** Check elect. connection for - Switch board - Motor terminals Check protective gadgets Check water quality and quantity. (Sand particles)			**FORTNIGHTLY** Check valve operation Check level indicator function Check the manhole cover to be tightend properly.		
QUARTERLY Take Water sample for Chemical analysis Carry out minor repairs to - Apron - Drains - Hut			**QUARTERLY** Check motor control unit. Lubricate bronze bearing bush in gland packing. Check for any abnormal noise			**QUARTERLY** Carry out overall checking for - Motor control unit - Overheating - Abnormal noise - Connection (panel board and motor). Lubrication			**QUARTERLY** Check valve Lubricate running parts of the level indicator Check valve operation		
ANNUALLY Carry out general repairs and maintenance for normal wear and tear White washing and painting			**ANNUALLY** Check Elect. Connection in - Panel board - Motor terminals Check motor control unit. Automatic starter - Circuit breaker - Dry running protection - Low/high voltage controller - Phase failure - Overload control Check indicator bulbs and fuzes Lubricate bearing bush. Check motor vibrations Check the discharge of the pump. Check the quality of water. Check for any abnormal noise Check the alignment of pump.			**ANNUALLY** Check Elect. Connection in - Panel board - Motor terminals Check motor control unit. Automatic starter - Circuit breaker - Dry running protection - Low/high voltage controller - Phase failure - Overload control Check indicator bulbs and fuzes Lubricate bearing bush. Check motor vibrations Check the discharge of the pump Check the quality of water. Check for any abnormal noise Check the alignment of pump.			**ANNUALLY** Check the complete Civil structure of the Tank carry out any repair if required. Check chlorination apparauts if fitted. Do internal inspection of the Tank structure. Carry out cleaning of the Tank and disinfect. check the operation of the valve. Check the level indicator for operation.		

WATER SUPPLY SYSTEM COMPONENTS
OPERATION AND MAINTENANCE CHECKLIST

SURFACE TANK	C	O	SUPPLY MAIN/ DISTRTION. NETWORK	C	O	COMMUNITY	C	O	STAND POSTS	C	O	HOUSE CONNECTION	C	O
DAILY Clean the surrounding area and drains etc.			**DAILY** Check for any leakage and repair or replace if required.			**DAILY** Check for dripping taps - Repair or replace			**DAILY** Check for dripping taps - Repair or replace			**DAILY** Check for dripping taps - Repair or replace Clean - Drains - Apron - Surroundings - Storage jars		
FORTNIGHTLY Check valve operation Check level indicator function if fitted			**FORTNIGHTLY** Check operation of the valves Check for any leakage Check for any abuse of the network (e.g. illegal connection or damaged).			**FORTNIGHTLY** Carry out cleaning of - Drains - Apron - Surroundings			**FORTNIGHTLY** Carry out cleaning of - Drains - Apron - Surroundings			**FORTNIGHTLY** Check for any leakage of house connection if necessary.		
QUARTERLY Check sluice/peat valves. Lubricate running parts of the level indicator if fitted Check valve operation			**QUARTERLY** Inspect of the entire line for leakage and valve operation and repair if damaged.			**QUARTERLY** Carry out repairs to and disinfect - Drains - Apron - Tank Check leakage from - Tap - Tank			**QUARTERLY** Carry out repairs to and disinfect if necessary - Drains - Apron Check leakage from - Tap - Stand posts Replace faulty taps.			**QUARTERLY** Carry out repairs to and disinfect if necessary - Drains - Apron Check leakage from - Tap - Pipe		
ANNUALLY Check the complete Civil structure of the Tank carry out any repair if required. Check chlorination apparatus if fitted. Do internal inspection of the Tank structure. Carry out cleaning of the Tank and disinfect. Check the operation of the valve. Check the level indicator for operation if fitted			**ANNUALLY** Replace damaged portion of the pipes Cover any exposed portionof the pipe Check quality of water at - Source - Delivery point.			**ANNUALLY** Carry out cleaning of the Tank disinfect Carry out repairs to - Tank - Drains - Apron Replace faulty taps			**ANNUALLY** Carry out cleaning of the surroundings Carry out repairs to & disinfect - Drains - Apron Replace faulty taps			**ANNUALLY**		

LOCAL HANDPUMP ON HOUSEHOLD WELL
(BOREHOLE OR IMPROVED DUG WELL)
OPERATION AND MAINTENANCE CHECKLIST

			Indus Hand Pump			Local Hand Pump		
WELL/SURROUNDINGS	**C**	**O**	**PUMP**	**C**	**O**	**PUMP**	**C**	**O**
DAILY			**DAILY**			**DAILY**		
— Clean apron — Clean drains and clear any blockage — Check that waste water drains away properly into drain/ soakpit/garden — Keep animals away — Remove rubbish/faeces lying near well			— Clean outside of pump — Check pump handle moves smoothly — Tighten loose nuts/ bolts — Check flow of water is smooth and in sufficient volume			— Clean outside of pump — Check pump handle moves smoothly — Tighten loose nuts/ bolts — Check flow of water is smooth and in sufficient volume		
QUARTERLY			**QUARTERLY**			**QUARTERLY**		
— Test free residual chlorine (disinfection for dug well). — If less than 2mg/1 chlorinate well			— Check pump secure at base — Carry out repairs to base — Register and deal with user problems/ complaints			— Check pump secure at base — Carry out repairs to base — Check leather washer and replae if necessary — Lubricate moving parts		
ANNUALLY			**ANNUALLY**			**ANNUALLY**		
— Chlorinate well after overhaul — Carry out repairs to well cover, apron and drain — Rehabilitate well if necessary — Remind users of correct operation of pump and all relevant hygiene practices that should be observed — Cleaning of the dug well.			— Buy spare parts — Replace tools — Carry out scheduled maintenance (2 people) a. Footvalve replace bobbin replace 'O' ring b. Plunger replace bobbin replace seal c. Hanger Pin replace bearings bush d. Fulcrun Pin replace bearings bush e. Tighten all nuts/bolts — Clear out silt and/or clean filter — Replace or repair rising main and road centralisers.			— Buy spare parts — Replace tools — Carry out maintenance a. Replace leather washer b. Replace footvalve c. Tighten all nuts bolts d. Replace or repair rising main and rod centralisers e. Lubricate moving parts — Clear out silt		

GRAVITY FLOW SYSTEM
OPERATION AND MAINTENANCE CHECKLIST

SPRING TAPPING	C	O	INFILTRATION GALLERY	C	O
DAILY			**DAILY**		
FORTNIGHTLY			**FORTNIGHTLY**		
— Check the surrounding of the spring for any source of pollution (e.g. human being, animals) and arrange sanitary protection of the spring if necessary.					
QUARTERLY			**QUARTERLY**		
— Check the structure if needs any repairs. — Check intake structure for cleaning.			— Infiltration gallery. — Check operation of valves. — Guide channel — Grit chamber — Check sump well		
ANNUALLY			**ANNUALLY**		
— Check the structure if needs repair. — Clean the storage tank. — Check the valve operation — Check the discharge of the spring with a discharge measurement.			— Occasional minor repairs in sump well etc. if required Replace a portion part of the aggregate in infiltration gallery or in grit chamber. — Check the discharge of the gallery with a discharge measurement.		

OPERATION AND MAINTENANCE COSTS FOR PHED WATER SUPPLY SCHEME

to be used for discussions with the VDO when they are making their choice between feasible systems.

TUBEWELL SCHEME

Estimated O&M costs

CATEGORY OF COST		UNIT	REMARKS
		Rs./year	
MACHINERY REPAIRS AND PARTS		15,000	Figures based on annual average for all schemes, Pesh. Division, 1990/91 - valid for central area of NWFP
ELECTRICITY		80,000	
CIVIL WORKS INCLUDING PIPES, VALVES		5,000	
ESTABLISHMENT (operator, lineman and chowkidar)		42,000	In most cases all 3 staff are employed
Total		1,42,000	
Say:		1,50,000	
No of people served	=	6,000	(Design population)
Assume only 50% connected and about 50% served by standposts	=	3,000	
No of families @ 7 people	=	429	
Cost per family per annum	=	350 Rs	
Cost per family per month	=	29 Rs	

GRAVITY FLOW SCHEME

Spring tapping or infiltration gallery

Estimated O&M costs

CATEGORY OF COST		UNIT	REMARKS
		Rs./year	
CIVIL WORKS INCLUDING PIPES AND VALVES		1,863	Annual average of all schemes, A'bad Division 1990/91 valid for northern area of NWFP
ESTABLISHMENT (valveman, chowkidar)		16,410	Less than 10% schemes employ a chowkidar.
Total		18,273	
Say		20,000	
No of people served	=	3,000	Average calculated from A'bad figures.
Assume only 50% connected and about 50% served by standposts	=	1,500	
No of families @ 7 people	=	214	
Cost per family per annum	=	93.5 Rs.	
Cost per family per month	=	8 Rs.	

LOCAL HAND PUMP ON HOUSEHOLD WELL

(NEW BOREHOLD OR IMPROVED DUGWELL)

Estimated O&M costs

CATEGORY OF COST	UNIT	REMARKS
	Rs./year	
MAINTENANCE AND REPAIRS OF PUMP AND CIVIL WORKS TO WELL, APRON AND DRAIN INCLUDING DISINFECTION* (non-household labour costs)	150	
SPARE PARTS AND TOOLS	50	
MATERIALS FOR CIVIL WORKS AND DISINFECTION*	50	
TOTAL	250 Rs.	

Cost per family per annum	250 Rs.
Cost per family per month	20 Rs.

* Disinfection for dugwell.

Actual figures will be available, when the monitoring programme in the village Budni is utilized.

INDUS HANDPUMPS ON COMMUNITY WELLS

(NEW BOREHOLE OR IMPROVED DUGWELL)

Estimated O&M costs

CATEGORY OF COST	UNIT	REMARKS
	Rs./year	
MAINTENANCE AND REPAIRS TO 10 PUMPS, WELLS, APRONS AND DRAINS INCLUDING DISINFECTION (PART-TIME MECHANIC + LABOUR)	6,000	
MATERIALS FOR CIVIL WORKS AND DISINFECTION	2,000	
SPARE PARTS AND TOOLS	2,000	
TOTAL	10,000	
No of wells	10	Average scheme
No of people served (assume all are users)	2,000	Design population 200 per handpump
No of families @ 7 people	285	
Cost per family per annum	35 Rs.	
Cost per family per month	3 Rs.	

All cost from DACAAR - Mr. Z A Mumtaz, Head of Maintenance Unit, responsible for maintenance of about 1500 Indus handpumps installed in Afghan refugee camps

PROS AND CONS LISTS FOR PHED WATER SUPPLY SYSTEMS AND SYSTEM COMPONENTS

to be used for discussion with the VDO, so that the VDO can choose that system and system component which they can afford and maintain.

CRITERIA USED TO ASSESS THE PROS AND CONS OF EACH WATER SUPPLY SYSTEM

1. Financial input for construction from the users (individually or collectively) and construction cost borne by PHED

2. Labour and materials input for construction from the users

3. Privacy/convenience especially concerning purdah, proximity of facility to user, and quantity of water available

4. Level of service (community tank; standpost; house connection)

5. System reliability
   - ➢ Likelihood of breakdown
   - ➢ Cost of repairs
   - ➢ Time needed for repairs
   - ➢ Temporary alternate water supply
   - ➢ Duration of service (hrs per day)

6. System sustainability
   - ➢ Operation cost
   - ➢ Ease of operation
   - ➢ Operation responsibility
   - ➢ Maintenance cost
   - ➢ Ease of maintenance
   - ➢ Maintenance responsibility

OTHERS COULD INCLUDE:

7. Extent to which community can take responsibility of decision-making for a given system and components.

8. Siting and ownership of facilities

9. Water quality; taste, colour, smell & health aspect

10. How quickly can the system be installed

TUBEWELL SYSTEM

PROS

Good water quality, free from bacteria, can be guaranteed from the source because the well is deep and water is protected

The system can supply house connections when sufficient water is available

CONS

Operation costs are very high because a chowkidar, a valveman, an operator must be employed and electricity is needed for pumping. Because of high operation costs pumping time is restricted to few hours

There are problems with electricity, for example:

- lack of coordination with WAPDA can lead to delays in installation and repairs;
- voltage fluctuations can burn out the motor so there will be the extra cost of either a motor control unit or a regulator;
- load-shedding and low voltage can lead to less pumping time

Maintenance costs are high because skilled labour is needed to carry out repairs to the pump and parts are expensive

When the pump breaks down water supply can be stopped for a long time because the new pump or spare parts and the skilled labour required to fit them are not locally available

Repairs can also take a long time because the pump machinery is technically complicated (especially submersible pumps)

Because water supply is not constant, waste water can enter distribution network where there are faulty joins in the pipes and illegal connections

Installation and construction can take up to 2-3 years

The capital cost to PHED is high especially where land has to be bought and an overhead reservoir installed

MONTHLY WATER CHARGES FOR OPERATION AND MAINTENANCE OF A TUBEWELL SYSTEM AT CURRENT PRICES WOULD BE ON AVERAGE 20 RUPEES PER FAMILY

GRAVITY FLOW SYSTEM

PROS

24 hours water supply is possible

Operation costs are low because usually only a valveman is needed and in a few cases a chowkidar

Maintenance costs are low because there are few recurrent repairs and no machinery is involved

The system rarely breaks down

The system can supply house connections when sufficient water is available

Construction usually takes a year or less

CONS

Disputes over rights to the water source can cause problems for the community

Springs can dry up in times of drought

The capital cost to PHED is very high

MONTHLY WATER CHARGES FOR OPERATION AND MAINTENANCE OF THE SYSTEM AT CURRENT PRICES WOULD BE ON AVERAGE 5 RUPEES PER FAMILY

INDUS HANDPUMP ON COMMUNITY WELL (BOREHOLE OR IMPROVED DUGWELL)

PROS

Operation is done by the user with no additional cost

The well and surroundings are easy to maintain and after short training **routine** and **preventive** maintenance can be done by a village caretaker

When any pump needs to be repaired the nearest handpump can be used temporarily as an alternative source of water

Installation is quick and easy and users can participate in this work

The Indus handpump provides 24 hours water supply

CONS

Where the pump is installed on a dugwell the water can become contaminated from wastewater seepage and from dirty well surroundings

The handpump must be at least 50ft away from the family or neighbour's latrine, and where no latrine exists at present this must be remembered when a latrine is built in the future

Indus handpumps are not familiar to the community and most spare parts are not available in local markets

Non-routine maintenance must be carried out by a mechanic who needs technical training, spare parts and tools

The handpump is too heavy for women to repair

The Indus handpump is only feasible where the depth of the water table is less than 170ft

If the water table is less than 20ft deep the Indus handpump is not cost-effective

MONTHLY WATER CHARGES FOR MAINTENANCE AT CURRENT PRICES WOULD BE ON AVERAGE 3 RUPEES PER FAMILY

LOCAL HANDPUMPS ON HOUSEHOLD WELL (BOREHOLE OR IMPROVED DUGWELL)

PROS

Communities are already familiar with local handpumps

The handpump is owned entirely by one family and there is no operation cost

It is very convenient to use especially for women who do not have to leave the compound

The family is responsible for all preventive maintenance and can replace fast wearing parts on pump and repair the well cover and drain.

Women can participate in maintenance and neighbours can help each other

If a new pump is needed the family can choose one they are able to afford as they cost up to Rs 1500

Water is available 24 hours a day whenever needed and in quantities required for family's needs

The boring of a new well can be carried out by many private contractors and the family can participate in this work or by improving an existing dugwell

In case the pump breaks down, water is available from nearest neighbour

Local handpumps can be installed in a few weeks and at low cost to PHED

CONS

Families must bear some financial cost and provide labour and materials to improve an existing dugwell (lining, slab, cover) or drill new borehole

The handpump must be at least 50ft away from the family or neighbour's latrine, and where no latrine exists at present this must be remembered when a latrine is built in the future

Incorrect hygiene practices can lead directly to contamination of well

Handpumps can only be installed where the water table is 30ft or less so there is a risk of water table contamination depending on soil type (a filter screen can be fitted below the level of the water table)

During installation every family has to be shown how to maintain the pump

THE COST OF MAINTENANCE AT CURRENT PRICES WOULD BE ON AVERAGE 20 RUPEES PER FAMILY PER MONTH

HOUSE CONNECTION

PROS

Most convenient method of getting water

User takes responsibility for maintenance

Easy for user to replace tap or washer

CONS

Initial connection fee of between 500 and 2000 Rs

Long distribution network needed

High cost of building and maintaining the network

Quantity of water used will be very high

Overhead reservoir may be needed to store water in sufficient quantities to meet this demand

Overhead reservoirs are expensive to build and maintain

COMMUNITY TANK

PROS

Less expensive distribution network required - capital and maintenance costs lower

No connection cost to user

Suitable for communities where houses are close together

In many cases can be directly connected to pump or gravity flow system so a surface tank not needed

CONS

Users have to leave their compound to collect water

STANDPOST

PROS

Very low unit cost

Least expensive distribution network required so capital and maintenance costs lower

No connection cost to user

Suitable for communities where houses are scattered

CONS

Users have to leave their compound to collect water

Standposts cannot usually be connected directly to pumping or gravity flow systems so a surface tank is needed

MANUFACTURER AND AVAILABILITY OF PARTS

ELECTRIC PUMPS:

Submersible pumps are supplied by KSB who have a monopoly on production. One office in Peshawar will supply spare parts obtained from the factory in Hassan Abdal. Will not guarantee machinery unless repaired by them. No system of recommended dealers/retail & repair outlets. Turbine pumps are made by a variety of manufacturers.

INDUS HANDPUMPS:

The Indus pump is manufactured by DACAAR at their factory located at Lakhtai village, Swabi District, NWFP. INDUS is the local name given to the Afridey pump first developed in Africa. It is continually being improved as technical problems emerge over time and as the numbers installed increase both from the experience of through DACAAR's own programme in Afghan refugee camps, and that of UNICEF and other implementing agencies.

Metal parts have to be ordered from DACAAR factory; rubber and plastic parts are made in Lahore and are not available in local market. However PVC pipes are widely available.

[See memo; "INDUS HANDPUMP MAINTENANCE: THE DACAAR EXPERIENCE", N. Harford, 14.7.913]

LOCAL HANDPUMPS:

There are numerous manufacturers so spare parts are stocked in local bazaars. PHED recommends the minimum criteria necessary to obtain a minimum of 10 years service from a handpum to their contractors but do not actually recommend individual suppliers.

WRITTEN AGREEMENT BETWEEN PHED AND VDO

to be used as a legal document which outline areas of cooperation between the department and villages.

GENERAL AGREEMENT

This is an agreement between the Village Development Organization (VDO) of village . . . . . and PHE Division (. . . . .) under the PHED drinking water supply and sanitation programme in NWFP. The details of the agreement are as under :

1. VDO ( ) is to

1.1) Motivate the villagers to support and make the VDO (Galai) a broad based village development organization in the long-run.

1.2)

- Assist in planning and design of the water supply and sanitation facilities to be built,
- Jointly with PHED **select wells for** improvement; Identify sites for new wells and disinfect polluted wells on a regular basis;
- Identify 4 No's public places and 10 No's households for pilot schemes of rain water harvesting;
- Select locations for community tanks or public standposts etc;
- Identify schools for the school sanitation programme.

1.3) Support the participation of women in those areas of the scheme in which they can contribute after having received the facility of a medical camp. VDO to support the following:-

- health education for women on common diseases identified during the medical camp;
- project related hygiene education like safe handling and storage of water, etc;
- contributing to the project e.g. routine maintenance of handpump, keeping the surrounding of the hand pump clean etc.
- This also includes selection of a women volunteer and a meeting place for women free of cost.

1.4) Contribute in form of land, labour, material, matching grant and cash, whenever PHE ( ) find necessary. This includes:

- ➢ transfer the ownership of the communal land selected for the construction of new wells in the name of VDO ( );
- ➢ right of way for pipeline, wherever required;
- ➢ digging of pits and construction of superstructure in case of pour flush latrines;
- ➢ unskilled labour (free of cost) where the PHED ( ) find it necessary.
- ➢ monitory contribution for the purchase of necessary equipments and material such as bleaching powder and chlorine kit etc.

1.5) jointly with PHE Division ( ) select the final facilities out of the different components offered. The components include:

- ➢ constructions of shallow wells
- ➢ installation of small pumps for existing/new wells where feasible and where the community is ready to pay for the operation and maintenance;
- ➢ installation of handpumps;
- ➢ installation of rain water harvesting system on household and public level;
- ➢ community tanks;
- ➢ public stand posts;
- ➢ pour flush latrines.
- ➢ drains

1.6) jointly with PHE Division ( ) supervise and construct the system. This includes:

- ➢ provision of proper storage facilities for equipment and material;

- ➢ nomination of village supervisor for on the job training.

1.7) Take over operation and maintenance by doing or paying for it after the completion and handing over of the scheme to VDO( ). This includes:

- ➢ a written undertaking on those operation and maintenance tasks which they can and want to do, while paying for the rest;
- ➢ evolvement of a village tarrification system with the assistance of PHE ( ) to cover the future operation and maintenance costs of the facilities, where necessary;
- ➢ opening of a bank account in the name of VDO;
- ➢ publish annual report on the annual water revenue and expenditure;
- ➢ conduct monthly meetings with the villagers to inform them on the progress of the VDO and asking for further suggestions to improve.

1.8) jointly with PHED undertake regular monitoring of the facilities constructed. This includes data collection at village level, identification and discussion of problems in operation and maintenance.

1.9) undertake other village development activities after the completion of the scheme by raising its own funds through:

- ➢ grants from other agencies after registration;
- ➢ self help financing.

2. PHE Division ( ) on the other hand is to:

2.1) jointly with the VDO, plan, design and construct the facilities (see 1.2 & 1.6).

2.2) partly finance the programme (see 1.4).

2.3) provide technical support to the VDO during and after costruction of the facilities (on the job training). This also includes coordination with other agencies.

2.4) provide complementary maintenance services after completion of the scheme in case of:

- ➢ those preventive maintenance tasks which the VDO can not do on its own and,
- ➢ difficult repairs such as burnt motors etc.

VDO - is to pay for the complementary services provided by PHED.

VDO MPA PHE Division ( )

1. _____
2. _____
3. _____
4. _____
5. _____

PROFORMA FOR THE PREPARATION OF THE VILLAGE PROFILE

containing data collected during the **preliminary survey** as well as information on the **socio-economic conditions** and on **common diseases** of the village.

PART 1. PRELIMINARY SURVEY BY PHED

1. Drinking Water Supply:

1.1 Main water source for drinking:

Number Used by % of population

- Ponds _____ _____
  - Existing Condition _____
  - Quality of water _____
  - Quantity of water _____

- stream _____ _____
  - Existing Condition _____
  - Quality of water _____
  - Quantity of water _____

- irrig. Canal _____ _____
  - Existing Condition _____
  - Quality of water _____
  - Quantity of water _____

- Open community well _____ _____
  - Existing Condition _____
  - Quality of water _____
  - Quantity of water _____
  - Functioning _____

- Community well with handpump _____ _____
  - Structure _____
  - Quality of water _____
  - Quantity of water _____
  - Functioning _____

	Number	Used by % of population
- Open house wells	_____	_____
— Structure _____		
— Quality of water _____		
— Quantity of water _____		
— Functioning _____		
- House well with handpump	_____	_____
— Structure _____		
— Quality of water _____		
— Quantity of water _____		
— Functioning _____		
- Tubewell	_____	_____
— Structure _____		
— Quality of water _____		
— Quantity of water _____		
— Functioning _____		

SOURCE OF PIPED W/S SCHEME

- Spring	_____	_____
— Quality of water _____		
— Quantity of water _____		
— Existing Condition _____		
- Perennial Khawar (infiltration gallary)	_____	_____
— Structure _____		
— Quality of water _____		
— Quantity of water _____		
— Existing Condition _____		

	Number	Used by % of population
– Community Standposts	_____	_____
— Existing Condition _____		
— Quality of water _____		
— Quantity of water _____		
— Functioning _____		
– Surface Reservoir	_____	_____
— Structure _____		
— Quality of water _____		
— Quantity of water _____		
— Functioning _____		
— Existing Condition _____		
– Community Tanks	_____	_____
— Structure _____		
— Quality of water _____		
— Quantity of water _____		
— Functioning _____		
— Existing Condition _____		
– Household Connections	_____	_____
— Existing Condition _____		
— Quality of water _____		
— Quantity of water _____		
— Functioning _____		
– Tubewell (deep aquifer)	_____	_____
— Structure _____		
— Quality of water _____		
— Quantity of water _____		
— Functioning _____		

	Number	Used by % of population
- Peculation well (shallow aquifer)	_____	_____

— Structure _____
— Quality of water _____
— Quantity of water _____
— Functioning _____
— Existing Condition _____

- Gravity system	_____	_____

— Structure _____
— Quality of water _____
— Quantity of water _____
— Functioning _____
— Existing condition _____

MODE OF WATER SUPPLY

- Overhead reservoir

_____ _____

— Existing Condition _____
— Quality of water _____
— Quantity of water _____
— Functioning _____

2. Sanitation:

2.1 Excreta Disposal

a)

Excreta disposal in households:	Simple pit	VIP Latrine	Pour flush latrine	Latrine with individual septic tan	Latrine connect with combine sewage system
Total No. of existing installations					
How many are acceptable installations?					

b) Public excreta Disposal:

Existing Facilities	Type	Total No.

+c). Brief statement of the existing situation:- _____

_____

_____

_____

_____

_____

+ (Details should include total No. of actual users of existing facilities, % of open defecators, problems and proposed remedies etc. a rough guideline).

2.2 Drainage/waste water disposal

a) Length of street drains:- — Paved _____

— Unpaved _____

b) Length of street:- — Paved _____

— Unpaved _____

c) Brief statement about the drainage situation statement of the existing situation, system of maintenance and cleaning _____

_____

_____

_____

2.3 Solid waste disposal:

Brief statement about the situation on solid waste disposal including:

- Disposal places like darans, streets, fields _____

_____

_____

_____

- Use of manure or excreta as fertilizer and composting or organic materials _____

_____

_____

_____

SITE CONDITIONS

- Village configuration: — scattered _____

— concentrated _____

- Topographical condition: — mountainous _____

— hilly _____

— flat _____

- Subsoil condition:
  - stable, cohesive soil _____
  - unstable, less or non cohesive soil _____
- H ground water table below ground surface _____

Village Map
(prepare a sketch on a separate sheet)

Information Collected by _____

Date _____

Duration _____

Signature _____

PART 2: VILLAGE PROFILE

Name of Interviewer _____ Designation _____

Date _____ Duration From: _____ to: _____

1. Name of the village _____ Tehsil _____
   District _____
2. Total area _____ Acres
3. Total Population _____
4. Total No. of wards _____
5. Total No. of houses _____
6. Total No. of Families _____
7. Name of the MNA _____ Address _____
8. Name of the MPA _____ Address _____
9. Name of the District Council,
   Chairman _____ Address _____
   Member _____ Address _____
10. Name of Union Council,
    Chairman _____ Address _____
    Members _____ Ward No. _____
    - _____ _____
    - _____ _____
    - _____ _____
    - _____ _____
11. Village Connected to the City/Town of _____
    by - Metaled road _____
    - Katcha road _____
12. Distance from district headquarter _____ Km
13. Any ongoing or planned project(s) for the village _____

1. Existing Infrastructure

1.1 Mosques:

Total No. _____

1.2. Industrial Homes:

Total No. _____ Total No. of Instructresses _____

Total No. of Students _____

1.3. Community based organizations:

Name of the organization _____

Name of the Chairman _____

Brief Description _____

_____

Name of the organization _____

Name of the Chairman _____

Brief Description _____

_____

Name of the organization _____

Name of the Chairman _____

Brief Description _____

_____

1.4 Schools

Type of school	No. of Girl Schools	No. of Boy Schools
Primary		
Maqtab		
Middle		
High		
Total		

1.5 Boys/Girls Schools

Name of School	No. of teachers	No. of students	Type/No. of toilets for teachers available	Type/No. of toilets for students available	If no toilet available, where do students go to defe-cates?	Water Supply facilities		Condition of existing facilities		Person inter-viewed.
						School is connected to PHE W.S. Scheme Yes/No	If school is not connected to PHE W.S. Scheme what type of W.S. facility in use	Working or not?		
								W/S	Latrine	

Name of interviewer _____ Designation _____

Date _____

ration _____ Signature _____

1.6 Medical Facilities

Sl. No.	Type of facility	Total No.	Name of Medical Officer	Total No. of Doctors	Male/	Female	Total No. of Nurses	Male/	Female	Total No. of LHVs	Total No. of Midwives	Total No. of Dis-pensers	Person Inter-viewed
1.	Hospital												
2.	BHU												
3.	RHC												
4.	MCH												
5.	Private Doctors Clinics												

Traditional Healers:

		Type	Total No.	Other details if any
a.	Hakeem			

Name of Interviewer _____ Designation _____

Date _____ Duration _____

Signature _____

2. Existing Human Resources

Type	Total No.	Names
2.1 Religious Leaders		
(a) Imam		. . . . .
(b) Ustaz		. . . . .
(c) Ustaza		. . . . .
2.2 Traditional Leaders		
(a) Malik		. . . . .
(b)		
(c)		
(d)		
2.3 Government Officials		
(a) Education Deptt.		. . . . .
(b) Health Deptt.		. . . . .
(c)		. . . . .
(d)		. . . . .

Contact Persons of Village

	Name	Phone No.	Address
1.			
2.			
3.			
4.			
5.			

PART 3: INFORMATION ON COMMON DISEASES

TYPE OF DISEASES	NUMBER OF CLASSES					
	JANUARY		AUGUST		MEDICAL CAMP	
	WOMEN	CHILD	WOMEN	CHILD	WOMEN	CHILD
Diarrhoea						
Dysentery						
Jaundice						
Skin disease						
Eyes disease						
worm						
Throat chest						
Anaemia						
Fever: malar typnoia						
Bleeding						
Goitre						
Gunlea worm						
Dental propls						

Other information

Observation

SESSION TOPICS FOR VILLAGE WOMEN

This is an overview of the topics to be used by the health educators from the Department of Health.

SESSION TOPICS

These suggestions for session topics are subject to change as they are developed. For each topic a series of prime messages will be given. The sessions will become less prescriptive as they become more activity-based, as women and health educators gain confidence. There is substantial overlap between project-related hygiene sessions and project-related activity sessions so flexibility will be vital.

For developing each session the following questions will be asked:-

- What desired health/hygiene or user behaviour is the session promoting?
- What will the women need to know?
- What action do they need to take?
- What attitudes are likely to initiate and reinforce this action?
- Can existing knowledge, attitudes and practices be built upon?
- What pictures/illustrations are appropriate?

I INTRODUCTORY SESSION

Immediately after the medical camp a preliminary session will be held with the group of "change influencers" (GROUP I), selected by the VDO and the woman volunteer. Once GROUP II has been selected they too will attend a similar introductory session. Below is an outline of the issues that will be included:-

- Explain the project
- Discuss women's participation in the water supply and sanitation scheme
- Discuss problems faced by women relating to water and sanitation (problem census)

- Explain sequence - health/hygiene/user education
- Establish procedure for organising sessions
- Introduce activities and teaching methods/aids
- Discussion role of selected group of women and ways of spreading the message to family and friends
- Discuss need to sustain activities
- Elicit topic(s) for future sessions (priorities)

II TOPICS FOR TRUST-BUILDING HEALTH EDUCATION SESSIONS

(Household management of sickness, focusing on preventive actions or household treatment as solutions to perceived health problems).

1. **Worms**
   - Signs and symptoms
   - How they are spread
   - How to prevent them

2. **Diarrhoea/dehydration**
   - Signs and symptoms
   - How it spreads
   - how to prevent it.
   - Treatment (ORS)
   - Food for sick baby

3. **Hepatitis**
   - Signs and symptoms
   - How it spreads
   - How to prevent it

4. **Sore Eyes**

- Signs
- How infection spreads
- How to prevent it spreading

5. **Skin disease**

- Signs
- How it spreads
- How to prevent it
- Treatment/dry skin/sores

6. **Coughs and Colds**

- Signs and symptoms
- How they spread
- How to prevent them
- Treatment

7. **Menstruation**

- Irregularity
- Pain
- Hygiene
- Safe period

8. **Antenatal care**

- Diet
- How to prevent minor problems
- When a pregnant woman should visit the Doctor.

9. **Mother's Milk**

- Advantages of breast-feeding
- Disadvantages of bottle feeding

10. **Goiter**

- ➢ Signs and symptoms
- ➢ What are the causes
- ➢ how to prevent it
- ➢ Treatment

III TOPICS FOR PROJECT-RELATED HYGIENE EDUCATION SESSIONS

(Household management of hygiene habits related to existing and new water supply and sanitation facilities and providing interim messages; focusing on breaking transmission routes; forming good habits backed by prime messages and Quranic quotes. Many of the actions recommended will repeat the main messages of the health education sessions dealing with communicable diseases).

1. **Personal Hygiene**

- ➢ Why — self and family
- ➢ How — nails-teeth-hands-feet-body-face-hair

2. **Clean food**

Why food should be kept clean

What to do

- ➢ cleaning the kitchen/cooking area
- ➢ washing utensils
- ➢ washing hands
- ➢ covering food
- ➢ washing fruit and vegetables
- ➢ cooking meat well

3. **Clean water**

Why

What to do

- collecting
- transporting
- storing
- drawing water safely

4. **Protect water sources** (existing and new wells, hand pumps, standposts, taps)

Why

What to do

- disinfection of well
- sweeping/washing down surroundings
- animals/children defecating
- waste water

5. **Household hygiene**

- Why
- What to do -- inside the house (eg. airing bedding)
  -- inside the yard (eg. animals)

6. **Latrine habits**

- why a latrine is desirable
- how to use it correctly
- how to clean it
- what to do if there is no latrine
- handwashing

IV TOPICS FOR PROJECT-RELATED ACTIVITIES

(These sessions emphasise household management of new facilities: women will be responding to change, taking responsibility at different stages: pre-, during and post-construction, developing practical skills, establishing routines. Selection of specific topics and components within each topic will depend on a) which type of water supply and sanitation facilities the community decides they want; women's ideas about the kind of activity they are willing to do. The timing of these sessions will be closely linked to construction and installation).

1. **Pour-flush latrine**
   - ➢ site selection
   - ➢ construction of superstructure
   - ➢ using the latrine
   - ➢ cleaning the latrine
   - ➢ maintaining/repairing the latrine
   - ➢ handwashing facility/making soap

2. **Local** (household) **handpump**
   - ➢ site selection
   - ➢ construction of apron/drain
   - ➢ using the handpump
   - ➢ keeping the pump and surroundings clean
   - ➢ maintaining/repairing the handpump/surroundings
   - ➢ organising a system for borrowing tools and buying spare parts locally

3. **Clothes washing and/or water storage facility**
   - ➢ site selection
   - ➢ construction
   - ➢ using and cleaning
   - ➢ waste water
   - ➢ maintaining

4. **Drains - household and mohalla**

- site selection
- construction
- cleaning
- maintenance
- monitoring mohalla drains

5. **Indus (community) handpump**

- site selection
- using the handpump
- keeping the surroundings clean
- what to do if handpump is not working
- monitoring the handpump

6. **Standpost/community tank**

- site selection
- using the standpost/community tank
- keeping the surroundings clean
- what to do if standpost/tank is not working
- monitoring the standpost/tank

7. **Waste water - household and community**

Problems caused by waste water

- mosquitoes/malaria
- flies/disease
- smell

how water is wasted

- leaking pipes
- leaking taps
- incorrect use of facility

how to avoid wasting water

- ➢ mend taps
- ➢ use tap/pump correctly

what to do with waste water

- ➢ drains
- ➢ kitchen garden*
- ➢ filling stagnant ponds
- ➢ other

8. Garbage

animal excreta reuse

- ➢ precautions

household garbage disposal

- ➢ digging a pit
- ➢ burning the rubbish

household garbage reuse

- ➢ separating rubbish
- ➢ compost heap

*as neither the DoH nor PHED can be expected to show women how to make a kitchen garden this would be an opportunity to link up with the Fruit and Vegetable Development Board Women's Project, whose extension workers (Lady Field Assistants) are trained to teach women how to make and look after a kitchen garden.

SAMPLE HEALTH/HYGIENE EDUCATION SESSION FOR VILLAGE WOMEN

to be used by the hygiene educators from the DoH in giving health and hygiene education to the village women.

SESSION: WORMS

Purpose

To enable women to take action and motivate others to prevent round worm infestation.

Preparation

Time:	2 hours
Teaching methods:	Story, guided discussion, role play
Teaching aids:	Trigger pictures, transmission route and preventive action cards
Related sessions:	Diarrhoea, sore eyes, skin disease, personal hygiene, food handling.

Note to the health educator

This session deals with round worm only. Thread worm, hook worm and tape worm can be added if necessary using additional pictures and cards but you will need an extra session to explain and discuss them because the transmission routes are different.

STEP 1: INTRODUCTION

Welcome the participants; ask one woman to give a recitation

Revision and Evaluation of last session; see the relevant revision and evaluation box

Introduce the topic and informally find out what the women think and know about worms. Use the picture of faeces with worms. Ask what they are and if they or their children have ever had them. Ask what the local name is, what remedies are used, what else happens when a child has worms. Elicit the other signs and symptoms - show the picture of a boy with a swollen stomach to start. Others include:

- Loose stool alternating with constipation
- Block and mucus
- Slight fever
- Loss of appetite and weight
- Sore stomach
- Weakness
- Pale skin

Explain that when you find the symptoms of worm infection take the patient should be taken to the nearest health facility, since he or she will need medicine. Then say that if a child constantly has worms she or he will always be weak, especially if he or she gets sick with another disease.

Picture 1: faeces with worms

Picture 2: child with swollen stomach

STEP 2: TRANSMISSION ROUTES AND PREVENTIVE ACTIONS

Explain that the worms get into the faeces because they live in the stomach, and discuss how this can happen. For example:

Q. How does worm or anything else get into our stomach?

A. Through the mouth

Q. What do we put into our mouths?

A. Food, water, hands, glasses and utensils while we are eating or drinking.

Explain that we can't see the worms because we eat the eggs which are very small. When they get to the stomach they grow into worms. Then the eggs, and sometimes the worms are passed out in the faeces.

Q. How do the eggs get from one person to another?

Use one set of the cards to show the different routes: tell it like a story using the boys name that the women choose and build on previous sessions about the family, for example:

1. Ali has worms - He defecates in an open place - The eggs dry in the sun - the wind or flies carry the eggs inside houses and spread them over uncovered food - when his family eats this food they eat the worm eggs and now they have worms too.

How could this be prevented? Ask the women first, then use the cards to show where the route can be broken.

- (All should) use a latrine
  (or Ali should cover his faeces)
  Food should be covered

2. Ali defecates close to a water source* - the faeces are washed into the water - this dirty water is used for drinking -- now his family and neighbours have worms too.

How could this be prevented? Ask the women for suggestions

*here you should mention the common water sources e.g. handpump, well, stream

- (Ali should) use a latrine
  Water sources should be protected
- The Prophet (PBUH) said "do not relieve the bowels in water sources, roads and shady areas"

3. Ali defecates and wipes himself - he does not wash his hands afterwards and the eggs remain on hand - then he touches the food with his dirty hands so the eggs get on to the food - his family eats this contaminated food and get worms.

How could this be prevented?

- Ali should wash his hands after defecating
- Ali should was his hands before eating

STEP 3: COMMUNICATING THE PROBLEM; GROUP WORK

Divide the women into three groups. Distribute a set of cards for each for each group. Ask the women to try to arrange the cards in order and explain to each other the different routes and how they

can be broken. See if they can think of other routes (for example; show Ali defecating near vegetables; dog licking faeces and then child). After 10 minutes ask one woman from each sub-group to come to the front and show the rest of the group one route and its preventive actions.

STEP 4: RELATIONSHIP TO THE PROJECT.

Discuss how water supply and sanitation facilities can help to stop this chain but that they must be used properly and that personal and household hygiene is also important.

STEP 5: SUMMARY

Elicit main messages from women

- Use latrine or cover faeces
- Protect water sources
- Wash hands after defecating
- Wash hands before eating or preparing food
- Cover food

STEP 6: FOLLOW-UP

Discuss what women will do at home in the next week to stop worms spreading to their families, and how they can tell their families and other women. Ask for suggestions for the next session topic.

REVIEW AND EVALUATION - *to be used at the beginning of the next session*

- How do worms spread from one person to another?
- How can you prevent them from spreading
- What should you do if your child has worms?
- Was the session on worms useful?
- Did you enjoy it?
- Was there anything you did not understand?
- Did you like and understand the pictures?
- What did you do at home this week to prevent worms?
- Who did you tell about worms?

THREAD WORM

Transmission route: the worm goes from the appendix area to the anus and lays thousands of eggs. This causes itching of the anal region, especially at night. When the person scratches, the eggs stick under the fingernails and are carried to food and other objects. In this way, they reach the mouth of the infected person, and the mouths of others.

How can we prevent this?

- Preventive actions
- Wash hands before eating or handling food.
- Cut fingernails
- Wash body regularly
- Wash bed clothes
- Isolate the child at night

Hook worm

Transmission route: the eggs are passed out from the anus in faeces. When someone goes barefoot the baby hook worms enter the body though the skin of the feet, and enter the blood. They are transported to the lungs, coughed up and swallowed to the intestine where they become adults, lay eggs and leave the body in faeces.

How can we prevent this?

- Do not go barefoot

TAPE WORM:

Transmission route: the eggs are passed in faeces and contaminate the grass which is eaten by animals. When we eat the meat of the infected animal we also eat the tape worm.

How can we prevent this?

- Do not defecate where animals are grazing
- Cook meat properly
- Only eat well-cooked meat

MAIN RESPONSIBILITIES OF COMMUNITY AND WOMEN PARTICIPATION PERSONNEL OF PHED, NWFP

The following set-up shows the personnel requirements when PHED water and sanitation schemes follow the integrated Concept in all circles. Presently the two coordinators at PHED head office are the mostly needed one's.

MAIN RESPONSIBILITIES OF COMMUNITY AND WOMEN PARTICIPATION PERSONNEL OF PHED, NWFP

PHED
HEAD OFFICE

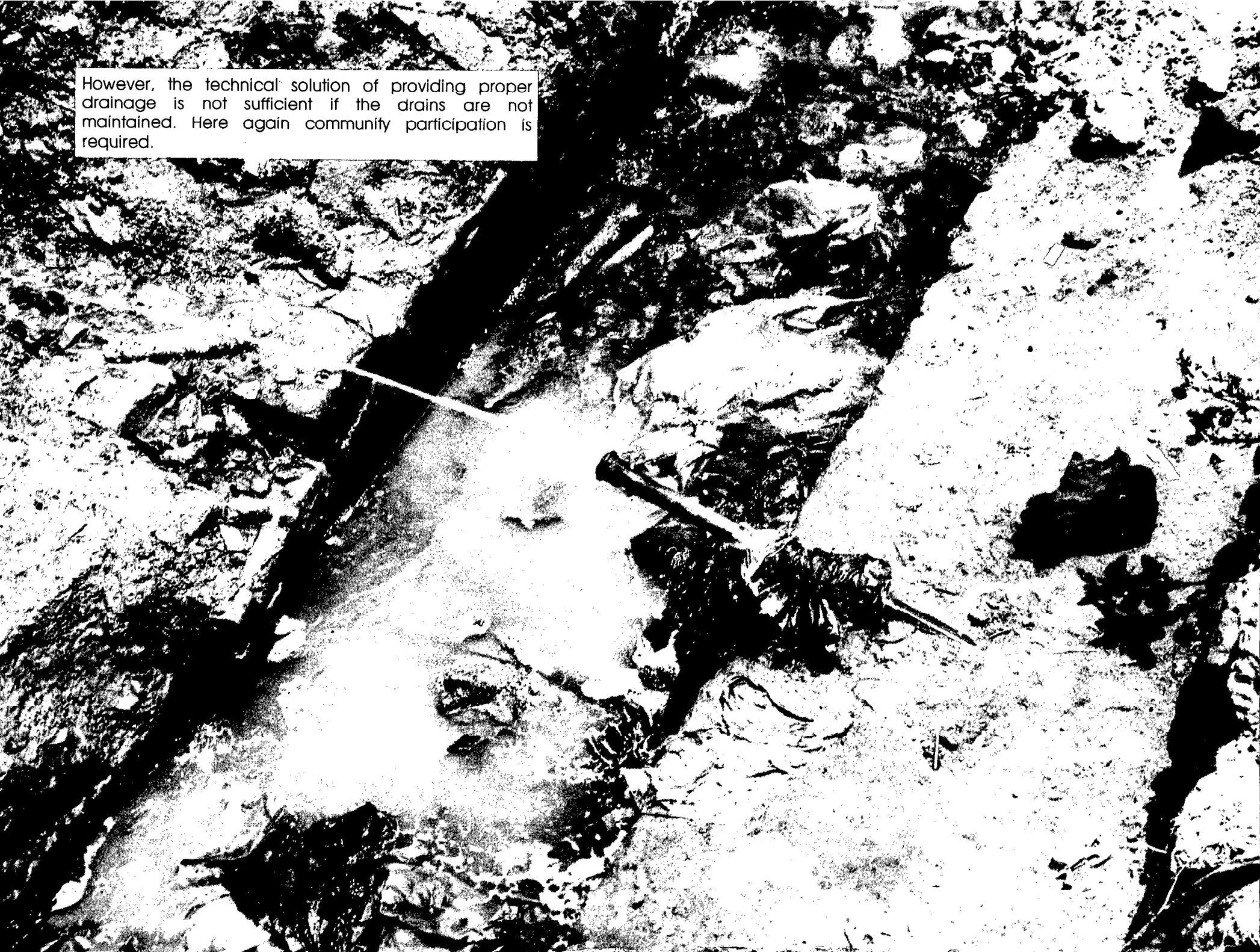
- One community participation coordinator (HO) coordinating between PHED and line departments like LG&RDD, DoH, DoE and within PHED between the different PHED units; updating of Integrated Concept working materials and training;

- One women participation coordinator (HO) ensuring that women participation is accepted, promoted and realized in PHED water and sanitation schemes, and coordinating between PHED and the departments relevant to women participation and health/hygiene education; updating working material relevant to community participation and training etc.

PHED
CIRCLE OFFICES

- One community participation coordinator (CO) at each PHED Circle office coordinating at district level; briefing other departments at district level as well as politicians; coordinating between PHED colleagues.

- One women participation coordinator (CO) at each circle office coordinating, briefing and training the VDO, women health educators and women volunteers; briefing and coordination with other departments.



However, the technical solution of providing proper drainage is not sufficient if the drains are not maintained. Here again community participation is required.

Drainage problems in rural areas often prevent water and sanitation programmes from becoming effective. The provision of proper drainage is to be an integral part of such programmes.

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