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Water, Sanitation, Hygiene and Health Studies Project  
Northern Areas and Chitral

**ISSUE PAPER 2:  
PIT LATRINES AS A SANITATION OPTION  
IN CHITRAL DISTRICT**

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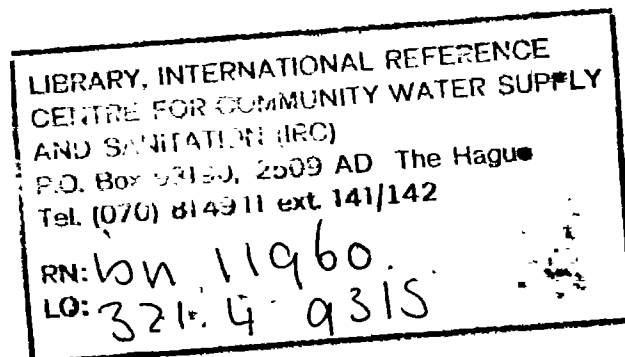
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## INTRODUCTION

In an assessment of the sanitation situation in Chitral the WSH&HS project identified two main sanitation systems; the open fields and the pour flush latrine (from now on PF-latrine). Only in a few cases could other sanitation systems be identified. All of these were pit latrines of various designs, some using water and some dry systems. In none of the latrines was the human waste re-used as manure because this is not a tradition in Chitral.

Despite the limited range of existing latrine systems and a general preference for the PF-latrine, the WSH&HS project felt that an indepth study of the pit latrine was justified. The PF-latrine has some disadvantages for example its cost, freezing during winter and other functional problems due to water shortage. It is therefore suggested that an improved pit latrine could be an attractive alternative.

This report gives the results of an indepth study of pit latrines in Chitral district. It is based on field work in 13 villages of upper and lower Chitral in August, October and November 1993. In the first chapter the methodology of the study is briefly introduced. Chapter 2 describes the existing pit latrines and gives some details about their use. In chapter 3 the villagers' opinions about the conventional and improved latrine are discussed. Finally in chapter 4 conclusions and recommendations are given.



## 1. METHODOLOGY OF FIELD INVESTIGATIONS

This report is based on three visits to Chitral; in August and September (13/8 - 8/9), in October (18/10 - 21/10) and in November (8/11 - 26/11). During the fieldwork three to four members of the WSH&HS project worked in Chitral.

In the first two visits a rapid assessment of the sanitation situation in Chitral was done by the social scientists (see position paper No. 1 and 2). During the indepth sanitation study the social scientists worked together with the Chitral based assistant engineer and for some days with the senior engineer.

One of the aims of the third visit was an indepth study of the pit latrine. The objectives of the study were:

- Gather indepth information about design and use of conventional latrines;
- Gather information to facilitate the introduction of an improved pit latrine which is appropriate to the local environment;
- Assess the interest of villagers in an improved pit latrine;
- Identify people who are interested in building an improved pit latrine on an experimental basis.

Another aim of the third visit was an indepth study of pour flush latrines. These findings are presented in a separate report.

In villages where pit latrines were identified indepth interviews were held with owners and their latrines were observed.

During the November visit a small KAP sanitation survey was made and where possible the structured questionnaire was followed by indepth interviews and focus groups discussions. Village walks and observation were important research methods to verify information about sanitation practices.

Both males and females were interviewed. The female social scientist mostly interviewed women with the assistant engineer. This was possible after asking permission to the male, which was often time consuming. The male social scientist worked separately with a field assistant. In most areas the men and women were open and willing to talk about sanitation and only in rare cases the villagers refused an interview.





## 2. THE DESIGN AND USE OF VARIOUS TYPES OF PIT LATRINES

In Chitral there is no tradition of using human waste on the fields<sup>1</sup>. People consider this practice as dirty and reject it completely. They think emptying of a latrine is disgraceful work. Perhaps this is one of the reasons why the range of latrine systems is very small in Chitral. With the exception of the Afghan refugee village Kalkattak (600 pit latrines) we never found more than two or three pit latrines in a village and in the majority of the villages we did not identify any.

About half of the conventional pit latrines that could be observed seemed to be under use. The rest were abandoned or used only occasionally. Some owners wanted to get rid of them. In three cases the family also had a PF-latrine and used the pit latrine only when the other latrine was frozen or when water was not available. With the exception of one, all the latrines were built more than five years ago. Villagers said they had built the pit latrine because it was the cheapest and easiest system to provide purdah for the household members. Ibrahim in Korach gave some interesting comments why he used a pit latrine:

"Children younger than 10 years old do not understand the PF-latrine. They use stones or something else and this will damage the commode. In a pit this is not a problem, nothing can be broken...We can use stones without problem and we do not have to worry about getting water".

In this report all conventional latrines are put together under the heading 'pit latrine' although there is considerable variation in design. Three different types of pit latrines were identified in Chitral.

- i) water based pit latrine
- ii) conventional pit latrine
- iii) improved pit latrine

### 2.1 Water based pit latrine

The designs of the water based pit latrine are diverse. These latrines have in common that people defaecate on one particular place and directly, or after some time the excreta is washed away by water into a channel, river or open field. Actually these latrines are not pit but 'hole' latrines.

One type of latrine is built in such a way that excreta is disposed straight into a channel or river. These 'direct pit latrines' are found in houses situated very near the river, particularly in case of steep banks<sup>2</sup>, see drawing 1 and 2.

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1. In the adjacent Ghizer district of Northern Areas human excreta is also not used as a manure, whereas it is a common practice in the districts Gilgit, Skardu and Ganche.

2. This type of latrine can be observed in Ashret near Lowari, in Kalkatak and in Naghar where a PF-latrine of a hotel disposes straight into the river. This pit latrine is also found in villages at the Lotkoh river.



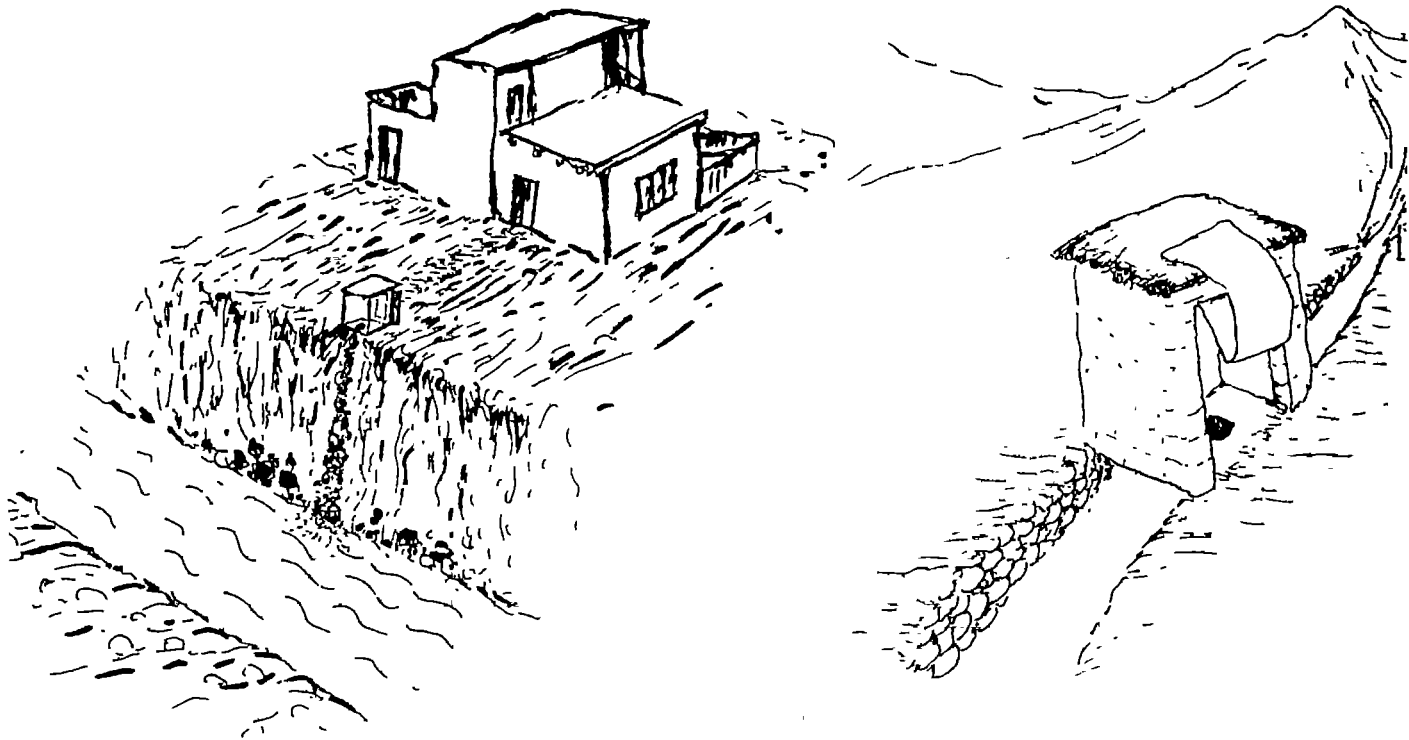


Figure 1. Pit latrine on river bank      Figure 2. Pit latrine above a channel

In second type the faeces first accumulate for a period of a few days or for some months in an open depression situated underneath the squatting hole. Later the excreta are washed out with rain water or water from a channel<sup>3</sup>. With the water the excreta are disposed in the channel or into fields.

There is some indication that a similar type of latrine is used exclusively by women. A small shallow depression in the corner of a walled compound (howly) is used for defaecation and at intervals it is washed out with channel water. The existence of this latrine was not confirmed as it could not be observed because of purdah and the reluctance of villagers to show us.

All these water based pit latrines discharge into water sources and pose a big health risk. The fresh excreta are directly or indirectly washed into water sources that are used for drinking further downstream. The owners often said that nobody lived downstream in their village, not realizing that people in the next village might fetch water from the river.

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3. These 'desi-Flush systems' were observed in Kalkatak (Drosh), Drassun (Mulkoh), Parabek and Poorponi (Lotkoh).



## 2.2 Conventional pit latrine<sup>4</sup>

Conventional pit latrines are dug in the ground. The design is less varied compared to the water based system. Basically these latrine consist of a pit covered with wooden planks, a flat stone or a wooden structure with a cemented or mud floor. In this floor a relatively small hole is made of not more than one foot square and often surprisingly smaller. Very likely holes are small to make it less likely that smell comes up, that the user can see the contents and to make it more safe for young children.

The usual dimensions of pits are; length and breadth between two and four feet and the depth ranges from three to 10 feet deep. In most cases the superstructure is made of stones, sun dried bricks or mud. In some pit latrines there was no superstructure and privacy was provided by a wall or by jute bags. None of these pit latrines had a ventilation pipe.

Two other latrines are particularly interesting because of their design or the idea behind their construction; a simple trench pit latrine and a winter pit latrine (see boxes 1 and 2 and figure 3).

### Simple trench latrine

Box 1.

One latrine had an interesting design. Instead of a pit the owner had dug a trench two feet wide, nine feet long and three feet deep. He said it took him only a few hours to make it. With wooden sticks, sand and stones he had made small platforms across the trench for squatting. The width of the holes was less than a foot. The owner said he built it this way because each of his children ask for a separate hole!

This pit latrine did not have a superstructure. The man had built a small two feet high wall on one side and short side walls to give the users some privacy, see drawing 3. The family also had a PF-latrine which was only used for guests.

The strong points of this simple pit latrine are:

- It resembles the traditional defaecation pattern, i.e. the open fields;
- Very easy to make it and except for some wooden sticks no material is needed and therefore the costs are almost nil;
- It is possible to use stones for anal cleansing;
- It can be constructed in any place and because of its limited depth digging is fairly easy and collapsing unlikely;
- The size of the latrine and the number of holes can be easily adjusted to family size.

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4. Pit latrines were observed in Shotkhar (Torkoh), Koragh (Mastuj), Drassun (Mulkoh), Poorponi and Basquir (Lotkoh), Ayun (Chitral) and in Madaklasht (Drosh).



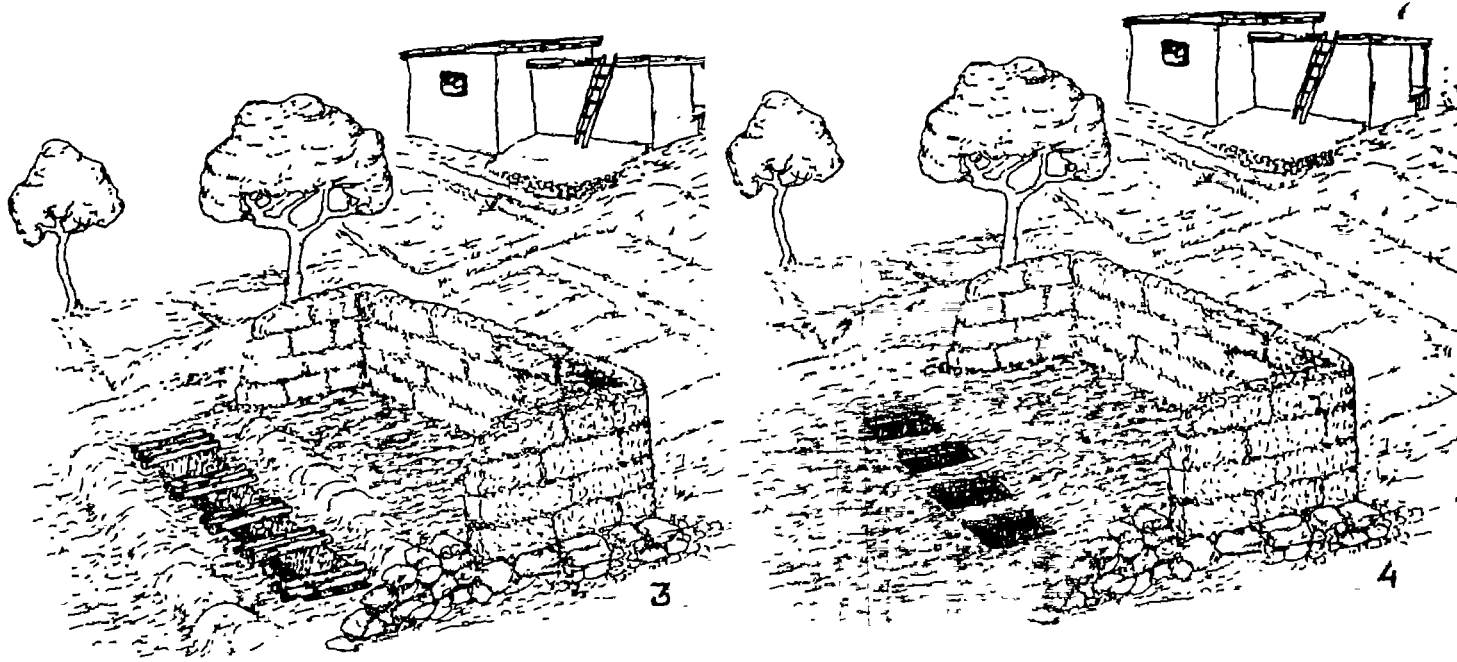
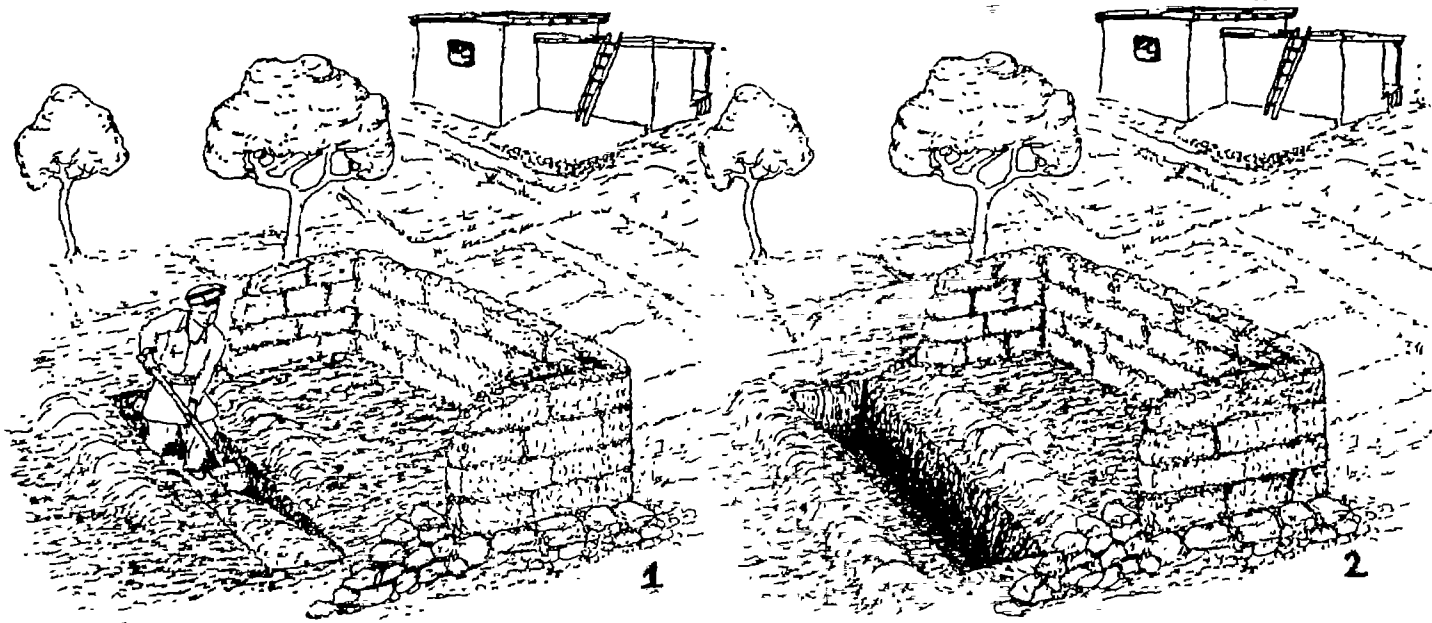


Figure 3: The construction sequence of the trench latrine





In Wassich in Torkoh a family has built a pit latrine which is intended for use only during the winter. In the summer it is covered with a lid. In winter the three PF-latrine of the house get frozen and household members are reported to use the pit latrine. It is actually a chamber built above the ground. The hole is made from a broken commode. Old bags provide some privacy.

In the conventional pit latrines people use stones, mud lumps or water according to their own preference. Latrines in which water was not used little or no smell was observed. There is no custom of using ash in the pit to decrease smell. In some villages people use lime (chuna) to reduce smell and the bulk of the pit contents. Ash is normally used in animal sheds to absorb moisture, in vegetable gardens for pest and disease control, or it is just thrown away. The WSH&HS project team did not identify any strong beliefs that ash attracts spirits, as reported from Baltistan (see Position Paper No.3).

### 2.3. The ventilated improved pit latrine (VIP):

#### i) VIP latrine constructed by phed/dorsch consult

In a joint project of the Public Health Engineering Department and DORSCH Consult VIP latrines are or will be installed in 25 schools<sup>5</sup> in Chitral town area (see also Position Paper No.1.).

This VIP latrine is a small building comprised of a series of three or four seats. The design consists of building contains two underground pits with separate squatting compartments constructed above them. Each compartment has an iron door. The squatting area has a RCC slab with one or two openings in the shape of a keyhole. The design shows a cover on each hole but in practice they were absent. Near the roof a small ventilator is installed to provide dim light inside. On the back side of the building two iron ventilation pipes are installed, one for each pit<sup>6</sup>.

These VIP latrines are relatively costly (RCC slabs, plastered walls, iron ventilation pipes). According to PHED/DORSCH consult the cost is Rs.66.000 per building of three or four units.

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5. VIP latrines with a similar design have been built by PHED in an unknown number of other schools. In the Master Plan for Sanitation of PHED it is mentioned that UNICEF has started a VIP latrine programme but the WSH&HS project could not obtain any details.

6. See the 1991; Master Plan for Sanitation, Water Supply and Sanitation Project for Chitral Town and Roadside villages. Government of North West Frontier Province/DORSCH Consult.



**ii) vip latrine or 'kinnarab' for afghan refugees in kalkatak:**

The village Kalkatak is a very congested Afghan refugee camp. In 1987 the UNCHR started the implementation project for an improved pit latrine which the afghan call kinnarab; a hole. Before that time people defecated near small drainage channels which caused smell and health problems.

In each muhallah sanitation workers were trained (totally about 8 or 10 workers). They motivated villagers to construct an improved pit latrine. The UNCHR provided every household with a concrete slab, a metal lid for the hole to control smell and a ventilation pipe. The slab has a opening shaped like a conventional commode (keyhole) and a handle to install it easily. Generally the pit dimensions have a breadth of 3x3 feet and a depth of 8-10 feet. Several big households constructed a pit of a bigger size.

Some of the pits were dug into the ground, in other places people built the pit partly against the slope of the hill (see figure 6). Locally made sun dried bricks and mud were used in the construction of the pit and the superstructure. The average dimensions of the superstructure are 6 feet length, 4 feet breadth and 6-7 feet width. The roofs are constructed with straw, mud and occasionally a piece of plastic in which a hole is made for the ventpipe. The door is closed with a piece of jute.

In the Government Basic Health Unit (BHU) a VIP latrine has been constructed with the same design. A difference is that the cover of the pit is made with wooden planks instead of a RCC slab.

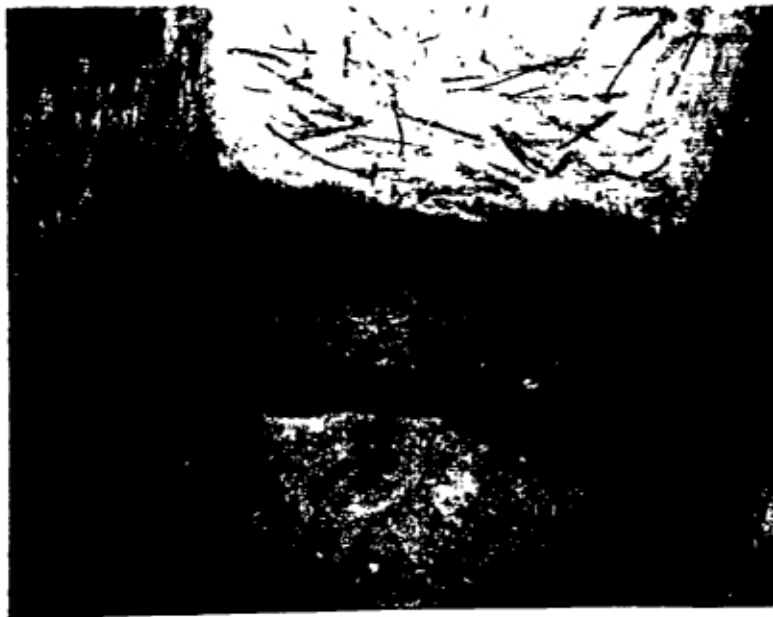


Figure 4. Keyhole opening of VIP-latrine in schools



Figure 5. View on VIP-latrine comprising three units



Introduction of the improved pit latrine in Kalkatak was very successful. From interviews and two village walks it was learned that almost all of the 700 households have installed a VIP latrine. Afgani refugees are so satisfied with the Kinnarab that some of them who re-migrated introduced it in their home villages. A villager pointed to an abandoned house where we could see a ruined Kinnarab. He said:

"The people took the ventpipe, the concrete slab and the metal lid with them to Afghanistan!!".

Seven improved pit latrines were closely observed. All of them were neat and with little or no smell when the lid in place. When the lid was removed from the hole a faecal odour came from the pit. The Kinnarab is used by all the family members during both day and night. People use mud lumps as anal cleansing material and throw these in the pit or outside the latrine. Generally people said that for anal cleansing with water (Wazzu) they will go outside the Kinnarab. When the pit of the latrine fills up the people do not empty it but throw lime (chuna) in the pit as this is said to reduce the bulk of the excreta. If the pit contents cannot be reduced in this way the villagers will close the pit and build a new one. It is not a tradition to empty the pit.

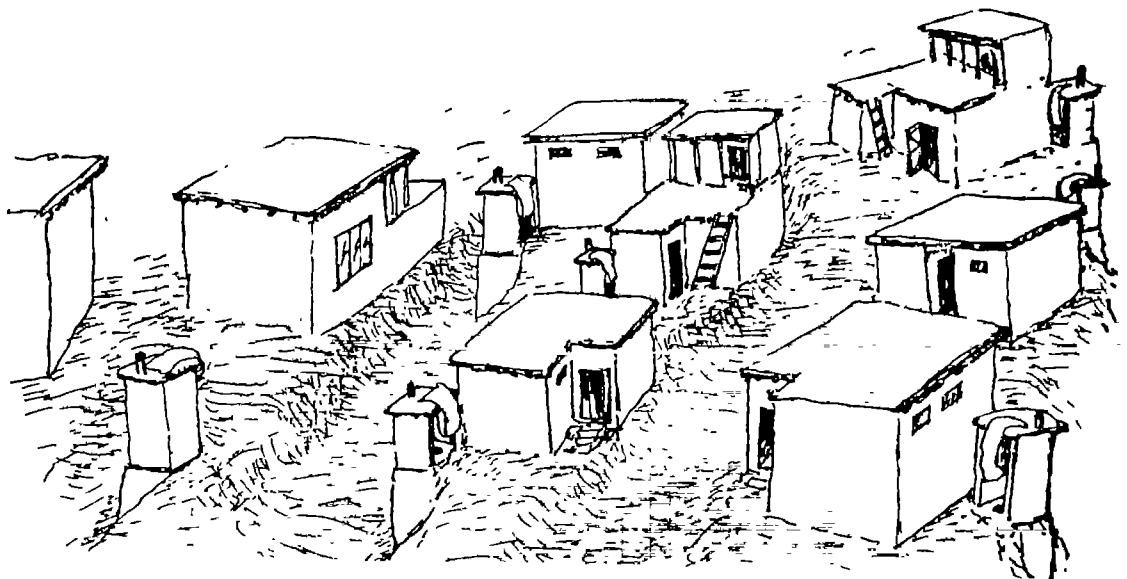


Figure 6. The improved pit latrine in Kalkattak



### 3. ATTITUDES AND OPINIONS ON THE PIT LATRINE

After the initial identification of the different conventional pit latrines the WSH&HS project felt encouraged to do an indepth study of the technology. Beside further research of the conventional systems an assessment would be made of the interest of villagers in pit latrines in general and with an improved system in particular. A plan for a VIP-latrine was designed in Gilgit by the technical section (see figure 7). After the research work this design could be modified according to need.

In November the improved pit latrine was discussed with villagers in a series of (group-) interviews and small dialogues. First the advantages and disadvantages of pour flush and simple pit latrine were discussed. Then the VIP latrine (a pit with a super-structure, a door and a ventpipe) was explained, sometimes with the help of a drawing to point at details. Following villagers were asked for their comments and opinions about the system. Finally people were invited to construct an improved pit latrine on a trial basis with technical support from the WSH&HS project.

#### 3.1 Opinions and attitude about the improved and conventional pit latrine

It is difficult to assess the opinion of villagers towards the pit latrine because there is often a discrepancy between private opinions and public statements. When the pros and cons of improved pit latrines were discussed in small groups the comments about the pit latrine were often encouraging.

About a quarter of the respondents were **positive** about the idea of the improved pit latrine. Some of them are using a pit latrine at the moment. Others have or expect a number of problems with the PF-latrine and are interested in alternatives. In places where the pit latrine could be discussed with women they were always positive. They said it is a cheap system, good for purdah. Women who have a PF-latrine said that a pit latrine might be better because they don't have to fetch or heat water for flushing.

One man said:

"We are used to the open so we don't like smell, a PF-latrine does not give smell and that's good. The pit latrine is easy because no toilet paper and water are needed. Defaecation is a problem in the winter time, we have to go outside, it is dirty, inconvenient and no purdah. I don't like to defaecate like this anymore".

In spite of their positive attitude not all these respondents were ready to build a (trial-)pit latrine yet. Several people said they wanted to wait for results of the experiments with trial latrines. They emphasized that they wanted a guarantee that the pit latrine will not smell. Again others said they could not afford the labour or the money to built one. So far six households have been identified who are ready to start construction in 1994. If more village dialogues are held in spring it is expected that also other people will show interest.

During the interviews and group meetings the comments of more than **half the respondents was neutral**. They said the pit latrine is a good idea, but that they were not





interested in building it. Some of the reasons they mentioned for not being interested are: we have a pit latrine and we want to get rid of it; fear for smell; not appropriate for guest; we have a PF-latrine or we wish to built one and we don't need any latrine because we have plenty of open space. Several of these people said the pit latrine is good for poor people, which again illustrates the fact that the system is considered of low status.

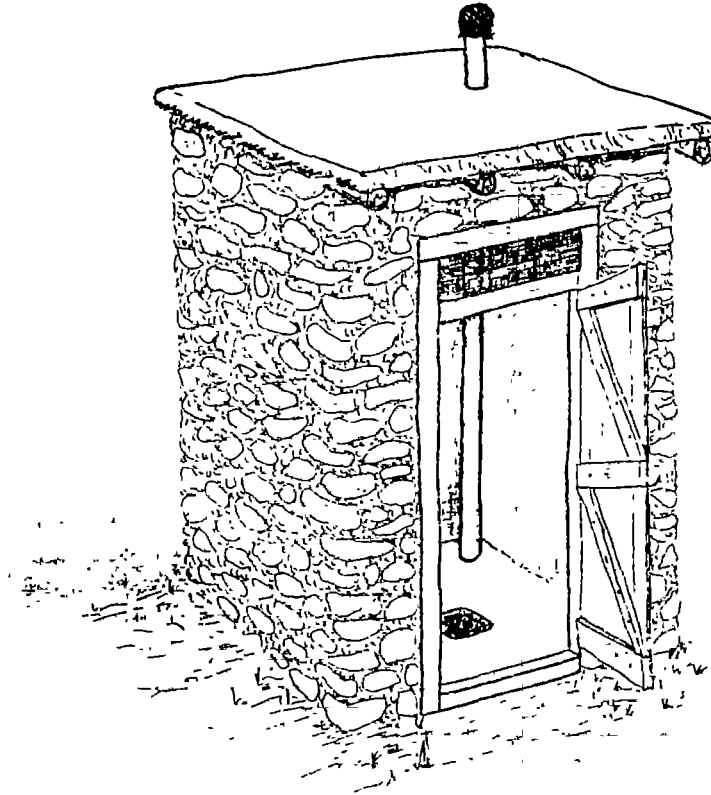


Figure 7. The Ventilated Improved Pit Latrine (First design)

Only a **quarter of the people** were directly against the idea of a pit latrine. Their aversion against the latrine was so high that they didn't want to hear about any pit latrine, improved or not. During a discussion two men got angry about the idea of a pit latrine in their village, one said:

"This dirty thing will make the whole village smelly!".

The above mentioned statements of villagers are made with regard to the improved pit latrine. In general the conventional type of pit latrine is not much appreciated by the villagers as it is associated with poverty, dirt and smell. It is seen as an old fashioned system. The people with a pit latrine are somewhat looked down upon and having a pit latrine is not particularly good for the social status of the owner. In contrast the PF-latrine is a sanitation system that provides the owner with an opportunity to increase his reputation because it is related to health, prosperity and progress. Partly for this reason people think it is good to have a PF-latrine.



### **3.2 Positive comments and suggestions of villagers on the improved pit latrine**

During the interviews and discussions many comments were made that provide useful insight into the attitude of the villagers towards the improved pit latrine. Several remarks bring up interesting points which should be considered in the design, and the possible health education/motivation campaign and a future implementation proposal.

#### **\* low costs**

The relatively low cost was mostly mentioned as the major argument for liking the idea of an improved pit latrine. Villagers said they would like to have a decent sanitation system but until now couldn't afford a PF-latrine. For example in a survey among people who do not have a PF-latrine, it was found that its costs are expected to be Rs. 3.000 or more. Therefore the people interested in the improved pit latrine anticipate that the costs the system will be much lower than this.

#### **\* no difficulties with water shortage and fetching of water**

Two candidates for the trial latrine are mainly interested because water is a problem. One person emphasized the fact that water is short and often not available, particularly during winter. The other person put more emphasis on the fact that fetching water is a time consuming activity for the women in his house. They like the improved pit latrine because water is not needed. The sanitation survey showed that 42% of the PF-latrine owners mention water shortage and fetching water as bad things about the PF-latrine.

#### **\* the use of stones in the pit latrine is easy**

The fact that in pit latrines the user can use stones or mud lumps should be considered as a strong point. For example in the survey on pour flush latrines it was found that the cost of toilet paper is considered as a factor for not always using the latrine. A pit latrine therefore is more cost effective and in line with local customs. Children for example are often not allowed to use the PF-latrine because parents fear they will destroy the pan if they use stones.

#### **\* the ventpipe; takes smell and gives status.**

The villagers were not completely convinced that the ventpipe will take away the smell. Nevertheless it was appreciated that a ventpipe was included in the design. To some extent the team got the impression the ventpipe was also liked because it adds to the sophistication and hence the status of the improved pit latrine.

Several villagers remarked that if the pit latrine is without smell they expect others to adopt the pit latrine quickly.

#### **\* no freezing problem**

The improved latrine is a dry system and does not need water. Therefore it cannot freeze and can be used during winter.



**\* good for purdah, cleanliness and convenience**

Several factors were mentioned as strong points of the pit latrine like purdah, cleanliness and convenience. The same points, however, also apply to PF-latrine and are therefore not specific advantages of the improved pit latrine.

### **3.3 Negative comments of villagers on the improved pit latrine**

**\* it will give smell**

During dialogues on the improved system villagers said that smell from the pit is their main worry. It was evident that they will not adopt the improved latrine if it is producing smell. It was impossible to assess the level of smell that is acceptable. The general impression is that the people in Chitral will have a low tolerance for smell<sup>7</sup>. Generally people express that they like the free and relatively odour free defecation<sup>8</sup> in the open fields. Haji Khan in Shotkhar said:

"I have a lot of open space near my house but I have enough of going to the open especially in winter. So I'm happy with your idea. But if this pit latrine is smelly I will prefer to go in my own jungle".

**\* the improved pit latrine will not be cheap**

Villagers said that digging a pit, transporting stones and building a superstructure will make the pit latrine not much cheaper than the PF-latrine. Some people remarked that the improved pit latrine also needs cement and that the difference is the commode and a flush pipe, which is Rs. 3-400.

**\* pit latrines are not appropriate for guests**

With the conventional latrine in mind most people worried whether a pit latrine would be appropriate or acceptable to guest. One exception was a house in Ayun where the pit latrine was used by guests. See the report on pour flush latrines for a discussion on the importance of sanitation for guests.

**\* pit latrines cannot be installed inside the house**

The PF-latrine can be installed inside the house or guest room. In case of a VIP latrine this is not recommendable nor acceptable to the villagers.

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7. It should be added that smell is a relative concept. What one person calls 'foul' another calls 'a bit smelly'. In Baltistan for example the people have no problem with some smell from their latrine, a smell that would be unacceptable for people in Chitral.

8. It is interesting to note, however, that the jungle is also not a completely odourless remedy. In the sanitation survey for example more than 70% of the respondents said that the PF-latrine is good to avoid smell and dirt in the village which implies that open defaecation also causes a problem.



**\* a pit latrine has a low status**

With the image of a conventional system in mind, villagers see the pit latrine as a low status system. As is said before, the system is associated with poverty, dirt and smell and considered as old fashioned. Without realizing the advantages some people do not think is appropriate to built the pit latrine in an era of development and progress. One man said:

"What is the use of building a latrine that our grandfathers were happy to get rid off!".

**\* stones will quickly fill the pit**

A disadvantage of using stones in the pit latrine was pointed out during a dialogue in Meragram 1. The men said that the pit will fill up very quickly if all household members use 2-3 stones or mud lumps every day. One man said this number might be up to 20 in case of diarrhoea!

Rapid filling of the pit can indeed be a problem if a small pit is constructed. The problem will also be more serious in areas where people use stones (such as Meragram 1) than in areas where small mud lumps are used (like Kalkattak). The latter take less space in a pit than the former and may also help to absorb moisture in the pit thereby reducing smell.

**\* digging of the pit is a lot of work**

In several villages the men said they did not like the pit latrine because they expected digging would be needed every year. They pointed at the rocky ground conditions which makes it difficult to construct a pit.

**\* defaecation in a hole is not a part of tradition**

People are mostly used to defaecate in the open fields. Using a single place, like in a latrine, was (and to some extent is) considered as odd. A PF-latrine is perhaps easier to accept than a pit latrine because people feel safer and more comfortable using a PF-commode than directly squatting above the pit with a view on faeces.

**\* proper sanitation is not considered as a high priority**

In many villages, particularly with a lot of open space, people do not feel the need for sanitation improvement. If people in these circumstances built a sanitation system they will prefer a PF-latrine for their guests. An improved pit latrine is considered as redundant because so much open space is available.





In the table below all the advantages and disadvantages of the pit latrine are put together. The different points are grouped in pairs of arguments and counter arguments.

ADVANTAGES OF THE IMPROVED PIT LATRINE	POSSIBLE DISADVANTAGES OF THE IMPROVED PIT LATRINE
<p><b>LOW COST:</b></p> <ul style="list-style-type: none"> <li>- cheaper to construct than the PF-latrine</li> <li>- no need to buy toilet paper</li> </ul> <p><b>EASY CONSTRUCTION</b></p> <ul style="list-style-type: none"> <li>- pit latrine is easier to make than PF-latrine</li> <li>- superstructure of local materials</li> </ul> <p><b>LITTLE SMELL:</b></p> <ul style="list-style-type: none"> <li>- expected that ventpipe will reduce smell</li> <li>- ash can be used, it is available and people are willing to use it</li> </ul> <p><b>USE OF STONES FOR ANAL CLEANSING:</b></p> <ul style="list-style-type: none"> <li>- anal cleansing with stones or mud lumps can be tolerated according to tradition</li> </ul> <p><b>HEALTH BENEFIT:</b></p> <ul style="list-style-type: none"> <li>- health related benefit because of clean environment, no faeces in fields, no water contamination</li> </ul> <p><b>NO WATER NEEDED:</b></p> <ul style="list-style-type: none"> <li>- no water is needed for flushing</li> <li>- labour saving effect because women do not have to fetch water</li> </ul> <p><b>NO FREEZING IN WINTER</b></p> <ul style="list-style-type: none"> <li>- pit latrine is a dry system, so it can be used also in winter</li> </ul> <p><b>(ADAPTABLE) DESIGN</b></p> <ul style="list-style-type: none"> <li>- design can be easily adapted to local circumstances, needs and resources (size of pit, with or without super-structure)</li> </ul> <p><b>ADDITIONAL BENEFITS</b></p> <ul style="list-style-type: none"> <li>- easy to clean and maintain because pan cannot get dirty</li> <li>- purdah, convenience, comfort</li> </ul>	<p><b>NO LOW COST:</b></p> <ul style="list-style-type: none"> <li>- people doubt if cost will be lower</li> <li>- a good slab needs wood or cement</li> <li>- a VIP latrine needs a vent-pipe</li> </ul> <p><b>(RE-)LOCATION IS NOT PRACTICAL:</b></p> <ul style="list-style-type: none"> <li>- the latrine needs to be relocated once the pit has filled</li> <li>- inadvisability of building inside the house</li> </ul> <p><b>A LOT OF SMELL:</b></p> <ul style="list-style-type: none"> <li>- pit latrine is expected to smell</li> <li>- need for ash or lime</li> <li>- smell expected in summer</li> </ul> <p><b>USE OF STONES:</b></p> <ul style="list-style-type: none"> <li>- with stones pit will fill</li> <li>- need for stone disposal</li> <li>- fear for digging new pit</li> <li>- no use of water for wazzu</li> </ul> <p><b>NEGATIVE SOCIAL EFFECT:</b></p> <ul style="list-style-type: none"> <li>- low status of pit latrine, considered as old fashioned</li> <li>- not considered appropriate for guests</li> </ul> <p><b>WATER:</b></p> <ul style="list-style-type: none"> <li>- if water is used the latrine will be more smelly</li> <li>- males do not recognize fetching water as a problem</li> </ul> <p><b>PROBLEMS IN SUMMER</b></p> <ul style="list-style-type: none"> <li>- beside giving smell the pit might be breeding place for insects</li> </ul> <p><b>DESIGN:</b></p> <ul style="list-style-type: none"> <li>- Defaecation in a hole is not a tradition</li> <li>- fear of squatting directly on pit</li> <li>- darkness inside, view of faeces</li> </ul> <p><b>ADDITIONAL DISADVANTAGES:</b></p> <ul style="list-style-type: none"> <li>- people might defaecate not the hole but on the ground next to it</li> <li>- needs a separate place for wazzu</li> <li>- the pit latrine cannot be used as a bathroom</li> </ul>

Figure 8. The advantages and disadvantages of the pit latrine



## 4. CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

- Conventional pit latrines are used in Chitral on a very limited scale. The latrines with a dry system normally do not give a health risk. These types of latrine have a number of advantages that make them into an interesting alternative to the pour flush latrine.

The water based pit latrines, on the other hand, pose a big health hazard and these systems should not be encouraged.

- The simple pit latrine has the following advantages; it is cheap and easy to built, does not need water, the conventional anal cleansing material (stone and mud lumps) can be used, it is cheap to use and utilize and it cannot freeze. Some disadvantages of the pit latrine are smell, low status and the possibility that the pit fills up.
- If the improved pit latrine is designed in an attractive way there are good chances that some villagers will adopt it. In a series of group interviews and small dialogues several villagers showed interest in constructing an improved type of pit latrine.

It should be kept in mind, however, that the pit latrine will not be adopted on a large scale. Most people in Chitral prefer to build the PF-latrine. People will be hesitant because of the low status and possibility of smell from the latrine.

- An improved system has to be newly designed, introduced and constructed by an implementing agency. Given the small number and diverse designs of existing pit latrines it is probably not worth to upgrade existing latrines in Chitral.

The design of the improved pit latrine should include ideas taken from conventional and other improved models. The experience with VIP latrines is limited to some schools and a refugee camp. The improved pit latrine for the Afghan people is a good example that, under certain circumstances, a VIP system can be introduced and adopted successfully.

The pit latrine is a sanitation option that can be easily modified to local needs, resources and available financial resources. Beside the VIP latrine also simpler systems can be worthwhile to include in a sanitation programme.



## Recommendations

### 1. Develop different pit latrine designs

Ideally the WSH&HS project should develop a range of different pit latrines; from simple to sophisticated pit latrines. This set of options can be used to advise villagers about sanitation now or in the future. From the various designs the villagers themselves can decide which system best suits their needs, resources and circumstances.

The table below shows the different pit latrine options, their objective in a sanitation programme and research and development input of the WSH&HS project.

RANGE OF DIFFERENT PIT LATRINE DESIGNS	OBJECTIVE	INPUT OF WSH&HS PROJECT IN RESEARCH AND DEVELOPMENT
Rectangular trench pit latrine	advice <sup>9</sup>	Design & test construction method Design & test Health Education materials.
Rectangular trench pit latrine with holes.	advice	...
Tree pit latrine	advice	...
Shallow pit + moveable superstructure.	advice	Design & test superstructure
Single pit with local slab (wood, stone)	advice	Design & test construction method Design & test communication materials
Single pit with slab (no ventpipe, no superstructure)	Option for implementation	Design & test construction method for slab Design & test communication material for experimental latrines Design & test communication material for implementation
Single pit with slab (ventpipe + superstructure)	Option for implementation	Design + construction experimental latrine Design communication material for implementation

Figure 9. Various options of pit latrines and R&D input of the WSH&HS project

### 2. Include the simple pit latrine in a sanitation programme

The first set of very simple systems can be advised to people during health education and motivation sessions. These systems can be built with local available materials and they are cheap and easy to make. The construction can be easily modified to fit local needs and resources. These designs are not meant to be constructed by an implementing agency. Rather these are suggestions that can be made to beneficiaries. These 'advisable options' will be used in a forthcoming fieldworkers' sanitation handbook. An example of a series

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9. These options can be advised to people during motivation activities in villages and during health & hygiene education.



of simple instructions are given in figure 3.

An additional advantage of the simpler systems is that the pit is not very deep and therefore can be used in circumstances with a high ground water level or rocky ground conditions.

### **3. (Ventilated) improved pit latrine might be implemented**

The improved pit latrine (either ventilated or not) can be constructed under guidance of an implementing agency. It is also feasible that people build it themselves. This option needs outside resources such as cement, steel and possibly a ventpipe. It also needs technical input to guarantee that construction is according to design.

To make the improved pit latrine acceptable to villagers and to enhance the chance for successful introduction the following factors should be taken into account; price, smell, status and latrine management. The implementation should be integrated with motivation and health education activities. Below each factor is discussed in detail.

### **4. Improved pit latrines should be cheap**

People want a pit latrine in the first place because it is cheaper. Arguments such as water shortage or freezing are also important but have less weight than the cost. Therefore the improved pit latrine must work out much cheaper than the PF-latrine.

One alternative is to build an improved system without a complete superstructure and possibly also without a ventilation pipe. This reduces the cost, gives more ventilation and therefore less smell, and will be more in line with conventional defaecation patterns. Of course this latrine will be less attractive and give less status to the owner.

- > Discuss the option of a improved pit latrine without a complete superstructure
- > Design such a system

### **5. Improved pit latrines should not smell**

#### **i) Ventilation pipe:**

The ventilation pipe is expected to take away odour from the pit. The presence of the ventpipe might also help to increase the status of the pit latrine.

- > In the experimental pit latrine careful smell monitoring is needed.

#### **ii) Cover:**

Experiences in Kalkattak show that a cover decreases the smell in the latrine.

- > Experiments with different covers should look at the effect of closing the hole for upward air and the possible side effect that the ventpipe cannot suck up any foul air.





iii) The use of ash and or chuna:

Villagers did not show any reluctance to use the ash in the pit latrine. Yet people wondered whether ash would really help to prevent the smell in the latrine. Some people were skeptical about the use of ash and said that chuna (lime) would be better. Others again reacted to this by saying that people do not want to spend their money to buy this.

- > Experiments with ash should confirm its effect on smell.
- > Experiments with lime (chuna) should confirm its effect on smell and on decreasing the bulk in the pit.

## **6. Emphasis should be given to winter pit latrines**

In summer the pit latrine will probably be a bit smelly. Considering the wish of users that smell should be very little it is suggested to introduce the pit latrine in the first instance as a winter latrine. In cold weather the smell will be less. After successfully adopting this winter pit latrine (see box 1) people might also start to use it in the rest of the year.

It should also be possible for people to use the winter pit latrine besides their PF-latrine. In certain situations villagers might have two latrines; the pour flush latrine for themselves during summer and for guest throughout the year, and the pit latrine for themselves during the winter.

- > Discuss the option of only promoting a pit latrine for winter.

## **7. Water should not be used in the pit latrine**

To stop smell it would be better not to use water in the pit latrine. Experiences with the pit latrines in Kalkattak show that the smell in the latrine will be less if the latrine is kept dry.

If the improved pit latrine is only used during winter there will be no problem with using water for anal cleansing. The pit will not produce much smell because of freezing. If the improved pit latrine is also used during summer a separate wash place is advisable, like in the WSH&HS project trial Twin Pit Compost latrine.

- > Include water use in the health education messages
- > Discuss the option of a separate wash place
- > Assess the effect of urine on smell

## **8. Address the use of stones and mud lumps**

The use of stones and mud lumps should be addressed in the health education. Possible options are to advise villagers to use mud lumps or, less ideal, throw the stone into the field.

- > Address the use of stones and mud lumps in health and hygiene education.



**9. Improved pit latrines should be presented as sophisticated systems; consider the use of a san plat.**

The successful introduction and adoption of a pit latrine will be enhanced when it looks fancy and when its owner is looked upon as an innovator rather than a traditional person. Both in the design and in the health education and motivation the issue of status should be addressed (see also 'the use of drawings')

The appearance of the improved pit latrine should appeal to people. To improve the superstructure is expensive. The slab can be easily upgraded and hence increase the status of the latrine.

- > One option would be the SANPLAT (Brandberg 1989) a 'sanitation platform' that was designed and tried in Africa. A small prefabricated concrete slab with two footrests, a squatting hole like a commode and a closely fitting lid. The cost of this slab will be about Rs. 150. The minimum input needed for a slab of 2x2 foot:

Cement	0,125 bag (=5 ltr)	(Rs.225 per bag)	Rs.30
Sand	30 kg (=7.5 ltr)	(Rs.11 per CFT)	Rs.25
Coarse aggregate	8 kg (=7.5 ltr)	(Rs.8 per CFT)	Rs.10
Reinforcement	4.5 foot	(Rs.10 per foot)	Rs.45
Labour	0.25 man days	(Rs.100 per day)	Rs.25
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		Total	Rs.135

**10. Include motivation, health and hygiene education in an implementation project**

The introduction of the pit latrine should be preceded or accompanied by health education and motivation sessions. Preferably the women should be explained and motivated about the pit latrine.

- > Design proper programme and health and hygiene education materials.
- > Focus on both male and female household members

**11. Use of technical drawings and wooden models:**

In Shotkhar a dialogue was held by the project engineer with the help of some technical drawings. Later people often referred to these drawings. Not all the people had completely understood them but it seemed that the drawings had impressed the people. Possibly the drawings have helped to convince the villagers that the pit latrine is a good system and perhaps makes the pit latrine more sophisticated and hence more statusfull. An other method to explain the technical details can be the use of wooden models of the latrine designs.



- > Use of drawings is recommended, not only to explain details but to increase authority and convince people.
- > Design and produce wooden models of the pit latrine.

## **12. Target areas**

The pit latrines are more likely to be successful in congested<sup>10</sup> villages, at higher altitudes and/or water shortage. In these villages there is less privacy to defaecate outside, the PF-latrines freeze during winter and fetching flush water is a big practical problem. The latter two points are major dis-incentive for using the PF-latrines.

- > Focus on congested villages, with water shortage and at altitudes higher than Chitral town.

## **13. Target groups**

There are two target groups. The first are the people who face or anticipate problems with the PF-latrines. For them the pit latrine can be an interesting alternative or second sanitation option (for example a winter pit latrine). The second target group can be those who cannot afford a PF-latrines and the pit latrine can be a cheaper alternative. However the pit latrine should not be promoted as a "poor men's latrine", but rather the emphasis should be put on the practical advantages of its use.

- > Target group are people who face difficulties with flush
- > Target group are people who cannot afford a PF-latrines

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10. Villages where conventional pit latrines were identified are congested (Madaklasht, Kalkattak, Basquir, Poorponi, Ayun) or with clustered houses (Drassun, Korach, Rayeen and Parabek). Only Wassich is scattered.



## **ANNEX 1: PROFILES OF VILLAGERS THAT ARE INTERESTED IN THE IMPROVED PIT LATRINE**

### **Ali Murad in Shotkhar (Torkoh)**

Ali Murad works as a farmer in Shotkhar. He is about 38 years old. He has no cash income and his children are too young to do any labour work. They live in a house with 10 people (his wife, six sons between one and 12 years old, a young daughter and his father). Ali Murad studied until 6th class. He has seen the PF-latrine locally, in Chitral and when he once visited Rawalpindi.

Most of the neighbours and relatives have a PF-latrine and he would also like to build one. The lack of money is the main reason for not constructing a PF-latrine. He expects that a complete latrine will cost around Rs 3500. Ali Murad believes a PF-latrine might fill up in seven years, or in four if the whole family uses it all the time. Beside the cost of the PF-latrine he does not foresee problems with freezing or water shortage because there is a spring near his house with relatively warm water during winter.

His commented that the pit latrine is easier to construct and that it is cheaper. He said:

"It will be a good system, you showed a good structure on the drawing and you will explain how to built it".

Two possible construction sites were observed. One was a triangular small room adjacent to a small guest room. He said he could demolish the room and construct a new building after digging the pit. A second site was in a small little room about 20 meters into the garden. He said he could also destroy this structure and rebuild it on the same place. He was advised that it is easier to dig the pit inside this room than to demolish it.

#### **Remarks:**

Ali Murad gave the impression that he was aware of the advantages of good sanitation. He also had some interesting remarks about water supply. His expectation is that the pit latrine will work out much cheaper than the PF-latrine, therefore the design has to be significantly cheaper. Ali Murad is ready to construct the pit latrine after the winter.

### **Haji Khan in Shotkhar (Torkoh)**

Ten years ago Haji Khan worked in Kuwait for two years. Nowadays he works as a farmer, together with his two brothers. They sometimes try to work as labourer but normally they are without cash income. They live with 14 people in the house (his mother and sister, his wife and two brothers with spouses, four young daughter and two sons). He didn't built a PF-latrine because it was not a tradition and the costs are high. He said:

"We are used to the open so we don't like smell. A PF-latrine does not give smell and that's good. The pit latrine is easy because no toilet paper and water are needed. Defaecation is a problem in the winter time, we have to go outside, it is dirty, inconvenient and no purdah. I don't like to defaecate like this anymore".





After March he is ready to start construction. He said that more people are interested and if no smell comes from the pit latrine then everybody will make it. On the other hand if it smells he says they will have to adopt the PF-latrine.

He did not think about possible sites for the pit latrine. It was explained to him that the project will only contribute minor expenses and that he has to do all the labour work.

Remarks: Many neighbours of Haji Khan have a PF-latrine already. It seems to be socially desirable to have a latrine in his muhallah. To some extent this influenced his interest in the pit latrine. From his account it is very clear that smell will be a major obstacle in his acceptance of the pit latrine.

### **Rahmat Nadir Shah in Shotkhar (Torkoh)**

Rahmat Nadir Shah was not present at the dialogue but later heard about the pit latrine from others. He has already dug a pit for a PF-latrine. He thinks a flush will be very expensive and he wants to try a cheaper system.

Rahmat Shah said that during the winter they face problems with purdah and with cold and that is why he wants to make a latrine. He first intended to build a PF-latrine for guests. He realized however that water for flushing and freezing are two main problems with the latrine. Therefore he believes that the pit latrine is a very good alternative. He also added that this system is cheaper because it will not need a commode. During our dialogue he explained to another man:

"We are all poor people, how can we pay for a flush, that is at least Rs. 500 and where can you get it? These people make it simple, and no water or commode is needed."

He is ready to start the construction of the pit latrine. Rahmat Shah understands it is an experiment and he said that if the pit latrine is smelly he will change it into a PF-latrine.

He lives in a house with nine people (his wife, his mother, one son with his wife, two sons and three daughters). He works as a farmer while his two sons work in the army. The household income is about Rs. 2000 a month.

The size of the pit is 6-7 feet deep and 5-6 feet wide. He has already started putting a stone lining wall in the pit, which is about one foot high. The pit is situated on a lower terrace eight feet below the ground level of the house.

Remarks: Rahmat seems to be genuinely interested in the pit latrine. He was the only person in Shotkhar who himself came with the argument that water shortage is a huge problem for the pour flush. If the trial latrine is not successful he will make a PF-latrine.



### **Local Health Board Chairman Zar Khan in Shotkhar (Torkoh)**

Zar Khan expressed his interest in the pit latrine during the dialogue. He is the chairman of the local health committee. Due to illness he was not able to attend an interview during our stay in Shotkhar. He has a house with a guest room and a separate PF-latrines already. We could not assess whether the chairman is genuinely interested in the pit latrine or feels obliged because he is the chairman.

### **Mason Hakim Ali in Shotkhar (Torkoh)**

Hakim Ali has already a latrine in his house and he is not (yet) interested to build a pit latrine in his own house. However he likes the idea and after the dialogue he told many other villagers. He is ready to help us. He built many PF-latrines in the past (how much he presently works as a mason is unclear). If construction would start he suggested that a local person should supervise the work. He is willing to help us with this task.

He added that soil conditions vary considerably in the village and that in some places pits for latrines only need to be four feet deep because of loose soil structure. In other, rocky parts of the village 10 foot was hardly enough for a soak pit. He offered his services to advise about these local conditions and possible help with supervision of the construction.

He further suggested that the vent pipe should be long and wide and be placed in the center of the slab, not at one side. Moreover he said that the first three foot of the superstructure should be cemented and the rest built with mud bricks.

### **Wor Wor in Drassun (Mulkoh)**

During an interview in which we briefly explained about the pit latrine Wor Wor said he already had a similar system. It turned out that he was using a water based pit latrine. The pit was only two foot deep and after filling up he would wash the pile of excreta into the field. His latrine was used by some family members although childrens' faeces were observed near the house.

Wor Wor expressed strong interest in the improved pit latrine. He lives in the house with 10 people, his nearly blind father and mother, his wife and six children between 0 and 8 years old. He has only 3 kanal land and sometimes earns some money through labouring. During the summer his wife and some children stay in a small house in the nullah.

He likes the pit latrine because it doesn't need water. The pit can be constructed nearer to the house than the present latrine and it will be more clean. As his parents are blind it will be easier for them to use the improved pit latrine.

### **Saheed Hassan in Basquir (Lotkoh)**

In Basquir many people have build PF-latrines. According to all respondents only 10 of the 65 households do not have a latrine. PF-latrines construction is strongly promoted by active CHWs and the nearby AKHS health center. It seems that there is social and practical pressure (Basquir is congested) to have a PF-latrines.



Nevertheless a small dialogue was held about the pit latrine. Most villagers did not like the idea but later when no other villagers were present one mason expressed interest in building a pit latrine.

Saheed Hassan lives in a house with 12 people, his mother and wife with three children (<10) and his brother, wife and four young children. When he finds work as a mason his income is Rs. 3000/month. He has worked with AK Housing Board and knows Farman Murad.

He will shift to a new house after winter. In his old house a pour flush is installed but it cracked when hot water was used in winter. He said there is a water shortage and the women carry water for flushing from the river. Particularly in the winter this is a hard task. He wants to build the pit latrine next to his new house. He realises it is an experiment and if the latrine does not work properly he will change it into a PF-latrine.

Remarks: Saheed Hassan showed keen interest that he would be the first one in Basquir to have this pit latrine. He said if it was successful he would help to build it for other families too.

