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FINAL REPORT

EVALUATION OF THE GOP-UNICEF WATER SUPPLY AND ENVIRONMENTAL SANITATION PROGRAMME 1992-1998

Submitted to:

UNICEF, Islamabad

November, 1999

EDC

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LIST OF ABBREVIATIONS & ACRONYMS

ADB	Asian Development Bank
AJK	Azad Jammu & Kashmir
ARID	Association for Rural Integrated Development
ATMI	Anjuman Takmeel-e-Maksid-Insania
BRUWAS	Balochistan Rural Water Supply & Sanitation Project
CBO	Community Based Organisation
CIDA	Canadian International Development Agency
DFID	Department for International Development
DPE	Directorate of Primary Education
EDC	Enterprise & Development Consulting
FANA	Federally Administrated Northern Areas
FLAAHE	Focus Local Area Approach for Hygiene Education
GO	Governmental Organisation
GOP	Government of Pakistan
HE	Health Education
HHL	Household Latrine
HP	Handpump
LG&RD	Local Government & Rural Development Department
M&E	Monitoring & Evaluation
MICS	Multiple Indicators Cluster Survey
MNA	Member of National Assembly
MPA	Member of Provincial Assembly
NA	Northern Areas
NGO	Non Governmental Organisation
NWFP	North West Frontier Province
O&M	Operation and Maintenance
OPP	Orangi Pilot Project
Pak-CDP	Pakistan Community Development Project
PDP	Participatory Development Programme
PED	Primary Education Directorate
PHED	Public Health & Engineering Department
PIHS	Pakistan Integrated Household Survey
PM&E	Planning, Monitoring & Evaluation
RCC	Reinforced Concrete Cast
RDD	Rural Development Department
RWSS-SA	Rural Water Supply and Sanitation – South Asia
SAP	Social Action Programme
SAPCOM of CIDA	Social Action Programme Communication Strategy of CIDA
SAPP	Social Action Programme Project
The Programme	The GOP-UNICEF WES Programme 1992-98
The WES programme	- ditto -
TOR	Terms Of Reference
TRDP	Thardeep Rural Development Programme
UNDP	United Nations Development Programme
UNICEF	United Nations Children Fund
WATSAN	Water and Sanitation
WES	Water & Environmental Sanitation
WHO	World Health Organisation
WMC or WSC	Water & Sanitation Management Committee
WSP-SA	Water and Sanitation Programme - South Asia

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EXECUTIVE SUMMARY

1. Introduction

This report has been prepared by Enterprise & Development Consulting (EDC) Private Limited to share the findings of the independent technical evaluation of the Government of Pakistan-UNICEF Water and Environmental Sanitation Programme (WES) from 1992-98, referred to hereafter in the present document either as "The Programme" or as "the WES programme". The strategic focus of The Programme was the promotion of low cost easy to operate and maintain technological options; community operation with emphasis on women's participation in project planning, execution, operation and maintenance and environmental sanitation and hygiene education directed towards women and primary school students. The Local Government & Rural Development Department and the Primary Education Department were identified as the primary government counterparts for the sector programme. From 1992-98, The Programme provided an estimated 25,100 hand pumps, material for approximately 160 gravity-fed piped water supply schemes and about 158,000 pans and slabs for latrine installation.

An extensive field survey was conducted to verify the installation and functioning of WES facilities and to determine community perceptions. This survey was conducted in 34 districts across Pakistan which included 10 in Punjab, 6 in Sindh, 6 in NWFP, 8 in Balochistan and 2 each in Azad Jammu & Kashmir (AJK) and the Federally Administered Northern Areas (FANA). The districts for the survey were chosen randomly but keeping in mind the geographical spread and variation in each province. This list was discussed and approved by LG&RD staff and UNICEF staff in each province. The sample was selected in a manner that met the minimum requirements of the client on the proportion of facilities to be covered. Overall, 1,252 hand pumps, 2,598 household latrines, 183 schools and 16 gravity flow schemes were covered in the sample. More than 5,000 men from beneficiary villages, 3,756 women and 533 handpump care takers were interviewed regarding their perceptions about WES facilities and services during the field survey.

2. The Water and Sanitation Sector in Pakistan

The water supply and sanitation sector in Pakistan is characterised by extremely low level of coverage particularly in the rural areas. There is a great divergence in the estimates of coverage of the water supply and sanitation sector in Pakistan. The actual figures regarding coverage differ with the definition of coverage. One recent report [1] concludes that the rural water supply and sanitation sector provides coverage to, at best, around 50% of the rural population and a mere 15% have access to sanitation facilities. Another report maintains that over all only 68% of the people in the country have access to clean drinking water and only 38% have access to sanitation facilities. In rural areas this coverage is even lower and only 50% of the rural population has access to clean water while only 17% have access to sanitation facilities[2]. It is projected that the pace of population growth in Pakistan is such that there will be need for large investments in the sector simply to maintain coverage at current levels.

Women and girls, who are the principle carriers of water, spend considerable time in collecting it for drinking and other domestic uses. Similarly, the availability of water and sanitation facilities in schools is limited. In most rural primary schools, children often have no option but to drink contaminated water found around the school premises. In the absence of

[1] Akbar Zaidi. The Rural Water Supply & Sanitation Sector in Pakistan. WaterAid. 1997 (page 1).
[2] UNICEF

sanitation facilities in schools, the compounds and surrounding areas were used for urination and defecation. The problems were more serious for female teachers and girl students. In fact, absence of sanitation facilities was often cited as one of the main reasons for a higher drop out rate for female students. Levels of hygiene education and practice in Pakistan are at a very primitive level and represent medieval standards in most urban slums and rural villages. Diarrhoea is prevalent in large parts of the country and its cases are directly related to poor hygiene practices. One of the principle reasons for UNICEF's intervention in the water supply and sanitation sector was the poor health status of women and children and its links with poor supply of water, sanitation and hygiene education.

There has been considerable focus on the water supply and sanitation sector in Pakistan in the last decade. This focus has been occasioned by the low level of coverage. The Social Action Programme has helped to bring the issues in the sector into sharp focus. UNICEF has played an important role in demonstrating strategies and approaches that have worked well in the sector. The Social Action Programme has gained from UNICEF's experience in the water supply and sanitation sector and many important aspects of UNICEF's approach are being replicated nation wide through financing provided under SAP. Beginning with the Strategic Investment Plans drawn up for the four provinces, AJK and the Northern Areas, there was an attempt to take stock of past developments, identify the key issues and devise solutions to the principle problems in the water sector.

3. The WES Programme: Survey Of Facilities

3.1 Hand Pumps

Of the total hand pumps surveyed 78% were found to be in working order. In over 93% of the cases the water from the hand pumps was found to be of acceptable quality. Most of the installed hand pumps are in working condition and in use. There was no significant difference in the condition of hand pumps in different provinces except In Balochistan where only 59% of the hand pumps were found to be in working order. There are a variety of reasons for the non-functioning of hand pumps. Overall the most significant reason was that the pump was broken (29%). Survey results were used to assess the performance of hand pumps installed in different years and there was found to be a significant co-relation between the year of installation and the functioning of hand pumps. This assessment showed that most of the handpumps that were not currently working had been installed in 1992, 1993 and 1996. As far as environmental features are concerned, in 62% of the hand pumps surveyed there was a proper drainage channel and a proper soak-pit in 38% of the cases. In 76% of the cases there was no dirty water pond nearby either. There are significant variations among the provinces as far as environmental aspects are concerned. Hand pumps in Balochistan and Punjab exhibit the worst environmental features with just over 50% of the hand pumps with a proper drainage channel and only 24% with a proper soak-pit in Punjab. NWFP showed the best results from the environment standpoint.

3.2 House Hold Latrines

A total of 2,598 household latrines were surveyed in 426 villages in 34 districts all across Pakistan. Most of the latrines surveyed had been installed between 1994 and 1998 and were Pour Flush Latrines. From among the latrines surveyed 86% were currently in use. The percentage of usage was high in all areas particularly in AJK where 91% of those installed were in use. The latrines in FANA were the least used. Where latrines were not being used, the principle reason was that these had been reserved for guests . Prior to the installation of latrines most of the respondents used to go out in the fields. As such, these facilities represent the first time that users have facilities inside their homes. About 78% of the latrines were clean and did not have flies or any foul smell around them. The users felt

that the principle benefit of using the latrine was that women felt more secure (60%), it offered a more clean way (22%) and that it was convenient in extreme weather (15%). Generally, users did not experience any problem in its use in 88% of the cases. However, some of the problems associated with a latrine at home was shortage of water (4%) and lack of proper sewerage (6%). In more than 96% cases the latrines have been installed in households with monthly household incomes less than Rs. 6,000 per month.

3.3 Hygiene Education

A total of 3,756 women were surveyed and asked about hygiene education. In 87% of the cases, women had not received any hygiene education. There was wide variation in women's perceptions about the messages imparted by the hygiene education promoter during her visits. In cases where hygiene education messages had been imparted, women felt that their habits had not changed much (51%). In 20% of the cases women felt that their personal hygiene habits had improved and in 11% of the cases they felt that their environment had become better. In Punjab only 15% of the women felt that their habits had improved compared with 25% in NWFP and 61% in Balochistan. There were no cases from Sindh due to the fact that there are no women hygiene education promoters in Sindh under WES.

3.4 Primary Schools Component

Overall 183 schools were surveyed during the current evaluation. These schools were located in Punjab, Balochistan and NWFP. Hand pumps had been installed in 90% of the schools surveyed. However, in Balochistan hand pumps had been installed in only 43% of the schools surveyed, in NWFP in 87% of the cases and in Punjab in 95% of the cases. Of the total hand pumps installed in schools, 80% of the hand pumps are in working condition. In most cases where the hand pump is not working, the teachers do not know the nature of the problem with the hand pump. However, in 21% of the cases the problem is due to the mal-function of the plunger. Most of the hand pumps which are not in working order have been in this condition for more than six months. Of those hand pumps currently in working order only 87% are being used. All the hand pumps currently not in use are in Punjab. Quality of water in the hand pumps was acceptable in 91% of the cases. However, in Balochistan the quality of the water was not acceptable in 33% of the cases.

Overall 92% of the schools surveyed had latrines. Latrines have been installed in 95% of the schools surveyed in Punjab, 100% in NWFP and in 50% of the schools surveyed in Balochistan. Most of these latrines are Pour Flush Latrines. In 85% of the cases, two latrines have been installed in each school surveyed. In 1% of the schools no latrine was in working order, in 24% only one latrine was in working order, in 65% of the cases both the latrines were in working order whereas in 6% of the cases three were in working order. There is regional variation among the provinces in this aspect. NWFP has the largest number of usable latrines whereas Balochistan ranks the lowest in terms of the condition of its latrines. About 91% of the latrines installed are currently in use. Of those not working the principle reason is damage to the latrines (23%), improper sewerage (18%), blocked latrines (9%) used as a store (9%) and shortage of water (9%). In 38% of the cases the latrines were mostly used by the teachers and in 33% of the schools surveyed the latrines were locked.

In 81% of the schools there was no teacher who had been imparted training in hygiene education. In 11% of the schools surveyed there was one teacher trained in hygiene education. In 7% of the cases there were two teachers trained in hygiene education and in only 1% of the schools there were more than three teachers trained in hygiene education. However, despite their lack of training in the subject, 87% of the teachers said that they gave instructions to children on hygiene education. The teacher's perceptions about the

benefits of the hygiene education programme varied considerably. About 29% of the teachers felt that as a result of the WES programme the incidence of disease would be lower (29%), school premises would be cleaner (24%), water was available (18%). However, 24% of the teachers felt that due to poverty the WES programme was not practicable.

3.5 Gravity Flow Schemes

During the current survey, 16 gravity flow schemes were surveyed. All the schemes visited were in working order. These were large schemes compared to the house hold hand pumps generally benefiting between 25 to 50 households. The main storage tanks of these schemes were properly capped and the storage tanks were properly constructed. The water pipes were properly fixed and in 93% of the cases there was no leakage. The quality of water in these schemes was acceptable in terms of taste and colour. Prior to the construction of these schemes the water was not acceptable in 18% of the cases surveyed. The distance to the water source prior to the construction of these schemes was more than 25 kilometres in 25% of the cases surveyed. However in 68% of the cases, the water source was less than 1 km. The Northern Areas benefited more from these schemes compared to AJK as the water quality was acceptable in only 57% cases before and the distance was more than 3 kms in 57% of the cases surveyed. There was a great deal of participation in the construction of these schemes and it appears that the entire village was involved in their construction.

4. Policy & Institutional Aspects of The WES Programme

4.1 Advocacy

UNICEF has played a catalytic role in the water supply and sanitation sector in Pakistan. It has brought into sharp focus the key issues in the sector and designed a strategy to deal with these issues effectively. In particular, The Programme has played a key role in demonstrating that a low cost approach using appropriate technology can be implemented effectively. The key elements of this strategy were focus on the rural areas, active participation of beneficiary communities, emphasis on women and focus on sustainability through use of low cost appropriate technologies and capacity building in its use. The Programme has been able to demonstrate the relevance of this approach for Pakistan. The water supply and sanitation sector as a whole is now pursing an approach close to The Programme approach in terms of community participation and emphasis on sustainability. The policy in the water supply sector enunciated through the Uniform Policy on water and sanitation is hinged upon the principles enunciated and demonstrated by UNICEF in the last twenty years or so. There is agreement on the key role that UNICEF has played in the sector among donors and the government.

The Programme has helped to change the system of location of schemes and undertakes the process of scheme location through community participation. However, the process is still liable to political influence and patronage and the influence of local leaders who are instrumental in deciding the location of WES facilities. The Programme has also influenced the staffing structure of the water supply and sanitation sector to some extent. The monitoring and evaluation capacity has been strengthened in some provinces. However, despite the emphasis of the programme on women and hygiene education, the LG&RD has recruited women in only a marginal manner. In many places the primary implementing department has no female staff and where the staff has been hired, their training and qualification allows them to make only a marginal contribution. Similarly, there is no emphasis on retraining or changing the structure of the implementing departments in the

provinces for more effective implementation of approaches for social mobilisation and recruitment based on the changing concept of participatory methods in the sector.

4.2 Alliance Building

UNICEF's experience in alliance building has been mixed. UNICEF has been working in the water sector in Pakistan since the 1960's. However, it has not played an instrumental role in shaping policy with other institutions working in the sector like the Public Health Engineering Department. A Federal Support Unit had been established by the Government but this was later disbanded as it had been established with donor funding. Although, UNICEF has been able to influence the policy in the sector it has done so from the sidelines. If UNICEF had pursued a more active alliance building strategy it could have helped to influence policy in the sector more actively and more quickly. There is no coherent alliance building strategy being pursed by UNICEF. There is need for a systematic assessment of the strengths of each collaborating partner and targeting them for strategic functions. There is need to specifically articulate alliance building objective into UNICEF's strategy. UNICEF has collaborated with WHO much more actively in monitoring the eradication of guinea worm. However, UNICEF has not worked actively with UNDP or other agencies in forging strategic links with them for a more active pursuit of its overall objectives. For example, UNICEF and UNDP could have worked more actively in strengthening NGOs for undertaking a more active social mobilisation role or helping to develop the capacity for NGOs to implement water and sanitation projects and programmes.

The role of the NGOs in the sector has not been properly articulated or rationalised. In most current programmes and projects, NGOs are being pursued for service delivery rather than for a strategic role in the sector like social mobilisation, building inter-sectoral linkages, facilitating links with the private sector, identifying solutions to issues of long-term sustainability, cost-recovery, user charge strategies, billing and collection methods, etc. Under the participatory Development Programme financed by the Government of Pakistan NGOs are being provided with grants for service delivery in the social sectors. Similarly, many NGOs are being given grants by donors for the implementation of social sector services. The Programme has recently inducted NGOs into its projects. However, this experience is still new and it is too early to comment on it.

The Programme has explored the role of the private sector particularly for the supply of hard ware. However, the interaction with the private sector has been limited. There is need for more active collaboration with the private sector at the field level in facilitating the production of appropriate low-cost technologies for water supply and sanitation. LG&RD are trying to build an alliance with the private sector. This alliance had not been very strong in the past. One principle reason is that the current volumes are small and the private sector requires larger volumes of input supply and orders for economies of scale. There are plans to assist the private sector to open shops for spares for Afridev hand pumps. There is also need to introduce the concept of social marketing for sale of latrines and other sanitation services.

4.3 Capacity Building

The Programme's approach to capacity building is through building the existing capacity of the institutions it is working with. The Programme has invested considerable resources in training LG&RD staff. Very comprehensive training manuals were prepared but there is no indication that these were used extensively for training. These manuals dealt very exhaustively with the technical and operational aspects of the programme. The perception of the LG&RD staff in many places was that they were not properly briefed about the objectives of the programme. The Programme has emphasised community participation as a key aspect of its programme approach. The choice of the Local Government & Rural Development Department was made on the basis of its strengths in the field. However,

LG&RD does not have a systematic approach to community participation and social mobilisation. UNICEF was one of the first donor organisations to appreciate the benefits of community participation and ensure that the community was an important player in its activities. However, this approach needs to be revitalised and the current lessons regarding community participation need to be incorporated in the approach followed by LG & RD.

LG&RD Punjab feel that The Programme has not contributed significantly to any structural change within the department, although it has contributed to human resource development and in enhancing the capability of the department through the provision of equipment and vehicles. In NWFP, Sindh and Balochistan there is consensus on the capacity building of the LG&RD due to the WES programme. While many of these changes are indicative of structural changes within the LG&RD department it is interesting that these are perceived by some of the department staff as strengthening efforts and not as structural changes. This may be due to the fact that these structural changes have not had a far reaching impact on the functioning of the departments. As part of the programme there has been considerable training of hygiene education promoters. However, in many places the women selected were young and not properly qualified and as a result they did not enjoy credibility with the community. The cultural milieu in Pakistan is such that the rural population is generally not very receptive to the types of messages that were being delivered. This has also hampered the functioning of the health and hygiene promoters.

4.4 Equity

The Programme ranks well on equity grounds. It addressed spatial equity by focusing attention on rural areas which were neglected prior to The Programme's intervention in the sector. The Programme has also concentrated in provinces which had severe water problems and where access and coverage was the lowest like Balochistan and NWFP. A physical examination of the hand pumps show that most of them are located in areas where it is generally the poor who use them. Although, some hand pumps are installed outside mosques, police stations and the roadside their number is small An estimation of household incomes of people receiving latrines was made and this indicated that 61% of the households who had received latrines had incomes of less than Rs. 3,000 per month. Since the hand pumps and latrines have been given in the same area it can be assumed that these figures also reflect the incomes of those benefiting from the water supply facilities.

The WES programme was mainly aimed at women and UNICEF tried to involve women in decision-making. However, due to the limited number of female staff in government line agencies it has not had much of an impact on women's participation in decision making although women are the prime beneficiaries of the water supply schemes. Perceptions regarding the participation of women in the programme were recorded from both the men and women in the field. These show a remarkable regional differentiation in the response. When asked the question whether men give priority to women in decision-making 51% of the male respondents from Punjab felt that they considered women's opinion, in NWFP 40% and in Balochistan only 7% indicated that they gave priority to women's opinion. What is more significant is that the perception of women and men for any particular area were quite similar.

4.5 Sustainability

The key elements in achieving sustainability is the availability at the local level of the human, social and financial capital required to sustain the investments in the water and sanitation sector. The record of the WES programme is quite good with respect to sustainability and far better than investments made by the Public Health Engineering Department. The handpumps which The Programme has provided are low cost and can be managed by the community at the local level. The preliminary results from the field survey show that 78% of

the hand pumps installed are working. Among those not working, the primary reason for mal-function is missing handles, plunger being out of order and lack of water. The human and financial resources exist to sustain these schemes. However, there is need for further investments in the social capital to ensure proper scheme location based on community needs. The community will maintain schemes it needs.

5. Relevance & Effect of WES Programme Facilities

The overall coverage of water supply and sanitation is still poor in Pakistan and there is need for massive investment in the sector. As such, UNICEF's assistance under the WES programme is not only relevant but are critical for ensuring that a certain minimum level of momentum is maintained in the sector. There are just a handful of donor agencies funding the small scale, community based program in the water and sanitation sector. These schemes are more effective and function better than the large-scale schemes and as such provide an important lesson for other players in the sector. However, in order to improve the effectiveness of the program, there are a few minor modifications and suggestions in the current approach and programme components which are outlined in this report.

5.1 Effect of WES Programme Facilities at the Community Level

There is evidence that there has been an improvement in the health indicators of the beneficiaries as a result of WES programme activities. Most of this improvement has come about as a result of the provision of water and sanitation facilities. The effect of WES programme activities extends to non-recipients as well through the demonstration of the benefits of community level water supply and household latrine facilities. Although, the demonstration effect is not systematically monitored, there is ample anecdotal evidence that many households within the recipient village and in adjoining areas are influenced by the convenience these facilities offer and are beginning to invest in them. The impact on health indicators of the provision of these facilities is not always immediately evident or appreciated by the others, but over time, this is also expected to be a good motivator and incentive for people to invest in the improvement of water supply, sanitation and better hygiene practices.

Although, the hygiene education component of the WES programme has had limited outreach, there has been improvement in the hygiene practices of the recipients of WES programme components. Most of this change in behaviour can be attributed to the provision of water supply and sanitation facilities by the programme. The provision of water and household and school level latrine facilities has generally improved the hygiene practices of the recipients at the household level and in schools. An analysis of survey results shows that over 91% of the respondents washed their hands after toilet use and 41% used soap to wash their hands. The teachers interviewed regarding their perception about the effect of the WES program on children reported that the school children were cleaner as a result of the provision of water supply and sanitation facilities. The school questionnaire also asked specific questions about the impact of WES programme facilities on school enrolment. About 30% of the teachers felt that there had been an increase in school enrolment as a direct result of WES programme facilities.

One of the principal objectives of the WES programme was to contribute to the reduction of child mortality and morbidity, as caused by water and sanitation related diseases. The Pakistan Integrated Household Survey[3] reports that the percentage of children who have suffered from diarrhoea has fallen between 1991 and 1996-97, particularly in rural areas. The incidence of diarrhoea among females fell much more sharply than that for males. Of

[3] Pakistan Integrated Household Survey: 1996-97. Federal Bureau of Statistics, Government of Pakistan, Islamabad.

the 2,598 households surveyed during the current survey, 41.5% were of the opinion that the incidence of diarrhoea had gone down. About 35% felt that the incidence had remained unchanged, while only 1.6% of the households felt that the incidence had actually increased.

5.2 *Effect of WES Programme Facilities at the Provincial & National Levels*

At the national level, The Programme has helped to launch the water supply and sanitation sector into prominence in Pakistan. The Programme's approach has provided the basis for better understanding of the issues in the sector and has been the linchpin for broad institutional reform in the water supply and sanitation sector. Many of the policy changes in this sector are a direct outcome of the approach tried and tested by The Programme. Many key aspects of this approach have now been incorporated into official policy and taken to scale by the government under the Social Action Program. Relevant aspects of the approach followed under The Programme has also been extended to other social sectors, particularly, the education sector.

There is also evidence that the emphasis on hygiene education in The Programme has helped to raise the level of awareness of the staff of the implementing agencies and government policy makers regarding the direct impact of hygiene education on health indicators. Many of the provincial LG & RD's have, as a result, made structural changes in the staffing pattern of their departments. In addition, the government is stressing hygiene education and sanitation in the Social Action Program. The health departments have also begun to stress hygiene education over the last ten years and have created a cadre of field workers who, apart from providing primary level health care, stress on the importance of effective hygiene education in preventive health care.

5.3 *Future Role of UNICEF in the WES Sector*

UNICEF has made important contributions to the water supply and sanitation sector in Pakistan. One of the questions before UNICEF at this stage is whether it needs to change its direction for the future or continue as in the past. Some within UNICEF are beginning to question the role of UNICEF in view of the paucity of funds for WES sector activities. The question is what can UNICEF do to further the coverage and promote sustainability of water supply, sanitation and hygiene education for the next few years. The changes that UNICEF has made recently in its approach, incorporates some of the lessons that UNICEF has learnt in the field. The reduction of the subsidy in some of the components of WES, the inclusion of NGOs in implementation, the experimentation with the revolving credit scheme and the shift from household to demonstration latrines in public places is a move to make the project more cost-effective and sustainable. These are all moves in the right direction. There are other minor modifications which are suggested in other sections of this report which will help to make the WES program more cost-effective e.g. the elimination of the RCC slab from the latrine program, flexibility in the provision of materials for community hand pumps, etc.

The evaluation team would also like to suggest that UNICEF should revisit the underlying objectives of its support to the WES sector more rigorously and focus on its role as a catalyst rather than as a service provider in the sector. This implies far greater effort to monitor, document and learn from the demonstration effect of its activities. UNICEF has had an important catalytic role in the sector and it can capitalise on its successful work in the field by disseminating lessons it has learned and helping others to develop sustainable approaches to water supply and sanitation. Partnerships with other actors in the sector like the WSP-SA, the Global Water Partnership, the World Water Council can help to disseminate these experiences more widely.

UNICEF needs to review its investment in the hygiene education component of The Programme. There was clear illustration of the limited outreach of the hygiene education

component during the current evaluation. However, despite this, people's hygiene practices improved and this was found to be due simply to the increased convenience and supply of water and sanitation facilities provided by The Programme. Under this scenario, UNICEF may want to discuss whether its current model of delivering hygiene education is a good investment. The health workers of the LG & RD Department have little resources and little credibility to deliver this component of the program. The view of the evaluation team is that this component of The Programme should be dropped and should be left to the health sector professionals to manage.

The issue of sewerage is one that has not been adequately addressed in WES. While it is true that sewerage was not a critical issue in the community level hand pumps and The Programme dealt with the drainage around the water supply facility. However, sewerage is becoming an issue in villages with large schemes and water at the household level. Even where sewerage schemes have been sanctioned and built there is ample evidence that there are either design defects in these or that they are built without community participation as a result of which they get choked and become a vehicle of disease. This is an area that has not received enough attention and could become a potential hazard for the rapidly growing rural and urban population of Pakistan. While there is the OPP model in peri-urban areas, there is no effective model or benchmark in rural areas for the establishment of village level sewerage schemes with community participation. UNICEF could play a strategic role in this area by helping to raise awareness about these issues and help in developing effective approaches for the development and management of sewerage schemes at the village level.

1. BACKGROUND

1.1 Introduction

This report has been prepared by Enterprise & Development Consulting (EDC) Private Limited to share the findings of the independent technical evaluation of the Government of Pakistan-UNICEF Water and Environmental Sanitation Programme (WES) from 1992-98, referred to hereafter in the present document either as "The Programme or as "the WES programme". Enterprise & Development Consulting initiated the work in December 1998. The strategic focus of the programme was the promotion of low cost easy to operate and maintain technological options; community operation with emphasis on women's participation in project planning, execution, operation and maintenance and environmental sanitation and hygiene education directed towards women and primary school students. The Local Government & Rural Development Department and the Primary Education Department were identified as the primary government counterparts for The Programme. From 1992-98, The Programme provided an estimated 25,100 hand pumps, material for approximately 160 gravity-fed piped water supply schemes and about 158,000 pans and slabs for latrine installation.

1.2 Scope of the Evaluation

The scope of the current evaluation was fairly broad and the areas covered were policy, institutions, planning, management, technical and financial aspects. In addition, the questions asked related to assessing the relevance, equity and sustainability aspects of the WES programme. The service delivery aspect was reviewed through a detailed field survey. The terms of reference of the consultants are given at annex 1. The current study reviewed UNICEF's role in the sector and its comparative advantage in influencing policies and strategies in the sector. The institutional review included UNICEF and LG&RD's strategy on advocacy, alliance building, capacity building components, including national institutional strengthening, local production/ manufacturing capacity, support to NGOs and civil society organisations and the implications of its programme for equity and sustainability. EDC undertook a review of the community participation strategy and methodology followed by WES. Women's involvement and the gender strategy followed by The Programme was also assessed. In addition, EDC also reviewed the self-reliance approaches, including the subsidy strategy, cost-recovery and revolving funds and the operation and maintenance mechanisms pursued under The Programme.

1.3 Review of Documentation

EDC was supplied with a list of documents by UNICEF. EDC reviewed this list and obtained from UNICEF documents, which it considered relevant for the evaluation. Provincial UNICEF offices were contacted and they were extremely forthcoming in sharing reports and documents which they considered relevant for the purpose. In addition, EDC has also obtained documents such as the Ninth Five Year Plan which underline the Government's overall priorities in the water sector. The provincial governments have supplied documents, which described the progress and coverage in the sector. EDC also contacted resource persons who have undertaken substantive work in the water sector and they very generously shared their research and review of the work done in the water and sanitation sector in Pakistan. The donor agencies active in the sector like World Bank, ADB, the Netherlands Government and DFID were also contacted for their views on the WES programme.

1.4 Meetings with Key Participants in the Sector

EDC held primary discussions with most of the donor agencies dealing with the Rural Water Supply sector in Islamabad including the World Bank, the Asian Development Bank, the Multi-Donor Support Unit, the BRUWAS Project staff, the ADB Project, etc. The purpose of the meetings was to understand the donor perceptions of the key issues in the sector and the overall strategic focus of donor programmes and projects. This dialogue was also undertaken with government line departments, particularly with the PHED and LG&RD staff to understand the perceptions of the Government of Pakistan with reference to the water and sanitation sector. Meetings with NGOs working in the sector like Pak-Community Development Programme, Kuram Rural Support Organisation (NWFP), Community Support Concern (Punjab), Taraqee (Balochistan) and the National Rural Support Programme (AJK) were also held. Consultations were also held with staff of other projects and NGOs working in the water supply and sanitation sector like BRUWAS, ADB-Punjab, ARID, TRDP and ATMI. The understanding gleaned from these meetings enabled the consultants to assess how The Programme interventions have assisted in meeting the priorities and addressing the constraints in the WES sector. A list of key people met by each team member has been maintained for the record.

1.5 Field Survey of Facilities

An extensive field survey was conducted to verify the installation and functioning of WES programme facilities and to determine community perceptions. This survey was conducted in 34 districts across Pakistan. It was not cost-effective to cover each district in the country to verify the situation in the field. The districts for the survey were chosen randomly but keeping in mind the geographical spread and variation in each province. This list was discussed with LG&RD staff and UNICEF in each province. Table 1.1 below gives the details of the districts covered in the field survey.

Table 1.1
List of Selected Districts in Each Province

Province	Districts
Punjab	Attock Bahawalpur Chakwal D.G. Khan Gujrat Jhelum Mianwali Rajanpur Rawalpindi Sargodha

Sindh	Badin Dadu Jacobabad Khairpur Sanghar Umerkot
NWFP	Abottabad D.I.Khan Karak Kohat Peshawar Swabi
Balochistan	Chagai Jafarabad Kalat Pashin Quetta Sibi Turbat Zhob
AJK	Muzaffarabad Rawala Kot
FANA	Gilgit Skardu

The sample selected for survey of each type of WES programme facility is given in Table 1.2 below. The sample was selected in a manner that met the minimum requirements of the client on the proportion of facilities to be covered. The number of facilities chosen for each district was chosen to give statistically valid results. The sample was selected in a manner which is representative of the activities undertaken in different years of the implementation of The Programme. The results will include the district level analysis only for those districts for which the sites/communities have been selected.

Table 1.2
Number of WES Programme Facilities Included in the Survey

	%age	Schemes Completed Under The Programme	Sample Size
Gravity Schemes	11	148	16
Hand Pumps	5	23,613	1,252
Latrines	2	150,967	2,598
Schools	8	2,310	183

The installed facility i.e. the hand pump, latrine, school served was the primary sample unit of the survey and was selected randomly within each province/area from the list of installations obtained from LG&RDD for each province/area according to the sample size and sample distribution. In the selected sites interviews were held with community members (both men and women) and households benefiting from were interviewed. The schools for survey were selected from within the selected site or near the site involved in the programme. In case of gravity-fed piped schemes, the site at which the scheme was installed was selected randomly within each area from the list of sites. The status of latrine installation and household and community interviews were conducted at those sites selected for the survey. A preliminary set of questionnaires and checklists were designed for the field survey. These are given in annex 2. The questionnaires were field tested and discussed with UNICEF staff prior to the field survey.

1.6 Provincial Workshops

Once the preliminary findings were available, workshops were held in each province to share preliminary findings, obtain feed back, discuss key issues in-depth and obtain ownership for the process that was used by the consultants. More than 100 people participated in these workshops and their views and suggestions are incorporated in the report. EDC found these workshops invaluable in terms of sharing its methodology and findings and obtaining ownership for the evaluation process. To share the process followed in each province a report on the field findings and meeting in NWFP has been attached as Annex 3. Similar work was done in Sindh, Balochistan, Punjab, AJK and FANA. However, field reports were not developed at length although field notes were prepared for each province and area.

2. THE WATER AND SANITATION SECTOR IN PAKISTAN

2.1 Current & Projected Coverage Levels

The water supply and sanitation sector in Pakistan is characterised by extremely low level of coverage particularly in the rural areas. There is a great divergence in the estimates of coverage of the water supply and sanitation sector in Pakistan. The actual figures regarding coverage differ with the definition of coverage. Official figures of coverage vary due to the paucity of data and divergence of actual and design figures of the public sector services. One recent report [4] concludes that the rural water supply and sanitation sector provides coverage to, at best, around 50% of the rural population and a mere 15% have access to sanitation facilities. Another report maintains that over all only 68% of the people in the country have access to clean drinking water and only 38% have access to sanitation facilities. In rural areas this coverage is even lower and only 50% of the rural population has access to clean water while only 17% have access to sanitation facilities[5]. The Multiple Indicators Cluster Survey (MICS) of Pakistan conducted in 1995 defined safe/potable and convenient water source as piped supply in the dwelling or hand pump in the dwelling. By this definition, 84% of urban Pakistan and 69% of rural Pakistan have safe potable and convenient source of drinking water[6].

According to the latest national Pakistan Integrated Household Survey (PIHS), 73% of rural households have access to drinking water, out of which 11% have taps inside or outside house and the remaining 62% are supplied through handpumps or motorised pumps, although nothing is said about the quality of the water supplied or the service level. In the case of sanitation, the situation is not as bright with only 22 per cent of survey households in 1997 having adequate sanitation facilities according to the PIHS.

Women and girls, who are the principle carriers of water, spend considerable time in collecting it for drinking and other domestic uses. Similarly, the availability of water and sanitation facilities in schools is limited. In most rural primary schools, children often have no option but to drink contaminated water found around the school premises. In the absence of sanitation facilities in schools, the compounds and surrounding areas were used for urination and defecation. The problems were more serious for female teachers and girl students. In fact, absence of sanitation facilities was often cited as one of the main reasons for a higher drop out rate for female students.

It is projected that the pace of population growth in Pakistan is such that there will be need for large investments in the sector simply to maintain coverage at current levels. Even conservative estimates of coverage indicate that the population of Pakistan will have grown to 208 million by the year 2025[7]. About 50% of this population will be living in urban areas thus exerting additional pressure on the already strained municipal facilities. To provide adequate water supply and sanitation coverage to this population would require large investments in the sector.

The competitive demands from different sectors has not yet emerged as a key issue in Pakistan but is likely to become a major issue in the future. Currently, 97% of the fresh water in Pakistan is used in the agriculture sector and only 3% is available for domestic and industrial use. A review of growth trends shows that as the income of a country increases, the use of water by different sector changes dramatically and the water needs of the industrial and domestic sector grow rapidly until in high income countries water

[4] Akbar Zaidi. The Rural Water Supply & Sanitation Sector in Pakistan. WaterAid. 1997 (page 1).
[5] UNICEF
[6] Akbar Zaidi. The Rural Water Supply & Sanitation Sector in Pakistan. WaterAid. 1997
[7] National Institute of Population Studies 1998.

requirements are 47% of the available water. In the immediate future Pakistan needs to review strategies for reallocation of water from irrigation to domestic and industrial use. For this purpose it will need to consider market based reallocation methods that are voluntary and yield economic benefits to both buyer and seller. The rate of return of a cubic meter of water used for agriculture is less than 10% of return on municipal and industrial use. Conservation measures in agriculture can help is increasing the productivity of water.

2.2 Quality & Reliability of Services

There are serious concerns regarding the quality of services, quality of water, reliability of services and technical issues associated with the current system. The quality of water is highly uncertain. Professionals in the field assess that "there is no city in Pakistan where the water supplied by the municipality was safe to drink and met WHO standards[8]. Presently, it is still possible to get reasonable quality of water at the source. However, it will be progressively more difficult to get raw water which will be safe for domestic and industrial use at a reasonable cost. The major sources of pollution of fresh water were industrial and domestic waste and agricultural use of fertilisers and pesticides. There is no system in place to regularly monitor the quality of surface or ground water. There is indiscriminate sinking of tube wells in Pakistan. Ground water contamination is less visible but more serious because it can take up to decades for the polluted aquifers to clean themselves. There is need for countrywide mapping of surface and ground water quality.

Levels of hygiene education and practice in Pakistan are at a very primitive level and represent medieval standards in most urban slums and rural villages. Poverty and lack of awareness of the relationship between poor hygiene practices and poor health are among the principle reasons responsible for this situation. The Guinea worm disease has been eradicated from Pakistan and WHO has provided certification regarding this issue. However, diarrhoea is prevalent in large parts of the country and its cases are directly related to poor hygiene practices. One of the principle reasons for UNICEF's intervention in the water supply and sanitation sector was the poor health status of women and children and its links with poor supply of water, sanitation and hygiene education. However, the link between water and sanitation and hygiene education has been lost sight of in most programmes and there is no systematic attempt to monitor this impact.

2.3 Institutions in WES Sector

There has been considerable focus on the water supply and sanitation sector in Pakistan in the last decade. This focus has been occasioned by the low level of coverage. The Social Action Programme has helped to bring the issues in the sector into sharp focus. UNICEF has played an important role in demonstrating strategies and approaches that have worked well in the sector. The Social Action Programme has gained from UNICEF's experience in the water supply and sanitation sector and many important aspects of UNICEF's approach are being replicated nation wide through financing provided under SAP. Beginning with the Strategic Investment Plans drawn up for the four provinces, AJK and the Northern Areas, there was an attempt to take stock of past developments, identify the key issues and devise solutions to the principle problems in the water sector. Some of the key institutional arrangements which were put in place to oversee these measures were the following;

- Transfer of small schemes to the Local Government & Rural Development Department.

[8] Mir Naeemullah. Presentation during the first Consultative Meeting of the Pakistan Water Partnership.

- Establishment of the Rural Water Supply and Sanitation Group – South Asia (World Bank-UNDP) restyled in May 99 as the Water and Sanitation Program – South Asia (WSP-SA).

The Public Health & Engineering Department (PHED) and the Local Government & Rural Development Department (LG&RD) are the two principle departments in the public sector which provide access to water supply and sanitation facilities. Within the public sector institutions, 90% of the budget is allocated to PHED which uses high cost technology with high cost operation and maintenance. On the institutional infrastructure side the system of billing and collection is very weak and inefficient and cannot recover costs.

The LG&RD Departments were created in the late 1970s with the basic mandate of undertaking rural development projects with community participation and for the supervision of local councils. The conceptual basis for establishing the Local Government & Rural Development Department was to activate rural development through community participation. LG&RD's strength was in implementing small-scale village level schemes with community participation and contribution under a matching grant system. However, several functions and activities were superimposed on LG&RD beginning in 1986 when it was asked to execute schemes with development funds allocated to the MPAs and MNAs. At this stage, LG&RD was asked to undertake physical infrastructure for which it did not have the capacity and it was asked to adopt a methodology which not only undermined its community participation approach. During this phase, schemes were identified which were not merit based and which eroded the concept of community sharing in the capital and maintenance cost of schemes. The reversal of the existing methodology of self-help was thus done irreparable damage in terms of destroying the community habit of sharing in the cost of schemes and undertaking responsibility for it. LG&RD has not recovered from the demise of the matching grant concept.

2.4 Key Issues in the Sector

One of the principle issues in the water sector is the rising operations and maintenance cost of the large piped water schemes and the low level of government financing for new schemes and limited capacity for maintaining the existing infrastructure.

Despite the need for integration between domestic water supply, solid and liquid wastes, sanitation and hygiene education the government has not been able to implement an integrated approach due to resource scarcity. As such the approach towards the water sector is fragmented.

The quality of water is rapidly deteriorating particularly as a result of the indiscriminate sinking of tube wells. The aquifers are being rapidly polluted. There is no system of monitoring water quality. The professionals in the water sector maintain that there is no city in Pakistan where the water supplied by the municipality is safe to drink and meets WHO standards.

The two principle departments in the sector are increasingly relying on community participation approaches for the implementation, operation and maintenance of schemes. Although, the LG&RD has made some headway in making its hand pumps sustainable due to its use of low cost appropriate technology, the PHED has been unable to do so because of its use of technology which is not amenable to management by the community, its lack of community orientation and political interference in its work.

3. THE WATER AND ENVIRONMENTAL SANITATION PROGRAMME (1992-98)

3.1 Introduction

The GOP/UNICEF Water and Environmental Sanitation Programme was initiated in 1992 and was completed in two phases; the first from 1992-96 and the second from 1996-98. The Programme followed the guidelines set by the Government of Pakistan (GOP) to assign high priority to the rural water supply and the sanitation sector. The emphasis of The Programme was in trying to secure strong political and financial commitment from GOP; support to vulnerable rural and urban populations and primary schools; promote sustainable low cost water and sanitation technology; increase community involvement including that of women; improved dissemination of hygiene education down to village level; involvement of all relevant Government line departments and strengthen the Government's capacity to accelerate the implementation of integrated water, sanitation and hygiene education programmes. The Programme planned to develop links with the health sector (Control of Diarrhoeal Disease Programme) and the education sector, to co-ordinate with major donors in the sector (World Bank, Asian Development Bank and the Dutch Government) and to target deprived communities scattered throughout Pakistan. The primary objective of The Programme has been stated as follows:

> "Improved access to safe drinking water and basic sanitation facilities through participation of communities with a focus on women and girls, improved behavioural changes to realise full benefits from such services, enhanced Government/NGO capacities and policy refinement."

3.2 Objectives

The main aim of the WES programme was to increase focus on sanitation and hygiene with greater allocation of resources for the use of low-cost technologies with a community-based approach through uniform implementation of sector policies. The overall broad objectives of The Programme were:[9]

(a) to expand rural and urban water supply and sanitation facilities by 5-10 per-cent;
(b) to promote greater awareness amongst the target population of improved hygiene practices;
(c) to eradicate guinea worm disease from Pakistan;
(d) to secure a significant political and financial contribution from the GOP to increase coverage, and achieve sustainability through appropriate, low-cost technology systems;
(e) to promote increased involvement of communities in the selection, planning and execution of projects and in the capital costs and operation and maintenance for long term sustainability;
(f) to establish operational linkages between line departments to encourage greater co-ordination with health, education services and overall community development.

[9] Master Plan of Operations (1992-96). Government of Pakistan and UNICEF. Country Programme of Co-operation. (Page 155)

3.3. Geographical Coverage and Beneficiaries

The Programme targeted the poor in isolated, difficult hydro-geological conditions in the Barani areas, the mountainous areas of AJK, NWFP and NAs. Initial plans made under the WES indicated that the program hoped to benefit 7,730,000 people under the water supply program and 3,400,000 people under the sanitation program. However, subsequent reports indicated that this number would be 3,300,000 for the water supply program and 1,300,000 under the sanitation program. The Programme planned to cover the whole of Pakistan but geography, geology and physiography governed technology choice. The primary hand pump used under The Programme was deep well community hand pump called Afridev and gravity flow schemes dominated in the mountainous areas of NWFP, Northern Areas and AJK. It had been UNICEF's policy to bias endeavours in favour of the "poorest of the poor". Although The Programme embraced primarily the rural population but some funds were also channelled to the rapidly growing peri-urban and urban slum areas to demonstrate successful low-cost appropriate water and sanitation approaches.

According to the GOP-UNICEF quarterly and annual reports, during the period from 1992-98, The Programme provided an estimated 23,613 handpumps, material for approximately 148 gravity-fed piped water supply schemes and some 150,967 pans and slabs for latrine installation. An estimated 3.3 million persons have potentially benefited from the improved water supply schemes and 1.3 from improved sanitation facilities. The province wise distribution of the schemes is shown in Table 2.1 below.

Table 3.1
Distribution of WES Programme Facilities

	Punjab	Singh	NWFP	Balochistan	AJK	NAs	Total
Districts	12	15	19	20	6	5	71
HPs	7,937	5,134	3,970	6,506	39	27	23,613
HHLs	64,585	19,760	23,060	31,150	9,203	3,209	150,967
G. Flow	-	-	49	9	80	10	148
Schools	2,000	-	200	110	-	-	2,310

3.4. Components of The Programme

In order to address the specific objectives and strategies identified, the following components of the water and environmental sanitation programme were pursued with some minor variations throughout the period:

(a) Integrated Community Water, Sanitation and Hygiene Education;
(b) Integrated Water, Sanitation and Hygiene Education in Primary Schools.

3.4.1 Integrated Community Water, Sanitation and Hygiene Education

Under the Integrated Community Water, Sanitation and Hygiene Education component, the emphasis was on expanding service coverage for water and sanitation in a technically appropriate and financially sustainable fashion. At the same time, there was a need to ensure the involvement of women down to village level in the planning, selection and execution of projects. In addition to the overall objectives of The Programme cited above, some specific objectives of the component were as follows (for the 1992-96 period):

(a) to install about 20,000 community water systems (beneficiary numbers three million) consisted primarily of Village Level Operation and Maintenance handpumps in drilled or dug wells together with the construction of household pour-flush latrines in an approximate ratio of one handpumps to five latrines;
(b) to construct 1,000 gravity/piped systems (60,000 beneficiaries) in hilly areas or where handpumps schemes were not applicable;
(c) to promote the construction of 165,000 household latrines (1.3 million beneficiaries) as part of the integrated approach;
(d) to train master trainers and supervisors at district and sub-district levels to prepare field workers for the promotion of the benefits of water and sanitation facilities; the organisation of water and sanitation committees (emphasising on the involvement of women); to train mechanics, masons and caretakers in correct construction, operation and maintenance of schemes;
(e) to ensure supervision and monitoring of field workers for improved feed-back and to provide motivation;
(f) to ensure refresher training provided to LG&RDD personnel and WMCs in areas where previous programmes were executed;
(g) to provide support to private sector by encouraging quality standards in local production of hand pumps and a delivery system for spare parts.

3.4.2 Plan of Activities

Community hand pumps were to be installed on existing or newly drilled bore holes or existing or new dug wells following a standardised design to serve approximately 150 persons per system. Gravity/piped systems were to serve 500-1000 beneficiaries per system and emphasis was placed on quality of design, construction and O & M.

The Programme provided assistance in the supply of appropriate hardware for the water component. Emphasis was to be placed on the delivery of software components through training and social mobilisation. For each scheme, Water and Sanitation Management Committees (WMCs) were to be formed. A caretaker was to be selected for handpump maintenance duties. Guidelines for construction were to be given to masons and mechanics and hygiene messages to be disseminated. Training and field demonstrations were to be arranged by counterpart agencies through Government Training Centres for Government personnel down to secretaries of union councils who have been directly involved in the project execution and supervision. Training to field staff and construction workers was to be provided by the private sector.

3.4.3 Integrated Water, Sanitation and Hygiene Education in Primary Schools

Independent surveys have revealed that school hygiene facilities were almost non-existent and teachers and children often have no option but to drink contaminated water and defecate in the school grounds or surroundings. Some districts have shown water supply coverage as low as four per cent while figures for sanitation coverage were not recorded. Teachers and children from rural areas where water and sanitation coverage was already low were unaccustomed to manage or use facilities so they were in need of some hygiene education related to school environment. There was no policy to provide these schools with water and sanitation facilities. There was a mandate obliging the Education Department and line departments to co- operate and supply hygiene facilities with accompanying hygiene education and procedures for operation and maintenance.

The specific objectives of this component of The Programme were as follows:
(a) to improve hygiene practices of children and teachers in primary schools as part of the reducing the overall aim of reducing mortality and morbidity amongst children;

(b) to advocate at federal/provincial levels for policy to be formulated regarding the inclusion of water and sanitation facilities in the construction of schools along with hygiene education;
(c) to support the provision of appropriate water and sanitation facilities in existing primary schools;
(d) to ensure a sustainable system within the Education Department for operation and maintenance of facilities;
(e) to strengthen the capacity of the education department by improving teacher training with the provision of a specific hygiene education component designed to facilitate the correct use of hygiene facilities in schools, and to strengthen the education departments data base to include statistic on water and sanitation facilities in schools;
(f) to ensure supervision and monitoring mechanisms within the Education Department make provision for regular reviewing of hygiene facilities and teaching with schools;
(g) to strengthen the role of the child and the teacher in the community whereby they are encouraged to promote the benefits of sanitation and improved hygiene practices.

3.4.4 Plan of Activities

Assistance was to be provided to the Education Department and any relevant agency (i.e. LG&RDD) to make a realistic implementation strategy where training takes place before the installation of hardware to ensure the sustained usage and functioning of water and sanitation facilities. A water point was constructed in each school mounted by an Afridev hand pump. Latrines were also constructed initially with a ratio of 50 pupils per facility.

3.5 Implementing Agencies

Water and sanitation is a Provincial subject. Nevertheless, as in most of other social sectors, the Federal Government has considerable influence over the planning process and programme funding. The Government agency responsible for the implementation of the WES programme in the country was the Local Government and Rural Development Department (LG&RDD). The LG&RDD has a multi-disciplinary role and responsible for various basic services for rural areas such as water supply, sanitation, village electrification, etc. This department was identified to implement small, simple and low-cost schemes like handpumps, gravity flow schemes and dug wells. Although the department was weak on the technical side, it has the potential to ensure meaningful involvement of communities identification, planning, execution and most significantly in operation and maintenance of schemes. This department is the main counterpart of UNICEF in the WES sector.

3.6 Role of NGOs

Although promotion and execution of the project was to be undertaken by selected Assistant Directors of LG&RDD, the private sector was also encouraged to participate and actively promote both the components of community Afridev handpumps and household latrine construction. NGOs have also been encouraged to participate in the promotion and implementation of training activities subject to approval from LG&RDD. In this regard, Pakistan Community Development Programme (Pak-CDP) has been doing a lot in the Water and Sanitation sector in NWFP. With the assistance of The Programme, Pak-CDP has been arranging training of the staff on Water, Sanitation and Hygiene through suitable institutions. It was also given the role of identifying suitable NGOs and CBOs for sanitation promotion, providing them with technical support in demonstrating the low cost latrine

technology in their areas. Monitoring activities were also to be performed by Pak-CDP sanitation staff. Similarly in Punjab ARID and ATMI two NGOs were hired to undertake the implementation of The Programme and in Sindh TRDP was assigned to undertake the challenging task of water harvest in Tharparkar. In Thatta District, an experimental programme component has also been undertaken to explore the role of NGOs in the sector.

3.7 Financial Outlays

There is a substantial difference between the planned and actual financial outlays under The Programme. The initially planned UNICEF contribution was US$ 49.4 million for the period 1992-98. Of this planned amount, 33% was to be provided through General Resources (GR) and 67% through Supplementary Funds (SF). However the actual total UNICEF financial outlay under the WES program was US$ 18.2 million of which 12% was from the Supplementary Fund and 88% from General Resources. The annual breakdown of this amount between 1992-98 is shown in Table 3.2 below. These funds were for four different categories of expenditure. From among these, 79% was spent on service delivery, 11% on management, 10% on Capacity building and only 1% on Advocacy & Social Mobilisation. The annual variation in these categories of expenditure is shown in Chart 3.3.

Table 3.2

GOP-UNICEF WES Programme 1992-1998

Summary of Annual Expenditures per Type (Cash or Supply), Source of Funding (GR or SF) and Activity

		1992	1993	1994	1995	1996	1997	1998	Total 92-98	Planned Budgets 1992-98
General Resources	Cash	1,112	627	725	780	305	318	502	4,369	
	Supply	2,962	646	2,065	2,281	1,727	953	1,083	11,716	
	GR	***4,074***	***1,273***	***2,790***	***3,061***	***2,032***	***1,271***	***1,585***	***16,085***	***16,364***
Supplementary Funds	Cash	120	137	79	-430	26	90	0	23	
	Supply	954	292	583	83	35	145	32	2,124	
	SF	***1,074***	***429***	***662***	***-347***	***61***	***235***	***32***	***2,146***	***33,000***
GR + SF	Cash	1,232	764	803	351	332	408	502	4,392	
	Supply	3,916	938	2,648	2,364	1,761	1,098	1,115	13,840	
	Total	**5,148**	**1,702**	**3,451**	**2,714**	**2,093**	**1,506**	**1,617**	**18,231**	**49,364**
Type of Activity	Management	544	482	242	200	182	188	247	2,085	
	A&SM	1	10	10	1	6	2	35	65	
	CB	337	298	287	237	250	203	187	1,799	
	SD	4,266	912	2,912	2,276	1,655	1,113	1,148	14,282	
	Total	**5,148**	**1,702**	**3,451**	**2,714**	**2,093**	**1,506**	**1,617**	**18,231**	

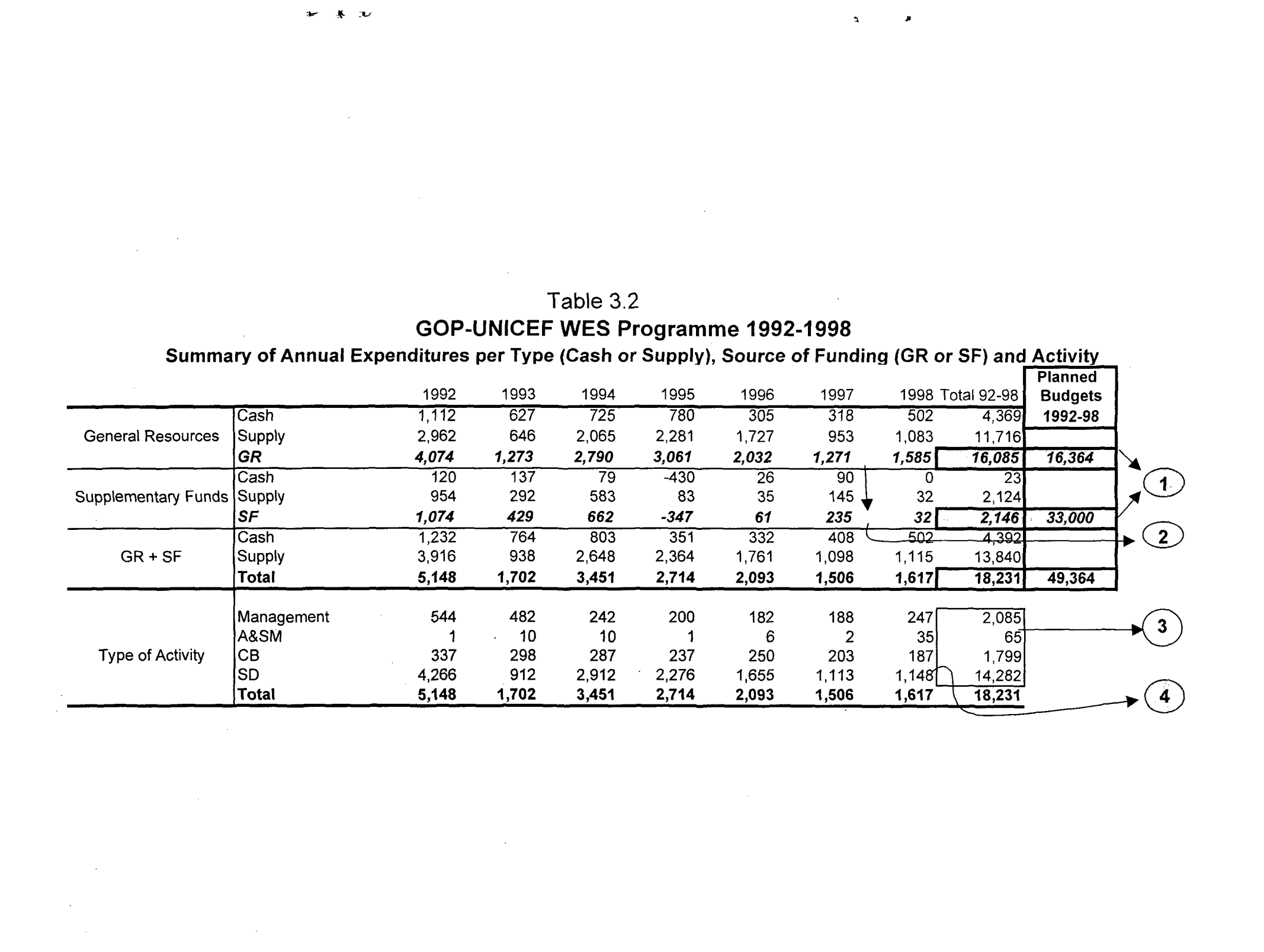
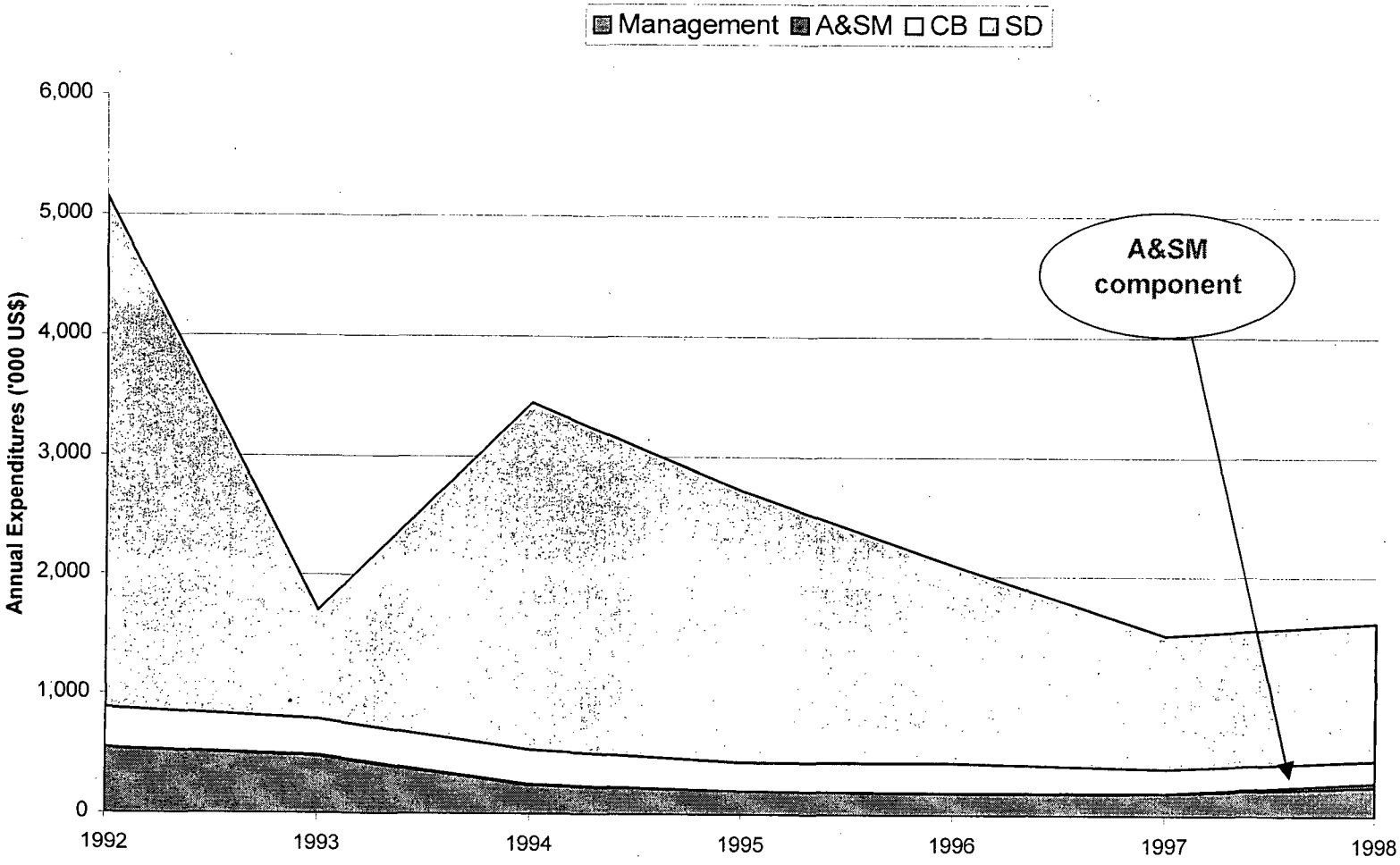


Chart 3.3
Evolution of Annual Activity Expenditures over the Period



4. WES PROGRAMME IMPLEMENTATION

4.1 Overview

An extensive field survey was conducted by EDC to review the actual implementation and functioning of facilities under The Programme. The field survey was conducted in the 34 districts indicated in Table 4.1 below. These districts included 10 in Punjab, 6 in Sindh, 6 in NWFP, 8 in Balochistan and 2 each in Azad Jammu & Kashmir (AJK) and the Federally Administered Northern Areas (FANA). Overall, 1,252 hand pumps, 2,598 household latrines, 183 schools and 16 gravity flow schemes were covered in the sample. More than 5,000 men from beneficiary villages, 3,756 women and 533 handpump care takers were interviewed regarding their perceptions about WES facilities and services during the field survey. Annex Table 1 gives a break down of the number of union councils and villages covered in each province and Annex Table 2 gives a break down by year of installation.

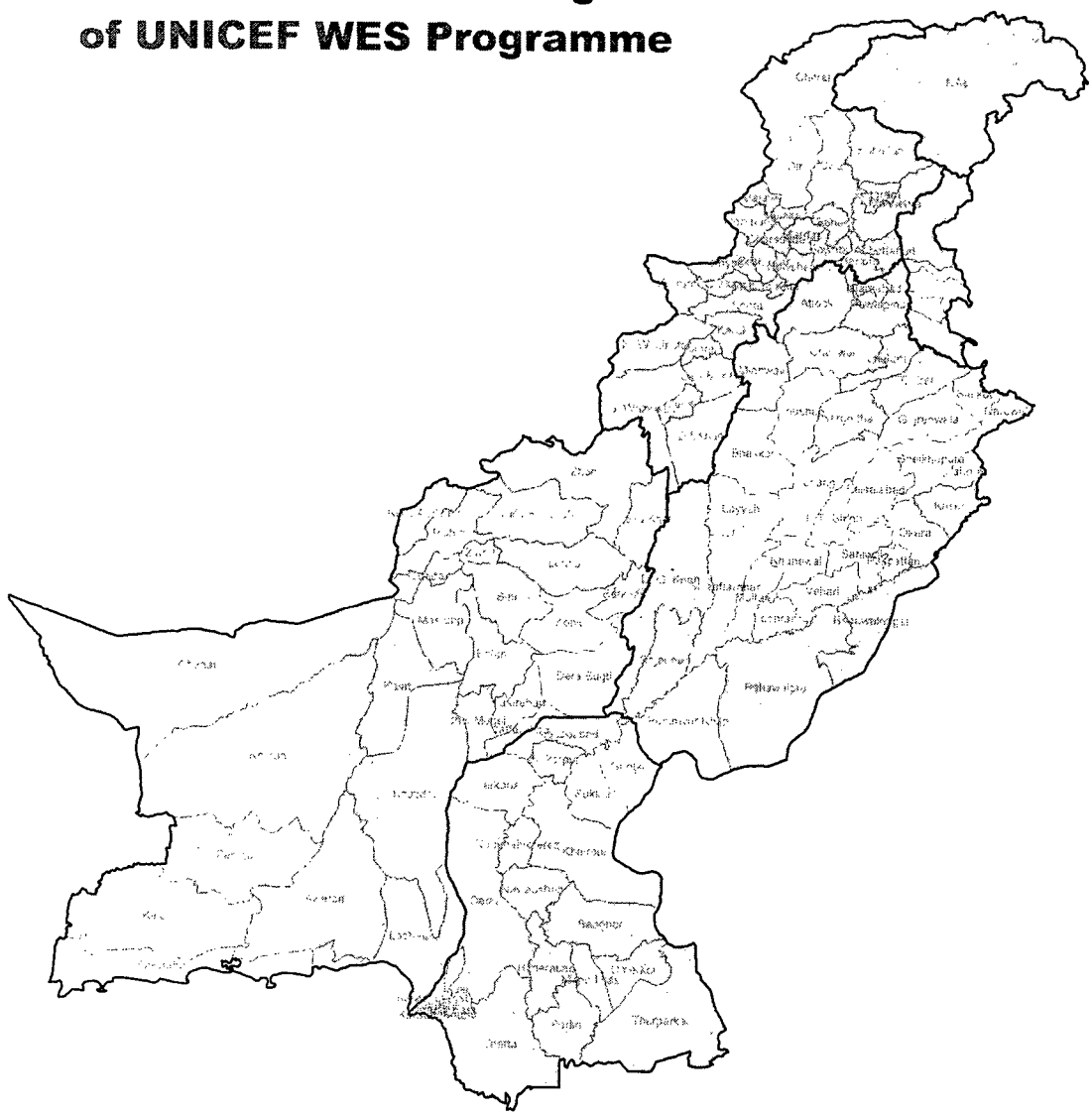
Table 4.1
Districts Covered During the Field Survey

Province	Districts
Punjab	Attock Bahawalpur Chakwal D.G. Khan Gujrat Jhelum Mianwali Rajanpur Rawalpindi Sargodha
Sindh	Badin Dadu Jacobabad Khairpur Sanghar Umerkot
NWFP	Abottabad D.I.Khan Karak Kohat Peshawar Swabi

Balochistan	Chagai Jafarabad Kalat Pashin Quetta Sibi Turbat Zhob
AJK	Muzaffarabad Rawala Kot
FANA	Gilgit Skardu

MAP 1

District-wise Coverage of UNICEF WES Programme



Districts Selected for Survey

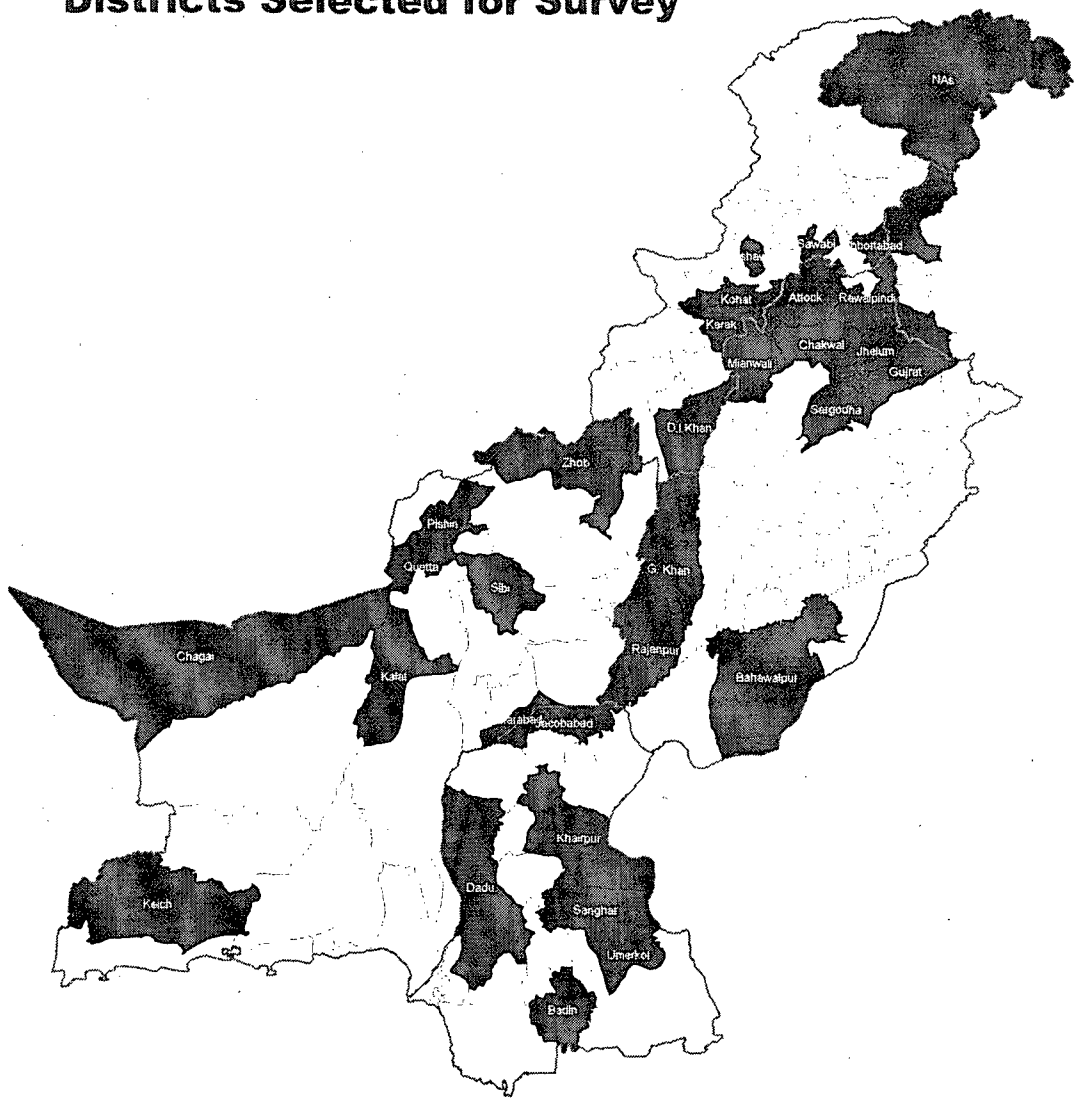


Table 4.2
No. of WES Programme Facilities Surveyed in Each Province

Province	Hand Pumps	Household Latrines	Schools	Gravity Schemes
Punjab	440	1,226	154	-
Sindh	276	294	-	-
NWFP	208	421	15	-
Balochistan	328	583	14	-
AJK	-	44	-	9
FANA	-	30	-	7
Pakistan Total	**1,252**	**2,598**	**183**	**16**

4.2 Hand Pumps

4.2.1 Location of Facilities

Of the hand pumps surveyed, it was found that 78%[10] were communal hand pumps, 12% were installed in individual homes and 10% were fixed at public places and community centres like schools, mosques, roadside, etc. However, among those which were communal, 27% were installed inside compound walls. Of the total hand pumps, 36% were inside compound walls. There was significant regional difference in the location of hand pumps. Balochistan had the smallest proportion of hand pumps in use as communal pumps (63%) followed by Punjab (73%), NWFP (92%) and Sindh (93%). As far as compound walls were concerned, NWFP had the smallest proportion of hand pumps inside compound walls (16%), followed by Punjab (28%), Balochistan 41%) and Sindh 59%. Table 4.3 below gives the distribution of hand pumps by location within a village.

[10] All numbers appearing in tables have been rounded-off in the text.

Table 4.3
Distribution of Hand Pumps by Location

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total HP Surveyed (No.)	1,252	440	276	208	328
1. Communal Hand Pumps	78.3	72.7	93.4	91.7	63.6
2. *H.Hold Handpumps*	12.1	10.0	3.7	3.4	28.2
3. HP at Specific Locations	9.6	17.3	2.9	4.9	8.2
a. Schools	26.1	13.9	37.5	50.0	48.0
b. Mosques	45.2	52.8	50.0	10.0	36.0
c. Road side	19.1	22.2	12.5	20.0	12.0
d. Union Council Offices	2.6	4.2	-	-	-
e. Graveyards	4.3	5.6	-	-	4.0
f. Police Stations	2.6	1.4	-	20.0	-
HP Installed Inside Compound:	36.1	27.5	59.1	15.6	40.7
% of Communal Handpumps Inside Compound:	27.4	19.3	58.2	10.9	16.1

The general perception of the community members and LG&RD staff was that it was important to provide hand pumps in civic areas like mosques, road sides, etc because there is a regular traffic of people and water is needed in these places.

The construction of a compound wall was perceived to be of great importance for the users in many places in view of the cultural norm of Purdah which is strictly practiced by women in many places. The construction of a compound wall does not necessarily negatively effect access by others and may even increase access by women as it allows women a certain modicum of privacy during water collection and use.

The feudal and tribal structure of society is a key arbiter in the system of allocation of facilities within an area. The selection of the villages within a district is decided by local influential leaders. The local MNAs and MPAs apportion the number of facilities each can sanction. These allocations may or may not be need based, however it was found that generally these facilities were apportioned on the basis of need and the neediest communities were not deprived of these facilities. In most districts, applications are submitted to the LG&RD either directly or routed through the local leader who decides which applications are to be approved. In Dera Ghazi Khan for instance, every application has to be routed through the local Sardar. In some cases, the hand pumps are issued to individuals and installed within the four walls of their house. Although, the LG&RD system makes provision for a site inspection of the well by the Secretary Union Council and the community is told to select a site accessible to others. On their part, LG&RD staff complain that the community members sometimes show them bore-holes outside compound walls at initial inspection but later erect walls around the facility (Jhelum District).

4.2.2 *Condition of Hand Pumps*

Of the total hand pumps surveyed 78% were found to be in working order. There was no significant difference in the condition of hand pumps in different provinces except In Balochistan where only 59% of the hand pumps were found to be in working order. There are a variety of reasons for the non-functioning of hand pumps. Overall the most significant reason was that the pump was broken (29%). In Punjab (56%) and NWFP (40%) the major reason for the mal-function of the hand pump was due to the plunger being out of order. In Sindh there were problems with the filter (25%) and the washer (20%). In Balochistan, the major reason was that the hand pump was broken (52%). Overall in 11% of the cases, the respondents did not know what the problem was. In Sindh, 27% of the respondent did not know the problem with the hand pumps. This may indicate the need for a more concerted effort at training local community members in the care of the hand pump in that province. About 44% of the handpumps which were not in working order had been in this condition for more than 12 months. There is considerable provincial variation in the length of time for which a hand pump has not been working with the problem being the most severe in Balochistan (66%). Table 4.4 below gives an overall summary.

Table 4.4
Distribution of Hand Pumps by Working Condition

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total HP Surveyed (No)	1,252	440	276	208	328
Hand Pumps:					
Currently Functioning	78.07	83.8	85.0	87.0	58.8
Not Functioning	22.0	16.2	15.0	13.0	41.2
Reasons for Mal-Functioning					
1. Plunger is out of order.	17.0	56.3	6.1	40.0	-
2. There is no water.	7.4	12.5	-	8.0	7.3
3. Filter has some problem.	5.2	4.2	30.3	-	-
4. Check valve broken.	6.1	-	6.1	12.0	7.3
5. Washer is out of order.	5.7	4.2	3.0	12.0	5.6
6. Connecting rods broken.	4.8	4.2	3.0	-	6.5
7. There is no handle/HP was broken.	30.0	2.1	12.1	-	51.6
8. The HP was stolen.	1.7	2.1	-	8.0	0.8
9. Electric motor installed on the HP.	1.7	-	-	-	3.2
10. Sunk from foundation.	2.2	4.2	-	4.0	1.6
11. HP is yet not installed.	4.3	4.2	3.0	12.0	3.2
12. Don't know the problem.	10.9	6.3	27.3	4.0	9.7
13. Others.	2.2	-	3.0	-	3.2
Not Working Since:					
Less than 3 months	11.8	31.4	7.4	10.0	5.7
3 - 6 months	19.5	22.9	33.3	30.0	11.5
6- 12 months	24.9	22.9	33.3	50.0	17.2
More than 12 months	43.8	22.9	25.9	10.0	65.5

Survey results were used to assess the performance of hand pumps installed in different years. This assessment showed that most of the handpumps which were not currently working had been installed in 1992, 1993 and 1996. Most of the non-functioning pumps had been installed in Punjab in 1996, in Sindh in 1996 and 1998, in NWFP in 1996 and in Balochistan in 1992 and 1993. (Annex Tables 3-7).

4.2.3 Usage of Hand Pumps

Most of the handpumps which have been installed and are in working condition are in use However, a small percentage of the handpumps which are functioning are not being used (3%). The principle reason why these hand pumps are not being used is the poor quality of water (42%). In Balochistan, the principle reason for not using the pumps which are in working order is the installation of electric motor on the wells due to the depth of the water table (75%).

Table 4.5
Reasons for Not Using Pumps in Working Condition

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Hand Pumps Currently in Use	96.9	97.8	96.1	100	93.1
Not in Use	3.1	2.2	3.9	0	6.9
Reasons for Not Using					
1.Water is not good.	61.1	100	100	-	12.5
2.Electric motor installed on the pump.	33.3	-			75.0
3. Used only during WS disconnection.	5.6	-	-	-	12.5

4.2.4 Efficiency of Operation

In trying to assess the efficiency of operation, two specific questions were asked in the survey relating to aspects of pumping and the number of strokes required for the pump to begin pumping water. Overall, in 21% of the cases, the hand pump was heavy or noisy during pumping. The most complaints in this regard came from Sindh (32%) and Balochistan (30%). In 32% of the cases the pumps did not give water even after 2 or 3 strokes. The performance was most inefficient in the case of Sindh (81%) and Balochistan (39%). Table 4.6 below provides the details regarding the performance of hand pumps. An analysis was also attempted of the most frequently cited problems. Overall the most frequent problems in functioning pumps is the piston leather ring. In Punjab, the breakdown in the plunger (44%) was the most frequent problem. In Sindh the piston leather ring (59%), problems with washer (17%) in NWFP and breakdown in foot valve (23%) and washer problems (21%) in Balochistan were the most frequently cited problems.

Table 4.6
Efficiency of Operation of Hand Pumps

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total HP Surveyed (No)	1,252	440	276	208	328
Hand Pumps with Heavy/Noisy Pumping:	20.9	11.3	31.6	17.2	29.5
Does not give water after 2/3 Strokes:	32.4	9.7	80.6	10.3	39.2
Number of Times HP broken:					
0 times	6.5	-	0.6	18.5	-
1-5 times	88.5	92.3	95.5	76.2	93.6
6-10 times	4.5	7.7	3.4	4.6	6.4
11 & above	0.5	-	0.6	0.8	-

4.2.5 Environmental Features of Hand Pumps

As far as environmental features are concerned, in 62% of the hand pumps surveyed there was a proper drainage channel and in only 38% of the cases there was a proper soak-pit. In 76% of the cases there was no dirty water pond nearby either. There are significant variations among the provinces as far as environmental aspects are concerned. Hand pumps in Balochistan and Punjab exhibit the worst environmental features with just over 50% of the hand pumps with a proper drainage channel and only 24% with a proper soak-pit in Punjab. NWFP showed the best results from the environment standpoint.

Table 4.7
Environmental Features of Hand Pumps

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total HP Surveyed (No)	1,252	440	276	208	328
Hand Pumps with:					
Proper Drainage Channel	61.6	56.7	75.9	61.0	55.2
Proper Soak-pit or Alternative	37.7	24.4	46.8	46.5	42.2
No latrine/Garbage within 50 feet radius	78.2	89.1	51.2	80.6	86.5
No dirty water pond nearby	76.0	84.1	66.8	91.9	61.8
Clean Drainage Channel	64.0	66.1	64.8	75.8	50.4
Clean Surrounding Area	60.2	66.2	44.9	80.1	51.6

4.2.6 *Quality of Water & Distance from Source*

The survey team asked questions regarding the quality of water only in terms of the taste and colour of water. In over 93% of the cases the water from the hand pumps was found to be of acceptable quality. A comparison of water quality prior to the installation of hand pumps indicated that only in 86% of the cases surveyed water was acceptable prior to the installation. This means that the hand pump installation has helped to improve the quality of water in approximately 7% of the cases. The most appreciable difference in water quality has been in NWFP where water quality has improved in 25% of the cases. Prior to the installation of the hand pump, the most important source of water was hand-dug wells open to direct contamination from the surface. In Sindh existing hand pumps were also an important source (30%) whereas in Balochistan springs were an important source of water (16%). Prior to the hand pump installation, the source of drinking water was less than one kilometer in 70% of the cases, between 1-3 kilometers in 27% of the cases and more than 3 kilometers in 3% of the cases. Table 4.8 below gives a summary of the distance and quality of water.

Table 4.8
Quality of Water & Distance After Installation

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total HP Surveyed (No)	1,252	440	276	208	328
Quality of HP Water in Terms of Taste and Colour:					
1. Acceptable	93.0	91.4	91.7	91.4	97.6
2. Not Acceptable	7.0	8.6	8.3	8.6	2.4
Quality of Water in Terms of Taste and Colour Before:					
1. Acceptable	86.4	87.7	90.5	66.3	96.6
2. Not Acceptable	13.6	12.3	9.5	33.7	3.4
Source of Drinking Water Before:					
1.Piped WS	2.3	3.8	1.2	2.7	1.2
2.Hand-Dug Well	72.6	81.2	57.3	71.0	78.3
3.Stream/Rain	7.9	10.7	6.3	10.8	3.7
4.Neighbor's facility	1.7	3.1	-	3.2	0.4
5.Spring	5.2	-	0.4	6.5	16.0
6.Tubewell	1.5	0.6	0.4	5.9	0.4
7.Open Channel	1.2	0.6	4.0	-	-
8.Handpump	7.7	-	30.4	-	-
Distance from the Source Before:					
Less than 1 km	70.3	56.4	81.4	67.4	82.0
1 – 3 kms	27.1	39.7	16.1	32.6	15.3
3 kms and above	2.6	3.9	2.5	-	2.7

4.2.7 *Distribution of Hand Pumps by Number of Users*

An estimate was made of the number of households using each hand pump. Overall it was found that the hand pumps were being used by between 1-5 households in 32% of the cases, by 6-10 households in 25% of the cases, by 11-15 households in 17% of the cases and by above 15 households in 26% of the cases surveyed. With an average of 8 persons per house-hold that leads to approximately 80 users per handpump nationwide. There is no significant variation in this figure except that in NWFP there is a smaller proportion of pumps being used by 1-5 households. The number of households using each hand pump is generally reflective of the settlement pattern and it can have implications for the type of community participation approach required in each different context. Table 4.9 below gives the range of users using the hand pumps in each province.

Table 4.9
Distribution of Hand Pumps by Number of Users

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total HP Surveyed (No)	1,252	440	276	208	328
Hand Pump Users					
1 – 5 Households (#24)	31.7	34.0	41.3	9.3	35.1
6 – 10 Households (#64)	25.0	27.2	25.6	30.2	18.1
11 – 15 Households (#100)	17.3	22.6	13.6	22.5	9.6
15 and above (#150)	26.0	16.2	19.4	37.9	37.3
Average Number of Users per Hand Pump	80	72	69	101	86

4.2.8 *Community Participation in Installation of Hand Pumps*

The field survey was also used to assess the number of persons who contributed in the initial arrangement for installing hand pumps. In more than 50% of the cases, only 1 to 5 people participated in the initial arrangements. There is considerable regional variation in the number of people who participated in each province. In Punjab, the level of participation is the highest with more than 10 people participating in 62% of the cases. Less than 5 people participate in the arrangements for the installation of the hand pumps in 86% of the cases in Sindh, 64% of the cases in NWFP and in 61% of the cases in Balochistan. This further reinforces the viewpoint that there needs to be some variation in the approach of community mobilization in each province. The field survey assessed the number of NGOs working in the areas where hand pumps had been installed. It was found that in 90% of the sites surveyed there was no NGO working in the area. The NGOs found in 10% of the sites were working in a range of sectors. Of these only in 22% of the cases was an NGO working in the area of water supply and sanitation (Annex Table 8).

Table 4.10
Community Participation in Site Selection

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total HP Surveyed (No)	1,252	440	276	208	328
Number of Persons Contributed in Arrangement					
1 – 5 people	52.7	23.2	85.7	63.6	60.6
5 – 10 people	14.0	14.4	8.0	18.2	15.3
10 and above	33.3	62.4	6.3	18.2	24.1

4.2.9 Women's Participation in Site Selection

With reference to women's participation in site selection, men candidly responded that in only 52% of the cases did they consult women. Men said that they did not consult women because they did not feel the need to ask them. Surprisingly, the response of the women was very close to that of men in each province. Where the men said they consulted women the women in those areas also felt they had been consulted. For example, overall 47% of the women in the sample felt that they had been consulted. In Punjab 71% of the men said they consulted women, while 70% of the women felt consulted. The figures for NWFP and Balochistan are also very close in terms of men and women's perceptions. However, the greatest divergence is in the frontier where 76% of the men said that they consulted women whereas only 60% of the women felt consulted. Table 4.11 below gives the provincial breakdown of these figures.

Table 4.11
Women's Participation in Hand Pump Site Selection

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total HP Surveyed (No.)	1,252	440	276	208	328
Male Perception:					
Men Give Priority to opinion of women for the Hand Pump Site Selection:					
Yes	51.6	70.5	76.1	44.2	6.5
No	48.4	29.5	23.9	55.8	93.5
If Not Why Not					
1. The HP was to install on Stop/ Mosque/ School.	13.0	80.0	25.0	8.7	8.8
2. We did not feel the need to ask women.	55.5	20.0	50.0	89.1	50.5
3. Because there was already an open well.	28.8	-	3.1	-	40.7
4. Don't know.	2.7	-	21.9	2.2	-
Female perception:					
Were Women Consulted for Site Selection:					
Yes	46.8	69.8	59.8	36.4	14.1
No	47.7	23.6	40.2	55.9	77.9
Women not Available	5.5	6.6	-	7.7	8.1

4.2.10 Community's Satisfaction & Perception about Hand Pumps

Tables 4.12 and 4.13 give the survey results regarding the perceptions of men and women separately about the hand pump. Women were generally more satisfied with the hand pump than men. Overall 73% of the male respondents were happy with the hand pump compared with 94% of the women. The level of satisfaction was the highest in NWFP (97%), followed by Sindh (95%), Balochistan (84%) and Punjab (36%). The principle reason for lack of satisfaction with the hand pump was the inability of the users to have the hand pump fixed repeatedly, lack of spare parts, lack of a caretaker and inadequate quantity of water.

Table 4.12
Men's Satisfaction with Hand Pumps

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total HP Surveyed (No)	1,252	440	276	208	328
Men's Satisfaction with HP:					
Happy	73.0	36.0	95.2	97.3	83.7
Not Happy	27.0	64.0	4.8	2.7	16.3
Comments about the HP:					
1. No comments.	13.6	68.3	6.7	15.7	4.9
2. We don't have money to repair it again & again.	4.7	7.3	3.0	0.7	9.2
3. We have no caretaker.	1.2	2.4	-	-	3.1
4. HP should not installed inside the compound.	0.6	2.4	1.2	-	-
5. HP is a headache for us.	0.6	4.9	-	-	0.6
6. We need spare parts.	1.8	4.9	1.2	3.6	-
7. HP is far from our home.	0.4	2.4	-	-	0.6
8. Quality of water is not good.	0.6	-	-	1.4	0.6
9. Water is less.	1.0	-	0.6	2.9	-
10. Others	2.8	-	4.2	5.0	-

Women indicated high levels of satisfaction with the site (94%), distance (90%) amount of water per stroke (82%), availability of water (75%) and water quality (95%). However, women in Sindh seemed less satisfied with the amount of water per stroke and availability of water than those in other provinces. The water usage and storage habits of women are given in Annex Tables 9 and 10. In terms of the impact of the WES facilities, about 42% of the people surveyed believed that the incidence of water borne diseases had reduced, 35% believed it had remained the same, 2% felt it had increased while 22% did not know (Annex Table 20).

Table 4.13
Women's Satisfaction with Hand Pumps

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total Women Surveyed (No.)	3,756	1,320	828	624	984
With Hand Pump Site:					
Happy	94.2	94.6	98.4	90.1	92.3
Indifferent	3.9	4.2	1.6	4.1	5.8
Not Happy	1.9	1.2	-	5.7	1.9
With Distance to Walk:					
Happy	90.0	89.7	93.2	85.4	90.6
Indifferent	6.0	7.0	4.0	4.3	8.3
Not Happy	4.1	3.3	2.8	10.3	1.0
With Amount of Water/Stroke:					
Happy	82.4	93.3	72.1	82.6	80.1
Indifferent	12.5	4.6	25.7	8.3	11.3
Not Happy	5.0	2.1	2.2	9.1	8.7
With Availability of Water:					
Happy	74.9	91.9	49.7	85.8	72.3
Indifferent	19.5	3.6	47.6	6.3	19.3
Not Happy	5.6	4.5	2.7	7.9	8.4
With Quality of Water in Terms of Taste and Colour:					
Happy	91.5	95.1	84.5	90.5	95.6
Indifferent	4.6	1.7	11.0	2.6	2.6
Not Happy	3.9	3.2	4.5	6.9	1.7

4.2.11 Programme Water Management Committees (WMCs)

There were no formalized committees or community groups in existence in 81% of the cases. Sindh had the worst record with reference to the existence of such committees (97%) whereas, NWFP had a better record than the other provinces with Water Management Committees in existence in 36% of the cases. In Balochistan there was no indication of the existence of any organisation with a majority responding in the negative with respect to the presence of a committee and the rest were not aware. The reason most often cited for the absence of any institutional arrangement at the village level for water management was the community perception that there was no need for it (67%), little interest (27%) and problem of funds (7%). In only 9% of the cases surveyed was an WMC found to be in existence with established maintenance funds.

Table 4.14
Functioning of Programme Water Management Committees

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total HP Surveyed (No)	1,252	440	276	208	328
Presence of Water Management Committee:					
Yes	11.6	12.5	2.5	36.4	-
No	80.6	78.8	97.0	59.2	82.7
Do Not Know	7.8	8.7	0.4	4.3	17.2
Functioning WMCs:					
Yes	69.4	78.8	71.4	66.7	-
No	19.8	9.1	28.6	21.7	100
Do Not Know	10.8	12.1	-	11.6	-
If Not Functioning Why Not?					
1. WMC is not interested.	26.7	66.7	-	16.7	-
2. Problem of funds.	6.7	33.3	-	-	-
3. There is no need of it.	66.7	-	-	83.3	-
WMC with Established Maintenance Fund:					
Yes	8.7	10.3	-	7.6	-
No	91.3	89.7	100	92.4	-

4.2.12 Hand Pump Caretakers & Training

The field survey attempted to determine the existence of hand pump caretakers. Overall, hand pump caretakers existed in only 66% of the cases. The situation was much worse in Punjab (17%) and Balochistan (53%). The figures for Sindh and NWFP were quite good where caretakers existed in (98%) and (94%) of the cases respectively. A total of 533 hand pump caretakers were interviewed. From these, 72% had received training. The record of training was better in Balochistan where 94% of those interviewed had received training. In over 90% of the cases this training had been given by LG&RD. Most of the caretakers felt that they had benefited from the training. Table 4.15 below gives the details.

Table 4.15
Hand Pump Caretakers

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total HP Surveyed (No.)	1,252	440	276	208	328
Hand Pump Caretaker Surveyed (No.):	533	44	250	175	64
Hand Pump Caretakers as % of HP Surveyed:	65.7	17.5	98.4	94.1	53.3
Received any training:					
Yes	71.9	69.6	65.7	73.2	93.7
No	28.1	30.4	34.3	26.8	6.3
From Whom:					
1. LG&RDD	93.2	89.5	92.7	94.3	95.0
2. Others	6.8	10.5	7.3	5.7	5.0
Training helping in O&M:					
Yes	95.5	91.7	94.3	100	91.9
No	4.5	8.3	5.7	-	8.1

4.3 House Hold Latrines

4.3.1 Status of Existing Latrines

There were significant numbers of latrine materials given to the district office to distribute but which had never been distributed. This was verified from the district stores where the unutilised materials were stored. The current survey results only report the findings in those places where latrines have been installed. A total of 2,598 household latrines were surveyed in 426 villages in 34 districts all across Pakistan. Most of the latrines surveyed had been installed between 1994 and 1998 and were Pour Flush Latrines. In most cases, where latrines had been installed, the source of water was own hand pump (45%), piped water supply (26%), communal hand pump (12%) and others (17%). Details are given in Annex Tables 11-19. From among the latrines surveyed, 92% had been constructed.

Table 4.16
Distribution of Household Latrines by Status of Construction

Province	Latrines Surveyed	Constructed %	Not Constructed %
Punjab	1,226	91.5	8.5
Sindh	294	93.9	6.1
NWFP	421	94.8	5.2
Balochistan	583	86.4	13.6
AJK	44	100	-
Northern Areas	30	83.3	16.7
Total Pakistan	**2,598**	**91.2**	**8.8**

4.3.2 Usage of Household Latrines

Of the latrines surveyed, 86% were currently in use. The percentage of usage was high in all areas particularly in AJK where 91% of those installed were in use. The latrines in FANA were the least used. Where latrines were not being used, the principle reason was that these had been reserved for guests (27%). At the regional level there were different reasons cited for lack of use. Some of these were people's reluctance to use them (Punjab), damage to the soak pit (Sindh and NWFP), reserved for guests (Balochistan and FANA) and lack of availability of water (AJK). Where the latrines were being used, they were generally used by more than 6 people and the entire family tended to use them. Prior to the installation of latrines most of the respondents used to go out in the fields. As such, these facilities represent the first time that users have facilities inside their homes. About 78% of the latrines were clean and did not have flies (80%) or any foul smell (68%) around them. The users felt that the principle benefit of using the latrine was that women felt more secure (60%), it offered a more clean way (22%) and that it was convenient in extreme weather (15%). Generally, users did not experience any problem in its use in 88% of the cases. However, some of the problems associated with a latrine at home was shortage of water (4%) and lack of proper sewerage (6%). See Annex Tables 11 to 19.

Table 4.17
Usage of Household Latrines

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %	AJK %	FANA %
Total Latrines Surveyed (No.)	2,598	1,226	294	421	583	44	30
Currently in Use:							
Yes	86.2	88.5	87.1	86.0	82.5	90.9	50.0
No	13.8	11.5	12.9	14.0	17.5	9.1	50.0
If Not Why Not:							
1. Broken.	14.1	19.0	13.3	25.0	11.1	33.3	-
2. Not properly installed.	7.0	14.3	6.7	-	-	-	10.0
3. Non availability of water.	5.6	9.5	-	-	-	66.7	-
4. People don't want to use.	15.5	42.9	-	-	11.1	-	-
5. It is only for guest.	26.8	4.8	-	-	50.0	-	90.0
6. Pipe is blocked.	2.8	4.8	-	25.0	-	-	-
7. Soak pit is damaged.	9.9	-	26.7	50.0	5.6	-	-
8. House is closed.	2.8	0.8	6.7	-	-	-	-
9. Used only in extreme weathers.	5.6	0.8	-	-	22.2	-	-
10. Recently constructed.	9.9	-	46.7	-	-	-	-
Latrine Users:							
1-5	16.7	20.6	22.7	14.0	5.0	4.9	68.2
6-10	52.0	64.4	39.6	52.7	29.0	70.7	27.3
11 & Above	31.4	15.0	37.7	33.2	66.0	24.4	4.5
Latrine is Most Used By:							
1. Men	6.4	6.0	8.8	3.0	7.9	-	29.2
2. Women	25.5	30.4	28.4	21.5	18.8	5.3	-
3. Children	4.2	7.8	0.4	0.6	0.6	7.9	-
4. All	63.9	55.7	62.5	74.9	72.7	86.8	70.8

4.3.3 Socio-Economic Characteristics of Households with Latrines

One of the principle concerns in the WES programme was that the free material for household latrines may be going to households who can afford to purchase the materials. As such, the survey was used to give a socio-economic profile of households with WES programme latrines. In 9% of the cases surveyed, household latrines have been installed in households with incomes of up to Rs. 1,000 per month. In 53% of the cases the latrines have been installed in households with monthly household incomes between Rs. 1,000 to Rs. 3,000 and in 33% of the cases latrines have been installed in households with incomes between Rs. 3,000 to Rs. 6,000. In only 4% of the cases surveyed overall have latrines been installed in homes with monthly household incomes of more than Rs. 6,000. There is little regional variation in this aspect except in Balochistan and AJK where a higher proportion of households with incomes between Rs. 3,000 and Rs. 10,000 have received latrines. About 95% of the households who have installed latrines own the house they live in. In terms of the type of house, about 41% are kutcha, 40% are kutcha/Pucca and 19% are Pucca. This is consistent with the income level of households receiving latrines.

Table 4.18
Socio-Economic Characteristics of Households with Latrines

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %	AJK %	FANA %
Total Latrines Surveyed (No.)	2,598	1,226	294	421	583	44	30
Gender of Respondent:							
1.Male	48.1	52.6	17.9	46.8	55.0	10.3	100
2.Female	51.9	47.4	82.1	53.2	45.0	89.7	-
Monthly Income:							
1.upto 1000	9.4	8.2	25.3	5.2	3.9	-	48.3
2.1001-3000	53.0	53.6	62.6	66.1	37.8	20.6	48.3
3.3001 - 6000	32.6	34.7	10.9	24.0	49.9	38.2	-
4.6001 - 10000	3.8	2.9	0.4	4.7	5.5	26.5	3.4
5.10001 through highest	1.2	0.6	0.8	-	3.0	14.7	-
Tenural Status:							
1.Owner	94.7	92.3	95.5	97.5	96.7	100	100
2.Tenant	3.8	5.3	4.5	2.5	1.5	-	-
3.Others	1.6	2.4	-	-	1.9	-	-
Type of House:							
1.Kucha	41.1	33.6	24.3	38.6	69.4	27.0	50.0
2.Kucha/Pukka	40.1	42.4	52.1	42.2	27.1	29.7	46.7
3.Pukka	18.8	24.0	23.6	19.2	3.5	43.2	3.3

4.4 Hygiene Education

A total of 3,756 women were surveyed and asked about hygiene education. In 87% of the cases, women had not received any hygiene education. In the 13% of the cases where hygiene education had been imparted, it had been imparted to women in groups of 1 to 5 in 56% of the cases, in groups of 6 to 10 in 19% of the cases, in groups of 11 to 16 in 9% of the cases and to women in groups of more than 15 in 16% of the cases. There was wide variation in women's perceptions about the messages imparted by the hygiene education promoter during her visits. In cases where hygiene education messages had been imparted, women felt that their habits had not changed much (51%). In 20% of the cases women felt that their personal hygiene habits had improved and in 11% of the cases they felt that their environment had become better. In Punjab only 15% of the women felt that their habits had improved compared with 25% in NWFP and 61% in Balochistan. There were no cases from Sindh due to the fact that there are no women hygiene education promoters in Sindh.

Table 4.19
Hygiene Education and its Impact

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total Women Surveyed (No.)	3,756	1,320	828	624	984
Women Ever Received any Hygiene Education:					
Yes	13.1	23.2	-	1.8	23.6
No	86.9	76.8	100	98.2	76.4
Number of Women she Gathered:					
1-5 women	55.9	8.1	-	50.0	65.5
6-10 women	19.0	2.7	-	50.0	21.3
11-15 women	9.1	13.5	-	-	8.5
15 & above	16.0	75.7	-	-	4.8
Sanitation Promoter talked about:					
1. Personal hygiene.	16.8	83.3	-	25.0	6.7
2. Home cleanliness etc.	2.1	-	-	-	2.5
3. Environmental hygiene.	11.5	4.2	-	75.0	11.0
4. Proper usage of HP.	16.2	12.5	-	-	17.2
5. Just visited & told nothing.	19.9	-	-	-	23.3
6. She told in Urdu.	8.9	-	-	-	10.4
7. We have forgotten.	4.7	-	-	-	5.5
8. Complete hygiene education.	19.9	-	-	-	23.3
Effect of Hygiene Education on Women Habits:					
1. We can easily convey the message to other people.	5.6	7.7	-	-	5.6
2. Habits of livestock management changed.	1.4	7.7	-	-	-
3. Environment has become better.	11.3	15.4	-	-	11.1
4. Personal hygiene has improved.	19.7	30.8	-	-	18.5
5. Our habits have not much changed.	50.7	15.4	-	25.0	61.1
6. We are trying to improve	7.0	23.1	-	-	-
7. Don't know	4.2	-	-	75.0	3.7

The hygiene habits of households were assessed during the field survey (Annex Tables 16-17). The data showed that 98% of the users surveyed flushed after using the facility, 91% washed hands. Of those washing hands 41% used only water whereas 59% used both water and soap.

4.5 Primary Schools Component

4.5.1 Installation of Handpumps in Schools

Overall 183 schools were surveyed during the current evaluation. These schools were located in Punjab, Balochistan and NWFP. Hand pumps had been installed in 90% of the schools surveyed. However, in Balochistan hand pumps had been installed in only 43% of the schools surveyed, whereas in NWFP hand pumps had been installed in 87% of the cases and in Punjab hand pumps had been installed in 95% of the cases. Of the total hand pumps installed in schools, 80% of the hand pumps are in working condition. In most cases

where the hand pump is not working, the teachers do not know the nature of the problem with the hand pump. However, in 21% of the cases the problem is due to the mal-function of the plunger. Most of the hand pumps which are not in working order have been in this condition for more than six months. Of those hand pumps currently in working order only 87% are being used. All the hand pumps currently not in use are in Punjab. Table 20 gives the details. Quality of water in the hand pumps was acceptable in 91% of the cases. However, in Balochistan the quality of the water was not acceptable in 33% of the cases. Annex Tables 21-24 give further details about the school hand pumps.

Table 4.20
Distribution of Hand Pumps in Schools

	Pakistan %	Punjab %	NWFP %	Balochistan %
Total Schools Surveyed (No.)	183	154	15	14
Installed with Hand Pumps:	89.9	94.7	86.7	42.9
HP Currently :				
Working	79.5	79.6	76.9	83.3
Not Working	20.5	20.4	23.1	16.7
Reason for not Working:				
1. Teachers don't know the problem	29.2	33.3	-	-
2. Plunger is out of order	20.8	23.8	-	-
3. It is out of order since the time of installation	12.5	14.3	-	-
4. Section pipe is out of order	4.2	4.8	-	-
5. Connecting rod is out of order	8.3	9.5	-	-
6. Washer is out of order	8.3	4.8	50.0	-
7. Water is low	8.4	4.8	-	100
8. No handle/HP broken	8.3	4.8	50.0	-
Since How Long Not Working:				
1 – 3 months	-	-	-	-
4 - 6 months	13.0	5.0	66.7	-
7 – 12 months	26.1	25.0	33.3	-
13 and above	60.9	70.0	-	-
Hand Pumps Currently in Use	86.9	86.9	100	100
Not in Use	13.1	13.1	-	-
Who Uses the HP the Most:				
1.Teachers	0.9	0.9	-	20.0
2.Students	99.1	99.1	100	80.0
3.Others	-	-	-	-
Main Uses of Hand Pump:				
1.Drinking	97.3	97.3	100	100
2.Use for Sanitation	83.5	83.5	100	100
3.Others	10.8	10.8	100	100

4.5.2 *Installation of Latrines in Schools*

Overall 92% of the schools surveyed had latrines. Latrines have been installed in 95% of the schools surveyed in Punjab, 100% in NWFP and in 50% of the schools surveyed in Balochistan. Most of these latrines are Pour Flush Latrines. In 85% of the cases, two latrines have been installed in each school surveyed. In 1% of the schools no latrine was in working order, in 24% only one latrine was in working order, in 65% of the cases both the latrines were in working order whereas in 6% of the cases only three were in working order. There is regional variation among the provinces in this aspect. NWFP has the largest number of usable latrines whereas Balochistan ranks the lowest in terms of the condition of its latrines. About 91% of the latrines installed are currently in use. Of those not working the principle reason is damage to the latrines (23%), improper sewerage (18%), Latrines are blocked (9%) or being used as a store (9%) and shortage of water (9%). In 38% of the cases the latrines were mostly used by the teachers and in 33% of the schools surveyed the latrines were locked. (Annex Table 25).

Table 4.21
Condition & Use of Latrines

	Pakistan %	Punjab %	NWFP %	Balochistan %
Total School Surveyed (No)	183	154	15	14
Installed with Latrines:	92.1	95.3	100	50.0
Currently in Use:				
Yes	91.1	91.2	86.7	100
No	8.9	8.8	13.3	-
Type of Latrine:				
1.VIP	2.5	2.9	-	-
2.PFL	95.0	97.1	73.3	100
3.Others	2.5	-	26.7	-
How Many Installed:				
1. One	3.7	1.4	6.7	42.9
2. Two	85.3	90.1	60.0	42.9
3. Three	5.5	2.1	33.3	14.3
4. More than three	5.5	6.4	-	-
How Many in Usable Condition:				
0.No One	1.3	1.5	-	-
1.One	23.8	22.9	21.4	50.0
2.Two	64.9	69.5	35.7	33.3
3.Three	6.0	1.5	42.9	16.7
4.More than three	4.0	4.6	-	-

4.5.3 *Hygiene Education in Schools*

In 81% of the schools there was no teacher who had been imparted training in hygiene education. In 11% of the schools surveyed there was one teacher trained in hygiene education. In 7% of the cases there were two teachers trained in hygiene education and in only 1% of the schools there were more than three teachers trained in hygiene education.

However, despite their lack of training in the subject, 87% of the teachers said that they gave instructions to children on hygiene education. The teacher's perceptions about the benefits of the hygiene education programme varied considerably. About 29% of the teachers felt that as a result of the WES programme the incidence of disease would be lower (29%), school premises would be cleaner (24%), water was available (18%). However, 24% of the teachers felt that due to poverty the WES programme was not practicable. Most of the teachers felt that hygiene education had positive benefits. See Annex Tables 26 –28.

Table 4.22
Hygiene Education & Teacher's Training

	Pakistan %	Punjab %	NWFP %	Balochistan %
Total School Surveyed (No)	183	154	15	14
Teachers with HE Training:				
1.No One	81.2	87.9	66.7	25.0
2.One	10.6	9.1	13.3	25.0
3.Two	7.1	3.0	13.3	50.0
4. Three & more	1.2	-	6.7	-
Training Given By:				
1.Primary Education Deptt.	40.0	71.4	-	33.3
2.Others	60.0	28.6	100	66.7
Do teachers give HE Instructions to Children:				
Yes	86.7	70.0	93.3	100
No	13.3	30.0	6.7	-

4.6 Gravity Flow Schemes

During the current survey, 16 gravity flow schemes were surveyed. All the schemes visited were in working order. These were large schemes compared to the house hold hand pumps generally benefiting between 25 to 50 households. The main storage tanks of these schemes were properly capped and the storage tanks were properly constructed. The water pipes were properly fixed and in 93% of the cases there was no leakage. The quality of water in these schemes was acceptable in terms of taste and colour. Prior to the construction of these schemes the water was not acceptable in 18% of the cases surveyed. The distance to the water source prior to the construction of these schemes was more than 25 kilometres in 25% of the cases surveyed. However in 68% of the cases, the water source was less than 1 km. The Northern Areas benefited more from these schemes compared to AJK as the water quality was acceptable in only 57% cases before and the distance was more than 3 kms in 57% of the cases surveyed. There was a great deal of participation in the construction of these schemes and it appears that the entire village was involved in their construction. Up to 50 people participated in 41% of the cases and more than 50 people participated in 58% of the cases. In FANA all the men and women interviewed felt that the incidence of diarrhea had been reduced after the scheme, whereas in AJK only 22% of the men and 30% of the women felt that diarrhoea had been reduced (see Annex Table 29-33).

Table 4.23
Gravity Flow Schemes

	Pakistan %	AJK %	N. Areas %
Total GF Schemes Surveyed (No.)	16	09	07
Total schemes actually found:	100	100	100
Provision of connections at:			
1.Individual household level	31.3	55.6	-
2.Communal level	31.3	33.3	28.6
3.Both	37.5	11.1	71.4
With capped source tank/spring:	100	100	100
Main storage tank:			
Properly constructed:			
Yes	100	100	100
No	0	0	0
Properly covered:			
Yes	86.7	88.9	86.7
No	13.3	11.1	13.3
Water supply pipes: Dugged in/coated properly			
Yes	100	100	100
No	-	-	-
Have any leakage:			
1.Minor	6.7	-	14.3
2.Major	-	-	-
3.No leakage	93.3	100	85.7

5. POLICY & INSTITUTIONAL ASPECTS OF WES

5.1 Overview

This section of the report examines the policy and institutional impact of the WES programme. In particular the types of issues reviewed include advocacy, alliance building, capacity building, inter-sectoral linkages, service delivery, equity and sustainability. These aspects of the WES programme are important because UNICEF's role in the water and sanitation sector is seen not in the context of service delivery alone but as instrumental and catalytic in introducing policies, procedures and implementation arrangements which would bring fundamental change in the water and sanitation sector in Pakistan. The challenges in the sector are so enormous that only a transformation was seen as critical to effect both supply and demand characteristics in the sector. UNICEF thus envisaged that one of the key indicators of The Programme performance was its performance on these aspects. The progress of LG&RD, the main implementing partner of UNICEF on these aspects is also reviewed where appropriate and is discussed in the sections below.

5.2 Advocacy

5.2.1 At the Policy Level

UNICEF has played a catalytic role in the water supply and sanitation sector in Pakistan. UNICEF has brought into sharp focus the key issues in the sector and designed a strategy to deal with these issues effectively. In particular, The Programme under review played a key role in demonstrating that a low cost approach using appropriate technology can be implemented effectively. The key elements of this strategy were focus on the rural areas, active participation of beneficiary communities, emphasis on women and focus on sustainability through use of low cost appropriate technologies and capacity building in its use. The Programme has been able to demonstrate the relevance of this approach for Pakistan. The water supply and sanitation sector as a whole is now pursing an approach close to The Programme approach in terms of community participation and emphasis on sustainability. The policy in the water supply sector enunciated through the Uniform Policy on water and sanitation is hinged upon the principles enunciated and demonstrated by UNICEF in the last twenty years or so. There is agreement on the key role that UNICEF has played in the sector.

UNICEF itself has stayed at arm's length from other donors and has not followed a very aggressive role in advocating this approach. Other donors are only now beginning to come in with approaches for the sector and, in particular with programmes with LG&RD. In Balochistan, there is a Dutch Funded programme BRUWAS BRUWAS (phasing-out by the end of 1999). DFID is planning to initiate a programme with the LG&RD in NWFP. UNICEF needs to play a more aggressive and strategic role with other donors. For example, in NWFP, UNICEF should not play the role of the donor of last resort and pick up the gaps left by DFID just as it should not try and pick up the pieces in Balochistan after BRUWAS leaves. UNICEF should identify areas of high value added for the types of overall objectives it wants to pursue in the sector.

The perception among LG&RD staff in Punjab is mixed about their own advocacy role. One viewpoint shared by the Director General (Punjab) is that LG&RD has not been a very good advocate as only 10% of the funds allocated for the water sector are provided to LG&RD and that PHED still gets 90% of the share. Another view was that LG&RD had been effective in its advocacy function as the allocation of 90% of the funds to PHED was due to the institutional rigidities in the system as a result of which PHED due to its large operations and maintenance needs was allocated this share. LG&RD had in recent years been able to

attract funding from the Social Action programme. In addition, hygiene education and the sanitation component of the Asian Development Bank funded Rural Water Supply & Sanitation Project was to be implemented by LG&RD. The Department had also been effective in advocating its role with donors. Each provincial Local Government & Rural Development Department had programmes which it was implementing with donor assistance.

5.2.2 At the Procedural Level

The Programme has helped to change the system of location of schemes and undertakes the process of scheme location through community participation. However, the process is still liable to political influence and patronage and the influence of local leaders who are instrumental in deciding the location of WES programme facilities. The preliminary survey results form the field indicate that 22% of the hand pumps are in places where they will benefit either mosques, road side passengers or police stations. Of the 78% hand pumps located in the village, 16% were inside compound walls and as such did not allow free access to the community. Similarly, there is a great demand for the latrine materials since they were being provided on a subsidy. The long lists of applications for hand pumps and sanitation facilities had to be approved and short-listed by the local MNA or MPA before they were approved.

5.2.3 At the Structural Level

The Programme has influenced the staffing structure of the water supply and sanitation sector to some extent. The monitoring and evaluation capacity has been strengthened in some provinces. However, despite the emphasis of The Programme on women and hygiene education, the LG&RD has recruited women in only a marginal manner. In many places the primary implementing department has no female staff and where the staff has been hired, their training and qualification allows them to make only a marginal contribution. Similarly, there is no emphasis on retraining or changing the structure of the implementing departments in the provinces for more effective implementation of approaches for social mobilisation or recruitment based on the changing concept of participatory methods in the sector.

5.2.4 At the Resource Allocation Level

There has been no significant improvement in the financial allocations for the water sector in the last decade. In 1992 the total allocation for the water sector was Rs 3.478 billion. From 1992 to 1998 the total allocation for the water sector grew by only 11% in real terms.

5.3 Alliance Building

5.3.1 With Government

GOP-UNICEF's experience in alliance building has been mixed. UNICEF has been working in the water sector in Pakistan since the 1970's. However, it has not played an instrumental role in shaping policy with other institutions working in the sector like the Public Health Engineering Department. A Federal Support Unit had been established by the Government but this was later disbanded as it had been established with donor funding. Although, The Programme has been able to influence the policy in the sector it has done so from the sidelines. If GOP-UNICEF had pursued a more active alliance building strategy it could have helped to influence policy in the sector more actively and more quickly. As it happened GOP-UNICEF let the sector learn from its own mistakes and it came to adopt the approach demonstrated by The Programme in a gradual manner. There is no coherent alliance

building strategy being pursed by GOP-UNICEF. There is need for a systematic assessment of the strengths of each collaborating partner and targeting them for strategic functions. There is need to specifically articulate alliance building objective into GOP-UNICEF's strategy.

5.3.2 *With UN Agencies*

UNICEF has collaborated with WHO much more actively in monitoring the eradication of guinea worm. However, UNICEF has not worked actively with UNDP or other agencies in forging strategic links with them for a more active pursuit of its overall objectives. For example, UNICEF and UNDP could have worked more actively in strengthening NGOs for undertaking a more active social mobilisation role or helping to develop the capacity for NGOs to implement water and sanitation projects and programmes.

5.3.3 *With Other Donors*

There has been considerable focus on the water supply and sanitation sector in the last ten years. This donor interest has been largely galvanised through the Social Action Programme and other donor funded projects in the sector. However, UNICEF has not played an active role of alliance building with other donors interested in the sector. There have been several forums which were established by donors to consider the key issues in the sector. However, UNICEF has not played an aggressive role in these forums for canvassing its viewpoint. CIDA is currently reviewing a communication strategy for the social sectors and it would be very useful for UNICEF to form linkages with them particularly since the integration of water supply and health messages are very key for the long-term success of the WES programme.

5.3.4 *With NGOs*

The role of the NGOs in the sector has not been properly articulated or rationalised. In most current programmes and projects, NGOs are being pursued for service delivery rather than for a strategic role in the sector like social mobilisation, building inter-sectoral linkages, facilitating links with the private sector, identifying solutions to issues of long-term sustainability, cost-recovery, user charge strategies, billing and collection methods, etc. Under the participatory Development Programme financed by the Government of Pakistan NGOs are being provided with grants for service delivery in the social sectors. Similarly, many NGOs are being given grants by donors for the implementation of social sector services. UNICEF has recently inducted NGOs into its programmes. However, this experience is still new and it is too early to comment on it. There are differing perceptions as to the role of NGOs in the sector. LG&RD Punjab have selected NGOs to implement the revised sanitation programme in which household latrines will be sold. The Department feels that NGOs have the time and capacity to undertake marketing, community mobilisation, hygiene education training, service delivery and sustainability. However, LG&RD is already beginning to realise that most NGOs do not have roots in the village and they lack institutionalised contact with the community.

5.3.5 *With the Private Sector*

The Programme has explored the role of the private sector particularly for the supply of hard ware. However, the interaction with the private sector has been limited. There is need for more active collaboration with the private sector at the field level in facilitating the production of appropriate low-cost technologies for water supply and sanitation. LG&RD is trying to build an alliance with the private sector. This alliance had not been very strong in the past. One principle reasons is that the current volumes are small and the private sector requires

larger volumes of input supply and orders for economies of scale. There are plans to assist the private sector to open shops for spares for Afridev hand pumps. There is also need to introduce the concept of social marketing for sale of latrines and other sanitation services.

5.3.6 With the Community

UNICEF itself has no direct contact with the community except during its periodic monitoring visits. Contacts and interaction with the community are linked and maintained through the implementing partners of The Programme, LG&RD, PHED, DPE and NGOs.

5.4 Inter-Sectoral Linkages

5.4.1 With the Health Department:

One of the principle reason for UNICEF's intervention in the water supply and sanitation sector was to use it as an entry point for exploring the linkages between good health and clean water supply. The Programme tried to integrate water supply and sanitation components with the delivery of hygiene education and a programme of hygiene education in primary schools. However, the co-ordination with the Health Department has been virtually missing.

5.4.2 With the Department of Education

The Programme involved the Primary Education Directorates in some of the provinces for the implementation of the hygiene education and sanitation programmes in primary schools. However, this component of The Programme is weak and there is little ownership among the schools and teachers of this aspect of The Programme.

5.5. Capacity Building

5.5.1 Local Government &Rural Development Department

The Programme's approach to capacity building is through building the existing capacity of the institutions it is working with. The Programme has invested considerable resources in training LG&RD staff. Very comprehensive training manuals were prepared but there is no indication that these were used extensively for training. These manuals dealt very exhaustively with the technical and operational aspects of the programme. The perception of the LG&RD staff in many places was that they were not properly briefed about the objectives of the programme. The Programme has emphasised community participation as a key aspect of its programme approach. The choice of the Local Government & Rural Development Department was made on the basis of its strengths in the field. However, LG&RD does not have a systematic approach to community participation and social mobilisation. UNICEF was one of the first donor organisations to appreciate the benefits of community participation and ensure that the community was an important player in its activities. However, this approach needs to be revitalised and the current lessons regarding community participation need to be incorporated in the approach followed by LG & RD.

LG&RD Punjab feel that The Programme has not contributed significantly to any structural change within the department, it has contributed to human resource development and in enhancing the capability of the department through the provision of equipment and vehicles. LG&RD Punjab now has a WATSAN Cell which has contributed to improving the monitoring capacity of the department. The Programme has also assisted in strengthening the capacity of the Local Government Training Institute in Lala Musa for off-campus training. In NWFP,

Sindh and Balochistan there is consensus on the capacity building of the LG&RD due to the WES programme. While many of these changes are indicative of structural changes within the LG&RD department it is interesting that these are perceived by some of the department staff as strengthening efforts and not as structural changes. This maybe due to the fact that these structural changes have not had a far reaching impact on the functioning of the departments.

As part of The Programme there has been considerable training of hygiene education promoters. Master trainers train female hygiene education promoters who then disseminate the hygiene education messages among the village women. The hygiene education messages comprise environmental hygiene, personal hygiene and sanitation. However, in many places the women selected were young and not properly qualified and as a result they did not enjoy credibility with the community. The cultural milieu in Pakistan is such that the rural population is generally not very receptive to the types of messages that were being delivered. This has also hampered the functioning of the health and hygiene promoters.

There was an extensive programme of training of caretakers for the hand pumps at the village level for the operation and maintenance of the hand pumps. A preliminary analysis of field survey indicates that the caretaker exists in only 59% of the cases. From these caretakers only 76% have received training.

5.6 Equity

Spatial Equity: The Programme ranks well on equity grounds. It addressed spatial equity by focusing attention on rural areas which were neglected prior to The Programme's intervention in the sector. The Programme has also concentrated in provinces which had severe water problems and where access and coverage was the lowest like Balochistan and NWFP.

Income Equity: A physical examination of the hand pumps show that most of them are located in areas where it is generally the poor who use them. Although, some hand pumps are installed outside mosques, police stations and the roadside their number is only 22%. An estimation of household incomes of people receiving latrines was made and this indicated that 61% of the households who had received latrines had incomes of less than Rs. 3,000 per month. Since the hand pumps and latrines have been given in the same area it can be assumed that these figures also reflect the incomes of those benefiting from the water supply facilities.

Gender Equity: The WES programme was mainly aimed at women and The Programme tried to involve women in decision-making. However, due to the limited number of female staff in government line agencies it has not had much of an impact on women's participation in decision making although women are the prime beneficiaries of the water supply schemes. Perceptions regarding the participation of women in the programme were recorded from both the men and women in the field. These show a remarkable regional differentiation in the response. When asked the question whether men give priority to women in decision-making 51% of the male respondents from Punjab felt that they considered women's opinion, in NWFP 40% and in Balochistan only 7% indicated that they gave priority to women's opinion. What is more significant is that the perception of women and men for any particular area were quite similar.

5.7 Sustainability

The key elements in achieving sustainability is the availability at the local level of the human, social and financial capital required to sustain the investments in the water and sanitation sector. The record of the WES programme is quite good with respect to sustainability and far better than investments made by the Public Health Engineering Department. The handpumps which The Programme has provided are low cost and can be managed by the community at the local level. The preliminary results from the field survey show that 78% of the hand pumps installed are working. Among those not working, the primary reason for mal-function is missing handles, plunger being out of order and lack of water. The human and financial resources exist to sustain these schemes. However, there is need for further investments in the social capital to ensure proper scheme location based on community needs. The community will maintain schemes it needs. Of the hand pumps working, 81% are in use. The primary reason for not using the hand pump is poor quality of water and availability of alternative water supply.

6. KEY RECOMMENDATIONS ON POLICY & IMPLEMENTATION ASPECTS

6.1 Overview

This section of the report identifies some key recommendations and suggestions which the evaluation team believes will help in improving the WES programme. UNICEF and LG&RD have embarked upon a new programme methodology which incorporates many of the lessons learnt from the earlier WES programme methodology and implementation strategy. One of the principle elements incorporated in the new methodology is the move from a subsidy driven approach to a more sustainable orientation in WES. This is reflected in the changes made in the capital cost contributions for the hand pump installation and the withdrawal of subsidy from the household latrine programme. The WES programme is managed by UNICEF and LG&RD in a fairly interactive manner and this allows lessons to be incorporated and fed back into the programme. The UNICEF and LG&RD equation as donor and recipient is unique in that it is not characterised by the tensions of the typical donor-recipient relationship but there is a tone of partnership underlying their interaction. *This spirit of partnership needs to be further nurtured and encouraged as the programme charters into new territories and more difficult areas.*

6.2 Strategic Vision and Approach

6.2.1 Congruence of Objectives

One of the principle objectives of the GOP-UNICEF programme in Pakistan was "to increase access and demand for rural water supply and sanitation". Water sector professionals believe that the key manner in which UNICEF and LG&RD can undertake this task is not by trying to provide service delivery to the population directly but by trying to facilitate access to water supply and sanitation services and by enhancing demand through strategic interventions. An underlying assumption of the WES programme was that by facilitating access to water and sanitation services, LG&RD could demonstrate the benefits of improved access to these services. This in turn would bring about attitudinal and behavioural change and directly impact the demand for these services. There is a clear sense within UNICEF and LG&RD of these overall objectives of The Programme. However, due to the fact that there is an extreme shortage of water and sanitation services in Pakistan, the service delivery aspect of The Programme often overshadows the other objectives. At the implementation level there is a need to revisit these objectives and ensure that the implementation strategy of the participating partners is congruent with their vision. *It is recommended that the participating partners have a periodic review to share their expectations, revisit the objectives and understand what each of them expects to achieve. It will be most useful to invite to these meetings field staff from LG&RD, partner NGOs and members from the community. This interaction will go a long-way in trying to clarify expectations, roles and responsibilities.*

6.2.2 Resurrecting the Vision

There is some confusion in the water sector today which has been occasioned by the unintended effects of the Social Action Programme. The Uniform Policy has made such a panacea of community participation that it has over looked the fact that community participation was not an end in itself but was designed as a mechanism for more accurately reflecting community needs, undertaking operation and maintenance and paying for services. As a result many of the schemes of PHED are falling into disrepair. There are many aspects of the water sanitation programmes being managed today which are open to serious question. For example, the need for introducing household latrines in households around which very unhygienic conditions prevail is questionable. Many of the NGOs are

being given subsidised programmes at a time when the government line agencies are moving closer to the principle of payment for services. There is need for a strategic vision and mission for the sector to be re-established. GOP-UNICEF unique partnership can play a lead role in establishing the strategic mission and vision in the sector.

6.2.3 Approach to Sanitation as a Women's Rights Issue

There are some within UNICEF who belief that the approach to WES should be pursued from the perspective of a women's rights issue. The relevant question here is how will the incorporation of this approach change the implementation strategy, methodology, components and other aspects of the WES programme. One of the key aspirations of UNICEF and LG&RD is to change behaviour patterns and attitudes towards water supply and sanitation. Traditional habits, practices and attitudes offer deep resistance to change. These require very dynamic approaches which can convincingly change the mind set of people. The conventional approach to increasing the demand for sanitation services and hygiene education currently being lacks the dynamism and energy to effect behavioural change. The Rights Based Approach has the potential to provide a dynamic framework to affect changes in habits, attitudes and practices. This approach can potentially change the framework within which the demand for water and sanitation services is perceived. Another strong implication of the approach is to directly target the men in the village who are the main decision-makers regarding investments in physical infrastructure at the household level. Thus male staff can be used to advocate the rights of women and children with community men directly. In view of the virtual absence of female staff in LG&RD this is an additional advantage of the approach. If men are convinced of the validity of the approach the work is half done. This approach will empower the LG&RD staff to pursue its task of community motivation more aggressively. *It is strongly recommended that UNICEF and LG&RD consider the Rights Based Approach and train LG&RD staff in its orientation. UNICEF has a strong unit within its offices locally which is well versed in the advantages of such an approach and its expertise should be made use of by WES.* To some extent GOP-UNCEF has already undertaken certain decisions in this regard and there is some move to change the orientation of its programmes. This would require more active participation and advocacy of all the field staff of LG&RD. This would mean the allocation of additional training and orientation funds for the WES programme.

6.2.4 Developing a Consensus on the Sanitation Policy

There is a written policy on sanitation but it is not readily available within LG&RD at the provincial or district level. There is little discussion or shared perception of the agreed strategy in the LG&RD as a whole and no involvement of the implementers or beneficiaries in designing a policy for sanitation. The LG&RD vacillates between the provision of public or private latrines without drawing lessons from the past or sharing the experience and perceptions of staff at the district level. However, the department maintains that this change in policy has been occasioned due to the donor refusal to provide further subsidy for household level latrines. *There is need for the development of consensus on a sanitation policy and incorporating the views of the implementing staff in this process. It is recommended that GOP-UNICEF take a lead in facilitating such a process of participatory policy formulation.*

6.2.5 Assessing the Revised Approach

The subsidy which was provided for the installation of hand pumps and household latrines has been withdrawn and only limited supplies and materials will be given for latrines to be installed in public places. The WES programme has come full circle with regard to this approach. When the WES programme was first started in Pakistan, a subsidy was given for

latrines to be installed in public places for demonstration purposes. Later this subsidy was withdrawn as a result of the fact that the latrines in public places were seldom used and rarely maintained. Thereafter, a subsidy was instituted for latrines to be installed at the household level. This subsidy has now been withdrawn in accordance with the agreements made under SAP and between the GOP and UNICEF. Although the withdrawal of the subsidy can be justified on many grounds there does not seem to be any empirical basis for the change in this decision. There has been no systematic data collection from the field to indicate that the time is right for the withdrawal of the subsidy in terms of its demonstration effect.

There are several different views regarding the withdrawal of subsidy. One view is that promotion cannot be done without subsidy and as such the withdrawal of subsidy is believed to be premature. Another view is that the subsidy should never have been given under the programme. The results of the field survey show that the latrines which have been given are generally installed and used and that most of the latrines are installed in homes whose income profiles indicate that they may not have otherwise installed them. The view of the evaluation team is that there needs to be a more careful analysis of the objectives of the WES programme before a methodology is decided. The evaluation team believes that in principle the decision to withdraw the subsidy is a good move. This assessment is based on the fact that the funds required to install a latrine are of a magnitude which could be made easily available by households if they believed the installation of latrines was a priority. However, the evaluation team questions whether the current approach of selling supplies and parts of latrines through NGOs is an approach that will work. The NGOs are not skilled at marketing, which is properly the work of the private sector. Similarly, the provision of credit is an area in which LG&RD has no experience and it is doubtful that it will be able to effectively supervise the NGOs entrusted with this task.

Although it is still too early to comment on the current system which has been devised of establishing a revolving fund. There are some potential issues associated with the new approach which have already arisen. These include; (i) the materials which are being purchased for further sale are not according to what is being demanded; (ii) there have been some complaints that the price of the materials supplied by LG&RD is higher than what is available in the market and; (iii) there is no system for collecting credit and chasing defaults which could entail the demise of the revolving fund.

It is recommended that the new approach should be monitored regularly and that there is a need to look closely into the process and survey what is available and what is required. The WES programme would be best served if the tasks of marketing of supplies and materials was left to the private sector and the role of financial inter-mediation was left to NGOs who were experienced and had well developed methodologies for it. Otherwise the new approach will be limited by the institutional incapacity of partners with little experience in tasks they have undertaken to accomplish.

6.2.6 ***Increased Use of Participatory Methods and Techniques***

There has been considerable refinement in the last decade in the development and application of participatory tools for rural and social development. This approach can be particularly useful in areas of The Programme which need strengthening e.g., the use of NGOs in community mobilisation, the disbursement of credit for sanitation facilities, the approach to hygiene education, refinement and modification in specific components of the sanitation and water supply program, etc. A more participatory approach will also help to make the community feel empowered and will ensure that the evolving design of The

Programme is in harmony with community requirements and expectations. Furthermore, the long-term sustainability of the WES program can only be accomplished with effective community participation. Although, many aspects of the current WES programme are hinged on participation of the community, there is need to revisit and revitalise the community participation approach of LG & RD. As is seen, the community is one of the major financiers of the WES program and provides anywhere between 25% to 50% of the total outlay on WES by LG&RD and UNICEF combined.

6.2.7 Linking up of WES Programme with Income Generating & Integrated Development Programmes

One of the issues raised during a review of the initial findings of the evaluation was whether there was scope in the WES programme to link up with income generating programmes, women's literacy programmes and integrated development programmes, etc. One reason to examine such linkages was past experience that indicated that such linkages could greatly enhance WES program sustainability and maximise its impact. In examining this issue, the evaluators have looked at two key issues; (a) the capacity of the implementing staff of LG & RD to deliver programmes of income generation, literacy and integrated development (b) the extent to which sustainability is a critical issue for the WES sector. It is generally accepted that income generating programmes can assist to make social infrastructure facilities and services more sustainable through making additional funds available to community members to finance these schemes. However, there are severe limitations in the capacity of LG & RD to implement income-generating and women's literacy programmes. Furthermore, sustainability of the facilities established under The Programme is not a critical issue as most of the schemes were found to be working. There are areas where scheme functioning and financing by the community could be improved. However, the current capacity and resources of LG & RD are limited and, as such, it is not recommended that such linkages should be especially developed by LG & RD. Where these linkages can be established by NGOs who happen to be working in the areas of integrated development and income generation they should, of course, be encouraged.

6.2.8 Scope of WES Programme for Linkages with Integrated Water Resources Management

Conceptually, the idea of establishing linkages of The Programme with integrated water resources management is very appealing. However, there is limited practical significance of the concept in Pakistan, at this stage, because the institutional framework for integrated water resources management does not currently, exist. Although, an initial dialogue has been initiated by the Global Water Partnership to develop a vision for integrated water resources management in Pakistan, this is far from achieved. In the next stage, the Global Water Partnership will initiate a Frame Work for Action to achieve this vision. It maybe worthwhile for the policy planners and implementers of the Programme to keep in close touch with the Pakistan Water Partnership to examine how The Programme could benefit from Integrated Water Resources Management at the Community and/or district level and what changes, if any, need to be incorporated in The Programme.

6.3 Choice of Institutional Partners

6.3.1 Local Government & Rural Development Department

The key government implementing agency for The Programme from 1992-98 has been the Local Government & Rural Development Department (LG&RD) which together with the Public Health Engineering Department is responsible for water supply and sanitation in rural

areas. However, the main agency responsible for the implementation of water supply and sanitation schemes in rural areas of Pakistan is the Public Health Engineering Department (PHED) which gets more than 90% of the share of the investments in the water sector for rural areas. The choice of LG&RD was made on the basis of its proximity to the community and its ability to handle the low cost appropriate technology being used under The Programme. Despite its resource limitations, LG&RD is still the most appropriate institution to implement the WES programme among the line agencies because of its outreach in the rural areas and its long-standing experience of low cost appropriate technology in the water sector.

LG&RD has a large staff base particularly at the field level. This staff is currently under-employed partly because there is little work that is being assigned to it. The only programme which LG&RD is currently implementing is the GOP-UNICEF and SAP funded programmes in the water supply and sanitation sector. Due to lack of financial resources and inadequate administrative and logistical support, LG&RD is not able to properly manage or monitor some key aspects of its water supply and sanitation programmes. These aspects include storage and inventory management, weak installation procedures for hand pump installation and latrine construction, weak monitoring mechanisms and inadequate monitoring tools, lack of co-ordination with Primary Education Department, lack of information on the private sector, etc. These aspects need to be strengthened.

In the opinion of the evaluation team, one of the principle challenges before LG&RD is to steer its role from one of execution to one of promotion, facilitation and co-ordination in the water supply and sanitation sector. Its key function should be transformed from that of service provision to one which provides a facilitating and supporting role to other institutions working in the sector like the private sector, NGOs, community based organisations, etc. It could assist in developing standards, monitoring systems and incentives to encourage a greater role for private sector practitioners. UNICEF could play a key guiding role in helping LG&RD achieve this transformation. In the context of UNICEF's diminishing funds for WES sector activities, it will also be more strategic for UNICEF to help mediate these issues and help UNICEF in the restructuring of its methodology and the reorientation and retooling of LG&RD staff for its new role.

6.3.2 Role of NGOs

NGOs are being increasingly involved in the water supply and sanitation sector. The inception of the Social Action Programme (SAP) focused attention on the water supply and sanitation sector in Pakistan. The initiation of the Participatory Development Programme under SAP has also seen a rapid proliferation in the number of NGOs involved with direct implementation of small water supply and sanitation schemes in the sector. SAP has brought into sharp focus the problems ailing the water supply and sanitation sector. In particular, it highlighted the problems with the large schemes constructed by the Public Health Engineering Department, the low level of scheme efficiency, escalating operation and maintenance costs and the inability of the system to recover even a fraction of its costs. The participation of NGOs in the sector was first justified on the grounds that they had the wherewithal for community participation which was viewed as a panacea for all the ills in the water sector. PHED considered the role of NGOs for assistance in community mobilising and handing over completed schemes to the beneficiaries. This role was handed over to NGOs when PHED failed to undertake this task successfully on its own. However, what PHED and others fail to appreciate is that this failure on the part of the Department had more to do with the technical design aspects of the scheme and high operation and maintenance costs than it did with the Department's incapacity to organise communities. The role of NGOs is now, nevertheless, seen as instrumental in helping to solve the problems of the sector.

There are different expectations of the role of NGOs within LG&RD. The reasons given by LG&RD staff for the participation of NGOs ranged from social marketing of latrines to community mobilisation, establishing links with the household and for public partnership and participation. LG&RD is also beginning to recruit NGOs in order to assist it in its new methodology under which it is withdrawing subsidy and working in new areas. It is not a surprise that NGOs have also been chosen in LG&RD for the implementation of some of the most difficult aspects of the programme. Some of the LG&RD staff explained that they were using NGOs because this was the first time that they had to sell the latrines and because the Department staff did not have the time for community mobilisation. However, the inclusion of NGOs in WES is still very new and too early to comment on.

Although it is generally true that the experience with NGOs is new and still needs to be tested but some things are beginning to emerge clearly. In general, NGOs are used for difficult tasks which the government line agencies feel that they are not able to handle themselves like community participation aspects, credit, social marketing, etc. However, these are generally tasks in which many of the NGOs are also not experienced properly. There is a shortage of good NGOs which are rooted in the community that they serve. NGOs in Pakistan have generally come in response to donor funds and lack indigenous roots. Another issue which compounds the LG&RD and NGO equation is that many of the tasks for which NGOs are engaged are resource intensive tasks. When the NGOs are given donor funds to undertake these tasks there is some resentment among line agencies which believes that if these resources had been given to them they could have undertaken the task themselves more effectively. This leads to an acrimonious start and erodes the spirit of partnership which is the essential aspect of this relationship. *The evaluation team is of the opinion that the work of the NGOs should not be parallel to the government but complementary to it. If the collaboration with NGOs is to be successful there is need to choose the NGOs very carefully* and *clearly define the expectation from them. The role of NGOs needs to be better defined with clear objectives of what is to be achieved by their participation.*

There are certain key opportunities in the water supply and sanitation sector with respect to the role of NGOs. One of these is through the Participatory Development Programme. Under SAP II there is about US$ 47 million available for NGO financing. Neither UNICEF nor LG&RD have played an active role in developing a strategy for the NGOs for the water sector. LG&RD with assistance from UNICEF could take the lead role in describing with the SAP secretariat the parameters within which NGOs should participate in the sector. This role for UNICEF and LG&RD is consistent with the type of role envisaged of them in the future. The funds spent in the water supply and sanitation sector by NGOs during PDP 1 were not effectively spent due to the absence of clear guidelines on their objectives in the sector. Even now there is a question mark as to the role the NGOs can play in the water sector in view of the overall decision to withdraw the subsidy from the sector. The absence of a clear strategy represents an opportunity for both UNICEF and LG&RD to assist in developing a policy, establishing monitoring frameworks and develop an overall vision of the role of NGOs in the water sector which will address some of the key objectives in WES.

6.3.3 Participation of the Private Sector

The production of the AFRIDEV hand pumps locally has been one of the principle achievements of the WES programme. This has been achieved principally through the participation of private sector manufacturers. There are indications that there is considerable competition in the production of the hand pump parts and this has led to a price reduction. However, it is generally observed that the private sector at the village level needs to be brought into the programme in a more strategic and systematic manner. There have been some attempts to involve some shops in the supply of spare parts, etc. However,

this role has not been undertaken systematically. It is often felt that in many cases where NGOs are being used for social marketing the job maybe better achieved by using private sector shops and marketing outlets more cost effectively. The private sector can play a more active role in the provision of parts and spares. *It is recommended that there should be greater interaction with the private sector. UNICEF and LG&RD should sit with shop keepers, village level manufacturers, repair shops, etc., and decide upon their participation in the WES programme for the future in a participatory interactive manner.*

The Programme has played an instrumental role in helping local manufacturers with the production of the Afridev pump. However, The Programme has not actively pursued the private sector as the principle suppliers of other hardware in the sector particularly for the production and supply of spares at the village level. There is need to involve them and build their capacity after a systematic review of the constraints faced by them. The data from the field also point to the need for a more effective system of monitoring the quality of hand pumps manufactured. The analysis of field data shows that the year of production of hand pumps is a significant factor in determining the quality of hand pump. Chi square tests indicate a significant co-relation between the year of production and the functioning of hand pumps. Those produced in recent years are generally of poorer quality (Annex Tables 3-7).

6.3.4 Local Government Institutions

The local government system in Pakistan consists of representative institutions, which exist at the level of district and union councils for the rural area, and at the level of Municipal Corporation, municipal committees and town committees for the urban zone. There has been little involvement of local government institutions under The Programme principally because these councils have not been allowed to function. Ironically, it is democratically elected governments which have been fearful of the power that these councils may yield at the village level and have stopped their functioning. However, local body elections have now been held and there is some move to revive the role of these institutions which form a key element in our system of local government.

One of the key questions is whether these local government have a role to play in the WES sector. In the opinion of the evaluation team these institutions have a role to play in regulating the services of the line agencies and creating a system of dual accountability by becoming truly representative bodies. However, this role is difficult to stipulate under the current scenario. Once these councils begin to function again there needs to be a systematic method of involving them particularly in allowing them to make some of the decisions currently exercised by the MNAs and MPAs about scheme location, etc.

6.4 Planning & Management

6.4.1 Overview

The overall planning and management of The Programme has been undertaken quite effectively. In particular, the close working relationship which UNICEF and LG&RD have developed is quite atypical of a donor-recipient relationship. There is much to be emulated and admired in the equation developed by the two partners. There are instructive lessons for other donors to be drawn from the UNICEF and LG&RD experience on how to forge a close working relationship that provides the space to discuss key issues. UNICEF staff are aware of most of the operational issues which arise as a result of the current system of planning and management and the operational limitations of LG&RD. However, there is need for more interaction to be encouraged in a systematic and institutionalised manner with the field staff.

6.4.2 *Opportunity for Discussion with Implementing Field Staff*

In Pakistan, there is a gap between planning and implementation which is symptomatic of a centralised bureaucracy trying to administer a large area. The lack of local government institutions with a system of planning at the grass roots also contributes to a top-down approach to planning and management. Policy and plans are generally made at the central level and then instructions are conveyed to the field staff for implementation without much opportunity for discussion. There is a critical need to involve the filed staff in this process. Many of the problems encountered in the field like lack of conceptual clarity, poor motivation to implement certain aspects of The Programme, poor explanation of the sanitation programme, deficiencies in the stores and supplies system would be resolved through a greater participation of field staff in decision-making.

6.4.3 *Communication Strategy*

Given that the objectives of the GOP-UNICEF programme required fundamental behavioural change, effective communication had to be made an integral part of the communication strategy. However, there was no systematic attempt at trying to develop a comprehensive communication strategy. Efforts which were undertaken were adhoc and sporadic. An understanding of the importance of this has been realised by GOP-UNICEF and some attempt has been made to ensure that this will be rectified. However unless the change also occurs and the realisation and wherewithal is present at the implementation level there may not be much change in current methodology. As such, it is critical to motivate and inform LG&RD implementation staff of the importance of a communication strategy. It is recommended that the WES programme be linked with the SAPCOM initiative being launched by CIDA in the area of communication to assess how some of the limitations can be overcome.

6.4.4 *Allocation of WES Facilities*

In view of the fact that government resources are extremely limited and there is a limited number of schemes and projects which the government is implementing at the village level, the provision of any type of service or facility comes into sharp focus. The members of the National and Provincial Assemblies who have little favours to grant their political constituents play an active part in the mediation of where WES facilities will be provided. Although, in most places the LG&RD staff admitted to the mediation of MNAs and MPAs, they felt that the decisions made were appropriate and equity considerations were kept in mind while allocating the WES facilities. The results of the field survey also indicated that The Programme facilities were generally located where they were needed. *The only recommendation which the evaluation team would like to offer in this regard is that since the political leaders are playing a key role in the decision on allocation of facilities, it is important to have a periodic meeting with them and brief them on the overall objectives of the programme to enable them to make more effective decisions on allocation of WES programme facilities and all other WES facilities in general.*

6.4.5 *Stores & Supplies*

Overall the system of supplies and stores which has been instituted under the WES programme works well but needs some minor improvement. The current system of inventory management is not a very participatory system. Store keepers and LG&RD staff complained that there were generally not informed about when the supplies were being sent to them. RDD Sindh does not have proper storage facilities and it needs improvement in this aspect. There was need for a central store in some places and a more decentralised

system of storage in other places. This is a relatively minor issue but one which causes undue amount of agitation for field staff. This issue of supplies is further complicated by the fact that hand pump parts are made in different places. This causes lack of co-ordination and often causes delay in supply. There are many districts where excess pipes, latrine slabs, etc were found lying in stores. For example, approximately, 3,000 to 3,500 feet water filter pipes were found lying in a store in an open area (Attock District). A lot of supplies meant for schools in the Rajanpur and Dera Ghazi Khan Districts are still lying in stores of the Education Department. There is need for UNICEF and LG&RD to review this issue at the provincial level and develop solutions appropriate for each location.

6.4.6 Flexibility in the Distribution of Supplies

There is some rigidity in the system of supplying the hardware for hand pumps and household latrine facilities. On average, The Programme provides 100 feet of pipe with each hand pump. However, there is great variation in the depth at which the hand pumps are installed. In many cases, the water in the wells recedes during the dry season making it necessary to have wells with depths greater than the water level in the wet season. LG&RD staff maintained that their staff measured the depth of each well before issuing pipes. However, there was a shortage of pipes in areas where the water depth was, on average, greater than 100 feet and more pipe was required. In these districts, the LG&RD staff complained of not receiving adequate material or any reply to their request for additional material. With respect to the household latrine programme there was a problem of a slightly different nature in evidence. The concrete slabs being given as part of the free materials for the installation of household latrines were not in much demand. This was primarily because the cost of transporting them from the stores to the villages was prohibitive. In many places, the slabs were being used as part of the super structure on the ceiling rather than on the floor ! Although this problem has now been resolved due to the elimination of the slabs from the latrine programme. However, it is surprising that this issue was not picked up before. The evaluation team feels that one main reason for the late detection of this problem was the limited interaction of LG&RD with its field staff, a failure to enquire about implementation issues from the field and discuss and resolve them to the satisfaction of all. The management of LG&RD needs to undertake a more active role in problem solving at the field level.

6.4.7 Flexibility in Capital Cost Contribution

The community has been contributing funds in the installation of hand pumps. By far, one of the most expensive aspects of the installation is the cost of boring. As a result of the cost, people compromise on the depth of the well in some cases, and in many others, they install the hand pump on an existing well. In Balochistan, where the water table can be as deep as 300 feet and is going down by 2-3 feet in dry years, people frequently install the hand pumps on existing wells. The depth from which water is extracted is often a critical factor in determining the quality of the water. In some districts people did not have enough money to make proper foundations (Rajanpur District). These factors effect the quality of the service and the durability of the hand pumps. As such, it is recommended that there should be some flexibility in the types of capital cost contribution the community is asked to provide. There should be provision for funds to meet such expenses.

6.4.8 Quality of Water

One of the principle objectives of the WES programme was to provide access to "safe" drinking water. A key reason that the Afridev hand pump was selected was because it is a deep well pump with the capacity to get water from considerable depths. The association between depth of the water and quality has been lost. The cost of boring is high and as this

is one of the costs borne by the community they often do not like to go deeper than required. LG&RD does not conduct any tests on water quality. The Rural Development Department in Sindh said that they conducted a Parts Per Million Test on water to determine the amount of salts in it. In Balochistan and NWFP they admitted frankly that they did nothing with respect to water quality. In the aftermath of the Arsenic poisoning in Bangladesh some kits were provided by The Programme to undertake arsenic poison tests in a few places. However, the issue of water quality is generally ignored on the assumption that since people have been drinking water from the same source for decades it must be safe. The other factor which prevents LG&RD to undertake any test on water is their conclusion that even if they found the water contaminated there is nothing that they would be able to do. It is recommended that LG&RD undertake random and periodic water testing to determine the quality of water and increase awareness on this issue.

6.5 Financial Aspects

There is an overall shortage of funds and resources in the water sector. The financial resources the government allocates to the sector are highly insufficient. LG&RD, the key implementing agency of The Programme has limited funds for the implementation, monitoring and supervision of WES activities. Even the small amount of funds which are allocated to LG&RD are not disbursed on time due to the severe cash flow problem which the government faces every year. Most of the funds are disbursed just before the close of the financial year of the government and the department is asked to spend this money before the end of June. There is often not enough time to use this money effectively in the given time. The training components of The Programme have particularly suffered as a result of these late disbursements. There is no easy solution to this problem as it is endemic to the government system. However, LG&RD should continue to canvass within the Government and find an internal solution. The Director General is allowed to operate a Personal Ledger Account (PLA) which is ceased at the end of the financial year. Even when the fund does not lapse there is a need for renewing approvals prior to incurring any expenditure from this account. The Schedule of New Expenditures (SNE) is often approved very late causing uncertainty and delays in the implementation of the entire programme.

6.6 Technical Aspects

6.6.1 Choice of Afridev Hand Pump

The Afridev hand pump is the principle hand pump introduced by GOP-UNICEF under its Water and Sanitation Programme in Pakistan. The choice of this pump was made on the basis that it is a deep well pump and it is appropriate as a community hand pump. The main strength of the Afridev is as a village level community hand pump. The hand pump is easily operated by one spanner and by one person. This gives an advantage to the Afridev compared with other deep well hand pumps. Most other locally manufactured hand pumps in Pakistan are household hand pumps and are designed as shallow well pumps. A review of the market revealed that there was a range of hand pumps available in the local market. Although, most of the locally manufactured hand pumps were cheaper than the Afridev, they were shallow well pumps with little quality control in the use of materials. The users of these pumps generally complained of frequent breakdowns. Some of the imported brands were expensive and not very popular at the village level where the expertise for maintenance and repair for these imported technologies was either deficient or altogether missing. This review led the consultants to the conclusion that the Afridev hand pump was superior to what was available in the local market both in terms of design and durability and that The Programme had made a real contribution through the introduction of this technical innovation.

Table 6.1
List of Pumps Available in the Open Market

INJECTOR PUMPS MASTER				
Motor Power (Horsepower)	**Head**		**Delivery**	**Rate (Rs.)**
½ HP		100	1	3,200
1 HP		180	1	4,200
2 HP		240	1	5.900
3 HP		300	1	6,900
INJECTOR PUMPS UMAR				
Motor Power (Horsepower)	**Head**		**Delivery**	**Rate**
3 HP, 5 ST		320	11/4	8,900
MONOBLOCK PUMPS MILLAT				
Motor Power (Horsepower)	**Section**	**Head**	**Delivery**	**Rate**
½ HP, 1ST	20	80	1	2,400
1 HP, 2 ST	20	160	1	3,000
2HP, 3 ST	25	220	1	4,900
DONKEY PUMPS GOLDEN				
Motor Power (Horsepower)				
½ HP	30	80	1/2	3,500
DONKEY PUMPS MILLAT				
Motor Power (Horsepower)	**Section**	**Head**	**Delivery**	**Rate (Rs)**
½ HP	30	80	1/2	3,200
SUBMERCIBLE PUMPS (CHINA)				
Motor Power (Horsepower)	**Head**		**Delivery**	**Rate**
½ HP		150	½	7,000
1 HP		150	1/4	1,5000
SUBMERCIBLE PUMPS (ITALY)				
Motor Power	**Head**		**Delivery**	**Rate**
2 HP		232	2	36,000

6.6.2 *Quality of Local Production & Inspection Procedures*

Over the years, The Programme has also spearheaded the effort for the local production of the Afridev hand pump and there is now sufficient capacity created locally for the production of the hand pump in Pakistan. There are some concerns about the quality of the locally produced hand pumps. The Programme has put in place mechanisms in order to ensure adherence to SKAT specifications. The procurement procedures of LG&RD focus more on the price quotations of the hand pumps and this can contribute to poor quality pumps. The field survey conducted as part of the current evaluation shows that where pumps were not

functioning, one of the principle reasons was technical faults with the plunger, foot value, rods or leather ring. While these problems could be associated with poor installation as well, there is evidence to suggest that the problem is linked to the use of poor quality materials in their manufacture.

Interviews with community members highlighted their perception that the pumps supplied earlier were of superior quality than those provided in recent years. The field survey data also indicated that there was significant co-relation between the year of installation of hand pumps and the frequency with which technical problems appeared in the hand pumps (Chapter 5). The LG&RD in Punjab and Sindh was aware that in certain years the quality of material being used was not of acceptable quality. LG&RD and UNICEF are both cognisant of these problems and have put in place a system of more rigorous inspection. However, there are loopholes in the system which have to do with the overall lack of quality control, lack of proper inspection procedures in the country and availability of a wide variety of low cost parts which can be easily substituted. There was a recommendation that prior to selection of the suppliers of the hand pump there was a need to physically inspect their facilities, experience and capacity to ensure that quality products were produced. There is a system of pre-delivery inspection being followed in each province. There was a suggestion from LG&RD staff that there should be inspection at different stages of production and not just pre-delivery inspection.

6.6.3 Depth of Hand Pump Installation

One of the principle reasons that the Afridev hand pump was selected was due to its comparative advantage as a deep well hand pump. However, it was seen that the pump is installed indiscriminately, regardless of the depth of the water. In all provinces the hand pumps are installed at a wide variety of depths. In Punjab, Sindh and NWFP the pump is also installed at shallow levels whereas in Balochistan, the pumps are generally installed at depths much greater than the recommended depth. The range at which the handpumps is currently installed varies from 70 feet to 300 feet, whereas the current recommended depth of the Afridev is 150 feet. In Punjab the standard length of pipe supplied with each pump is 100 feet which is less than the recommended depth of the pump. It is recommended that the length of the pipe supplied to each district have some relationship with the average depth of water availability in that district.

This variation in the depth at which the pump is installed also curtails the natural advantages of the pump. One of The Programme's principle purpose of providing a deep well pump was to ensure that the quality of water it provides improves as a result of the natural process of filtration which such pumps allow. When the pump is used at shallow depths, this advantage is lost. Furthermore, the durability and functioning of the pumps is also seriously impaired when it is installed at more than the recommended depth. There is need to establish some minimum and maximum criteria. There maybe a need to review whether it is possible to make the design flexible to accommodate the large variation in well depths.

6.6.4 Installation of Hand Pumps

The installation of the Afridev hand pumps requires more rigorous and technical capacity than hand pumps made and installed locally. The pump is very sensitive to alignment. Noisy pumping is often associated with incorrect alignment. The accurate alignment of the hand pump is a critical determinant of proper functioning and durability. The filter provided with the hand pump is of a standard size and yet the soil types are highly variable in different areas. In some places the soil is sandy, in other areas it is fine or lumpy. The slot size in the filter does not accommodate the different types of soils. The use of low quality

materials can compound the problems associated with poor installation. During interviews with community members, it was observed that there was a need to make the system of installation of hand pumps more rigorous. The community members, caretakers, private sector and often the LG&RD staff are also not trained properly in the proper installation of the hand pumps. This is not a serious problem since the field survey found that most of the hand pumps were functioning properly. However, the durability of the pumps would increase and their efficiency would increase if the technical training in installation was improved.

6.6.5 *Availability of Spare Parts*

The Afridev spare parts cannot be manufactured locally at the village level. There was a great deal of divergence in the information regarding the availability of spare parts. Even among the LG&RD staff, there were those who believed that spare parts were readily available and others who felt that the parts were not easily available. The principle point is that there is lack of information on this issue and the first step is to clarify it through a survey by LG&RD in the course of the regular work of LG&RD. It should be part of the routine responsibility of the field functionaries to determine the availability of spares in the local markets and make arrangements with manufacturers for their availability at selected outlets with information to community members. One recommendation is that all agencies dealing with hand pumps should estimate their requirements of spares based on past performance and ask manufacturers to provide spare parts or designate private shops for supplies. In some provinces, LG&RD staff have made arrangements with local shops to keep spares. However, where this has been done it is not widely known that parts are available at designated shops.

6.6.6 *Sanitation Programme*

There were several technical issues associated with the household latrine programme. In many places, particularly in Punjab there was found to be general confusion regarding the use of the cement slabs. In many places it was thought that the slab was meant to be part of the super structure. I*n village 29 BC—chak 24 almost all the super structures have slabs on the rooftop.* This showed that there was lack of proper explanation on the sanitation component. The pre-cast slabs being given by The Programme were weak and not appropriate for use where weight would be exerted on them. These pre-cast slabs were appropriate as super structures. RCC slabs were stronger and more durable and should be used where slabs are required. A quick review of some of the stores also showed that there were many slabs lying in the stores. In many places it was difficult to transport the slabs as the cost of transportation was prohibitive. As such, it is recommended that slabs should not be part of the material and supplies which are provided. In case required, the slabs should be manufactured locally.

Proper investigations are not conducted to determine whether the location of the latrine is appropriate and that it will not adversely effect the ground water quality in the vicinity. Key hydrological aspects are not fully considered. In some places, septic tanks have been made by households on their own initiative. When these tanks are made without professional advice and when the sewerage is not treated or drained properly they pose a serious environmental hazard. There is need for awareness raising and proper training on these aspects.

The quality and variety of latrines is in some places not according to demand. As a result people exchange the WES programme materials with what is available in the market. In some places where the latrines are being sold like (Bahawalpur District) people were not willing to purchase the latrine for Rs 800 plus 3-slabs for Rs 65 each when local types were

available for Rs 350. LG&RD and UNICEF need to explore these issues and come up with an appropriate approach to supply of materials together with community members.

6.6.7 *Hygiene Education*

The FLAAHE training (Focus Local Area Approach for Hygiene Education) has been given to women of selected villages only once. After this there has been no further training. There are generally one or two hygiene education promoters for the entire district and they visit villages only at the time of imparting training. The promoters are paid Rs. 1,600 per month which is insufficient to attract suitably qualified people. Many of the hygiene education promoters find it difficult to travel alone given the social conditions. The hygiene education messages simply do not reach enough people and they are delivered in a very casual manner. Often people do not even remember receiving the hygiene education messages. To be fair, this approach has been implemented largely by female staff with huge areas to cover and limited mobility and resources at their disposal. In a few places like NWFP, male staff were used to strengthen the delivery of hygiene education programmes and in other places like Sindh even female staff were missing. The hygiene education component is a weak aspect of The Programme mainly due to the lack of staff and resources in LG&RD. The Rural Development Department in Sindh does not have any female staff except those hired under the World Bank assisted Project. Even in other provinces where female staff exists, the geographical area assigned to them is huge and it is simply not possible for them to cover the assigned area with the limited logistical support to which they have access.

This is one of the most important aspects of The Programme, however it is not being implemented as one of the key components of The Programme and has been relegated to the background. The content of the hygiene education messages is appropriate but needs to be made stronger. There is need for the reconsideration of the messages and the manner of delivering them. In the local context it is required that a new strategy should be introduced which assists people in conveying the hygiene education messages more positively. The current approach is apologetic and lacks conviction. The Rights Based Approach discussed earlier has the potential to provide a stronger framework for the delivery of more effective messages.

6.6.8 *Primary School Component*

The primary school component has worked well in terms of the installation of the hand pumps and the latrines. However, the software aspects of the component have not had the desired impact. There were problems in co-ordination between the Education Department and the Local Government & Rural Development Department. Furthermore, there were few teachers in the participating who had actually received hygiene education training. Although, most teachers in the survey reported that they imparted hygiene education messages to the children, these are most likely to have been based on their personal initiative and knowledge of hygiene education concepts and practices. The component is useful and should be continued however the evaluation team recommends that there be clear ownership and commitment to the component by the Education Department. Furthermore, there is need for very clear targets assigned and monitoring indicators with a rigorous regime for reporting on the results.

6.7 Monitoring & Evaluation

6.7.1 Overview

Monitoring and evaluation of The Programme is one of its weakest aspects. LG&RD staff have little capacity for systematic monitoring and evaluation of the water supply and sanitation schemes of LG&RD. Many aspects of the WES programme need to be routinely monitored by the LG&RD staff. These include a routine review of the number of pumps functioning and those not functioning. The problems with the non-functioning hand pumps need to be investigated for improvement in manufacturing specifications, design or supervision, etc. The household latrine programme is one of the most neglected aspects of the WES programme as far as monitoring is concerned. There is need for a systematic review of the use of the latrine facilities, perceptions about benefits, environment effects, etc. This information can have an important impact in the future design of the latrine component. This aspect of monitoring has to be considerably strengthened.

6.7.2 Monitoring the Demonstration Effect

There is no systematic collection of indicators on the demonstration effect of the WES programme. One of the principle assumptions of the WES programme was that the provision of hand pumps and household latrines would have an impact in demonstrating the usefulness of these services and would impact demand for WES services. Although, the LG&RD staff have anecdotal evidence on these aspects of the programme they do not have a systematic manner of assessing how many new latrines and hand pumps have been installed as a result of the demonstration effect of the WES programme. There is need for both UNICEF and LG&RD staff to sit together and develop a methodology for monitoring the demonstration effect of the WES programme.

6.7.3 Monitoring Health Indicators

One of UNICEF's principle reasons for targeting the water supply and sanitation sector was to improve the health indicators for women and children in Pakistan. UNICEF's primary reason for intervening in the water supply and sanitation sector were the strong links between access to clean water supply, sanitation and health. It was assessed that the high incidence of diarrhoea and child mortality and morbidity was due to the lack of access to clean drinking water and sanitation facilities. Based on this assessment it was felt that access to clean water and sanitation facilities would usher in a change in the behaviour of individuals as a result of which hygiene education practices in the villages would be modified. Thus what The Programme would help to achieve in the long-run would be reduction in child mortality and morbidity and improvement in the health status of households. As a result, the emphasis of GOP-UNICEF programmes was to be on the hard ware and software aspects of sanitation. However, in the last seven years (1992-98) the emphasis has shifted to the hardware aspects of The Programme to the neglect of its software aspects. One indicator of this is that UNICEF and LG&RD have made no attempt to monitor the impact of its programmes on health. There is no effort to monitor health indicators or establish linkages with the health sector. It is recommended that the appropriate health indicators need to be identified and monitored through interaction with the Department of Heath.

7. RELEVANCE AND EFFECT OF WES FACILITIES

7.1 Relevance of the Activities of the WES Programme

There were several key questions listed in the terms of reference. One such question was whether the activities of the GOP-UNICEF WES programme are relevant in the context of the current national and provincial level of water and sanitation development in the country. As is evident from a review of the water supply and sanitation sector in Pakistan, the overall coverage of water supply and sanitation is still poor and there is need for massive investment in the sector. As such, GOP-UNICEF's activities under the WES programme are not only relevant but are critical for ensuring that a certain minimum level of momentum is maintained in the sector. There are just a handful of donor agencies funding the small scale, community based program in the water and sanitation sector. These schemes are more effective and function better than the large-scale schemes and as such provide an important lesson for other players in the sector. However, in order to improve the effectiveness of the program, there are a few minor modifications suggested in the current approach and programme components in this report.

7.2 Effect of WES Facilities at the Community Level

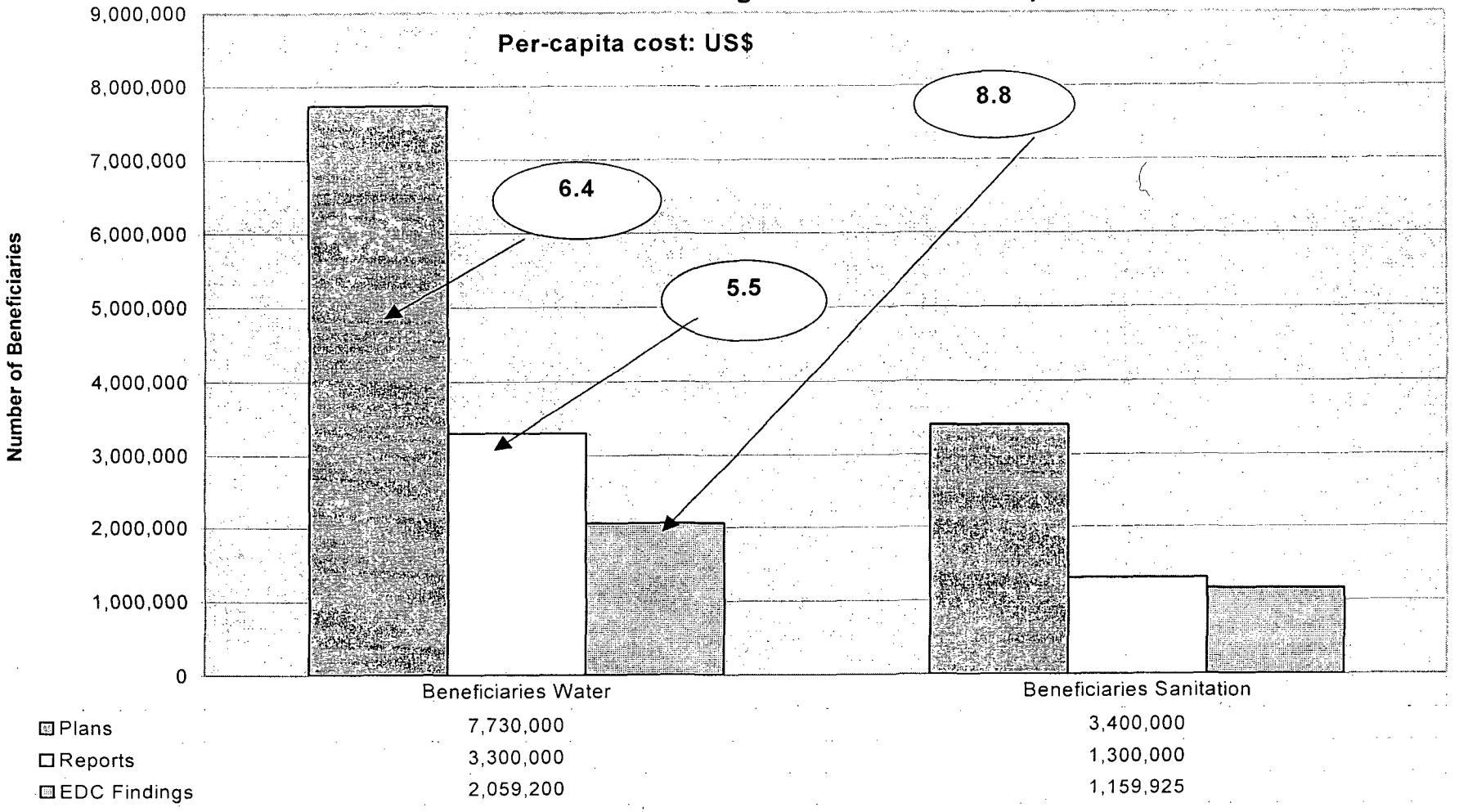
It is estimated that the WES programme has benefited about 257,400 households under its water supply component and 144,991 households as a result of the sanitation component. Chart 7.1 below gives the number of beneficiaries of The Programme and compares the figures of beneficiaries computed by EDC under the current evaluation with those initially planned and reported. These figures indicate that the actual beneficiaries of water facilities are 62% of the figures reported in GOP-UNICEF reports and only 27% of the initial planned estimates of beneficiaries. Similarly, the beneficiaries of the sanitation facilities are 89% of those reported in progress reports and only 34% of the initially planned beneficiaries. The cost per beneficiary is also estimated and this indicates that the per capita UNICEF contribution was actually 37% higher than that originally planned: $8.8 instead of $6.4.

It should be noticed that these somehow disappointing results are the direct consequence of financial and manpower constraints. While UNICEF had initially planned to contribute up to 49.4 million US$ to The Programme, the actual disbursements over the period amounted only 18.2 million US$. Manpower support to The Programme had to be proportionally reduced.

The differences in figures reported by GOP-UNICEF and by EDC are due to the following factors:

- at the time of the completion of quarterly and annual reports, GOP-UNICEF assumed that all facilities installed were in working conditions, while EDC has considered that by the end of the period 100% GFS were functioning, but only 78% of Handpumps and 86% of household latrines;
- while the initial plans envisaged 150 users by water point (handpump and tapstand) and 8 users per latrine, the estimates used in reports were more realistically based on 100 users and 8 users respectively. However EDC estimates are based on an average of 80 users per water point and 8.3 users per household latrine.

Chart 7.1
GOP-UNICEF WES Programme 1992-98
Actual Achievements against Plans and Reports



There is evidence that there has been an improvement in the health indicators of the beneficiaries as a result of WES activities. Most of this improvement has come about as a result of the provision of water and sanitation facilities. The effect of WES activities extends to non-recipients as well through the demonstration of the benefits of community level water supply and household latrine facilities. Although, the demonstration effect is not systematically monitored, there is ample anecdotal evidence that many households within the recipient village and in adjoining areas are influenced by the convenience these facilities offer and are beginning to invest in them. The impact on health indicators of the provision of these facilities is not always immediately evident or appreciated by the others, but over time, this is also expected to be a good motivator and incentive for people to invest in the improvement of water supply, sanitation and better hygiene practices.

Although, the hygiene education component of the WES programme has had limited outreach, there has been improvement in the hygiene practices of the recipients of WES programme components. Most of this change in behaviour can be attributed to the provision of WES water supply and sanitation facilities through The Programme. The provision of water and household and school level latrine facilities has generally improved the hygiene practices of the recipients at the household level and in schools. An analysis of survey results shows that over 91% of the respondents washed their hands after toilet use and 41% used soap to wash their hands (Annex Table 17). Similarly, the teachers interviewed regarding their perception about the effect of the WES programme on children reported that the school children were cleaner as a result of the provision of water supply and sanitation facilities. About 73% of the teachers interviewed reported that that the school children were cleaner as a result of the provision of water supply and 54% reported that they were also cleaner as a result of the sanitation facilities. About 29% of the teachers felt that the children were free from disease directly as a result of WES programme facilities. About 72% of the teachers felt that hygiene education had had an effect on the hygiene practices of school children (Annex Table 26).

The school questionnaire also asked specific questions about the impact of WES programme facilities on school enrolment. About 30% of the teachers felt that there had been an increase in school enrolment as a direct result of WES programme facilities. There was considerable variation in this figure at the regional level. In Punjab, 30% of the teachers felt that the enrolment had increased after WES programme facilities. in NWFP, 27% of the teachers felt that this was due to WES programme facilities and in Balochistan, 50% of the teachers felt that school enrolment had increased after the provision of WES programme facilities (Annex Table 26). There were no schools in Sindh where WES programme facilities were provided and as such the question is not relevant for Sindh schools.

One of the principal objectives of The Programme was to contribute to the reduction of child mortality and morbidity, as caused by water and sanitation related diseases. The health impact of the WES programme was assessed in two ways;(a) first the changes in the overall health indicators, in particular the incidence of diarrhoea, was reviewed from other data sources for Pakistan as a whole and (b) specific questions were asked regarding reduction in diarrhoea during the current survey and results of this survey have also been used to assess the health impact of The Programme. The Pakistan Integrated Household Survey[11] reported that childhood diarrhoea has been a serious health problem in Pakistan. However, the percentage of children who have suffered from diarrhoea has fallen between 1991 and 1996-97, particularly in rural areas. In 1991, 26 percent of the children under five had suffered from diarrhoea in the last 30 days compared with only 15 percent in 1996-97. The incidence of diarrhoea among females fell much more sharply than that for males. The

[11] Pakistan Integrated Household Survey: 1996-97. Federal Bureau of Statistics, Government of Pakistan, Islamabad.

incidence of diarrhoea among girls in rural areas fell even more sharply between the years 1995-96 and 1996-97. Between these years the incidence of diarrhoea among girls fell from 18 percent to 14 percent compared with 19 percent to 17 percent in boys during the same years.[12]

The current survey asked the respondents a specific question on the incidence of diarrhoea after the installation of the water scheme. Of the 2,598 households surveyed, 41.5% were of the opinion that the incidence of diarrhoea had gone down. About 35% felt that the incidence had remained unchanged, while only 1.6% of the households felt that the incidence had actually increased. About 22% of the respondents did not have a clear perception about the reduction or increase in the incidence of the disease. Provincial breakdown of the disease shows some regional variation with Punjab in the lead showing a reduction of 50%, Sindh 33%, NWFP 35% and Balochistan 32%, AJK 38% and FANA 38% (Annex Table 20).

7.3 Effect of WES Programme Facilities at the Provincial & National Levels

At the national level, GOP-UNICEF's program in WES has helped to launch the water supply and sanitation sector into prominence in Pakistan. GOP-UNICEF's approach has provided the basis for better understanding of the issues in the sector and has been the linchpin for broad institutional reform in the water supply and sanitation sector. Many of the policy changes in this sector are a direct outcome of the approach tried and tested by The Programme. Many key aspects of this approach have now been incorporated into official policy and taken to scale by the government under the Social Action Program. Relevant aspects of the approach followed under The Programme has also been extended to other social sectors, particularly, the education sector.

A major effect of The Programme at the provincial level has been to demonstrate how small-scale appropriate technology can deal with some of the problems in the water supply and sanitation sector more effectively as compared with high cost large schemes. For years, the Public Health Engineering Department (PHED) has been entrusted with the task of delivering water supply and sanitation facilities and services in the rural areas. However, PHED has not had the desired impact on the level of coverage in rural areas. One principal reason was their lack of community orientation. In recent years many comparisons are made between the work of PHED and LG & RD with reference to their work in the water sector. Most of the policy makers and donors are convinced that GOP-UNICEF's approach under The Programme is the more cost-effective one. Donors have advocated a greater role for LG & RD in the water sector and have lobbied with provincial governments to enhance the LG & RD budget. One of the principal effects of The Programme has been on PHED which has a come a long way in changing its approach and moving closer to the community based approach adopted by LG & RD. Many of the provincial PHED's have been restructured to incorporate the lessons of The Programme and the staff is being given a community orientation. Almost all the donor funded projects in the water and sanitation sector now incorporate key elements of the GOP-UNICEF WES program.

There is also evidence that the emphasis on hygiene education in The Programme has helped to raise the level of awareness of the staff of the implementing agencies and government policy makers regarding the direct impact of hygiene education on health indicators. Many of the provincial LG & RD's have, as a result, made structural changes in the staffing pattern of their departments. In addition, the government is stressing hygiene

[12] Pakistan Integrated Household Survey: 1996-97. Federal Bureau of Statistics, Government of Pakistan, Islamabad. (Table 3.5).

education and sanitation in the Social Action Program. The health departments have also begun to stress hygiene education over the last ten years and have created a cadre of field workers who, apart from providing primary level health care, stress on the importance of effective hygiene education in preventive health care.

7.4 Future Role of UNICEF in the WES Sector

UNICEF has made important contributions to the water supply and sanitation sector in Pakistan. One of the questions before UNICEF at this stage is whether it needs to change its direction for the future or continue as in the past. Some within UNICEF are beginning to question the role of UNICEF in view of the paucity of funds for WES sector activities. The question is what can UNICEF do to further the coverage and promote sustainability of water supply, sanitation and hygiene education for the next few years. The changes that UNICEF has made recently in its approach, incorporates some of the lessons that UNICEF has learnt in the field. The reduction of the subsidy in some of the components of The Programme, the inclusion of NGOs in implementation, the experimentation with the revolving credit scheme and the shift from household to demonstration latrines in public places is a move to make the project more cost-effective and sustainable. These are all moves in the right direction. There are other minor modifications which are suggested in other sections of this report which will help to make the WES program more cost-effective e.g. the elimination of the RCC slab from the latrine program, flexibility in the provision of materials for community hand pumps, water quality, more effective inventory management, revitalised community participation approach, a rights based approach, a more active gender approach, etc.

The evaluation team would also like to suggest is that UNICEF should revisit the underlying objectives of The Programme more rigorously and focus on its role as a catalyst rather than as a service provider in the sector. This implies far greater effort to monitor, document and learn from the demonstration effect of its activities. The Programme has had an important catalytic role in the sector and it can capitalise on its successful work in the field by disseminating lessons it has learned and helping others to develop sustainable approaches to water supply and sanitation. Partnerships with other actors in the sector like the WSP-SA, the Global Water Partnership, the World Water Council can help to disseminate these experience more widely.

GOP-UNICEF needs to review their investment in the hygiene education component of The Programme. There was clear illustration of the limited outreach of the hygiene education component during the current evaluation. However, despite this, people's hygiene practices improved and this was found to be due simply to the increased convenience and supply of water and sanitation facilities provided by The Programme. Under this scenario GOP-UNICEF may want to discuss whether their current model of delivering hygiene education is a good investment. The health workers of the LG & RD Department have little resources and little credibility to deliver this component of the program. The view of the evaluation team is that this component of the program should be dropped and should be left to the health sector professionals to manage.

The issue of sewerage, solid waste management and an integrated approach to water, sanitation and drainage is one that has not been adequately addressed in The Programme. While it is true that sewerage was not a critical issue in the community level hand pumps and The Programme dealt with the drainage around the water supply facility. However, sewerage and solid waste management is becoming an issue in villages with large schemes and water at the household level. Even where sewerage schemes have been sanctioned and built there is ample evidence that there are either design defects in these or that they are built without community participation as a result of which they get choked and become a vehicle of disease. This is an area that has not received enough attention and could

become a potential hazard for the rapidly growing rural and urban population of Pakistan. While there is the OPP model in peri-urban areas (Karachi Katchi Abadis), there is no effective model or benchmark in rural areas for the establishment of village level sewerage schemes with community participation. UNICEF could play a strategic role in this area by helping to raise awareness about these issues and help in developing effective approaches for the development and management of an integrated approach to sanitation, sewerage and solid waste management at the village level.

[wes evaluation final report)

ANNEX TABLES

Annex Table 1
Number of Districts, Union Councils and Villages Covered in the Hand Pump Survey

Province	Districts	Union Councils	Villages
Punjab	*10*	*121*	*236*
Sindh	*06*	*75*	*157*
NWFP	*06*	*42*	*105*
Balochistan	*08*	*69*	*231*
Total Pakistan	*30*	*307*	*729*

Annex Table 2
Distribution of Hand Pumps by Year of Installation

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total HP Surveyed (No)	*1087*	*440*	*276*	*208*	*328*
1990	*1.1*	*-*	*0.7*	*1.4*	*2.5*
1991	*1.5*	*0.2*	*-*	*1.0*	*4.7*
1992	*11.0*	*10.5*	*5.1*	*4.8*	*20.8*
1993	*11.5*	*12.8*	*4.0*	*9.7*	*17.4*
1994	*8.7*	*14.4*	*1.5*	*10.6*	*5.9*
1995	*11.7*	*16.0*	*2.9*	*15.0*	*11.2*
1996	*17.4*	*21.9*	*8.4*	*14.0*	*21.1*
1997	*13.9*	*16.3*	*12.8*	*18.4*	*8.7*
1998	*22.7*	*7.2*	*63.4*	*25.1*	*7.5*
1999	*0.6*	*0.7*	*1.1*	*-*	*0.3*
Total	*100*	*100*	*100*	*100*	*100*

Annex Table 3
Status of Hand Pumps by the Year of Installation (Pakistan)

PAKISTAN	HP Currently Working		Total
	Yes	No	
	Column Percentage		
Year of Installation			
1990	*0.5*	*2.9*	*1.1*
1991	*1.2*	*2.6*	*1.5*
1992	*9.4*	*15.7*	*10.8*
1993	*9.4*	*19.3*	*11.7*
1994	*8.8*	*8.4*	*8.7*
1995	*11.7*	*11.3*	*11.6*
1996	*16.7*	*19.7*	*17.4*
1997	*15.4*	*8.4*	*13.8*
1998	*26.2*	*11.7*	*22.9*
1999	*0.7*	-	*0.6*
Total	*100*	*100*	*100*
	Row Percentage		
Year of Installation			
1990	*38.5*	*61.5*	*100.0*
1991	*61.1*	*38.9*	*100.0*
1992	*67.2*	*32.8*	*100.0*
1993	*62.4*	*37.6*	*100.0*
1994	*78.1*	*21.9*	*100.0*
1995	*77.9*	*22.1*	*100.0*
1996	*74.3*	*25.7*	*100.0*
1997	*86.2*	*13.8*	*100.0*
1998	*88.4*	*11.6*	*100.0*
1999	*100.0*	-	*100.0*

Annex Table 4
Status of Hand Pumps by the Year of Installation (Punjab)

PUNJAB	HP Currently Working		Total
	Yes	No	
Column Percentage			
Year of Installation			
1990	-	-	-
1991	*0.3*	-	*0.2*
1992	*9.8*	*10.4*	*9.9*
1993	*14.7*	*6.0*	*13.3*
1994	*15.3*	*11.9*	*14.8*
1995	*15.9*	*16.4*	*16.0*
1996	*19.9*	*31.3*	*21.8*
1997	*16.5*	*13.4*	*16.0*
1998	*6.6*	*10.4*	*7.3*
1999	*0.9*	-	*0.7*
Total	*100*	*100*	*100*
Row Percentage			
Year of Installation			
1990	-	-	-
1991	*100.0*	-	*100.0*
1992	*82.9*	*17.1*	*100.0*
1993	*92.7*	*7.3*	*100.0*
1994	*86.9*	*13.1*	*100.0*
1995	*83.3*	*16.7*	*100.0*
1996	*76.7*	*23.3*	*100.0*
1997	*86.4*	*13.6*	*100.0*
1998	*76.7*	*23.3*	*100.0*
1999	*100.0*	-	*100.0*

Annex Table 5
Status of Hand Pumps by the Year of Installation (Sindh)

SINDH	HP Currently Working		Total
	Yes	No	
Column Percentage			
Year of Installation			
1990	*0.9*	-	*0.7*
1991	-	-	-
1992	*5.0*	*4.2*	*4.8*
1993	*2.7*	*10.4*	*4.1*
1994	*0.5*	*6.3*	*1.5*
1995	*1.8*	*6.3*	*2.6*
1996	*5.4*	*22.9*	*8.5*
1997	*11.7*	*18.8*	*13.0*
1998	*70.7*	*31.3*	*63.7*
1999	*1.4*	-	*1.1*
Total	*100*	*100*	*100*
Row Percentage			
Year of Installation			
1990	*100.0*	-	*100.0*
1991	-	-	-
1992	*84.6*	*15.4*	*100.0*
1993	*54.5*	*45.5*	*100.0*
1994	*25.0*	*75.0*	*100.0*
1995	*57.1*	*42.9*	*100.0*
1996	*52.2*	*47.8*	*100.0*
1997	*74.3*	*25.7*	*100.0*
1998	*91.3*	*8.7*	*100.0*
1999	*100.0*	-	*100.0*

Annex Table 6
Status of Hand Pumps by the Year of Installation (NWFP)

NWFP	HP Currently Working		Total
	Yes	No	
Column Percentage			
Year of Installation			
1990	*1.1*	*3.8*	*1.4*
1991	*0.6*	*3.8*	*1.0*
1992	*5.5*	-	*4.8*
1993	*9.9*	*7.7*	*9.7*
1994	*9.4*	*19.2*	*10.6*
1995	*14.4*	*19.2*	*15.0*
1996	*12.7*	*23.1*	*14.0*
1997	*19.9*	*7.7*	*18.4*
1998	*26.5*	*15.4*	*25.1*
1999	-	-	-
Total	*100*	*100*	*100*
Row Percentage			
Year of Installation			
1990	*66.7*	*33.3*	*100.0*
1991	*50.0*	*50.0*	*100.0*
1992	*100.0*	-	*100.0*
1993	*90.0*	*10.0*	*100.0*
1994	*77.3*	*22.7*	*100.0*
1995	*83.9*	*16.1*	*100.0*
1996	*79.3*	*20.7*	*100.0*
1997	*94.7*	*5.3*	*100.0*
1998	*92.3*	*7.7*	*100.0*
1999	-	-	-

Annex Table 7
Status of Hand Pumps by the Year of Installation (Balochistan)

BALOCHISTAN	HP Currently Working		Total
	Yes	No	
Column Percentage			
Year of Installation			
1990	*0.5*	*5.3*	*2.5*
1991	*4.8*	*4.5*	*4.7*
1992	*17.7*	*25.6*	*21.0*
1993	*7.0*	*31.6*	*17.2*
1994	*5.9*	*5.3*	*5.6*
1995	*12.9*	*9.0*	*11.3*
1996	*28.0*	*12.0*	*21.3*
1997	*13.4*	*2.3*	*8.8*
1998	*9.1*	*4.5*	*7.2*
1999	*0.5*	-	*0.3*
Total	*100*	*100*	*100*
Row Percentage			
Year of Installation			
1990	*12.5*	*87.5*	*100.0*
1991	*60.0*	*40.0*	*100.0*
1992	*49.3*	*50.7*	*100.0*
1993	*23.6*	*76.4*	*100.0*
1994	*61.1*	*38.9*	*100.0*
1995	*66.7*	*33.3*	*100.0*
1996	*76.5*	*23.5*	*100.0*
1997	*89.3*	*10.7*	*100.0*
1998	*73.9*	*26.1*	*100.0*
1999	*100.0*	-	*100.0*

Annex Table 8
NGO Involvement in the Communities

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total HP Surveyed (No)	*1252*	*440*	*276*	*208*	*328*
Any NGO worked in the Area:					
Yes	*9.6*	*3.8*	*6.2*	*9.6*	*21.0*
No	*90.4*	*96.2*	*93.8*	*90.4*	*79.0*
Sector of NGO					
1. *Women & Development.*	*3.1*	*20.0*	*4.8*	-	-
2. *Micro Finance.*	*2.1*	*20.0*	-	-	-
3. *Hygiene Education.*	*7.3*	*30.0*	*14.3*	-	*2.3*
4. *Agriculture.*	*5.2*	*20.0*	*14.3*	-	-
5. *Streets & Schools.*	*2.1*	*10.0*	-	*4.8*	-
6. *Water/Sanitation sector.*	*22.9*	-	*9.5*	*38.1*	*27.3*
7. *Health sector.*	*15.6*	-	*33.3*	-	*18.2*
8. *Girls primary education*	*27.1*	-	*9.5*	*4.8*	*52.3*
9. *Land leveling & poultry*	*11.5*	-	-	*52.4*	-
10. *Social Welfare.*	*3.1*	-	*14.3*	-	-

Annex Table 9
Water Usage by Women

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total Women Surveyed (No)	*3756*	*1320*	*828*	*624*	*984*
They Use water for:					
a. Drinking/Cooking					
1.Hand Pump	*87.7*	*89.9*	*96.1*	*90.9*	*75.0*
2.Well	*3.5*	*5.1*	-	*0.6*	*7.2*
3.Stream	*4.5*	*0.8*	*0.7*	*2.2*	*13.9*
4.Ohers	*4.3*	*4.5*	*3.1*	*6.3*	*3.9*
b. Washing					
1.Hand Pump	*78.3*	*79.8*	*85.0*	*84.6*	*65.5*
2.Well	*5.7*	*8.1*	-	*6.3*	*7.9*
3.Stream	*11.9*	*6.8*	*13.2*	*4.9*	*21.4*
4.Ohers	*4.1*	*5.2*	*1.8*	*4.1*	*5.2*
c. Sanitation					
1.Hand Pump	*73.1*	*69.0*	*90.4*	*90.5*	*46.6*
2.Well	*9.4*	*20.6*	-	*2.2*	*12.0*
3.Stream	*8.5*	*3.6*	*9.6*	*2.6*	*17.8*
4.Ohers	*8.9*	*6.8*	-	*4.7*	*23.6*
d. Agriculture					
1.Hand Pump	*16.2*	*7.4*	*0.5*	*64.6*	*8.5*
2.Well	*10.7*	*27.1*	-	*11.9*	*2.2*
3.Stream	*39.7*	*23.8*	*95.8*	*6.1*	*24.3*
4.Ohers	*33.4*	*41.7*	*3.7*	*17.3*	*65.0*

Annex Table 10
Water Storage Habits of Women

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %
Total Women Surveyed (No)	*3756*	*1320*	*828*	*624*	*984*
Keep Water from Different Sources Separate:					
Yes	*68.6*	*87.8*	*37.8*	*70.9*	*81.4*
No	*31.4*	*12.2*	*62.2*	*29.1*	*18.6*
How they Separate Water:					
1.Use different Container	*87.8*	*84.2*	*95.7*	*97.9*	*81.7*
2.Different Storage Places	*8.4*	*12.5*	*4.3*	*2.1*	*9.5*
3.Others	*3.8*	*3.2*	-	-	*8.8*
Safe Water Storage Place:					
Yes	*71.4*	*76.6*	*97.9*	*45.2*	*55.6*
No	*28.6*	*23.4*	*2.1*	*54.8*	*44.4*
Clean Container before Fetching Water:					
Yes	*98.9*	*99.2*	*99.1*	*99.3*	*98.0*
No	*1.1*	*0.8*	*0.9*	*0.7*	*2.0*

Annex Table 11
Number of Districts, Union Councils and Villages Covered in the Household Latrine Survey

Province	Districts	Union Councils	Villages
Punjab	*10*	*104*	*174*
Sindh	*06*	*47*	*78*
NWFP	*06*	*35*	*48*
Balochistan	*08*	*45*	*114*
AJK	*02*	*05*	*09*
Northern Areas	*02*	*02*	*03*
Total Pakistan	*34*	*238*	*426*

Annex Table 12
Distribution of Household Latrines by Year of Installation

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %	AJK %	FANA %
Total Latrines Surveyed (No)	2598	1226	294	421	583	44	30
1990	0.1	-	-	-	0.5	-	-
1991	0.6	-	-	-	2.6	-	-
1992	3.3	3.7	-	1.5	4.7	18.6	-
1993	2.3	2.5	0.3	2.2	2.6	9.3	3.3
1994	11.5	17.7	2.4	4.6	9.2	4.7	20.0
1995	10.7	14.0	2.7	7.5	10.9	11.6	6.7
1996	21.2	27.0	5.1	13.3	22.8	18.6	40.0
1997	19.9	19.4	22.5	24.9	15.6	14.0	30.0
1998	29.1	15.3	60.1	44.3	31.1	23.3	-
1999	1.3	0.4	6.8	1.7	-	-	-
Total	100	100	100	100	100	100	100

Annex Table 13
Distribution of Latrines by Type and Water Supply Facility

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %	AJK %	FANA %
Total Latrines Surveyed (No)	2598	1226	294	421	583	44	30
Type of Latrines							
1. VIP	3.3	0.5	7.5	1.2	8.7	-	66.7
2. PFL	96.0	99.5	89.7	98.6	91.1	100	33.3
3. Others	0.8	-	2.7	0.2	0.2	-	-
Source of Water							
1.Piped WS	25.5	16.0	9.3	23.1	52.2	100	3.6
2.Own HP	45.4	62.5	66.7	26.4	16.5	-	-
3.Communal HP	11.9	9.6	19.6	20.1	7.8	-	7.1
4.Others	17.2	11.8	4.4	30.5	23.5	-	89.3

Annex Table 14
Relationship Between Type of Household Latrine and Existence of Water Supply Facility

	VIP %	PFL %	Others %	Total %
Total Latrines Surveyed (No)	*84*	*2468*	*20*	*2572*
Source of Water				
1.Piped	*42.2*	*25.1*	*10.5*	*25.5*
2.Own HP	*28.1*	*46.2*	*5.3*	*45.3*
3.Communal HP	*14.1*	*11.6*	*42.1*	*11.9*
4.Others	*15.6*	*17.1*	*42.1*	*17.3*
Total	*100*	*100*	*100*	*100*

Annex Table 15
Distribution of Household Latrines by Environmental Aspects

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %	AJK %	FANA %
Total Latrines Surveyed (No)	*2598*	*1226*	294	421	583	44	30
Were the Latrines:							
1.Clean	*77.8*	*82.9*	73.5	84.4	64.2	85.4	58.3
2.Dirty	*22.2*	*17.1*	26.5	15.6	35.8	14.6	41.7
Bad smell In/Around the Latrine:							
Yes	*32.5*	*33.7*	38.3	15.6	39.1	17.1	66.7
No	*67.5*	*66.3*	61.7	84.4	60.9	82.9	33.3
Presence of Flies:							
Yes	*19.8*	*13.0*	49.8	9.3	29.1	-	-
No	*80.2*	*87.0*	50.2	90.7	70.9	100	100
Water Source within 50 feet:							
Yes	*37.2*	*35.1*	88.1	46.3	11.7	12.2	4.2
No	*62.8*	*64.9*	11.9	53.7	88.3	87.8	95.8

Annex Table 16

Province Wise Distribution of Males, Females & Children Habits Before Construction of Latrine

	Males %	Females %	Child %
PUNJAB			
Before Construction of Latrine They used to go:			
1.Out in the Fields	*79.2*	*63.0*	*59.8*
2.Corner of the House	*1.0*	*19.3*	*21.1*
3.Neighbour's facility	*0.7*	*0.7*	*0.7*
4.Others	*11.0*	*12.0*	*11.6*
SINDH			
Before Construction of Latrine They used to go:			
1.Out in the Fields	*90.9*	*53.8*	*79.1*
2.Corner of the House	*77.9*	*90.6*	*88.6*
3.Neighbour's facility	*2.9*	*5.6*	*2.9*
4.Others	-	-	-
NWFP			
Before Construction of Latrine They used to go:			
1.Out in the Fields	*82.3*	*19.7*	*25.4*
2.Corner of the House	*1.4*	*72.4*	*29.4*
3.Neighbour's facility	-	*0.3*	*0.3*
4.Others	*4.3*	*6.3*	*39.9*
BALOCHISTAN			
Before Construction of Latrine They used to go:			
1.Out in the Fields	*92.6*	*55.7*	*66.3*
2.Corner of the House	*66.2*	*85.7*	*88.0*
3.Neighbour's facility	*2.2*	*19.6*	*8.2*
4.Others	*79.9*	*81.1*	*77.7*
AJK			
Before Construction of Latrine They used to go:			
1.Out in the Fields	*100*	*100*	*100*
2.Corner of the House	-	-	-
3.Neighbour's facility	-	-	-
4.Others	-	-	-
FANA			
Before Construction of Latrine They used to go:			
1.Out in the Fields	*100*	*100*	*100*
2.Corner of the House	-	-	-
3.Neighbour's facility	-	-	-
4.Others	-	-	-
PAKISTAN			
Before Construction of Latrine They used to go:			
1.Out in the Fields	*83.3*	*53.3*	*54.5*
2.Corner of the House	*11.5*	*46.7*	*40.7*
3.Neighbour's facility	*0.6*	*1.5*	*0.9*
4.Others	*18.7*	*20.5*	*25.5*

Annex Table 17
Hygiene Habits of Households with Latrines

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %	AJK %	FANA %
Total Latrines Surveyed (No)	2598	1226	294	421	583	44	30
After Latrine Use Do they Flush:							
Yes	97.8	99.1	98.4	98.9	96.3	100	45.8
No	2.2	0.9	1.6	1.1	3.7	-	54.2
Wash Hands:							
Yes	90.5	97.5	64.0	99.4	82.3	94.4	87.5
No	9.5	2.5	36.0	0.6	17.7	5.6	12.5
They Wash Hands With:							
1.Water only	40.8	22.5	88.2	54.3	69.4	12.1	86.4
2.Water & Soap	58.6	76.4	11.8	45.4	30.6	87.9	13.6
3.Water & ____	0.6	1.1	-	0.3	-	-	-

Annex Table 18
Benefits and Problems of Having Latrine in the House

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %	AJK %	FANA %
Total Latrines Surveyed (No)	2598	1226	294	421	583	44	30
Benefits:							
1.Women feel more secure.	60.4	68.8	94.4	40.9	41.7	48.6	8.3
2.Convinient in Extreme Weathers	14.9	12.3	4.5	26.4	16.3	5.4	62.5
3.Clean/Proper way	22.2	18.2	0.8	28.8	37.3	40.5	4.2
4.others	2.4	0.8	0.4	3.9	4.8	5.4	25.0
Problems:							
1. No problem.	87.7	87.5	87.3	91.2	85.2	76.3	100
2. Due to shortage of water latrine cannot be cleaned properly.	3.7	3.4	2.7	3.9	4.9	7.9	-
3. There is no proper sewerage system in our village so the environment is polluted due to latrine.	5.9	8.7	9.7	-	-	5.3	-
4. Problem of inspection.	1.1	-	-	-	7.8	-	-
5. Others.	1.4	0.4	0.4	5.1	1.8	10.5	-

Annex Table 19
Frequent Faults and Who Repaired in Case of Breakage of the Latrine

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %	AJK %	FANA %
Total Latrines Surveyed (No)	2598	1226	294	421	583	44	30
Frequent faults:							
1. No fault.	86.6	83.4	97.7	88.5	86.8	73.7	95.5
2. Unsatisfactory material.	5.6	10.4	-	0.6	-	-	4.5
3. Blockage.	2.6	3.4	0.8	1.5	0.7	18.4	-
4. Bad smell.	2.6	0.7	-	2.1	11.8	7.9	-
5. Choking.	1.3	-	0.8	7.1	-	-	-
6. Don't know.	0.1	-	-	-	0.7	-	-
7. Others.	1.2	2.1	0.8	0.3	-	-	-
Who repairs in case of breakage:							
1. No breakage so far.	36.0	25.8	7.7	69.6	34.8	65.8	-
2. Repair ourselves.	57.9	70.4	20.5	29.6	55.1	15.8	95.7
3. Call some mason.	3.7	0.8	66.7	0.6	8.7	13.2	-
4. LG&RD care taker.	1.4	2.3	2.6	-	-	-	-
5. Others.	1.1	1.7	2.6	0.3	1.4	-	-

Annex Table 20
Incidence of Water-born Diseases in Children and Perception of Household

	Pakistan %	Punjab %	Sindh %	NWFP %	Balochistan %	AJK %	FANA %
Total Latrines Surveyed (No)	2598	1226	294	421	583	44	30
Change in Incidence of above Diseases (H.Hold opinion):							
1.Reduced	41.5	50.3	33.0	35.3	31.9	37.8	37.5
2.Same	35.3	39.2	31.8	40.9	23.8	56.8	16.7
3.Increased	1.6	2.7	-	0.6	0.6	2.7	-
4.Do Not Know	21.6	7.8	35.2	23.2	43.7	2.7	45.8

Annex Table 21
Number of Districts, Union Councils and Villages Covered in the School Survey

Province	Districts (No.)	Union Councils (No.)	Villages (No.)
Punjab	8	86	142
NWFP	01	07	10
Balochistan	01	03	14
Total Pakistan	10	96	166

Annex Table 22
Distribution of Schools by Year of Installation of Hand Pump

	Pakistan %	Punjab %	NWFP %	Balochistan %
Total Schools Surveyed (No)	*183*	*154*	*15*	*14*
1991	*0.6*	*0.7*	-	-
1992	*14.8*	*16.8*	-	-
1993	*9.9*	*11.2*	-	-
1994	*21.0*	*23.8*	-	-
1995	*21.6*	*24.5*	-	-
1996	*12.3*	*14.0*	-	-
1997	*9.3*	*3.5*	*30.8*	*100*
1998	*10.5*	*5.6*	*69.2*	-
Total	*100*	*100*	*100*	*100*

Annex Table 23
Distribution of Hand Pumps by Their Environmental Features

	Pakistan %	Punjab %	NWFP %	Balochistan %
Total School Surveyed (No)	*183*	*154*	*15*	*14*
Total HP Installed:	*89.9*	*94.7*	*86.7*	*42.9*
Hand Pumps with:				
Proper Drainage Channel:	*83.4*	*81.9*	*100*	*83.3*
Proper Soak-pit or Alternative:	*51.0*	*51.2*	*25.0*	*100*
No latrine/Garbage within 50 feet radius:	*69.0*	*66.1*	*83.3*	*100*
Clean Drainage Channel:	*76.6*	*73.2*	*100*	*100*

Annex Table 24
Distance and Quality of Water Before and After the Installation of Hand Pump

	Pakistan %	Punjab %	NWFP %	Balochistan %
Total School Surveyed (No)	*183*	*154*	*15*	*14*
Total HP Installed:	*89.9*	*94.7*	*86.7*	*42.9*
Quality of HP Water in Terms of Taste and Color:				
1. Acceptable	*90.6*	*90.9*	*100*	*66.7*
2. Not Acceptable	*9.4*	*9.1*	-	*33.3*
Source of Drinking Water Before:				
1.Piped Water Supply	*6.6*	*4.2*	*15.4*	*33.3*
2.Well – HP	*62.8*	*68.6*	*38.5*	-
3.Stream – Rain	*1.5*	*0.8*	*7.7*	-
4.Neighbor's Facility	*29.2*	*26.3*	*38.5*	*66.7*
Distance from the Source Before:				
Less than 1 km	*92.6*	*92.9*	*88.9*	-
1 – 3 kms	*7.4*	*7.1*	*11.1*	-
3 kms and above	-	-	-	-

Annex Table 25
Distribution of School Latrines by Environmental Aspects and by Users & Usage

	Pakistan %	Punjab %	NWFP %	Balochistan %
Total School Surveyed (No)	*183*	*154*	*15*	*14*
Installed with Latrines:	*89.9*	*92.6*	*100*	*50.0*
Currently in Use:				
Yes	*91.1*	*91.2*	*86.7*	*100*
No	*8.9*	*8.8*	*13.3*	-
IF Not Why Not:				
1.Due to improper sewerage system and soak pit, latrines are not in usable condition.	*23.5*	*26.7*	-	-
2.If we allow students to use latrines, cleanliness is not possible.	*5.9*	*6.7*	-	-
3.One latrine is damaged.	*29.4*	*33.3*	-	-
4. Latrines are blocked.	*11.8*	*13.3*	-	-
5. One is used as a store.	*11.8*	*13.3*	-	-
6.One latrine is closed due to shortage of water.	*5.9*	*6.7*	-	-
7. Others.	*11.8*	-	-	-
			100.0	
Latrines are Most Used By:				
1.Teachers	*37.6*	*35.4*	*38.5*	*83.3*
2.Students	*62.4*	*64.6*	*61.5*	*16.7*
3.Others	-	-	-	-
Was the Latrine/s Locked:				
Yes	*32.5*	*34.1*	*20.0*	*28.6*
No	*67.5*	*65.9*	*80.0*	*71.4*
Were the Latrines:				
1.Clean	*75.5*	*76*	*69.2*	*80.0*
2.Dirty	*24.5*	*24*	*30.8*	*20.0*
Bad smell In/Around the Latrine:				
Yes	*28.4*	*28.7*	*28.6*	*20.0*
No	*71.6*	*71.3*	*71.4*	*80.0*
Presence of Flies:				
Yes	*6.8*	*6.2*	*15.4*	-
No	*93.2*	*93.8*	*84.6*	*100*
Water Source within 50 feet:				
Yes	*26.8*	*29.2*	*14.3*	-
No	*73.2*	*70.8*	*85.7*	*100*

Annex Table 26
Teachers' Perception About the Effect of WES Programme

	Pakistan %	Punjab %	NWFP %	Balochistan %
Total School Surveyed (No)	183	154	15	14
Effect on Children Habits and School Environment of:				
Water Supply:				
1. Yes they are now more clean.	72.7	71.8	69.2	100
2. No effect because HP water in terms of taste & color is not acceptable.	3.4	4.2	-	-
3. No particular effect because the HP has some problem and often become out of order.	5.7	2.8	23.1	-
4. No effect.	8.0	9.9	-	-
5. Little effect.	2.3	1.4	7.7	-
6. No water supply facility because HP is out of order since the time of installation.	6.8	8.5	-	-
7. There is no HP in the school.	1.1	1.4	-	-
Latrines:				
1. School latrines are used only by teachers.	33.0	40.8	-	-
2. Yes, now students feel more secure and convenient and keep themselves more clean.	54.3	48.7	73.3	100
3. No effect.	12.8	10.5	26.7	-
Effect of Hygiene Education:				
Yes.	72.0	76.9	60.0	100
No.	28.0	23.1	40.0	-
Effect on Student Enrollment:				
Increased	30.4	29.7	26.7	50.0
Same	69.6	70.3	73.3	50.0
Reduced	-	-	-	

Annex Table 27
Teachers' Perception About the Problems and Benefits of WES Programme

	Pakistan %	Punjab %	NWFP %	Balochistan %
Total School Surveyed (No)	*183*	*154*	*15*	*14*
What are Benefits:				
1. People get clean water.	*17.6*	*42.9*	-	-
2. We are now more safe from diseases.	*29.4*	*14.3*	*40.0*	-
3. School environment has become more clean.	*23.5*	*28.6*	*20.0*	-
4. No benefit.	*5.9*	*14.3*	-	-
5. Due to poverty it's not practicable.	*23.5*	-	*40.0*	-
What are the Problems:				
1.No problem.	*50.0*	*25.0*	*55.6*	*100*
2.Problem of shortage of water.	*28.6*	*75.0*	*11.1*	-
3. Shortage of time.	*21.4*	-	*33.3*	-

Annex Table 28
Student's Drinking Practices

	Pakistan %	Punjab %	NWFP %	Balochistan %
Total School Surveyed (No)	*183*	*154*	*15*	*14*
Average Number of Students Gathered:	*26*	*29*	*04*	*23*
Students obtain drink of water from:				
1.The Pump	*54.4*	*55.6*	*42.9*	*57.1*
2.Container	*29.3*	*29.4*	*35.7*	*14.3*
3.Container from Home	*10.9*	*11.9*	-	*14.3*
4.Combination of Above	*4.8*	*2.4*	*21.4*	*14.3*
5. No drinking source	*0.7*	*0.8*	-	-
How Student Drink Water:				
1.Directly from Pump	*51.7*	*52.8*	*35.7*	*66.7*
2.Dipping the com. glass in container	*35.9*	*36.0*	*42.9*	*16.7*
3.using ladle	*2.8*	*3.2*	-	-
4.combination of above	*6.2*	*4.0*	*21.4*	*16.7*
5. No drinking source	*3.4*	*4.0*	-	-

Annex Table 33
Community's Satisfaction and Perception about Incidence of Diarrhea

	Pakistan %	AJK %	FANA %
Total GF Scheme Surveyed (No)	*16*	*09*	*07*
Men's Satisfaction with GFS:			
1.Happy	*100*	*100*	*100*
2.Not Happy	-	-	-
Incidence of Diarrhea perceived by men:			
1.Reduced	*56.3*	*22.5*	*100*
2.Same	*31.3*	*55.6*	-
3.Increased	*6.3*	*11.1*	-
4.Do not know	*6.3*	*11.1*	-
Incidence of Diarrhea perceived by Women:			
1. Reduced	*47.2*	*29.6*	*100*
2. Same	*44.2*	*59.3*	-
3. Increased	*5.6*	*7.4*	-
4.Do not know	*2.8*	*3.7*	-

ANNEXURE 1

Terms of Reference for the WES Evaluation

TERMS OF REFERENCE
(Revision December 1998)

1. Introduction :-

These Terms of Reference are being prepared to provide general background information and guidelines for a comprehensive evaluation of the GoP-UNICEF Water and Environmental Sanitation Programme over the period 1992 through 1998.

2. Background and Purpose: -

UNICEF's support to the Government of Pakistan (GoP) in water and environmental sanitation has been outlined in the Master Plan of Operations (MPO) for the peiod 1992-96 and in the bridging programme MPO 1996-98. The importance of the programme and its justification is based on the principle that access to safe drinking water and opportunity to live in a clean environment is a basic human right. The strategic focus, common to both plans, has included the promotion of low-cost, easy to operate and maintain technological options; community participation (with emphasis on women's involvement) in project planning and execution, operation and maintenance; and environmental sanitation and hygiene education directed towards women and primary primary school students. The programme planned to develop links with the health sector (Control of Diarrhoeal Disease Programme) and the education sector, to co-ordinate with major donors in the sector (World Bank, Asian Development Bank and the Dutch Government) and to target deprived communities scattered throughout Pakistan. The Local Government and Rural Development Departments (LG & RDD) and the Primary Education Department (PED) have been identified as the Primary government counterparts for the sector programme. The programme has also envisaged the enlistment of NGOs to support project delivery. The primary objective of the programme has been stated as follows:

> "Improved access to safe drinking water and basic sanitation facilities through participation of communities with a focus on women and girls, improved behavioral changes to realize full benefits from such services, enhanced Government / NGO capacities and policy refinement." (MPO 1996 – 98, p.151)

There is no clear national definition for "access to water and sanitation facilities". However the access to water in the UNICEF assisted programme means access to improved and sustained services in terms of distance, quality and quantity. For sanitation, the term access covers mainly the sanitary disposal of human excreta and other household solid and liquid wastes.

The UNICEF – assisted WES programme in Pakistan began in the late 1970s and expanded in scope and coverage through the 1980s up to 1993. Since then the annual input to the programme has gradually delined from a peak of over US $ 5 million in 1992 the programme provided assistance to the GoP

through LG & RDD to install gravity – fed water schemes in the North West Frontier Province (NWFP), Azad Jammu Kashmir (AJK) and the Northern Areas (NA); handpumps in Punjab, Sindh, Balochistan and NWFP; and latrines all over the country. In conjunction with installation of water supply schemes and latrines, the programme took steps to promote community participation and low-cost technology and to introduce women's participation and health education components into the programme. During the period 1992 – 98 the programme attempted to develop a hygiene education programme at girls primary schools in NWFP and Balochistan and supported NGOs with materials and equipment for promoting sanitation and improving water supply and sanitation facilities in rural areas and in the urban slums.

During the period 1992 – 98 UNICEF provided an estimated 25,100 hand pumps, material for approximately 160 gravity – fed, piped water supply schemes and some 158,000 pans and slabs for latrine installation. An estimated 3.3 million persons have potentially benefited from the improved water supply schemes and 1.3 million from improved sanitation facilities. While the coverage appears quite significant, it represents a mere 2 per cent of the current population for water supply and 1 percent for sanitation.

The latest national (1996 – 97) Pakistan Integrated Household Survey (PIHS) found 73% of rural households have access to drinking water, out of which only 11% have taps inside or outside house and the remaining 62% are supplied through hand pumps or motorized pumps, although nothing is said either about the quality of the water supplied or the service level. Coverage figures show that the goal of 65 percent under the National Programme of Action for children was met and that the Eighth Plan goal of 70.5 percent by 1997 – 98 seems well within reach. The situation with sanitation is not as bright with only 22 percent of surveyed households in 1997 having adequate sanitation facilities according to the PIHS.

With the focus of UNICEF – assisted's programme strategies and activities moving away from water supply, resources for water supply and sanitation activities dwindling and the planning exercise for the next programme cycle starting, it was felt that a comprehensive evaluation of the WES programme at this time would provide the information and guidance necessary to establish a future direction and scope for the programme. To do this the evaluation will assess the achievements and constraints of past activities against the background of the national situation and attempt to identify activities having the potential to contribute significantly toward the goal of universal access to safe water supply and improvements in environmental hygiene.

The results of the evaluation will be used by UNCEF to work with the GoP for improving the sector programme and to fine tune the UNICEF – assisted WES component of the next country programme 1999-2003.

3. Scope and Focus of the Evaluation.

The evaluation will cover the WES programme during the previous and the present agreement periods (1992 – 96 and 1996 – 98).

The evaluation will concentrate on assessing the performance vis-à-vis the original GoP – UNICEF plans as they had been defined in the two relevant

Master Plans of Operations and in the specific agreements signed during the period (Project Agreements, Project Contract Agreements, Letters of Agreement, Memos of Understanding and else).

That will cover, but not limited to assess and evaluate what follows: -

- The overall progress of the programme and its impact in relation to the overall objective;
- UNICEF's and partner's role in the programme:
- UNICEF's role in the sector and strength in influencing policies and strategies;
- The local capacity building component, including national institutions strengthening, local production/manufacturing capacity, support to NGOs and civil society organizations, and the implications for long-term sustainability;
- The strategy for alliance building and partnership;
- Community participation and particularly women's involvement and gender strategy;
- The self-reliance approaches, including the subsidy strategy, cost-recovery and revolving fund systems. O & M mechanisms;
- The Government contributions to the sector during the period ;
- The financial aspects of the programme;
- The organizational aspects, including procedures for reporting and follow-up by the different partners and associates in the programme.

4. Key Questions.

In light of the findings, the evaluation will attempt to answer the following five key questions:

4.1 What activities of the UNICEF – assisted WES programme remain relevant in the context of the current national and provincial level of water and sanitation development in the country?

To answer this question the evaluation team will need to assess the relevance of the following activities in the country.

- Supply of material for hand pumps and / or gravity – fed. Piped schemes and hous hold latriens.
- Training Government field staff, Water Management Committee members. Water supplies caretakers, sanitation and hygiene education promoters.
- Promotion of environmental and personal hygiene.
- Advocacy for low-cost options.
- Advocacy for community and, in particular, women's participation in planning and managing water supply schemes.
- Advocacy for greater involvement of NGOs in the sector.
- Promotion of hygiene education and supply of material for water supply and latrine installation at girls primary schools.
- Support to capacity building within the offices of government counterparts.

The relevance of UNICEF –assisted activities should be assessed in relation with the current situation and trends of the Social Action Programme (SAP). Whether these activities are complementing towards the SAP objectives should be assessed and analyzed. Contribution to the sector activities of all concerned agencies (government, non- – government and ESAs) should be taken into account.

4.2 What has been the effect at the community level of the various programme elements on accessibility to safe water supplies and on personal and environmental hygiene?

To answer this question the evaluation team will assess the effect of the following activities in the country.

- Supply of material for hand pumps and or gravity-fed, piped schemes and household latrines.
- Establishment of Water Management committees and maintenance funds, and appointment of caretakers. (This has relevance to the sustainability.)
- Training of Water Management Committee members and water supply caretakers. (This has relevance to the sustainability.)
- Promotion of environmental and personal hygiene.
- Promotion of hygiene education and supply of material for water supply and latrine installation at girl's primary schools.
- Involvement of NGOs / CBOs for organizing community participation, installing facilities and promoting environmental and personal hygiene.

In assessing the effects of the UNICEF – assisted activities, the evaluation team should attempt to answer the following questions:

- What percent of those served are from the neediest communities?
- What percent of the material for water supply and latrines provided by UNICEF have been installed properly, are in use and are being operated and maintained properly? Have the planned goals been achieved?
- What percent of the communities have a functioning Water Management Committee and caretaker and have established a maintenance fund?
- What effect has training had on the operation and maintenance of the water supply facilities?
- What effect has sanitation promotion and hygiene education had on the installation, use and maintenance of latrines?
- What effect have the facilities and hygiene education had on reducing diarrhoea in children, and on water use and storage?
- What effect has the provision of water supply facilities, latrines and teacher training in hygiene education had on the increase in enrollment and environmental hygiene at the school and personal hygiene of the students?
- What components of the programme activities have NGOs / CBOs been involved in and what has been the effect in terms of enhanced capacity for and effectiveness in service delivery where they have been involved?

The assessment of the above elements should include an analysis of the primary causes for achieving and failing to achieve the expected outcome.

3.3 What has been the effect at the provincial and national levels of the various programme elements on accessibility to safe water supplies and on personal and environmental hygiene?

To answer this question the evaluation team will assess the following activities at the national level and in each province.

- Advocacy for low-cost options.
- Advocacy for community and, in particular, women's participation in planning and managing water supply schemes.
- Advocacy for greater involvement of NGOs /CBOs in the sector.
- Advocacy for inclusion of hygiene education into the programme.
- Support for strengthening planning and management within government offices at the district, provincial and national levels.

In assessing the effects of the UNICEF – assisted activities, the evaluation team should attempt to answer the following questions:

- What activities have UNICEF supported to promote low-cost options for water supply and sanitation and what effects have these had on national / provincial policy and procedural guidelines?
- What activities have UNICEF supported to promote community participation and women's involvement in the programme and what effect have these had on national / provincial policy and procedural guidelines?
- What activities have UNICEF supported to promote greater involvement of NGOs / CBOS in the programme and what effects have these had on national / provincial policy and procedural guidelines?
- What activities have UNICEF supported to introduce hygiene education into the programme and what effects have these had on national / provincial policy and procedural guidelines?
- What activities have UNICEF supported to improve government capacity for service delivery and what effect have these had on planning and management within government offices at the national, provincial and district levels?

4.3 How can the planning and management aspects of the UNICEF – assisted programme be improved?

To answer this question the evaluation team will analyze the planning and management process of the UNICEF – assisted programme in each province, beginning with the initial community request and ending with whatever support is provided for operation and maintenance. The timing of each stage in the process should be shown as a function of the concerned players (community, Union Council, District/Divisional/Provincial/ National GO, NGOs, UNICEF, etc.) and their responsibility at each stage. Gaps in policy, procedural guidelines, criteria and deviations from these, as well as lack of information and familiarity with the process, and documentation required at each stage will be identified and recommendations made to fill gaps, over come impediments and improve documentation. The

evaluation team should also provide suggestions for streamoining the process and improving transparency and accountability.

The analysis of the process will include but not be limited to the following:

- Selection of geographical areas and individual site selection and approval.
- Preparation and approval of the annual programme plan and budget.
- Supply of material and release of funds.
- Reporting

4.4 In the context of UNICEF's diminishing funds for WES sector activities, what role, if any, might UNICEF play to further the coverage and promote sustainability of water supply, sanitation and hygiene education for the period 1999 – 2003?

In answering this question, the evaluation team may want to consider the following:

- Building on past activities, which have been most relevant and successful in improving accessibility to water supply and sanitation.
- Balancing "hardware" and "software" assistance.
- Supporting a programme to assist disadvantaged rural/urban communities with small, low-cost facilities.
- Promoting private enterprise and establishing revolving fund schemes for improving water supply and sanitation.
- Building alliances for jointly funded projects.
- Building capacity of NGOs/CBOs and private consulting firms for technical support to communities pursuing their own development work.
- Building capacity of GO in planning, monitoring and evaluation.

5. Methodology

National level support to the programme takes into account the provincial variations of types of inputs, programme implementation strategies and procedures and levels of programme development. While broad national policy, strategies and objectives guide the programme in each province: each provincial programme has unique features and will need to be treated as separate programmes for the purpose of this evaluation.

The evaluation is to be carried out by a team of consultants (hereinafter called the Consultant) covering relevant technical, economic, sociological and organizational aspects. One of the members of the team should be appointed as Team Leader, responsible for the planning and reporting process.

The Consultant will present a time-schedule with a proposal on detailed methods, procedures, information and support requested, outputs of the evaluation etc.

As an indication, it is estimated that the exercise could be roughly divided as follows (time schedule depends on the number of team member's assigned to carry out the evaluation).

Month 1- Finalize evaluation plan, review documentation, collect data on the national situation, prepare survey instruments and conduct the survey on status of facilities and select sites for a second round data collection.

Month 2 – 4 collect data for assessment of impact on communities, government policy, procedural guidelines and service delivery capacity and of the planning and management aspects. Collect information for recommendations of the future role of UNICEF.

Month 5- analyzes data, formulate recommendations and prepare the final report.

Relevant document including programme and project agreements, periodic monitoring and progress reports, policy and strategy papers, financial input records and evaluation reports have been compiled by the UNICEF WES section and should be reviewed at the beginning of the evaluation exercise. Additional information is available at the concerned government and UNICEF provincial offices. Programme and project information obtained from the document review will be verified through surveys and interviews at the community, provincial and national levels. A list of some of the major documents is shown in the annexes.

Assessment of the programme impact on the beneficiaries will focus primarily on the qualitative aspects of the programme. However, a stratum sample survey at the beginning of the evaluation will be conducted to establish the status of the facilities. This information will then be collated and used to make stratum selection of communities and schools for a more in-depth assessment of the impact and causality of the various project components. The initial survey will follow a standardized interview format and include at least five percent of the total hand pumps installed, ten percent of the total gravity-fed piped schemes installed and ten percent of schools benefiting from the programme. As far as possible samples, representative of each district and year 1992 –98 will be selected from lists of installation sites provided by the concerned government offices. Status of latrine installation will be conducted only at those sites selected for water supply facility survey. Information required to assess the impact on the beneficiaries will be obtained by rapid appraisal procedures, using gender – specific, focus group interviews, by observation of physical conditions and by personal interviews. Two each of the best and worst case scenarios will be identified in each province to investigate possible causes for success and failure.

In the absence of baseline data, the programme impact on the incidence of diarrhoea cannot be confidently assessed. The Sentinel Community Surveys conducted in 1997-98 in several provinces may provide the bases for relationships in communities having a significantly lower incidence rate (compared with the provincial average), if this situation can be established in the communities surveyed.

To assess the impact of advocacy and capacity building, the evaluation team will identify the activities (seminars, meetings, study tours, model project demonstrations, human resource development, reorganization. Decentralization, etc.) Directed at policy and procedural guideline improvements and project planning and management capacity building. These activities will then be related to changes identified over the period of the study. The information and data will be obtained through a review of

relevant documents and personal interviews with staff of the concerned government agencies, ESAs, NGOs and UNICEF.

The Consultant will conduct a system analysis in each province to assess the planning and management aspects of the UNICEF – assisted programme. To do this Consultant will identify the various steps and responsible entities in the process, identify deviations from the established process and impediments to a quick and unhampered movement through, the process, and recommend changes to streamline the process and improve transparency, accountability and documentation. The Consultant will also attempt to identify gaps in policy, procedural guidelines, criteria and deviations from these, as well as lack of information and familiarity with the processes. Information for this assessment will be obtained from documents outlining policy and procedures and personal interviews with those involved in the programme. Graphical representation of the processes will be prepared with each stage shown as a function of time and the responsible entity (community, Union Council. District /Divisional/ National GO, NGO, UNICEF. Etc.).

Recommendations for UNICEF's future role and strategy in the water and sanitation sector will be based on the assessment of the programme's relevance, the principle of building self-reliance rather than dependency, the need to focus on the most disadantaged groups and the trend in UNICEF's WES sector funding. The Consultant will solicit ideas from participants (government, NGO and ESAs) in the sector, assess these against UNICEF's policy and guidelines and prepare recommendations based on the results of discussion with the UNICEF WES section.

6. **Schedule of Major Tasks**

The Consultant will propose the list of major tasks and the schedule. The principal evaluators will meet with the steering committee at the beginning to finalise the Terms of Reference and prepare an evaluation plan and finalise the schedule. Periodic meetings with the steering committee will be scheduled as required and mutually agreed. In any event the evaluation team will present the results and recommendation to the committee for their comments before finalising.

7. **Consultant**

The broad range and scope of this evaluation will require a multi-disciplinary team of professionals. The Team Leader will assume overall responsibility for the evaluation and should have experience in managing and co-ordinating a multi-disciplinary evaluation team, be familiar with evaluation methods and analysis, have good English communication skills and have experience in the water supply and sanitation sector. The remaining team members should include the following:

1. Planning and management analyst (male or female) familiar with programme management systems.
2. Engineer (male or female) familiar with low-cost handpumps and gravity-fed water supply schemes and on-site excreta disposal facilities and having experience with community-based approach to project implementation,
3. Health Educator (female) familiar with community – level training in personal, food and environmental hygiene.

4. Sociologist (female) familiar with community organisation and mobilization techniques (experience in community organisation for water and sanitation activities would be advantageous but not strictly required),
5. Human Resource Development Specialist (male or female) capable of identifying training needs as well as analysing training curricula, materials and effectiveness.
6. In addition to above core evaluation team, short-term data collection teams will need to be arranged. The short time allocated for the evaluation will require that at least two data collectors from each discipline for each province be recruited.

7. Deliverables

The main deliverables will be written reports:

- An inception report will be submitted within 3 weeks of award of contract. It will describe the revised plan and methodology for carrying –out the assignment;
- An interim draft report after mid-term of the exercise;
- A draft final report within 4 months and 3 weeks of award of contract;
- The final report at the end of the exercise, not exceeding 50 pages (excluding annexes.)

All reports will be submitted to the steering committee in 20 copies. The steering committee will provide written comments and instructions within 2 weeks after reception of each report. The consultant will submit the final report no later than three weeks after all comments have been received. The report will be the property of UNICEF, which has sole authority for its reproduction and distribution.

While the report will be prepared in consultation with the rest of the evaluation team, the responsibility for writing the report lies with the Team Leader who will be the primary author. Authority for deciding on the final text lies with the Team Leader. Divergent views of other authors may be incorporated in the report as footnotes or and notes as decided by the steering committee. Secondary written reviews of the evaluation by at least one other independent expert in the sector will be sought and included in the final version of the report. The UNICEF regional monitoring and evaluation officer will be responsible for supplying a summary of the evaluation for the UNICEF evaluation database and in coordinating the process of the secondary review.

Attachments:
1. TOR for the Evaluation Steering Committee
2. List of documents
3. List of key informants
4. Concept of Hierarchy of Objectives

ANNEXURE 2

Questionnaires Used for Field Survey

Evaluation Of The GOP/UNICEF WES Programme 1992-98

Questionnaire for Gravity-fed Piped WSS Survey

Date of Interview: ___/___/_____

	Name	Signatures	Date
Enumerated by			
Verified/Coded by			
Entered by			

Identification

Q.1 Province/Area_____ ☐ *1=Punjab 2=Sindh 3=NWFP 4=Balochistan 5=AJK 6=FANA*

Q.2 District: _____ ☐☐☐

Q.3 Union Council: _____ **Q.4** Village: _____

Q.5 Is there any Gravity-fed WS Scheme in the Community? ☐ *1=Yes 2=No*

Q.6 Was this Gravity-fed Piped WSS installed under GOP/UNICEF WES Programme? ☐ *1=Yes 2=No 3=Do not know*

Q.7 Year of Installation of Scheme: *Month* _____ *Year* _____

Q.8 What type of scheme? ☐ *1=Gravity-fed piped 2=Uplifted Gravity-fed 3=Others*

Q.9 Under this scheme, are the connections? ☐ *1=At the Individual Household level 2=At the Communal Level 3=Both*

Q.10 Number of household benefiting from the scheme? ☐☐☐ (No.)

Installation

Q.11 Is the Source Tank/Spring capped? ☐ *1=Yes 2=No*

Q.12 Is the Main Storage Tank:
a) Properly constructed? ☐ *1=Yes 2=No*
b) Covered? ☐ *1=Yes 2=No*

Q.13 Are the water supply pipes:
a) Dug in /coated properly? ☐ *1=Yes 2=No*
b) Have any leakage? ☐ *1=minor 2=major 3=No leakage*

Q.14 Is the scheme currently functioning? ☐ *1=Yes 2=No*
If Not, why not and since how long?_____ _____months

Q.15 What is the quality of water in terms of taste and colour? ☐ *1=Acceptable 2=Not acceptable*

Q.16 For how many hours the water is available during the day? _____*hours*

Q.17 What was the source of drinking water before scheme installation? _____

Q.18 How far was the source of drinking water? _____*kms*

Q.19 What was the quality of water in terms of tase and clour? ☐ *1=Acceptable 2=Not acceptable*

IN THE NEW OR OLD SOURCE
INTERVIEW WITH MEN (Group meeting)

Q.20 Number of Men Participants: *No.*_____

Q.21 How many people contributed for arranging for the scheme? *No.* _____

Q.22 Were the village women consulted for planning and implementation of the water supply scheme? ☐ *1=Yes 2=No*
If NOT, *Why not?* _____

Q.23 IS there any caretaker for this scheme? ☐ *1=Yes 2=No*
If YES, do you think the caretaker is doing his job satisfactorily? ☐

Q.24 Are you happy with the scheme so far, and do you have any comments? ☐ *1=Yes 2=No*
Comments: _____

Q.25 Do you think that after this WS scheme, the incidence of Diarroea has reduced in your Area? ☐ *1= Reduced 2 = Same 3 = Increased 4 = Do not know*

Q.26 Do you have any Water Management Committee (WMC)? ☐ *1=Yes 2=No 3=Do Not Know*

Q.27 How many members are there in the Committee? *No.* _____

Q.28 Is this WMC functioning at the moment? ☐ *1=Yes 2=No 3=Do Not Know*
If No, then *Why not?* _____

If Yes, has the WMC established any maintenance fund? ☐ *1=Yes 2=No*

Q.29 Are you happy with the functioning of WMC? ☐ *1=Yes 2=No*
If No, *then why not?* _____

Q.30 Has any NGO worked in your village ever? ☐ *1=Yes 2=No*

Q.31 In which sectors?_____

Q.32 What role do you think an NGO could play in a water supply and sanitation programme? ___
_____

INTERVIEW WITH WOMEN (Please Interview Three Women User)

Q.33 Did anybody consulted you in planning and implementation of this water supply scheme? W1 ☐ W2 ☐ W3 ☐ *1=Yes 2=No*

Q.34 Are you happy:

	W1	W2	W3
a) With the WS scheme?	☐	☐	☐
c) Amount of water	☐	☐	☐
d) Availability of water throughout the year	☐	☐	☐
e) Quality of water (taste, sight)	☐	☐	☐

1=Happy 2=Indifferent 3=Not Happy

Q.35 Which water do you use for:

a) Drinking/Cooking
b) Washing
c) Sanitation
d) Agriculture uses

W1 W2 W3

1=scheme
2=well
3=Stream
4=Other

Q.36 Do you think that after the scheme, the incidence of Diarroea has reduced in your house? ☐ *1= Reduced 2 = Same 3 = Increased 4 = Do not know*

Q.37 Do you store water? W1 ☐ W2 ☐ W3 ☐ *1=Yes 2=No*

Q.38 If you use different water sources do you keep the water separate during storage? W1 ☐ W2 ☐ W3 ☐ *1=Yes 2=No*

Q.39 How do you separate the water in the compound during storage? W1 ☐ W2 ☐ W3 ☐

1 = using different types of containers
2 = different storage places
3 = others

Q.40 Have you prepared safe water storage place (elevated and covered)?
Q.41 Do you clean water container before fetching water?
Q.42 Have you ever received any Hygiene Education?
Q.43 Has a Lady Hygiene Promoter from LG&RDD ever visited you?

W1 W2 W3

Q.44 How many times she visited? W1 ☐ W2 ☐ W3 ☐

Q.45 How many women gather to listen to her? W1 ☐☐ W2 ☐☐ W3 ☐☐

Q.46 What did she talk about?

W1	W2	W3

Q.47 Did you like the session/s? W1 ☐ W2 ☐ W3 ☐ *1=Yes 2=No*

Q.48 What did you learn from the session/s?

W1	W2	W3

Q.49 How has this education changed your habits?

W1	W2	W3

Q.50 What benefits do you think you are getting from the hygiene education?

W1	W2	W3

Q.51 In your opinion, what problems do you have in practicing hygiene education?

W1	W2	W3

WS SCHEME CARETAKER

Q.52 Are you caretaker of this Scheme? ☐ *1=Yes* *2=No*

Q.53 How many times has this scheme broken down, for which the water supply stopped completely? *Number of times.* _____

Q.54 What is longest period of break down for which the supply was stopped? _____*weeks*

Q.55 What was the fault? _____ Who fixed it? _____

Q.56 Have you done any repair work? ☐ *1=Yes* *2=No*

Q.57 What is the most frequent problem? _____

Q.58 How far is the spare parts shop from the village? _____*km*

Q.59 Did you receive any training for Operating and Maintenance of this scheme? ☐ *1=Yes* *2=No*

If Yes, who gave you that training? ☐ *1 = LG&RDD* *2 = Others Specify:* _____

Q.60 Do you think that the training is helping you for operating and maintaining the scheme properly? ☐ *1=Yes* *2=No*

Q.61 Are you satisfied with the training? ☐ *1=Yes* *2=No*
If Not, *Why not?* _____

Q.62 What problems do you face in operating & maintaining this scheme?

_____

Evaluation Of The GOP/UNICEF WES Programme 1992-98

Questionnaire for Household Latrine Survey

Date of Interview: ___/___/_____

	Name	Signatures	Date
Enumerated by			
Verified/Coded by			
Entered by			

Identification

Q.1 Province/Area___ _____ ☐ *1=Punjab 2=Sindh 3=NWFP 4=Balochistan 5=AJK 6=FANA*

Q.2 District: _____ ☐☐☐

Q.3 Union Council: _____ **Q.4** Village:_____

Q.5 Was this Latrine installed under GOP/UNICEF WES Programme? ☐ *1=Yes 2=No 3=Do not know*

Q.6 Year of installation of Latrine: Month _____ Year _____

Q.7 Type of Latrine? ☐ *1 = VIP 2 = PFL 3=Others*

Q.8 Is the latrine currently in use ? ☐ *1=Yes 2=No*
If Not, *Why Not?* _____

Q.9 Number of latrine users: *No.* _____

Q.10 Who uses the latrine the most? ☐ *1=Men 2=Women 3=Children 4=All*

Q.11 What is the main source of water in your house? ☐ *1=Piped Water supply 2=Own handpump 3=Communal handpump 4=Others*

Q.12 Is the latrine? ☐ *1=Clean 2=Dirty*

Q.13 Is there any bad smell in/around the Latrine? ☐ *1=Yes 2=No*

Q.14 Presence of flies? ☐ *1=Yes 2=No*

Q.15 Is there any water source within 50 feet radius? ☐ *1=Yes 2=No*

HOUSEHOLD INTERVIEW

Q. 16 Gender of Respondent ☐ *1=Male 2=Female*

Q. 17 What is the socio-economic status of the Head of House?

a) What is the average monthly income of the household head? *Rs.*_____

Q.18 What is your tenural status in this house? ☐ *1=Owner 2=Tenant 3=Others*

Q.19 Is the house ? ☐ *1=Kucha 2=Kucha/Pukka 3=Pukka*

Q.20 Before the construction of latrine, where did you used to go?

	Males	Females	Children
a) Out in the fields	☐	☐	☐
b) Corner of the house	☐	☐	☐
c) Neighbour's facility	☐	☐	☐
d) Others	☐	☐	☐

Q.21 Do your family members flush after latrine use? ☐ *1=Yes 2=No*

Q.22 Do your family members wash hands after latrine use? ☐ *1=Yes 2=No*

Q.23 What does they use to wash hands? *1=water only 2=water and soap 3=water &* _____

Q.24 Did the incidence of following diseases take place in your family during last 12 months?

a)	Diarrhea:	Children ☐	*Enter 1=Yes 2=No*
		Adults ☐	
b)	Fever:	Children ☐	
		Adults ☐	
c)	Typhoid:	Children ☐	
		Adults ☐	
d)	Hepatitis	Children ☐	
		Adults ☐	
e)	Skin Diseases:	Children ☐	
		Adults ☐	

Q.25 What is the incidence of diseases in your household after the installation of latrine ? ☐

1=Reduced 2=Same 3=Increased 4=Do not know

Q.26 In your opinion what are the benefits of having the latrine in your house ? ☐

1=women/children feel more secure
2=Convinient in extreme weathers
3=Clean/proper way
4=Others: _____

Q.27 In your opinion what are the problems of having the latrine in your house? _____

_____

_____

_____

Q.28 Are you satisfied with the process followed to select your house and the installation of the latrine ? If not, *why not.* _____

_____

Q.29 In case of breakage, who repairs the latrine and how? _____

_____

_____

Q.30 What is the most frequent fault? _____

Evaluation Of The GOP/UNICEF WES Programme 1992-98
Questionnaire for Handpump Survey

Date of Interview: ___/___/_____

	Name	Signatures	Date
Enumerated by			
Verified/Coded by			
Entered by			

Identification

Q.1 Province/Area **PUNJAB** [1] *1=Punjab 2=Sindh 3=NWFP 4=Balochistan 5=AJK 6=FANA*

Q.2 District: _____ [ ][ ][ ]

Q.3 Union Council: _____ **Q.4** Village: _____

Q.5 Was this handpump installed under GOP/UNICEF WES Programme? [ ] *1=Yes 2=No 3=Do not know*

Q.6 Year of Installation of handpump: *Month* _____ *Year* _____
Type of hand-pump: [ ] *1=Afridev 2=Abyar 3=Abjoo*

Q.7 Is the handpump currently working (Please check this)? [ ] *1=Yes 2=No*
If Not, *Why Not?*_____
*Since how long is it not working?*_____ *months*

Q.8 Is it a communal HP? [ ] *1=Yes 2=No*

Q.9 Is the HP inside compound? [ ] *1=Yes 2=No*

Q.10 Number of handpump users: Household:No._____

Q.11 Is the handpump currently in use? [ ] *1=Yes 2=No*
If Not, why not?_ _____

Q.12 Does the handpump give heavy/noisy pumping? [ ] *1=Yes 2=No*

Q.13 Does HP give water after 2/3 strokes? [ ] *1=Yes 2=No*

Q.14 Does the handpump have proper Drainage Channel? [ ] *1=Yes 2=No*

Q.15 Does the handpump have proper soak-pit or alternative? [ ] *1=Yes 2=No*

Q.16 Is there any latrine/Garbage within 50 feet radius? [ ] *1=Yes 2=No*

Q.17 Is there any dirty water pond nearby? [ ] *1=Yes 2=No*

Q.18 Is the drainage clean? [ ] *1=Yes 2=No*

Q.19 Is the surrounding area of handpump clean? [ ] *1=Yes 2=No*

Q.20 What is the quality of water from handpump in terms of taste and color? [ ] *1=Acceptable 2=Not acceptable*

Q.21 What was the source of drinking water before handpump installation? _____

Q.22 How far was the source of drinking water? _____*kms*

Q.23 What was the quality of water in terms of taste and color? ☐ *1=Acceptable 2=Not acceptable*

INTERVIEW WITH MEN (Group meeting)

Q.24 Number of Men Participants: *No.*_____

Q.25 How many people contributed for arranging for the handpump construction? *No.* _____

Q.26 Did the village men give priority to the opinion of the women for the handpump siting? ☐ *1=Yes 2=No*
If NOT, *Why not?* _____

Q.27 Is there any caretaker for this handpump? ☐ *1=Yes 2=No*
If YES, do you think the caretaker is doing his job satisfactorily? ☐

Q.28 Are you happy with the handpump so far, and do you have any comments? ☐ *1=Yes 2=No*
Comments: _____

Q.29 Do you think that after the use of handpump water, incidence of Diarroea has reduced in your Area? ☐ *1= Reduced 2 = Same 3 = Increased 4 = Do not know*

Q.30 Do you have any Water Management Committee (WMC)? ☐ *1=Yes 2=No 3=Do Not Know*

Q.31 How many members are there in the Committee? *No.* _____

Q.32 Is this WMC functioning at the moment? ☐ *1=Yes 2=No 3=Do Not Know*
If No, then *Why not?* _____

If Yes, has the WMC established any maintenance fund? ☐ *1=Yes 2=No*

Q.33 Are you happy with the functioning of WMC? ☐ *1=Yes 2=No*
If No, *then why not?* _____

Q.34 Has any NGO worked in your village ever? ☐ *1=Yes 2=No*

Q.35 In which sectors?_____

Q.36 What role do you think an NGO could play in a water supply and sanitation programme? ___
_____

INTERVIEW WITH WOMEN (Please Interview Three Women User)

Q.34 Did anybody consulted you for the selection of handpump site? W1 ☐ W2 ☐ W3 ☐ *1=Yes 2=No*

Q.35 Are you happy:

	W1	W2	W3
a) With the handpump site in the village?	☐	☐	☐
b) With distance to walk?	☐	☐	☐
c) Amount of water per stroke	☐	☐	☐
d) Availability of water throughout the year	☐	☐	☐
e) Quality of water (taste, sight)	☐	☐	☐

1=Happy 2=Indifferent 3=Not Happy

Q.36 Which water do you use for: W1 W2 W3

a) Drinking/Cooking
b) Washing
c) Sanitation
d) Agriculture uses

1=handpump
2=well
3=Stream
4=Other

Q.37 Do you think that after the use of handpump water, incidence of Diarroea has reduced in your house? ☐ *1= Reduced 2 = Same 3 = Increased 4 = Do not know*

Q.38 Do you store water? W1 W2 W3 ☐ ☐ ☐ *1=Yes 2=No*

Q.39 If you use different water sources do you keep the water separate during storage? W1 W2 W3 ☐ ☐ ☐ *1=Yes 2=No*

Q.40 How do you separate the water in the compound during storage? W1 W2 W3 ☐ ☐ ☐

1 = using different types of containers
2 = different storage places
3 = others

Q.41 Have you prepared safe water storage place (elevated and covered)?
Q.42 Do you clean water container before fetching water?
Q.43 Have you ever received any Hygiene Education?
Q.44 Has a Lady Hygiene Promoter from LG&RDD ever visited you?

W1 W2 W3 ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ *1=Yes 2=No*

Q.45 How many times she visited? W1 W2 W3 ☐☐ ☐☐ ☐☐

Q.46 How many women gather to listen to her? W1 W2 W3 ☐☐ ☐☐ ☐☐

Q.47 What did she talk about?

W1	W2	W3

Q.48 Did you like the session/s? W1 W2 W3 ☐ ☐ ☐ *1=Yes 2=No*

Q.49 What did you learn from the session/s?

W1	W2	W3

Q.50 How has this education changed your habits?

W1	W2	W3

Q.51 What benefits do you think you are getting from the hygiene education?

W1	W2	W3

Q.52 In your opinion, what problems do you have in practicing hygiene education?

W1	W2	W3

HANDPUMP CARETAKER

Q.53 Are you caretaker of this handpump? ☐ *1=Yes* *2=No*

Q.54 How many times has this handpump broken down? *No.* _____

Q.55 Have you done any repair work on the pump? ☐ *1=Yes* *2=No*

Q.56 What is the most frequent problem? _____

Q.57 How far is the spare parts shop from the village? _____ *km*

Q.58 Did you receive any training for Operating and Maintenance of this handpump? ☐ *1=Yes* *2=No*

If Yes, who gave you that training? ☐ *1 = LG&RDD*
2 = Others Specify: _____

Q.59 Do you think that the training is helping you for operating and maintaining the handpump properly? ☐ *1=Yes* *2=No*

Q.60 Are you satisfied with the training? ☐ *1=Yes* *2=No*
If Not, *Why not?* _____

Q.61 What problems do you face for operation & maintenance of this handpump?

_____

Evaluation Of The GOP/UNICEF WES Programme 1992-98

Questionnaire for Primary School Survey

Date of Interview: ___/___/_____

	Name	Signatures	Date
Enumerated by			
Verified/Coded by			
Entered by			

Identification

Q.1 Province/Area **PUNJAB** [1] *1=Punjab 2=Sindh 3=NWFP 4=Balochistan 5=AJK 6=FANA*

Q.2 District: _____ [ ][ ][ ]

Q.3 Union Council: _____ **Q.4** Village: _____

Q.5 Name of School: _____

Q.6 Total number of students in the school? [ ][ ][ ]

Hand Pump

Q.7 Does school have any handpump installed? [ ] *1=Yes 2=No*

Q.8 Was this handpump installed under GOP/UNICEF WES Programme? [ ] *1=Yes 2=No 3=Do not know*

Q.9 Year of Installation of handpump: Month _____ Year _____

Q.10 Is the handpump installed inside school compound? [ ] *1=Yes 2=No*

Q.11 Is the handpump currently working (Please check this)? [ ] *1=Yes 2=No*
If Not, Why Not? _____
Since how long is it not working? _____ months

Q.12 Is the handpump currently in use? [ ] *1=Yes 2=No*
If Not, why not? _____

Q.13 Who uses the handpump the most? [ ]
1=Teachers
2=Students
3=Others: _____

Q.14 What are the main uses of water from the handpump?
a) Drinking [ ]
b) Use for Latrine [ ] *1=Yes 2=No*
c) Others [ ] *specify:* _____

Q.15 Does the handpump have proper Drainage Channel? [ ] *1=Yes 2=No*

Q.16 Does the handpump have proper soak-pit or alternative? [ ] *1=Yes 2=No*

Q.17 Is there any latrine/Garbage within 50 feet radius? [ ] *1=Yes 2=No*

Q.18 Is the drainage clean? *1=Yes 2=No*

Q.19 What is the quality of water from handpump in terms of taste and colour? ☐ *1=Acceptable 2=Not acceptable*

Q.20 What was the source of drinking water before handpump installation? _____

Q.21 How far was the source of drinking water? _____*kms*

Latrine

Q.23 Does school have latrine facility? ☐ *1=Yes 2=No*

Q.24 How many latrines ? ☐☐

Q.25 Was the latrine/s constructed under GOP/UNICEF WES Programme? ☐ *1=Yes 2= No 3=Do Not Know*

Q.26 Year of construction of latrine/s: Month _____ Year _____

Q.27 Type of latrine/s? ☐ *1 = VIP 2 = PFL 3=Others*

Q.28 How many latrines are currently in usable condition? *No.*_____

Q.29 Are these latrine/s currently in use? ☐ 1=Yes 2=No
If Not. *Why Not?*_____

Q.30 Who uses latrines the most? ☐ *1 = Teachers 2 = Students 3 = Others*

Q.31 Is the condition of the latrine? ☐ *1=Clean 2=Dirty*

Q.32 Is there any bad smell in/around the Latrine? ☐ *1=Yes 2=No*

Q.33 Presence of flies? ☐ *1=Yes 2=No*

Q.35 Is there any water source within 50 feet radius? ☐ *1=Yes 2=No*

Q.36 Were/was the latrine/s locked? ☐ *1=Yes 2=No*

Environmental Sanitation and Personal Hygiene Education

Teachers Focus Group

Q.37 Number of teachers present in discussion? *No.*_____

Q.38 How many teachers presently have received Hygiene Education Training? _____

Q.39 Who gave the training?

Q.40 What did you learned from the training you received?

Q.41 Do you give children Hygiene Education Instruction? ☐ *1=Yes 2=No*

Q.42 What do you teach and how?

Q.43 Do you watch hygiene habits of children at school?

Q.44 Do you think that the provision of water supply facility had any effect on the habits of children and on school environment?

Q.45 Do you think that the provision of sanitation facility had any effect on the habits of children and on school environment?

Q.46 Do you think that the Hygiene Education Programme had any effect on the habits of children and on school environment?

Q.47 Do you think that the provision of Water supply and sanitation facility at school had any effect on the student enrollment (Please also check records before and after the provision of facilities and note)?

*Enrollment before*_____ *Enrollment after*_____

Q.48 In your opinion what are the benefits of this programme if any?

Q.49 In your opinion what are the problems you and children face in practicing the hygiene education at school and how it can be improved?

Student Survey (please interview a group of children)

Q.50 Number of Students Participated: *No.*_____

Q.51 How do the children obtain a drink of clean water from? ☐

1 =the pump
2 =a water storage container in the school
3 =containers brought from home
4=combination of the above

Q.52 How do children drink water? ☐

1 = directly from the pump
2 = by dipping the communal glass in the container
3 = by using a ladle
4=combination of the above

Q.53 What problems do you face while drinking of water?

a) area around the pump very wet ☐
b) children do not wash hands before drinking ☐
c) one child unable to operate the pump ☐
d) everyone drinks from the same cup ☐
e) container not covered ☐
f) ladle left on the bench ☐

1=Yes 2=No

g) others ☐ *Specify*_____

Q.54 Do you use school latrine? ☐ *1=Yes 2=No*
If No, Why not? _____

Q.55 Where do you go for latrine? ☐

1=go out into fields
2=go home
3=wair till home time
4=others _____

Q.56 Do you flush after latrine use? ☐ *1=Yes 2=No*

Q.57 Do you wash hands after using latrine? ☐ *1=Yes 2=No*
If yes, *How?* _____

Q.58 Why is it important to wash hands? _____

Q.59 Who told you about Washing hands properly? ☐

1=Class Teacher
2=Somebody else in the school
3=Mother at Home
4=Nobody

Q.60 Where do you throw rubbish? ☐

1 = In the rubbish bin
2 = outside school fence
3 = in the school yard
4 = anywhere in the school

Q.61 Do your teachers tell you about proper?

a) Use of latrine ☐
b) Drinking water ☐
c) Hand washing ☐
d) Clean environment ☐
e) Personal hygiene ☐
f) Non of the above ☐

1=Yes 2=No

ANNEXURE 3

Provincial Report on NWFP

Enterprise and Development Consulting (EDC) Pvt. Ltd. Islamabad

EVALUATION OF
UNICEF/GOP/LGERDD WATER AND ENVIRONMENTAL SANITATION
(WES) PROGRAMME

DRAFT REPORT

On

Programme Coverage, Beneficiaries views, Technical Aspects, and
Women involvement

Including

Conclusions and Recommendations

May, 1999

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EVALUATION OF GOP/UNICEF FUNDED WATER AND ENVIRONMENTAL SANITATION (WES) PROGRAMME

SUMMARY

1. UNICEF assisted Water and Environmental Sanitation (WES) programme was implemented by Local Government, Environment and Rural Development Department (LGERDD) during the period 1992-1998. The programme has wide spread coverage and has been implemented in seventeen districts of the North West Frontier Province (NWFP). In addition to community water supply and sanitation, the programme has components of school sanitation, community participation and health hygiene education.

2. Under the WES programme, a total of 4,514 hand pumps and 22,800 latrines have been installed providing water supply service to 677,100 persons and sanitation service to 182,400 persons. In case of school programme a total of 174 schools have been provided with 86 hand pumps and 126 latrines both in Charsadda and Kohat districts.

3. Field visits and discussions with the beneficiary communities in the six selected districts conclude that the WES programme has fully been appreciated by the communities and Community Based Organizations (CBO). The programme have had positive impact on the health and general living condition of the rural populace, particularly the out reached people. Irrespective of the strengths and weaknesses identified during the exercise, the programme as a whole has been able to achieve most of its objectives.

4. Based on the results of the study, the following major recommendations are made. Detailed conclusions and recommendation are given in section 11.

   - The WES programme should be kept continued under the revised implementation procedure and site selection criteria, with special emphasis on school component.
   - The programme should have a component of technical input to take care of technical aspects of the facilities, e.g. hydro-geological investigations, design of filter, septic tank and latrines and safe disposal of wastes. These aspects have direct impact on the rural environment.

- The criterion of installation of HP out side compound should be relaxed due to security reasons. This will also help in better use of the facility by the women and children. Similarly criterion for installation of HP within existing water supply system should be, "the adequate level of service" instead of availability of infrastructure.
- The programme must be complemented with effective health and hygiene education programme. Female staff at district level, instead of divisional level, should be positioned with more conducive working environment.
- For better implementation of the programme, MIS should be developed and installed having M&E as its major component.
- The future programme should include solid waste management, as it is an integral component of environmental sanitation.

1. INTRODUCTION

UNICEF has engaged Enterprise and Development Consulting (EDC) for carrying out independent technical evaluation of the GOP/UNICEF Water and Environmental Sanitation (WES) programme which was implemented during the period 1992-98. The purpose of the evaluation is to assess the achievements of the programme, identify constraints and highlight the extent to which UNICEF has been able to meet the objectives of the programme. The result of the evaluation will be used by UNICEF to work with the GOP for improving the sector programme and to fine tune the UNICEF assisted WES component of the next country programme 1999-2003.

The following aspects are required to be covered during the evaluation:

- Policy Aspects
- Institutional and organizational Aspects
- Financial Aspects
- Technical Aspects
- Community Participation and Women's role
- Sustainability
- Overall performance and coverage
- Impact analysis

In order to answer some of the key questions raised in the TOR in relation to the above aspects, several activities were planned and carried out during the evaluation process. These included collection and review of existing data, review the programme progress and procedures, discussions with UNICEF, LGRDD office and field staff, NGOs and CBOs. The process also included site visits to installed facilities, field observations and interviews with beneficiary communities including women.

It is worth mentioning here that certain confusion was noticed among various stakeholders regarding nominclature of the programme. The hand pump and latrine programme was differently named by different people, e.g. WATSAN, ACWATSAN, Low Cost Water supply and sanitation, SAP and WES programme. For evaluation purposes, however, any HP and latrine propgramme implemented between 1992 and 1998 and having UNICEF contribution in software or hardware has been considered as part of WES programme

2. EVALUATION IN NWFP

In NWFP, besides meetings and discussions with various stakeholders, the major component of the evaluation was to conduct field survey. The following six districts were covered under the survey:

1. Peshawar
2. Swabi
3. Abbottabad
4. Kohat
5. Karak and
6. D.I. Khan

These districts were selected in consultation with provincial LGERDD and UNICEF. In each of the six districts, 35 HP, 68 latrines and 3-4 schools were to be covered. However, since school programme was implemented through Pak-CDP in Kohat and Charsadda districts only, therefore 10 schools from each of the two districts were covered.

During the survey work, meetings with LGERDD field staff, beneficiaries, and CBOs were regularly conducted. Notes of the meetings, findings and views of the stakeholders including field observations are provided, in a summarized form, at annexure I. The survey was conducted by three 2-member teams. Each team comprised of one male and one female member. Before starting the survey work, the teams were trained in the filling up of questionnaires. The female member was given the responsibility to contact women and fill up the women portion of the HP questionnaire. The latrine questionnaires could be responded to by the male or female and accordingly both the team members filled up these questionnaires. Where both latrines and HP were installed in a village, One HP and two latrines around the HP were covered. However in majority of the cases the situation was that either only HP or only latrines were installed according to the community need and priority. In such a case only the available facility was visited.

3. THE PROGRAMME PROGRESS

The WES programme in NWFP, had two components; 1, the community level programme and 2, the school programme.

3.1 The community level programme

The community level programme was implemented in 17 districts of NWFP. During the programme period (1992-98), a total of 4,514 hand pumps (HP) and 22,800 latrines were provided. Out of these, 2,835 HP and 18,000 latrines were procured by UNICEF and handed over to LGERDD. The balance 1,679 HP and 4,800 latrines were procured by LGERDD under the ADP (Social Action Programme) financing. All of the materials have since been distributed to various districts. However inspection of the stores in the six selected districts revealed that some of the materials are yet to be handed over to the communities due to ban on the programme by the provincial government. It was also found that a considerable number of materials distributed are yet to be installed by the communities in some of the districts. District wise distribution of facilities in the six selected districts is given in the following table.

	District	No. of HP			No. of latrines		
		Provided	Installed	Balance	Provided	Installed	Balance
1	Peshawar	283	283	-	3114	3114	-
2	Swabi	287	287	-	3140	3140	-
3	Abbottabad	218	206	12	868	868	-
4	Kohat	971	971	-	3325	3325	-
5	Karak	475	475	-	3000	2766	234
6	D.I.Khan	118	112	6	1148	1148	-
	Total	2352	2334	18	14595	14361	234

3.2 Population Coverage

The following table shows approximate number of beneficiaries who have been provided with water and sanitation services under the WES programme in all of the 17 districts. The calculations are based on an average figure of 150 persons served per hand pump and 8 persons served per latrine.

Sector	No. of facilities installed	Population served	%age coverage	Remarks
Water Supply	4,514	677,100	5.02%	%age of the total population of NWFP
Sanitation	22,800	182,400	1.35%	

3.3 The School Programme

The school component was implemented in government girls primary schools. The programme was implemented by Primary Education Programme (PEP) through Pak-CDP. Two districts were covered i.e. Kohat and Charsadda. Some facilities were seen in schools of other districts also but they were provided out of the community level programme.

A brief review of the school programme was carried out. A total of 300 latrines and 160 HP along with accessories were provided to Pak-CDP out of which 126 latrines and 86 HP have been installed. The balance 174 latrines and 74 HP are laying in the stores of respective DEOs and Pak-CDP. The school programme is currently suspended due to dispute between Pak-CDP and Primary Education Directorate. The following table shows the over all progress.

No.	District	No. of schools covered	No.of facilities installed		Balance	
			HP	Latrines	HP	Latrines
1	Charsadda	116	37	126	74	-
2	Kohat	58	49	-	-	174
	Total	174	86	126	74	174

4. THE PROGRAMME IMPLEMENTATION

4.1 Project implementation steps

A proper and well-defined procedure was devised by LGERDD for implementation of the programme. A 19-steps list was developed highlighting the procedure adopted for project implementation. These steps are given below.

1. UNICEF give programme orientation to Assistant Directors.
2. Assistant Directors brief District staff on programme.
3. LG&RDD/UNICEF train the Sub-Engineer, Technicians, Supervisors, Union Council Secretaries on WATSAN programme.
4. Union Council Secretary informs villagers about the WATSAN programme.
5. Community submit request for hand pump's/latrines to Assistant Director's office through Union Council secretary.
6. Union Council Secretary/Technician assess feasibility and recommend sites to Supervisor.
7. Supervisor prepares a priority list of feasible schemes for Assistant Director's approval.
8. Union Council Secretary, Supervisor and Technician assist villagers to form Users committee.
9. Union Council Secretary , Supervisor, and Technician orient Users Committee operation and maintenance responsibilities.
10. Supervisor releases material to committee members.
11. Technician train Caretaker on hand pump operation and maintenance during installation.
12. Technicians give spare parts to the caretaker.
13. Sub-Engineer/Technician conduct refresher training for caretaker at Union Council level.
14. Union Council Secretary/Technicians train village Masons by constructing demonstration latrines. (1 Pour Flush, 1 VIP).
15. Latrine materials to be issued to the village committee members through Union Council Secretary.
16. Union Council Secretary will monitor the progress of village latrine construction.

17. Union Council Secretary will encourage village committee members to promote sanitation to all village households.
18. Assistant Director / Union Council Secretary hold monthly meeting to review programme progress.
19. Assistant Director to mobilize local resources (e.g MNA/MPA, Union Council Funds) to meet village latrines and drainage demands.

4.2 Site Identification Criteria

Criteria were developed for identification/selection of village/site for installation of HP and latrines. The criteria is listed below:

A. Criteria for the selection of village/site for hand pump programme

1. Deprived areas/villages where there is no reliable source of water to provide potable and adequate water. For example in places where people collect water from an unprotected community well, polluted stream or canal, walk considerable distance to fetch water from any source.
2. Area/village where there is no proper water supply scheme and where there is no danger of the HP to be taken as secondary source of drinking water. NO hand pumps to be installed in wells where villagers have installed electric motor for supply of water.
3. Selected village/area should be such that Afridev HP is technically feasible to be installed i.e. depth is in the range of 30' – 170' which is depth limit of Afridev. In case of installation in open well, the minimum depth of installation should be 30'. In water logged areas and places where community wells are not available, drilling should be cone up to a matured depth so that wells do not get dried up.
4. The site selected for HP should be a community place and accessible to women and children who are the principal carriers of water in rural areas. This is a community HP and each should serve 10-15 houses or 150-200 users.
5. Preference should be given to those villages where people are willing to work on self-help basis for installation of HP as well as for the routine operation and maintenance of the HP.

B. Criteria for the selection of village for sanitation programme

The following criteria should be taken into consideration while selecting village/s for sanitation programme:

1. Village/s with clustered house where problem of privacy/ convenience for defecation can be seen easily especially for women.
2. Village/s should have either existing water supply facilities (like piped schemes, individual hand pump/wells) or feasibility of community hand pump exists in the village.
3. Village/s where the two technology of pour-flush and VIP latrines are feasible. This need to be assessed by looking in to the following:

    - availability of water (for Pour Flush latrines)
    - affordability of villagers to build latrines.
    - Low ground water table for VIP latrines.

4. Size of the village to be minimum of 150 household to a maximum of 500 household.
5. During the survey of the village, assess the interest or willingness of the community to build their household latrines. Give priority to these village/s where comparatively the awareness, interest and willingness is better.

4.3 Role of different organizations

Several government and non-government organizations were involved in implementation of the programme, e.g. UNICEF, LGERDD, DPE, and Pak-CDP. The roles and responsibilities of each organization/department were defined in the Provincial Plan of Action (PoA) and are provided at annexure - II. Major role of these organizations are indicated below:

UNICEF was to provide technical and institutional support. This includes establishment of MIS, training /workshops for the project staff, develop linkages between government and Pak-CDP.

LGRDD's major role was to implement the project and coordinate and supervise day to day activities. Mobilizing community in execution as well as O&M of the facilities,

carrying out of health and hygiene activities through female workers and monitoring of the programme were the responsibilities of LGERDD.

Pak-CDP role was to train LGERDD and DPE staff, develop linkages among partner CBOs and provision of technical support to CBOs. Pak-CDP also started installation of facilities in schools as contractors to the project till suspension.

In accordance with the aforementioned arrangements, procedure and criteria, two models were adopted for district level programme implementation:

Model 1: Materials issued to the users by AD LG&RDD,
Model 2: Materials issued through Pak-CDP.

In case of model 1, the LGRDD staff i.e. secretary UC would identify the site and following the above mentioned steps and criteria, the material were then handed over to the beneficiaries for installation. In some of the cases, local; CBOs were involved in the process. Pak-CDP identified and co-ordinated 60 CBO's for LG&RDD.

Model 2 was implemented in Peshawar, Charsadda, Mardan, Nowshera and Kohat only. The implementation was through active participation of the CBOs. Pak-CDP would identify and mobilize the CBO's , the materials would be handed over to them and the responsibility of distribution and installation rested with the concerned CBO. The Pak-CDP role was training, motivation and hygiene education

5. VIEWS OF BENEFICIARIES/CBOS REGARDING THE PROGRAMME

During visits to hand pumps and latrine sites in four districts of NWFP, several beneficiaries including CBOs, were contacted and comprehensive dialogues were held with them. The WES programme was highly appreciated at almost every level and every where. It was observed that the programme really addressed the basic need of the out reached and neglected communities particularly the communities deprived of the main projects due to scarce and thinly populated behavior. Most of the respondents were happy with the performance of the installation and the procedure and were demanding more HP and latrines for the unserved areas. There were however some constructive criticisms and suggestions in relation to the criteria, procedure and financial contribution.

5.1 Criteria

The criteria for selection of hand pump site do not address the requirement of some of the communities having typical cultural/traditional behavior. e.g. installation of hand pump out side the compound along the roadside. This criterion although not specifically mentioned in the main criteria list developed by LGRDD, but was mostly followed, has the following reservations from the beneficiaries point of view:

1. Insecurity of the installation
2. Playing of children with the installation thus damaging it
3. Little use by women in communities having women privacy tradition

The beneficiaries suggested that the hand pump should be allowed to be installed inside the compound in the extended family system. This will not only enhance the use of the HP but will also be more secured and properly maintained. Similarly the criterion of not installing of the HP in areas where PHED or other piped scheme exists is also not realistic. There are evidences where water supply infrastructure exists but level of service is either poor or not existing at all. In such cases the high demand of the community for installation of HP can be considered as justified and criteria need to be relaxed accordingly.

5.2 Revolving Fund System

The idea of revolving fund was criticized by many people particularly the CBO's due to several reasons.

1. A high risk to CBO integrity. The people had speculations that the CBO is selling the facilities they obtained free from the government.
2. The poorest people do not have latrine facilities and are the neediest. They can not afford to construct the superstructure. They can not be convinced to spend Rs. 3000-8000 for an offer of pan and pipe and even that on payment. That is why most of the CBO's had materials dumped in their stores with little demand from the poorest people. Only house holds having started new construction had demand for latrines and accordingly were issued to them.

5.3 Lengthy Procedure with CBO's.

Some of the CBOs complained of the lengthy procedures and deduction of 2% materials by AD office for covering damages.

5.4 Contribution towards capital cost

The project share in case of latrines was criticized by most of the beneficiaries and CBOs. It was demanded that the project should increase its share of financing. The reason they quoted was because the latrines are needed mostly by the poorest and the poorest can not afford to construct the latrine (minimum cost of latrine is Rs. 8000 for cemented latrine and Rs. 3000 for mud/wooden one) and therefore they remain deprived of the facility.

Alternatively, construction materials could be arranged by the CBO in bulk for the whole village. This will reduce the cost of material and also facilitate its availability. This idea came up because individual house hold can not arrange e.g. 200-500 bricks, a bag or two of cement, a few cubic feet of sand, crush and a few kg of steel. If these materials are arranged in bulk for the whole village then every one would like to purchase and install the latrine. Another option could be co-financing by the CBO for the poorest community.

5.5 Maintenance Fund

The concept of maintenance fund for HP could not be seen materialized in many cases. The HP installed through a family, mostly the financially sound and influential one, had to care for the maintenance of the HP. It is however suggested that funds should be collected by the CBO and CBO to has take care of HP maintenance through HP caretakers.

6. TECHNICAL CONSIDERATIONS

6.1 Types of HP

There are various types of hand pumps.

- Afridev or Indus hand pump: This type of pump was developed in Africa and is used for installations in wells upto a depth of 50 meters. These pumps called Indus in Pakistan are manufactured by DACAAR having a factory in Sawabi district. Most of the pumps installed under the WES programme are from DACAAR factory. Recently an other factory has been established in Peshawar. Some private shops in Lahore have also started manufacturing of the pumps.
- Kabul Pump: This pump manufactured in DACAAR factory is similar to Indus pumps. The only difference is the head capacity. Kabul pump can lift water from 20 meters depth. This type of pump is manufactured for water supply programme in Afghanistan
- Locally made pump: This is a small type of pump and is made locally. There are several shops in Peshawar making these pumps. The pump is having no delivery head and can operate in areas having water level up to 20 feet.
- Circular handle type of pump: This type of pump is similar to locally manufactured hand pump. The only difference is in its handle. Instead of straight handle, it operates with a circular wheel.

6.2 Design of HP

The most important factor in HP programme is the proper design and construction of bore hole. The well defined procedure for tube well design is that a bore hole is drilled in the ground up to a depth which provides adequate water potential based on the assessment of the hydro geologist/engineer. The strata encountered are checked for its capacity to give water and the strata location and material size is determined. On the

basis of strata grain size and depth, the lowering material is designed. The lowering material includes housing/blind pipe and the filter. The holes in the filter called slots are prepared according to the size of the strata. The stock should have several slot sizes filters and the best suited to a particular condition should be adopted. This will greatly reduce the chances of sand discharging with water and hence successful HP installation. An other design aspect is proper placing of filter. During drilling, the driller should mark the location of sand and water bearing strata and the filter should be placed right against the water bearing strata and not the clay. This will stop discharging of muddy water. Sandy and muddy water are not only un acceptable by the community for use but also causes damages to the plunger and other parts of the HP

6.3 Quality of the facility

During the filed visits, it was found that the HP manufactured by DACAAR are not only the most strong and successful but its parts are also standardized and facing no problem during installation and maintenance. It is there fore important that before purchase of the HP, the bidders should be either pre-qualified or their product thoroughly checked before payment.

6.4 Latrines

A safe and convenient place for disposal of human wastes is called latrine. There are several types of latrines. Flush latrines, pour flush latrine, pit latrine, Ventilated Improved Pit (VIP) latrines, Flush and pour flush latines are similar in nature. The only difference is that flush latrine has got a flush tank containing water for flushing excreta while pour flush latrine uses a lota or bucket for flushing the wastes. Several design considerations are there. The P-trap used for stopping bad smell coming back should be properly installed and it should always be horizontal. Several people were heard to keep the p-trap tilted. This is wrong. An other important design consideration is the out let size of the pan. In the pans provided under WES programme, the out let dia is about 4" which is quite reasonable and allows to discharge human wastes easily while in other cases the out let dia of pan was found to be up to 2" which is the main reason of blockage

6.5 O&M of the facilities

A. Hand Pump

O&M of the HP is basically an issue that is closely related to regular follow-up and the availability of spare parts. The LGERDD district offices had some support in this regard but with the closure of the programme, they were not able to continue with. In most

cases there were complaints regarding non-availability of spare parts. In order to address this issue and ensure the sustainability of the installations, it is important that in each district, private sector should be encouraged and supported to establish their own HP business. The beneficiaries should be informed on the availability and approximate costs of the spares.

B. Latrines

Management of the latrines is not a financial but more or less a social and technical issue. Socially, latrines are considered dirty places and touching human waste for cleaning purpose is also considered a taboo, particularly by men. That is why in some of the cases where latrines get blocked, it is left and cleaned through sweeper or left unattended and the house hold return back to its original practice.

The design and construction of latrines also affects its maintenance. Proper design of pan, P-trap and pipe sizes in case of pour flush and proper design and installation of squatting slab and vent pipe in case of pit latrines ensures its easy maintenance. Informing the users on the tools for cleaning of the facility can also help its proper use.

6.6 Follow up

Successful installation and operation and maintenance of the facility depend upon regular follow up by the external agency. The more regular the follow up the more the motivation and encouragement to the users to use and maintain the facility. It was observed during the field visits that wherever the LGERDD staff personal efforts had gone into regular follow up, e.g. in case of D.I.Khan, the facilities were regularly maintained and were properly used.

7. ENVIRONMENTAL CONSIDERATIONS

The main objective of providing latrine facility to the community is to ensure clean environment and avoid contamination for better health. Therefore extreme care should be taken in the design, construction and use of latrines to avoid any detrimental impact on the environment particularly the underground water. In case of pit latrines, the chances of underground water pollution are limited due little or no use of water. However care should be taken to avoid construction of latrines in sandy formation. In case of pour flush latrines, the chances of under ground water pollution are high. The following measures should be adopted.

- As far as possible. the pour flush latrines with pits disposal should be avoided in areas where people use shallow water wells or shallow hand pumps for drinking purposes. In such cases septic tanks are recommended. Where piped water supply from a tube well is used then such type of technology can be adopted with out any risk.
- In case community use shallow water for drinking purposes, and pits type of pour flush latrines are the only option then the following guidelines shall strictly be followed.

  - In case of silty/sandy formation with water level below 15' the distance of disposal pits (and not the latrine pan) shall be kept minimum at 50 ft away from the source of water (well of HP)
  - In case of clayey formation with water level below 15 ft. the distance of pits shall be kept minimum at 30 ft from the source of water (well, HP)
  - With every 2 ft increase in the depth of water level, the horizontal distance can be reduced by 1 ft. However in any case the distance of latrine and pits from the source should never be less than 25 ft.
  - In case of water level above 15 ft, soakage pit system is never recommended. The alternative is septic tank properly designed and constructed under the guidance of a sanitary engineer.
  - The effluent from septic tanks should be disposed off either through soakage pits or through piped drains if possible and never in open drains. As filed observations have shown that discharging of septic tank water into open drains causes bad smell and nuisance and bad impact on environment associated with serious social problems.

The problem in soak pit type design is, it causes contamination of under ground water and open wells quality is suffered. On the other hand , septic tanks constructed by some people with out proper engineering design, creates un bearable smell in the streets having serious environmental problem.

8. COMMUNITY PARTICIPATION

Community participation was the main concept behind WES programme implementation. They were to be involved in all stages of project implementation and subsequent operation and maintenance. The beneficiaries were to contribute towards capital cost e.g. construction of bore hole and civil work for HP and construction of latrine except pan, pipe and p-trap.According to PoA, mobilization of the communities was the responsibility of the LGERDD. While Pak-CDP role was to train community nominee for caretaker and village level technician.

During the field survey and observations it was found that community participation was adequate so far their contribution and fulfilling of formalities are concerned. However it was noticed that adequate efforts were not put to form and strengthen formal community organizations/ committees.The dependency was either on existing CBOs or in most cases non-formal groups or influentials. There were no signs of women involvement in the process. Even Pak-CDP did not emphasized on women involvement in programme implementation and O&M.

8.1 Maintenance committees

The Formal maintenance committees were almost non-existent. There were indications of formation of such committees, but were found non functional during the survey. It was also observed that formation of such committees were limited to collection of identity cards and recording names of the 4-8 persons on the agreement paper. Nothing more than that was found.

9. INVOLVEMENT OF WOMEN

Women of rural areas of NWFP play a major role in water and sanitation related issues. Because of the responsibilities, that are given to them in the family unit with respect to arrangement of daily water supply, sanitation and health, it is important to rightly assess the community perception of the role of women related to water and sanitation sector.

During the survey, it was observed that a deviation from pre-determined role of women was on the increase. Modernization, migration and media are bringing about changes in the perceptions of men with respect to women's role. The following general observations regarding involvement of women in the WES programme were made.

- Literacy rate among the women was found to be low. It is because, the opportunity for women to acquire knowledge, lessens as they grow older. Poor economic conditions of the rural family and social restrictions drive the female out of primary schooling at quite a young age. This was typically true for semi tribal societies and remote small hamlets. It was however observed that the trend is changing and literacy among the young girls was found to be comparatively high in case of big villages e.g. in Peshawar and Swabi districts.
- The women knowledge and awareness of health and hygiene is acquired through religious teachings. Most of the women were referring to the teachings of Islam regarding personal and environmental cleanliness.
- Women were said to be restricted in mobility, however many women were seen moving around in rural areas collecting water while observing pardah. In case of semi tribal areas like Sherakera in Peshawar and Karak, women were completely mobile out side their houses collecting water without observing traditional pardah.
- Although women are the main users and managers of WES related activities, yet their role was not seen in decision making regarding site selection and installation of HP. They were seemed to be satisfied with the decisions of their men regarding HP installation. There was however some role of women in site selection of latrines. NO women HP caretaker was seen or found during the survey.
- Women were generally found to be satisfied over site selection of HP and were very happy with the facility provided to them. Some of them had indications that they were informed about the project.
- No evidence of contacts of rural women were seen with out-side agencies, i.e. NGOs or GOs. Only in a few cases, women responded that some female workers visited their houses.
- No mobility and encouraging environment for female workers was seen when inquired from the AD offices.
- Poverty was not the only factor for unhygienic condition. Many houses of poorest families were seen extremely neat and clean, while some well to do people had dirty houses. (awareness, education, family back ground, social environment.)
- Touching excreta is considered as taboo. That is why most of the latrines were dirty particularly in schools. Chowkidars or teachers had no interest to clean them.

10 MONITORING AND EVALUATION (M&E) AND THE MIS

Monitoring is the continuous assessment of project implementation in relation to agreed schedules, and of the use of inputs, infrastructure, and services by project beneficiaries. Monitoring:

- Provides managers and other stakeholders with continuous feedback on implementation.
- Identifies actual or potential successes and problems as early as possible to facilitate timely adjustments to project operation.

Evaluation is the periodic assessment of a project's relevance, performance, efficiency, and impact (both expected and unexpected) in relation to stated objectives:

- Project managers undertake interim evaluations during implementation as a first review of progress, a prognosis of a project's likely effects, and as a way to identify necessary adjustments in project design. The use of mid-term reviews of ongoing projects has spread quickly in the last decade.
- Terminal evaluations, conducted at the end of a project, are required for project completion reports. They include an assessment of a project's effects and their potential sustainability.

The LGERDD adopted manually operated M&E system for progress monitoring of the programme implementation. No benefit monitoring or post evaluation was practiced during the implementation period. A quarterly progress report, mostly inadequately prepared, was prepared by LGRDD WES cell and submitted to Government. The form used for monitoring progress included total target, supply and installation status and expenditures incurred. It also contained the population served but with incomplete data. The progress reports were prepared based on the information received form the district offices. At district level monthly meetings were held to monitor the progress and identify bottle necks or weaknesses in the programme.

Establishment of management information system (MIS) was envisaged by UNICEF and was part of the WES programme but what was found in the LGERDD office was a computer with printer using typing software for progress reports and briefs. No proper software was developed for MIS. In fact there was no concept of MIS in the LGERDD.

11. Conclusions and Recommendations

11.1 Conclusions

- There was a high level of demand for additional HP and latrines through out the province irrespective of the geographical locations.
- Non-availability of spare parts made some of the HP non-operational. Several were operative on the basis of ad hoc repairs at local level. There are apprehensions that non-availability of spare parts could endanger the sustainability of the programme.
- The programme has an element of political influence, which besides violation of the criteria created frustration among the field staff.
- There is a high risk of negative environmental impact on the underground water particularly in those areas, where the ground water level is high.
- The technical input in terms of hydro geological consideration is minimum in the HP installation resulting in poor design of filter and shorter life of the facility.
- The quality/design of latrine pans was questioned resulting in frequent choking and replacements by the users with ones form the local market
- There was a high demand from the communities for relaxation in criteria of installation of the HP out side the compound for security reasons and maximum use by the women and children.
- Formal committees at community level were weak and almost non-existent.
- There was no indication of hygiene education for women in the areas visited.
- The design of septic tanks constructed and its effluent disposal process was in-appropriate resulting in bad smell and nuisance in the streets.
- Regular follow-up, either from UNICEF or from LGRDD side was not noticed in majority of the cases. This would have improved the situation.
- The field staff had complaints regarding non-availability of transport for field duty.
- People were fed up from frequent inspections and checking of latrines. As latrine site is considered a place of pardah and most people do not accept the place to be visited. Especially the inspection of latrines were highly criticized where these were sold out.
- There were complaints by filed staff about non-standardized spare parts

11.2 Recommendations

- The WES programme should be kept continued under the revised implementation procedure and site selection criteria, with special emphasis on school component.
- The programme should have a component of technical input to take care of technical aspect of the facilities, e.g. proper design of filter, septic tank and latrines and safe disposal of wastes, which is having direct impact on the environment.
- Private sector should be systematically developed in each of the WES district for HP maintenance service. Alternatively, adequate quantity of spare parts should be made available through AD offices.
- Political interference in site selection/identification should be minimized.
- The criteria of installation of HP out side compound should be relaxed due to security reasons. This will also help in better use of the facility by the women and children. Similarly criterion for installation of HP within existing water supply system should be, "the adequate level of service" instead of availability of infrastructure.
- The programme must be complemented with effective hygiene education campaign. Female staff at district level, instead of divisional level, should be positioned with better and more conducive working environment.
- Regular follow-up is a key to sustainable development, which should be ensured by the implementing agency as well as UNICEF.
- For better implementation of the programme, MIS should be developed and installed having M&E as its major component.
- The future programme should include solid waste management, as it is an integral component of environmental sanitation.

ANNEX - I

EVALUATION OF GOP/UNICEF/LGERDD FUNDED WATER AND ENVIRONMENTAL SANITATION (WES) PROGRAMME

Findings during Meetings and FVR

Date: 14th January 1999
Meeting With Assistant Director LG&RDD Nowshera, Mr. Fazal Wahab Khan

Major findings:

1. Community Based Organizations can play a significant role in successful implementation of the programme. Presently the role of CBOs is limited which needs to be enhanced in the future programme for which a comprehensive policy should be framed and adopted.
2. Secretary Union Council (UC) was the key person who would identify sites for hand pumps and latrines. He would inform the communities about the WES programme and invite applications. Initially the criteria were not strictly followed in some of the cases due to little demand. Later on however, the general public and political people came forward and started demanding the facilities for their areas. Accordingly the demand increased and the selection criteria were fully enforced.
3. Presently most of the sites are identified through recommendations by the concerned MPA. Some CBOs have also been involved in the programme. The CBOs are comparatively more effective in the programme particularly in observing of the criteria.
4. Politicians can not be avoided. Their role is generally considered negative but it proves to be positive in some cases where they are very much cooperative and useful for implementation of the programme. MPA/MNA and public open meetings are useful to give an opportunity to the public for complaints and criticizing any facility provided against the criteria. About 2% of the facilities have been installed against the defined criteria. The criteria is to install Hand Pump out side the house, while the influential want it to be installed inside the house because of the fact that there are several families inside one compound wall and all can use the same facility.
5. Technical problems: The programme also faces some technical problems, which should be considered in future programme. These problems are poor design of filter resulting in sand emission or choking of the filter, little knowledge of hydro geology resulting in uncertain water level depleting, non-availability of spare parts i.e. washers, check valve, plunger etc.
6. Presently demand of the people is more both for latrines and hand pumps. On the other hand supply is generally short.
7. More coverage has been achieved in Central districts, preference should be given to southern districts. It means the programme should be demand oriented.
8. Generally target is high and implementation is low due to delay in procurement of the materials.
9. The programme was also implemented in primary girls schools through PK-CDP.
10. Latrine programme was much useful. Motivation was effective resulting in improvement in hygiene practices.
11. Sanitation is more needed in central districts as compared to southern districts.

12. For addressing increasing problem of solid and liquid wastes in view of increasing population, the most effective tool is awareness and motivation. Using ones strength first to generate minimum waste and second to dispose it off properly. One of the major problems in this context is influx of afghan refugees. This problem has a direct impact on the environment and needs to be solved on political level.
13. The LG&RDD could also play a better role provided the people change its attitude towards tax paying.

Date 28th January 1999
Meeting with Assistant Director LG&RDD Peshawar, Mr. Yahya Tinoly and WES programme field staff Mr. Sheraz Ali Shah, Field Supervisor and Mr. Hakeemullah Technician.

Major Findings:

1. A total of ....HP and ....Latrines have been received out of which ....HP and .... Latrines have been distributed.
2. In some areas where PHED or other piped water supply system exists, the criteria restrict installation of hand pumps. The on-ground situation is such that a part of the village is deprived of the water facility due either to deficiency of the system or newly constructed houses or even a poor group who can not afford to pay for house connection. The criteria in such a case should be relaxed and should be based on the felt need instead of availability of physical infrastructure in the village.
1. The termination of the project left many trained people unemployed. The useful experience they have should be made use of. They should be either re-employed for continued programme or they should be supported to establish their own business which would not only help their earning but will also provide services to the hand pumps installed. Alternatively the UNICEF and community (water and sanitation committees) can jointly finance these technicians.
2. For areas having low water level, locally hand pumps should be used having little capital cost and easy maintenance with abundance of spare parts.
3. The programme was highly appreciated by AD and was of the opinion that it should be extended for the next phase.

Date: 29th January 1999
Meeting with Director Pak-CDP, Mr Zakaullah Khan, Mr. Humayun Engineer and Mr. Liaqat Gil ASO.

Major findings:

1. The project was implemented under Provincial Plan of Action (PPA) with four major organizations i.e. UNICEF, LG&RDD, PEP and Pak-CDP.
2. The programme had two components 1. Facilities provided to communities, 2. Facilities provided to primary schools.
3. The component 1., was implemented in two parts: 1., facilities provided directly by AD LG&RDD, 2., facilities provided by Pak-CDP. The process of identification and programme implementation was also different. In case of direct supply by AD LG&RDD, an application from the interested community member would be receive having recommendation of the concerned MPA. In some cases ex-UC/DC members were also involved in identification. The site was then visited by LG&RDD supervisor

or technicians, the criteria were discussed and the beneficiary were asked to start work. After completion of the community work, the facility was then handed over and installed. For this option, Pak-CDP identified and co-ordinated 60 CBO's for LG&RDD.

4. In case of supply by Pak-CDP, the implementation was through active participation of the CBOs. The materials would be handed over to CBO and the rest was the responsibility of the CBO. The Pak-CDP role was training, motivation and hygiene education. The component 2 was implemented by Pak-CDP in girls primary schools. They identified 270 schools in district Charsadda and Sawabi. Under the programme, 125 hand pumps and 3000 latrines were given to Pak-CDP. SO far Pak-CDP have installed 37 HP in Charsadda and 49 in Kohat. Pak-CDP has now terminated with PEP due to procedural differences.
5. Role of individual household and women were not concerns of Pak-CDP and they had therefore no comments to offer.
6. Pak-CDP provided training to caretakers and technicians and also LG&RDD field staff.
7. Monitoring and follow up of the programme was carried out by Pak-CDP. For this purpose they had developed special forms. They had complete record.
8. The Pak-CDP initiated a different procedure for fund enhancement of the CBO. They tried to establish a revolving fund. Under which instead of providing pan and pipe free, they charged the beneficiaries @ Rs. 100 per latrine. This resulted in generation of fund and more coverage. However response to such process has been limited so far.

Date: 2nd February 1999
Meeting with Programme Co-ordinator, Mr. Faheemullah.

Major findings:

1. Initially, UNICEF supplied materials directly to districts. Later on central store system was introduced which has both merits and demerits.
2. There is no follow up arrangement, where the facility installed is working or not or being used by the community or not. (in fact no benefit monitoring is carried out)
3. The role of NGO should only be motivation and technical support and not installation.
4. Little work with much more staff and expenditure by the NGO.
5. No coordination was observed with LG&RDD.
6. Cost of HP considerably reduced due to competition of contractors for its supply under the SAP programme.
7. Pak-CDP role was not much effective. They had no co-ordination with LG&RDD and no record has been sent to WES cell.
8. Market at Peshawar has now a days started manufacturing some of the spares for hand pumps.
9. Sanitation efforts need more concentration as compared to water supply.
10. The financial contribution of project is low.
11. Where felt need criterion is followed, the programme is much successful, but where the identification and selection is not need based, the sustainability is doubted.

Date 2nd February 1999
Meeting with Vice President and Finance Secretary of CBO at Wahid Garhi Peshawar.

Major Findings:

1. Two different policies for sanitation programme are in vogue in one village. One by PHED providing pan, pipe, cement, brick and skilled labor free of cost coupled with motivation through PHED staff, and second by Pak-CDP/UNICEF providing only pan and pipe at a cost of Rs. 100/-. The response is therefore slow. However some people who are in a process of constructing new houses demand latrines.
2. The latrine programme was not accepted by some of the people due to chances of contamination of under ground water having small plot sizes with open wells or local HP as water source and criteria of latrine water source distance not met.
3. Hand pump programme was not initiated in the village due to no demand form the community. Almost each house hold has got open well or local HP.
4. Some people changed the design of latrines from two soak pits to septic tanks for treating of the liquid wastes before discharging into the drain. This has however created another problem. Some of the tanks constructed without proper design, discharges untreated wastes into the drains causing bad smell beside other contamination.
5. One PHED tube well based scheme exists but it is not operational and the community is not ready to take it over due to high operational costs.
6. Some latrines had disposal problems with far away drain and improper drain pipe installation causing frequent blockage
7. People are fed up form inspections and checking of latrines. As latrine site is considered a place of pardah and most people do not accept the place to be visited. Especially where the project contribution is less that one tenth of the total cost of latrine.

Date: 3rd February 1999
Meeting with Field Supervisor, Technician, and Engineer at AD, LG&RDD office Abbottababd.

Major Findings:

1. A total of 218 HP were provided to Abbottabad out of which 206 have been installed. The balance were stocked at office store due to ban by the Chief Minister NWFP on the installation of hand pumps.
2. The programme was mostly implemented through secretaries union councils. In the initial stage, the secretary union councils and filed supervisor would inform people about the programme. Later on the demand of the people increased and they would come themselves for getting latrines and hand pumps.
3. Pak-CDP organized training programme for technicians and field supervisor. The technician would then train caretaker from the community.
4. Some political influence was experienced in the programme but in most of the cases, the criteria of HP installation was strictly followed.
5. Follow up and cheking is very difficult due to non-availability of transport facilities.
6. Demand for HP is increasing day by day. Demand is being submitted to DG office but no response from them.
7. UNICEF contribution in case of latrine is very low. Some of the people can not afford to spent Rs. 5000 against Rs. 300 from UNICEF side.

8. **Important Observation:** Some of the people mind frequent visits inside their houses. They say that only for Rs. 300 they are being disturbed and privacy affected.
9. The policy regarding sanitation is not uniform. The latrines programme implemented by other NGOs' e.g. SRSC, SUNGI is more successful due to more contribution (Pan+Pipe+cement+bricks). This however needs to be confirmed.
10. There is apprehension that HP programme may fail due to non-availability of spares and market. Some thing should be done for establishing/strengthening private sector. An option could be to support technicians establish their work shops in each district.
11. No programme for female health and hygiene education was implemented in the district resulting in less effectiveness of the latrines programme.

Date: 5th February 1999
Field visit to Wahid Garhi, Terai Payan, Ghani Lalzada Korona and Hakeem Abad, district Peshawar. Meeting with Community beneficiaries and field observations

Major Findings:

1. Most of the house hold were describing financial problem for not installation of latrine in their house. The availability of latrine materials in their houses indicates their sense of possession.
2. In some of the cases the house size was small which could not accommodate both fresh water well and latrine at safe distance.
3. Most of the latrines were distributed with out considering real felt need especially in Garhi Lalzada Korona.
4. Some of the hand pumps were delivering water with bad taste. This was mainly due to existence of waste water pond/drain nearby. In such a case either the hand pump installation should be avoided or the bore hole should be deep enough to stop infiltration of waste water into the aquifer.
5. In an other case the hand pump was giving sand and its water was not fit for use. The reason was poor design of the tube well.
6. The programme implemented in Ghani Lalzada Korona had little efforts of motivation and follow up as most of the latrines were un installed.

<u>Recommendations</u>

- The criteria for implementation of pour flush latrine programme in high water table areas should be the availability of tube well or remote source based water supply system. Other wise there are greater chances of under ground water contamination endangering the health of the water users. Alternatively, the design of latrine should include septic tank and drainage system.
- The hand pump should be installed away from waste water pond or the depth of the bore should be more to tap lower aquifer water.
- The tube well for HP should be properly designed by an engineer or hydro geologist to ensure sustainability of the facility.

Date 7th February 1999
Meeting with President of CBO at Aza Khel Peshawar and field survey.

Major Findings:

1. Most of the hand pumps were declared as failed due to water level depletion in the area. The hydro-geology of the the area and of the particular open wells were not properly studied before installation of the hand pumps.
2. Some of the pumps were shifted into the mosques due to reportedly security reasons.
3. Some pumps were shifted into private houses due to safety and security reasons for better maintenance, while these were still used by a number of house holds around the hand pumps.
4. The most serious problems in hand pumps breakage were rod breakage due to wear and tear and washers.
5. The resolving fund concept has seriously damaged the progress of the programme and the integrity of the CBO.
6. It was observed that hand pumps installed on road sides or open spaces were mostly damaged and un attended while those installed in the houses/compound and mosques were relatively functional. The larger number of failures can be attributed to existence of WSS in the village, depleting water level, and non-availability of spares in the area.
7. It was observed that no proper village committees for hand pumps were established. In most of the cases the respondents were unaware of the village or hand pumps committees. However, the village based CBO's were available and were known to most of the respondents. The conclusion could be that no proper efforts were made for organization of users or their motivation.

Recommendation

1. Proper hydro-geological assessment of under ground water should be carried out before installation of the hand pump.
2. Proper village committees should be established motivated and trained and the hand pumps should not be distributed with out effective committees.
3. The programme should have a regular monitoring and follow up component to ensure proper use of hand pumps.
4. Spare parts should be arranged, private sector should be supported to establish spare parts/repair shops in each district.
5. Uniform policy should be adopted for any programme run in the province irrespective of the source of funding.

Date 08-02-1999
Meeting with Ms. Riffat UNICEF representative in Peshawar Office.

Key questions

1. Do UNICEF act with in the frame work of SAP policy. What has been the UNICEF role in influencing sector policy for implementation of the programme.
2. Up to how much extent the UNICEF has been able to really monitor the WES programme and follow up.

3. What has UNICEF done in capacity building/training of LGRDD staff, NGO's/CBO's staff and community beneficiaries for better implementation of the programme.
4. What has been the role of UNICEF for making the department to strictly follow the criteria. As some of the HP's and latrines were installed against the criteria and procedure.
5. What steps have been taken by UNICEF for ensuring sustainability of the facilities.
6. What has been the financial contribution of UNCEF in the project and in the physical components.
7. What steps have been taken by UNICEF for ensuring technical feasibility of the facilities.

Major Finding in light of the above questions.

1. UNICEF has been trying and coordinating with the government for formulating sector related policies and is trying to implement its programme with in the frame work of the sector policy. The province is experiencing diversified policy, which has made the CBO's and the communities confused. There is a need for adopting uniform policy. No regular monitoring has been carried out by UNICEF due to limited staff and other resources. It has from time to time visited the sites.
2. UNICEF has financed and organized a number of training programmes, seminars and work shops. The training participants include, AD's, female field staff of LGRDD, caretakers from the communities and technicians.
3. There are reports from deviations from the criteria. However UNICEF has not been able to totally stop the practice due to political and other influences. However, is has been observed that only 5-10 % of the facilities have been installed deviating from criteria.
4. A combination of various efforts leads to the sustainability of the facilities. However, the primary objective of the UNICEF is to introduce the programme and create awareness among the depressed communities in sector related activities.
5. UNICEF is not contributing to SAP project at federal level as other donors do. UNICEF assists the programme at provincial level. Its contribution is a total grant and not loan. In the beginning of the project the UNICEF contribution was 65% which has now gradually reduced. The grant for the year 1998 was Rs. 8,56,000 against the provincial government contribution of Rs. 1,98,97,000 which is about 4 % of the total investment.
6. No technical staff has been employed by LGRDD or UNICEF for technical feasibility particularly the under ground water situation, design of tube well and filter, assessment of the under ground water potential and assessment of chances of containation of under ground wate due to infiltration of latrine liquids into wells.

Recommendations.

1. The latrine delivered to the house hold should not be left un installed. The house hold should install latrine within a specified duration or it should be retured.
2. A copy of the agreement between AD, LGRDD and Community for hand pump installation should be sent to UNICEF for review and record.
3. A hydro geologist /Engineer should be hired to properly assess the under ground water potential and design the tube well and prepare a complete technical feasibility.
4. The UNICEF contribution is very limited i.e. about 4 % of the total programme investment (1998). That too is in software components which has shown very

poor result/impact on the over all programme as has become clear from the field survey. UNICEF contribution should be increased at least up to 50% of the programme cost.

Date 10th February 1999
Meeting with Assistant Director LG&RDD Swabi, Mr. Akhtar Munir and WES programme progress officer Mr. Shibli and field staff

Major Findings:

1. The programme in Swabi district was mostly implemented through local CBO's. The criteria established for the programme was adopted with full spirit. However, some problems were faced while observing the criteria.
   - In the villages where water supply scheme existed, many people had serious demand due to non-availability of service. In some areas the existing systems remain non-operational for more than 20 hours due to break downs in electricity. The need in such cases was felt but criteria did not allow us. In such cases the criteria should be relaxed.
   - Due to obsevance of purdah and security reasons, women do not come out side their houses for collection of water. Installation of hand pump out side the house makes it less useful. Moreover, traditionally, women collect water from one well dug in the house of head of the extended family or influential. SO if hand pump could be installed on the ame well or in the same house on bore hole, it would be more useful for providing clean water to the people.
   - The hand pumps are less secured when installed on streets or road side. Chances of theft or damages are more. Similarly one takes leaste interest in repair and up keep of hand pump installed in no one's land.
   - In some hilly areas, bore hole or new well is difficult to dug. The available well inside the house which is already providing water to major portions of the village should be utilized for the hand pump
2. Political interference did create some problem but as a whole contributed positively towards implementation of the programme.
3. Regular follow up of the programme was carried out by filed staff, however, shortage of POL created some problem.
4. The decision regarding saving through stopping POL and removing technicians from service has posed serious threat to the programme. A little saving caused big loss. Recurrent budget contributing towards programme implementation should not be curtailed.
5. For implementation of the programme, a proper procedure was adopted.
   - In response to the application form a community,
   - feasibility was prepared and
   - a committee was established and their ID cards were kept and
   - an under taking was written on stamp paper for proper maintenance of the HP.
   - The hand pump was delivered in stages in order to ensure proper installation and use.

   The same procedure is follwed in political recommendation case also.

6. Women were not regularly involved and educated due to female staff establishment operating from divisional director's office. The female filed staff should be employed

in district office so as to have a close liaison with the women and their involvement in the programme implementation.

7. The hand pumps now a days purchased are having quality doubts. This is because of open tendering process at head quarter level who are bound to accept the lowest price. The quality should be preferred instead of price.
8. Spare parts should be provided by AD office during project implementation phase.
9. There is a serious need of school programme in Swabi district.
10. The technicians should be re-employed. They are having very good experience. Their experience can help in sustainability of the programme. UNICEF should finance these skilled people as they have been trained by UNICEF.
11. We have surplus pipes, people demand for extending down the well but AD has no authority to issue.

Date 10th February 1999

Visit to DACAAR managed INDUS pump manufacturing factory at Sawabi.

The factory is located at a distance of about 3 km from Swabi on Mardan road. Established in 1987, for UNHCR by DACAAR, the factory is operating on no-profit no-loss basis. The factory is producing two types of pumps, Indus and Kabul. The Kabul pump has recently been developed for use in Afghanistan. The production capacity of the factory is about 1600 pumps per year. Most of the staff employed is Afghan refugees. While some of them including Manager Administration is local.

Views of CBO Serai

- Criterai is to give latrines to poor people, while poor can not afford to construct.
- Maximum demand comes from the people who have started new construction.

Views of CBO Rashakai

- Procedure of handing over of latrines to CBO by the AD office is very lengthy.
- CBO faces very difficulties in AD office. E.g. deduction of 2% material for breakage.
- The demand is very high while availability of latrines is a problem
- The problem in soak pit type desing is it causes contamination of under ground water and open wells quality is suffered. On the other hand , septic tanks constructed by some people with out proper engineering design, creates un bearable smell in the streets having serious environmental problem.

Date 18th February 1999
Meeting with Assistant Director LG&RDD D.I.Khan, Mr. and WES programme progress officer Mr. Razaullah and field staff Safdar Saeed and visit to villages

Major Findings:

- A total of .... HP and .....latrines have been received by AD. So far .....HP and .....Latrines have been districuted.
- No or little CBO's have been involved in the programme.
- The major problem in D.I.Khan is saline water. The criteria does not allow installation of HP in saline water zone, while the communities in such area demand for HP due to non-availability of any other water source
- Schools are in most need of the HP and latrines particularly girls schools.

Report on Women Involvement

- In most areas of NWFP particularly, the central districts, women are observing pardah which hinders their direct participation in decision making regarding developmental activities.
- Where women do agriculture work out side the homes, they are mostly illiterate and are not empowered to take decisions.
- There are some indications of women involvement, e.g. elders women are well regarded by their sons and they can give useful suggestions. Where as they are not onvolved in site selection of hand pumps, they are mostly involved in any physical work carried out in side the house. In other words women are involved in decision making regarding site for installation of latrines
- In case of hand pump they are generally kept informed on the programme and can indirectly suggest to their men.

Technical Report on the Programme.

The programme has two major physical components:
A. Hand Pumps
B. Latrines

A. HAND PUMPS
A hand pump installation has two parts, a tube well (bore hole) or open well and the hand pump

1. Tube Well (components, hydrogeology, lowering materials, market strength)
For construction of the tube well, a bore hole is drilled in the ground upto a depth which provided adequate water potential based on the assessment of the hydrogeologist/engineer. The strata encountered is checked for its capacity to give water and the strata location and material size is determined.

After this the lowering material is designed based on the strata size and material. The lowering material includes housing/blind pipe and the filter. The holes in the filter called slots are prepared according to the size of the strata.

2. Hand Pump (types of pumps, installation requirements, training, spares, maintenance)

There are various types of hand pumps.

1. Afridev or Indus hand pump: This type of pump was developed in Africa and is used for installations in wells upto a depth of 50 meters. These pumps called Indus in Pakistan are manufactured by DACAAR having a factory in Sawabi district. Most of the pumps installed under the WES programme are from DACAAR factory. Recently an other factory has been established in Peshawar. Some private shops in Lahore have also started manufacturing of the pumps.
2. Kabul Pump: This pump manufactured in DACAAR factory is similar to Indus pumps. The only difference is the head capacity. Kabul pump can lift water from 20 meters depth. This type of pump is manufactured for water supply programme in Afghanistan
3. Locally made pump: .This is a small type of pump and is made locally. There are several shops in Peshawar making these pumps. The pump is having no delivery head and can operate in areas having water level upto 20 feet.
4. Circular handle type of pump: This type of pump is similar to locally manufactured hand pump. The only difference is in its handle. Instead of straight handle, it operates with a circular wheel.

Merits and Demerits

Design and installation guidelines.

The most important factor in HP programme is the proper design and constuction of bore hole. Several bores are available in almost each district. The starta obtained during drilling should be examined for its suitability for water and for filter slot size design. The filter size (slot size should never be uniform in all the cases. It depends on the size of sand particle obtained during drilling. The filter should be designed /specified after close examination of sand particles. The stock should have several slot sizes filters and the best suited to a particular condition should be adopted. This will greatly reduce the chances of sand discharging with water and hence successful HP installation. An other design aspect is proper placing of filter. During drilling, the driller should mark the location of sand and water bearing strata and the filter should be placed right against the water bearing strata and not the clay. This will stop discharging of muddy water. Sandy and muddy water are not only un acceptable by the community for use but also causes damages to the plunger and other parts of the HP.(A typical bore with lowering chart is attached to the report)

During the filed visits, it was found that the HP manufactured by DACAAR are not only the most strong and successful but its parts are also standardized and facing no problem during installation and maintenance. It is there fore important that before purchase of the HP, the bidders should be either pre-qualified or their product thoroughly checked before payment.

Management of the HP

Management of the HP is basically a financial issue together with availability of spares. In each district, private sector should be encouraged and supported to establish his own HP business. The beneficiaries should be informed on the availability and approximate costs of the spares.

Most important is the follow up of the facility for a minimu of two years. The more the follow up the more the motivation and encouragement of the users to use and maintain the facility.

B. Latrine:
A safe and convenient place for disposal of human wastes. There are several types of latrines. Flush latrines, pour flush latrine, pit latrine , Ventilated Improved Pit (VIP) latrines, Flush and pour flush latines are similar in nature. The only difference is that flush latrine has got a flush tank containing water for flushing excreta while pour flush latrine uses a lota or bucket for flushing the wastes. Several design consideration are there. The P-trap used for stopping bad smell coming back should be properly installed and it should always be horizontal. Several people were heard to keep the p-trap tilted. This is wrong. An other important design consideration is the out let size of the pan. In the pans provided under WES programme, the out let dia is about 4" which s quite reasonable and allows to discharge human wastes easily while in other cases the out let dia of pan was found to be up to 2" which is the main reason of blockage
Relevance to under ground water
The main objective of providing latrine facility to the community is to ensure clean environment and avoid contamination for better health. There fore extreme care should be taken in the design, construction and use of latrines to avoid any detrimental impact on the environment particularly the under ground water.

In case of pit latrines, the chances of under ground water pollution are limited due little or no use of water. However care should eb taken to avoid construction of latrines in sandy formation.
In case of pour flush latrines, the chances of under ground water pollution are high. The following measures should be adopted.

1. As far as possible: the pour flush latrines with pits disposal should be avoided in areas where people use shallow water wells or shallow hand pumps. In such cases septic tanks are recommended. Where piped water supply from a tube well is used then such type of technology can be adopted with out any risk. In case community use shallow water for drinking purposes, and pits type of pour flush latrines are the only option then the following guidelines shall strictly be folowed.

- In case of silty/sandy formation with water level below 15' the distance of disposal pits (and not the latrine pan) shall be kept minimum at 50 ft away from the source of water (well of HP)
- In case of clayey formation with water level below 15'. the distance of pits shall be kept minimum at 30 from the source of water (well, HP)
- With every 2 ft increase in the depth of water level, the horizontal distance can be reduced by 1 ft. However in any case the distance of latrine and pits from the source should never be less than 25'.

- In case of water level above 15', soakage pit system is never recommended. The alternative is septic tank properly designed and constructed under the guidance of a sanitary engineer.
- The effluent from septic tanks should be disposed off either through soakage pits or through piped drains if possible and never in open drains. As filed observations have shown that discharging of septic tank water into open drains causes bad smell and nuisance and bad impact on environment associated with serious social problems.

Implementation Procedure.

Pans and accessories should not be distributed. The project should increase its share because the latrines are needed mostly by the poorest and the poorest can not afford to construct the latrine (minimum cost of latrine is Rs. 8000 for pakka latrine and Rs. 3000 for katcha one). In case the project can not increase share, then materials required for construction of latrines should be provided to the village through CBO or other and should be distributed on payment. This is important because some people do not install the latrine because he can not arrange e.g. 200-500 bricks, a bag or two of cement, a few cubic feet of sand, crush and a few kg of steel. If these materials are arranged in bulk for the whole village then every one would like to purchase and install the latrine.

Technical Matrix

Management of the facilities

Management of the latrines is not a financial but more a social and technical issue. Socially, latrines are considered dirty places and touching human waste for cleaning purpose is also considered a taboo, particularly by men. That is why in cases where latrines get blocked, it is left and cleaned through sweeper or left unattended and the house hold return back to its original practice.

The design and construction of latrines also affects its maintenance. Proper design of pan, P-trap and pipe sizes in case of pour flush and proper design and installation of squatting slab and vent pipe in case of pit latrines ensures its easy maintenance. Informing the users on the tools for cleaning of the facility can also help its proper use.

Users are to be motivated and trained not a single time but several times. Particularly the women should be involved in the process. Awareness campaign should be launched using radio and TV.

Date 4th March 1999
Visit to Charsadda for School Survey along with Team 1 and meetings with school teachers and students

Major Findings:

- Most of the schools were found to have latrines facilities already provided but were unusable due to either breakage or choking with apparent reason of lack of maintenance. Howeyer the facilities provided by Pak-CDP were so far properly maintained and were in good and usable condition.

- The teachers were not not aware of hygiene education or WES training programme. The issue was later on discussed with Pak-CDP representative who produced the record showing details of several training programmes conducted for the teachers of district Charsadda.
-
- Proper HP maintenance system was not found in schools. In on of the schools, GGPS Utmanzai No.1, the HP was broken for the last 8 months. When asked about its repair, the head teacher expressed her in ability to repair it due to non-avaialabilityof funds and spare parts i.e. plunger. It is worth mentioning here that the school was in miserable condition due to non-availability of water and the latrines seven in number were also closed. Excreta was seen every where around the latrines premises. It is a grave situation and a matter of great concern for the planners that facilities provided, WES training conducted, caretaker training conducted and still the facility is broken and not maintained in spite of serious need Why?? (No or little realization---no access of recipients to their share of funds)
- No proper design was followed for HP installation. In one of the school i.e. GGPS Farmanabad, the HP was discharging muddy/silty water. This was due to poor design of filter against the underground stratum material size and misplacing of filter.

Annex-2

PROVINCIAL PLAN OF ACTION 1997-98

ROLES & RESPONSIBILITIES OF LG&RDD NWFP UNDER THE PoA FOR THE YEAR 199798

- D.G LG&RDD at provincial level will coordinate all the activities planned.
- WATSAN CELL will carry out necessary planning budgeting, logistic management and monitoring of the project implementation.
- The programme officer will act as coordinator of the cell.
- A.D. LG&RDD at district level will be responsible for day to day implementation mainly in WES facilities.
- District WATSAN team will be involved in identification and selection of communities to provide Hand Pumps and sanitation schemes, mobilizing community participate in execution as well O&M of the facilities.
- WATSN team will be supported by PAK-CDP's Mobile teams in selected districts
- Health Hygiene Education activities will be carried out by Female workers of LG&RDD under the support and guidance by the female sanitation coordinator based at provincial office of LG&RDD Peshawar and by Mobile teams of Pak-CDP.
- Monitoring will be conducted by the field monitoring officer based at provincial level and will submit regular report to D.G. LG&RDD.

ROLE & RESPONSIBILITIES OF MCP NWFP ACCORDING TO PoA OF UNICEF FOR THE YEAR 1997-98

- UNICEF will keep a liaison with the administrator, Municipal Corporation Peshawar (MCP) for the PAK-CDP's project activities on sanitation and hygiene in Piraghaib and other selected Urban Slums in Peshawar for an approach to urban WATSAN issues.

- The Chief Officer, the technical team of the engineering section, and the social organizer of the Corporation will work closely with PAK-CDP urban Mobile team, to carry out the sanitation and hygiene promotion activities in selected urban slums.

ROLE & RESPONSIBILITIES OF DPE NWFP ACCORDING TO PoA OF UNICEF FOR THE YEAR 1997-98

- DPE will be the focal Govt. agency responsible to implement the school sanitation and hygiene related activities under the PoA (1997-98)
- The P&D section of the directorate will coordinate and manage the activities at provincial level an will provide support to DEO to carry out the activities.
- The DEOs at district level will execute the project.
- The DEO staff will be involved in organizing trainings for school teachers and selecting schools for the provision of Hand Pumps an simple latrines.
- The DEO staff will identify and mobilize PTAs/CBOs in the areas from where the schools are selected.
- The Curriculum Wing of the DPE will work closely with the UNICEF to develop a training package on sanitation and hygiene and to incorporate in the regular teachers' training course.
- Key sanitation and hygiene messages & IEC material will be developed with the assistance of the UNICEF and Pak-CDP to include in the curriculum of the primary education.

ROLE & RESPONSIBILITIES OF UNICEF NWFP ACCORDING TO PoA OF UNICEF FOR THE YEAR 1997-98

- Technical support to both LG&RDD and DPE.
- Assist LG&RDD to establish a WES Management Information System (MIS).
- Support all the trainings/workshops for the staff of LG&RDD and DPE through Pak-CDP.
- Institutional support to Pak-CDP.
- Collaboration with PMU/CIP to improve sanitation in low income urban communities in the province.
- With assistance of Pak-CDP will coordinate with MCP to address the sanitation problems in Urban slums.
- Support the development/testing of the IEC material for the activities in the project.
- Incorporate the sanitation and hygiene in the teachers training course with the support of curriculum wing of the DPE.
- To develop linkages between Go's, and Pak-CDP so that Pak-CDP can play a supplementary/complementary role for Government to achieve the objectives.

ROLES & RESPONSIBILITIES OF PAK-CDP NWFP ACCORDING TO PoA OF UNICEF FOR THE YEAR 1997-98

- Capacity building of the LG&RDD and DPE staff to implement the planned activities.
- To build the capacity of the partner organizations and to assist them in identifying the CBOs in the designated Districts.
- Develop and facilitate linkages among partners and existing CBOs.
- Capacity building of the CBOs to implement WES activities under the PoA.
- Follow-up of the NGOs mobilized in 1996 to help them address the sanitation and hygiene in the communities they work.
- Apart from training the staff of DPE will also identify and mobilize the CBOs, PTAs, and VECs, in the area from where the schools are selected.
- Provision of technical support to plan and implement the improvement of water and sanitation facilities through low cost hand pumps and latrines and also in O&M of these facilities.
- Mobilization of MCP and PMU management to provide trainings to their field staff in Sanitation and hygiene promotion activities.