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# Water Supply and Sanitation in Pakistan



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## Current Status, Issues, and Future Strategies

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**Papers Prepared by the Multi-donor Support Unit for the  
Pakistan Human Development Forum**

- Elementary Education in Pakistan: Current Status, Issues and Future Strategies
  - Health Sector Strategy: Vision for the Future
  - Population Sector in Pakistan: Current Demographic Situation, Sectoral Issues, and the Way Forward
  - Water Supply and Sanitation in Pakistan: Current Status, Issues and Future Strategies
  - Governance in the Social Sectors in Pakistan: Analysis, Issues and Recommendations
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## Preface

This paper is an attempt at providing an overview of water supply and sanitation (WSS) sector in Pakistan. The paper includes a review of the sector in the context of development, discusses briefly the reform agenda and progress for the rural part of the sector under the Social Action Programme (SAP), the emerging challenges under devolution plan, and data on current state of coverage based on the 1998 National Census and the 1998 Pakistan Integrated Household Survey (PIHS). It then summarizes issues, as well as possible strategies, to assist in a constructive debate to contribute to pragmatic policy decisions.

This paper has been prepared in the context of the proposed Human Development Forum planned to be held in November 2001. It is not the intent here to prescribe definite parameters, formulas as well as solutions in order to accelerate the pace of development of this very critical sector. The main objective of the paper is to provide a background and a basis for a meaningful discussions. It may be worth mentioning here that improvement in the domestic water supply and sanitation services in the country has not received the consideration it merits. It remains neglected in terms of allocation of resources as well as adequate attention at policy and decision making levels. A possible reason could be that addressing WSS issues requires greater financial commitments upfront. On the other hand, the benefits of improvements in WSS far outweigh the initial higher costs. Clearly, an exhaustive debate is urgently required for a qualitative change in the policies and their focus in the context of the need and relevance of the sector.

An important change is already underway in the form of devolution. Service planning and decision making have been brought down closer to the end users. Sector activities have been defined and related more clearly and sharply in the newly created institution of Tehsil Municipal Administration. It is granted that there will be some initial "teething" problems which will need the government's attention for some time. However, it is imperative that time is not lost in undertaking a comprehensive and in-depth review of the sector and devising long term sector vision and an action plan to realize that vision. This is critical to capitalize on progress being achieved through devolution.

Finally, it may be said, that elementary education, primary health, population planning, as well as water supply and sanitation are all important indicators of the real development status of a country. If safe water is not available conveniently in adequate quantities and accompanied by sanitary conditions, people will use water which may not be safe, fetched from afar, and even if it leads to conditions which are not sanitary. And if that happens, it will undermine the public investments in education, health, and population planning as well. Hence, it is absolutely critical that issues besetting WSS are addressed adequately and at the first opportunity.

The efforts made by Mr. Nadir Abbas, Water Supply and Sanitation Advisor, Multi-Donor Support Unit, in finalizing this paper are thankfully appreciated.

Jahed-Ur Rahman  
Chief

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*This paper has been prepared against the backdrop of the following sector specific realities:*

- Pakistan currently **spends less than one quarter of a percentage point** of its GDP on water supply and sanitation
- Out of current coverage level of about 79 per cent, **57 per cent** of the population **depends on hand pumps** as the inside source of water
- About **half of the population** in Pakistan have **no toilet facility**
- In the context of **devolution plan**, there is a greater need to: (i) support capacity building at Tehsil/Taluka Municipal Administration and levels below; (ii) ensure services to end-users without disruption; (iii) facilitate the process of vision articulation and overall sector strategy; (iv) encourage public-private/NGO partnerships, both in the urban and rural areas, by exploring alternative models; and (v) continue Uniform Policies initiated under Social Action Programme
- There is a need to institutionalize a **water quality assessment**

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## Executive Summary

### *Background*

This paper is an attempt at providing an overview of water supply and sanitation (WSS) sector in Pakistan. It reviews the sector in the context of development, discusses briefly the reform agenda and progress for the rural part of the sector under the Social Action Programme (SAP), the emerging challenges under devolution plan and, data on current state of coverage from the 1998 National Census and the Pakistan Integrated Household Survey (PIHS). It then follows with a summary of issues as well as possible strategies listed for illustrative purposes.

### *Water Supply & Sanitation and Development*

Pakistan ranks 127 (out of 162 countries) on the UNDP's Human Development Index<sup>1</sup>. Sri Lanka ranks 81, India, 115, Nepal, 129, Bhutan, 130, and Bangladesh, 132. Investments in water can lead to improved health, education, cash income, food production, employment, independence, safety/security of rural women, leisure, as well as to reduced burden of disease. Inadequacy of coverage in terms of both water supply and sanitation are two immediate factors contributing to the country's low ranking. This is supported by the contention that nearly **80 per cent known human diseases are related to water** and also that unsafe drinking water, accompanied by inadequate sanitation facilities, constitutes one of the major causes of death and disability among the poor in the developing countries.

### *Current Status of WSS Coverage in Pakistan*

Although nearly 79 per cent households in Pakistan have an inside water source (a tap or a hand pump), **about 57 per cent households depend on hand pump**. That is, most households are not served by a public supply and depend on private/individual initiatives for water supply. The sanitation coverage, similarly, is also a cause for very serious concern. Though nearly 80 per cent households have access to a latrine, nearly half do not have access to any drainage and the remaining have an access to an open drain with few exceptions. Only 5 per cent households have access to a municipal garbage collection system while 47 per cent households have a "private" garbage collection system. The remaining 48 per cent households do not have any garbage collection system at all!

### *WSS Issues in Pakistan*

In terms of access to, and equity in and quality of water supply and sanitation services, issues in Pakistan can be summarized as follows. **Public sector investment in the sector are woefully inadequate**. For instance, **Pakistan spends less than one quarter of a percentage point of its GDP on water supply and sanitation**. What should be noted, however, is that even in the case of seemingly "good" coverage, supply of water is neither adequate (in terms of quantity) nor reliable or convenient. **There are hardly any water quality monitoring programs** implemented on a regular basis. Most quality testing is done at the planning and/or inception stage. Subsequent testing is limited to cases where there is report of a problem. Also, the mechanism for water quality testing gradually deteriorates with the passage of time or the close of project initiative. Hence, there is a big question mark about whether the water supply available for domestic use is safe or not. Sanitary conditions are appalling. **Toilets may be available but a proper system for disposal of wastes**

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<sup>1</sup> Human Development Report 2001, Human Development Indicators, p.141

**does not exist.** Systems for disposal of liquid and solid wastes are inadequate. The issues which plague the sector can be broadly placed in the following three categories:

- i. Convenience, Reliability, Quantity, And Quality Of Water Supply; Site Selection And Source Development, Appropriate Technology; Conservation
- ii. Equity, Community Participation And Awareness
- iii. Sustainability, Costs And Financing; Operation And Maintenance; Management; Role Of Private Sector; Evaluation, Monitoring, And Research

A major challenge has recently been introduced with the devolution process. The traditional public service delivery mechanisms have been abolished. A new Tehsil Municipal Administration (TMA) has been introduced with primary responsibility for planning and implementation of sector related activities. This strengthens the bottom up planning and accountability by bringing the decision making closer to the end users. There are areas, however, where clarifications are required for many functions which may not be feasible for TMA's to undertake. These include macro-level planning and 'visioning', water quality, monitoring and evaluation, research and development, institutional strengthening and capacity building, etc. A strategy for narrowing the sharp rural/urban divide is also lacking.

### ***Illustrative Possible Strategies***

In order to address the issues discussed, the strategies could be devised to address two sets of considerations: (i) immediate, to avoid or minimize disruption in the existing level of service as devolution progresses; and (ii) medium/long term, to improve the level of the service. The following is a set of recommended strategies presented for purposes of illustration to be taken up and implemented at appropriate levels.

#### **A. Strengthening of and support to Tehsil Management Administration (TMA) entailing:**

##### Immediate:

- Reorientation of staff and intra- and extra-tehsil coordination between various entities and stakeholders in the delivery process
- Supervision and monitoring, and prioritization of incomplete, on-going, and in-operational schemes
- Analysis and implementation of Tehsil Transition Reports
- Analysis of Tehsil-based indicative financing position and preparation of the next year's budget

##### Consolidation and Improvement:

- Preparation of TMA's annual, and possibly longer term operational plans
- Compilation and maintenance of data on WSS schemes, development of performance indicators, development and implementation of strategies for schemes' transfer and cost recovery, supervision and monitoring
- Preparation of operational manuals, bye-laws, and rules of business
- Addressing needs of densely, sparsely, and averagely populated tehsils and the needs of less-developed sections of the tehsils
- Flow of Funds to the Tehsil and further down below



**B. Appropriate/Macro Level Strategies:**

1. Resources (human and financial) should be identified and assigned to:
  - i. Develop sectoral vision statements, standards, as well as policies for tehsil, province, and the country through a consultative and participatory process with all stakeholders for improving: access to, gender and spatial equity, and quality of domestic water supply and sanitation in keeping with the national and international aspirations and environmental considerations
  - ii. Develop plans for implementation of sectoral policies and, subsequently, monitoring their implementation
  - iii. Provide technical assistance to, as needed and requested by, TMAs in resolution of more complex technical problems in their water and sanitation service delivery systems
  - iv. Undertake regular water quality monitoring programmes
  - v. Develop and implement programmes for institutional strengthening and capacity building
  - vi. Maintain and update databases to assist TMAs in planning, monitoring, and implementing the sectoral programmes
  - vii. Assist TMAs in technical supervision of the staff and review and evaluation of more complex projects
  - viii. Formulate a regulatory framework (including policies including taxes/duties, and procedures, documentations, etc.) to encourage and facilitate non-public sector organizations (such as non-profit/non-governmental organizations and for-profit private sector) to participate in the development of sector complimenting public sector efforts
  - ix. Undertake research and development activities focused on improving technology and systems
  - x. Assist TMAs in undertaking activities to increase awareness among various stakeholders about the importance of and benefits emanating from safe and adequate supply of drinking water and hygiene and sanitation.
2. Continue using Uniform Policies for Water Supply and Sanitation including site selection criteria introduced under SAP. National and provincial forums should be established to review past implementation, lessons learned and propose and incorporate necessary improvements and changes in the policies to help and guide TMAs.
3. Continue efforts to transfer the existing water supply schemes operated and maintained presently by the public sector to the users. Review and refine draft transfer strategies developed under SAP for the purpose.
4. Review, refine, and adopt draft strategies for improving recovery of costs particularly those related to O&M. Such strategies will help public sector in O&M of the schemes which have not been or cannot be transferred to the users. They will also help in improving the transfer rate as well as schemes managed by the communities themselves.
5. Undertake programmes for ensuring adequate and appropriate capacity at TMA and lower levels for engaging, mobilizing, and supporting communities through awareness campaigns, training, and monitoring and evaluation activities

6. Continue efforts initiated under SAP to engage private (for profit) and non-governmental (non-profit) organizations. These organizations can help increase public sector agencies' capacity for mobilizing and involving communities as well help experiment with innovative activities

# Water Supply and Sanitation in Pakistan

## Current Status, Issues, and Future Strategies

### 1 Introduction

The development indicators relating to water supply and sanitation (WSS) services in Pakistan, like those for other basic social sectors of elementary education, primary health, and population planning and reproductive health, are dismally low compared even with countries with similar socio-economic conditions in the region such as Sri Lanka, Bangladesh, and India. Public sector resource allocation for the sector continues to be much lower than required. **For example, in 1998-99, national allocation was just under Rs. 5.25 billion (0.18 per cent of GDP)**<sup>2</sup>. Although, according to the latest, 1998-99, round of the Pakistan Integrated Household Survey (PIHS), almost 79 per cent households either have a tap or a hand pump inside the house<sup>3</sup>, **the delivery is largely through private/individual household initiative and not through the public sector system**. There is no systematic monitoring to ensure availability of adequate quality or quantity of water. Sanitary conditions, disposal of solid and liquid wastes, and drainage remain unsatisfactory as less than half of the rural population have household toilets, one-third of the households do not have access to any type of drainage system while almost two-thirds do not have any system of garbage collection according to the survey referenced above.

Until early 1990s, planning, implementation, operation, and maintenance of water supply systems was done through provincial level public sector agencies. Under SAP, since 1993-94, through the introduction of Uniform Policies, participation of communities in all phases of the delivery process was made mandatory. The recently announced devolution plan has introduced major restructuring of the public sector entities previously responsible for WSS. Tehsil has been made primary responsibility level for the sector. All divisional and sub-divisional level staff of the erstwhile Local Government and Rural Development (LGRD), Public Health Engineering (PHE) and Housing and Urban Development (HUD) Departments have been placed under the newly created Tehsil Municipal Administration (TMA). There is a provision for establishing PHE and HUD Nucleus Units at District Level for intra district coordination of tehsil/taluka spatial plans. There are also discussions for provincial level technical pool which will include, *inter alia*, WSS related expertise which was previously available at the level of Chief and Superintending Engineers. However, the immediate concern of the government is to ensure that there is no disruption in the level of service available prior to devolution. Once the devolved system stabilizes, the focus will shift to consolidation and improvement in the level of service.

This background paper, with the above introduction in view, attempts to present a brief discussion of the importance of water supply and sanitation services in general, the current coverage and status of the services, overall findings and feedback, and recommends a few strategies for consideration of policy makers, planners, managers, and other stakeholders.

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<sup>2</sup> MSU Reports

<sup>3</sup> Pakistan Integrated Household Survey (PIHS), Round 3: 1998-99, Federal Bureau of Statistics, Government of Pakistan, Islamabad, October 2000. The figure includes hand pumps outside the household as well as mechanized pumps. But as indicated in the 1998 Provincial Census Reports, the number of inside house hand pump is pre-dominant.

## 2 Water and Sanitation in the Context of Development

Man cannot survive without water beyond a few days. While some access to limited water is the *sine qua non* for existence, the quality of life is heavily dependent on economy and efficiency pertaining to access to convenient, safe, and adequate quantity of water. Access to water, however, needs to be accompanied by a good sanitation system both for the environmental and hygienic conditions as well as safeguards. Increased water supply coupled with in-sanitary conditions and lack of proper drainage can lead to enhanced incidence of water-related diseases. A Chinese magazine quotes investigation by the World Health Organization that **80 per cent of the human diseases are related with water**<sup>4</sup>. Even if this estimate is on the high side, the point made is incontrovertible, particularly, in the context of the developing countries. **Furthermore, return on investment on water doubles with improvement in sanitation.** Unsafe drinking water, combined with inadequate sanitation facilities, constitutes one of the major causes of death and disability among the poor in developing countries<sup>5</sup>. Safe, convenient, and adequate water supply and proper sanitation are thus fundamental components of any broad-based economic growth strategies. Lowering mortality and morbidity from water and sanitation-related diseases is a goal in itself; it can also lead to increased productivity and decreased absenteeism among members of the labor force. It can equally reduce the time and energy burden on the household, leading to more time for crop cultivation, child care, and income-generating activities, as well as more regular school attendance. The availability of a minimum of 20-40 liters of relatively safe water per person per day is essential to achieve sustained health improvements in developing countries.

### **WATER IS LIFE!**



Picture: WHO

To summarize, investments in water can lead to many benefits including: (i) improved health and better education; (ii) more cash income; (iii) increased food production or diversification of crops, (iv) more employment; (v) greater independence, reduced burden, and better safety/security for rural women; and (vi) more leisure. All these are indicative of one broad conclusion. **If poverty is to be addressed, if productivity is to be increased, and if social**

<sup>4</sup> Article in *Hua Sheng Monthly* (2001-06-29). Please visit the web site for details:

[http://www.csis.org/asia/China/Health/ProtectingWaterSupply\\_en.htm](http://www.csis.org/asia/China/Health/ProtectingWaterSupply_en.htm)

<sup>5</sup> USAID Policy Paper, *Domestic Water and Sanitation*, 1982.

**exclusions are to be minimized, then Pakistan is in need of a coherent policy framework relating both to planning and investment in water and related areas of sanitation and drainage.**

### **3 Reform Agenda and Progress under Social Action Programme**

Keeping the above imperative in view, the government and donors, in designing the Pakistan's Social Action Programme (SAP), reached agreements on broad strategies with respect to rural water supply and sanitation (RWSS). These included improving access to, equity in, and quality of services related to RWSS. Key RWSS agenda under SAP to support these objectives included: establishing and verifying sites' selection criteria to ensure that schemes are prepared in communities who have demonstrated demand; community mobilization to ensure their input into each stage of schemes processing and to build capacity for operation and management of schemes; development of strategies and their implementation leading to transfer of schemes to communities; use of non-governmental institutions to assist the above process of scheme transfer; and expansion of provision of sanitation services in rural areas. To monitor performance, it was agreed to focus on selected indicators especially: (i) per centage of rural villages with access to water; (ii) number of rural households with access to sanitation; (iii) number of communities mobilized each year; (iv) number of existing and new water supply schemes – completed and those handed over to the community.

Performance analysis of selected indicators based on PIHS data showed that the per centage of rural households with access to clean water surpassed the Eighth Plan Target, and those having toilets increased somewhat during the 1990s. Per centage of rural households with access to drainage, however, has remained static. **More than a third of the existing water supply schemes have been transferred to the communities and the number of in-operational schemes has significantly decreased.**

SAP reform agenda for RWSS exemplifies a significant shift in approach in the public sector service delivery. Unlike other SAP sectors, where there was greater emphasis on strengthening and improving the quality of service through public sector delivery systems, in RWSS sector of SAP, the greater emphasis was on achieving the same through community participation, with assistance, wherever necessary, of private sector and NGOs/CBOs. Thus, the shift in approach, in terms of the objectives, was a challenging one for the line departments (PHE, LGRD) requiring time and effort for structural adjustment, organizational reorientation, social mobilization, and developing local leadership.

An important operational issue recognized and addressed under SAP was making allocations for and undertaking new development schemes without ensuring adequate funds for or completing the on-going schemes. This resulted in an inordinately large portfolio of ongoing schemes. Most of these schemes were in final stages of completion but dragged on for years without being completed for lack of funds. This led to discussions between the government and donors and, eventually, imposition of a moratorium on new schemes until the portfolio of the ongoing schemes was brought down to a reasonable size. This did have the desired effect and the number of ongoing schemes has dropped considerably. However, the moratorium also led to stagnation of public sector coverage of water supply on the one hand and a sharp increase in investment on drainage on the other hand. In spite of concerted efforts under SAP to increase focus on sanitation, it continued to be accorded a lower priority than warranted.

#### 4 Emerging Challenge - Devolution

Prior to “devolution”, the public sector WSS services in the rural areas were mainly delivered through two government departments: the Public Health Engineering Department (PHED) and the Local Government and Rural Development Department (LGRDD). In ICT and NA, there was no PHED. In AJK, PHED handled only urban systems. But in the four provinces and FATA, both these agencies were present. In provinces/areas, where both agencies were present, LGRDD was generally responsible for water supply schemes, particularly in relatively small settlements, which were based on hand pumps (generally the areas where potable water is available easily at relatively shallow depths and not involving pumping) and promotion of household sanitation. PHED, on the other hand, was responsible for relatively large and complex (mechanized) water supply, and drainage schemes in larger settlements.

In the urban areas, agencies such as Water and Sewage Boards, Water and Sanitation Authorities, Municipal Corporations, Municipalities, etc., were responsible for all aspects of water supply and sanitation services. Whereas, in the drainage, city development agencies were also involved.

Prior to launching of SAP, all costs associated with RWSS schemes including capital, operation and maintenance, extension, rehabilitation, depreciation, etc. were borne by the government through the Annual Development Programmes (ADP) and Recurrent Budgets. These also included schemes executed under external assistance. Only AJK had a prior history of user communities contributing toward capital costs (largely in the form of labour and local materials), and major component of O&M costs. However, the level of end users’ direct share of costs associated with delivery of RWSS services has varied from one province/area to another, or even within one province/area (from one scheme to another). The examples range from the government installing free latrines/hand pumps in individual households and fully funding complex water supply schemes; to farmers required to pay water cess on agricultural income (to finance drinking water supply) as in Sindh, and; users contributing to the capital and O&M costs as in AJK. Situation in the urban areas was also similar as the water and sanitation or municipal agencies were bearing all costs. However, water tariff at highly subsidized rates was charged, albeit the recovery rates were very low, unlike in the rural areas where a clear policy or system of user charges was largely absent.

With the inception of SAP, it was sought to improve access to, equity in, and quality of public RWSS service delivery through community participation in all phases of the delivery including planning, site selection, design, implementation, operation and maintenance, and evaluation and monitoring. To accomplish that, it was envisaged that the end users ought to operate and maintain the RWSS schemes and provide for at least the O&M costs themselves. The formulation of this new policy was not only to enunciate the new strategy for community participation but also to introduce a uniform policy for all public sector RWSS service delivery systems. Hence, all provinces/areas embarked on implementing the Uniform Policies for RWSS.

The devolution plan currently being implemented by the government, as briefly mentioned earlier also, has changed the above delivery system completely introducing a further element of change and shift with respect to providing water, sanitation, and drainage (WSD) services. First, **the rural and urban distinction in providing the related services has been done away with.** Second, **the traditional line departments within the provincial government structure to plan, execute, and maintain such services/facilities have been abolished.** Third, **a new structure, within the context of Tehsil/Taluka Municipal Administration**

(TMA), has been envisaged to provide WSS and other municipal services. Fourth, within the framework of TMA, **village councils/neighbourhood councils have been assigned the responsibility of developing water supply sources, sanitation, and solid waste disposal.** Fifth, provision has been made to have nucleus office of two (Housing and Urban Development and Public Health Engineering) out of the three departments (LGRDD being the third) for intra-district coordination of Tehsil/Taluka spatial plan. In essence, **the devolution plan shifted the entire planning, extension, and monitoring functions relating to WSD to Tehsils/Talukas and levels below** of the new local government structure. Hence, there is a paradigm shift in terms of provision of WSD in future. A recent effort was made by media to capture priority profile of elected Nazims/Naib Nazims. **Four out of five Nazims/Naib Nazims**, in response to question as to “what are the most pressing and urgent problems?”, **identified “sewerage, water, and sanitation” as their immediate and prime concern**<sup>6</sup>. The issues and challenges related to WSD are, therefore, needed to be seen, assessed and evaluated in the context of such emerging priorities.

## 5 Current Coverage and Status

In the light of the foregoing, it is relevant to visit the nature and type of current coverage, to assess the current status, and to identify policy interventions which, in the context of devolution, may assist in attaining the objectives and sustain them with respect to WSD. The 1998 Provincial Census Reports and the latest 1998-99 round of Pakistan Integrated Household Survey (PIHS), conducted by the Federal Bureau of Statistics, contain pertinent information. They are also indicative of recent trends, preferred options of the beneficiaries, and possible interventions with less burden on government's exchequer. Keeping the above information in view, following assessment of related service delivery in terms of coverage and status of WSD is reflected.

Tables I through VII, in Annex I, present information on coverage of water supply and sanitation services in the country. Tables I and III reproduce data from the 1998 Punjab, Sindh, and NWFP Provincial Census Reports on sources of drinking water and status of latrine facilities<sup>7</sup>. Tables II, IV, V and VI are based on the latest round of PIHS conducted by Federal Bureau of Statistics (FBS), summarizing the main sources of drinking water, latrine facilities, type of toilet used by the household, type of sanitation system (drainage) and type of garbage collection system in the country. Table VII is based on information collected by MSU on the total number of completed water supply and drainage schemes in the rural areas, the number of schemes handed over to the user communities, and expenditures on water supply schemes currently operated and maintained by government. Finally, Table VIII, based on the information extracted by MSU from the Government of Pakistan's Combined Finance Accounts and Pakistan Economic Survey, presents data on public expenditures on WSS.

The following sections summarize the data presented in these tables.

### 5.1 Water Supply

#### 5.1.1 *Coverage and Source/System*

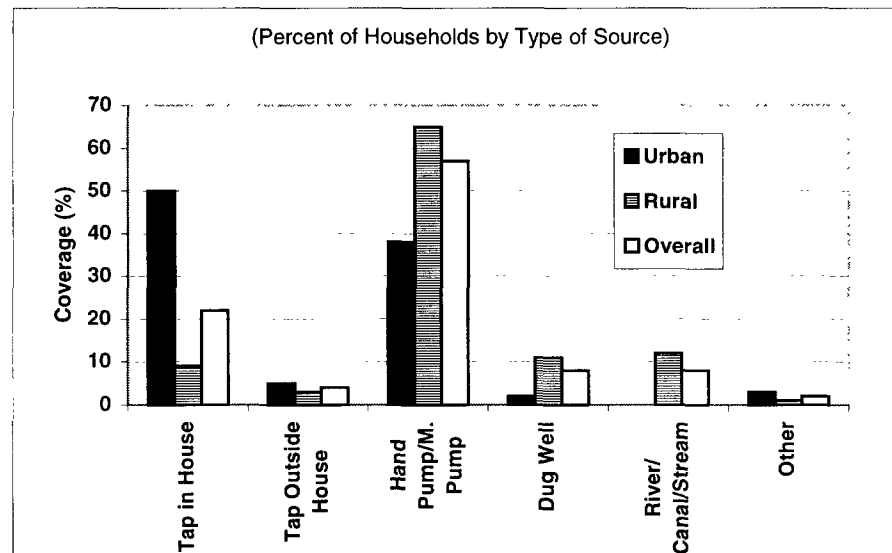
The PIHS report (Figure 1) indicates that almost 79 per cent households in Pakistan have either a tap inside the house or have access to a hand or mechanized pump. Predictably,

<sup>6</sup> *The News*, September 30, 2001: “Naib Nazims in Search of Solutions”.

<sup>7</sup> Reports for Balochistan, FATA, NA, and AJK have not been issued by the Census Bureau as yet.

Balochistan has the lowest figure (28 per cent) and the Punjab the highest (93 per cent). Also, 71 per cent households in Sindh, and 47 per cent households in NWFP either have a tap or a hand pump in the house.

**Figure 1: Sources of Drinking Water (PIHS)**



It may be noted that PIHS does not record the inside and outside pumps separately. But comparison with provincial census reports indicates that access to hand/mechanized pump, by and large, **indicates predominantly a hand pump inside the house for the rural areas.** For the urban areas, the situation is quite the opposite. For example, the national figures of PIHS indicate that 50 per cent urban households and only 9 per cent rural households have a tap inside the house. Conversely, 38 per cent urban households and 65 per cent rural households have a hand or a mechanized pump. Furthermore, there is also a possibility that, in some cases, public sector tube-well based systems have been reported as mechanized pump source as well as motorized pumps installed inside a household!

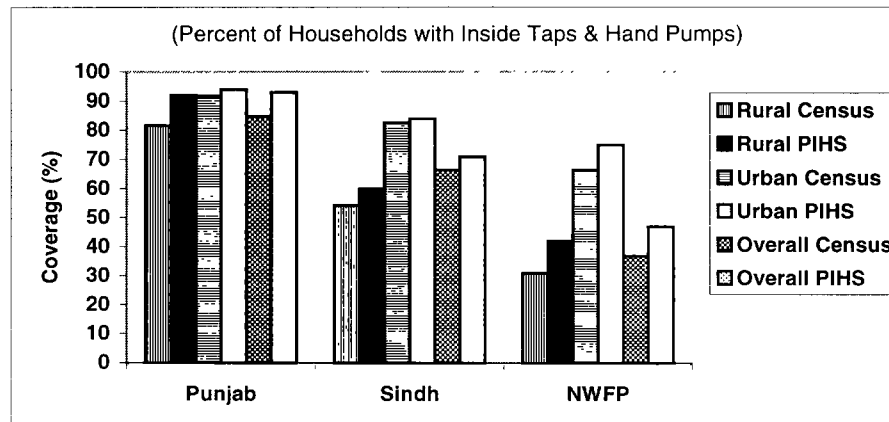
These figures compare fairly well with the 1998 Census reports (Figure 2) that indicate that almost 86 per cent households in Punjab, 68 per cent in Sindh, and 55 per cent in NWFP have a source of water inside the household. The per centage is, of course, higher for the urban areas and for the rural areas it is lower. Census also indicates the significant increase in coverage from 1980 when only 64 per cent households in the Punjab, 38 per cent those in Sindh, and 20 per cent those in NWFP had a household tap. However, **the increase appears to be mostly through private and individual initiatives rather than through public sector delivery system** as discussed in the following paragraphs.

Not surprisingly, **'hand pump' is the inside source of drinking water in the case of 57 per cent households nation-wide** according to PIHS. 65 per cent rural households depend on hand pump but, significantly, urban households using an inside pump is also quite high – 38 per cent. Less than one-quarter of the households have an inside tap. Province-wise, in the case of Punjab and Sindh, a pump (an inside hand pump) is the major source – 75 per cent and 27 per cent respectively. In NWFP an inside tap (27 per cent) is the largest inside source of water and in Balochistan, it is a well (38 per cent). Census figures are comparable for



Punjab (60 per cent households with hand pump), and NWFP (27 per cent households with a tap). But for Sindh, Census reports indicate that 37 per cent households have an inside tap and almost 29 per cent have an inside hand pump.

**Figure 2: Sources of Drinking Water: Inside Taps & Hand Pumps**  
**Comparison of 1998 Census and 1998-99 PIHS Data**



PIHS indicates that rivers, canals, and streams are a significant source of water supply in Sindh (13 per cent), NWFP (23 per cent) and Balochistan (27 per cent).

Finally, it must be noted that neither Census nor PIHS data provide an indication of the quality, quantity or adequacy of water supply for satisfying the demand.

### 5.1.2 Public/Private Service Delivery

It is significant to note that a household tap by and large indicates a public sector supply system. These, in turn, could be based on tube-wells, springs, or natural streams. The systems were, in the rural areas, installed by the Public Health Engineering Departments except in the case of ICT, AJK, and NA where there is no PHED and the systems were installed by LGRDD. Although, LGRDD has installed household hand pumps in the rural areas through out the country, their number is very small compared with the total number of inside hand pumps. Thus, it is safe to assume that an inside hand or mechanized pump indicates private initiatives undertaken primarily by the individual households on their own.

In addition, private sector is also involved in provision of water through water tankers and water vendors mainly in low income urban or peri urban localities. **Ironically, the vendors collect water from public sector sources and sell it to the users at a very high rate.**

It may be concluded, therefore, **the high coverage indicated in the Census and PIHS is based largely on the private initiatives of individual households.** This has serious implications for quality and quantity of available drinking water, if not for the convenience, and for environmental considerations.

### 5.1.3 “Safety”

As concluded above, a hand pump inside the household is the largest source of drinking water in the country. This is particularly true for areas where groundwater is available at relatively shallow depths, e.g., large parts of the Punjab and Sindh. In sparsely populated settlements, apparently free from a major source of contamination, the hand pump supply may be relatively safe. The same may not hold true for relatively densely populated areas and for the areas where there is a known contamination source, particularly in the case of ‘shallow’ wells - less than about 60 feet deep from the ground level.

In mountainous regions of NWFP, AJK, NA, and ICT, natural springs constitute a major source of drinking water. Whereas the water itself may be safe, the conditions at the ‘head’ and during conveyance may not be safe.

As mentioned above, there are hardly any regular water quality monitoring programs in Pakistan apart from some initial testing (particularly in the case of public-sector supply).

### 5.1.4 *Technology, Economy, Efficiency, and Environment*

The hand pump technology itself is simple and inexpensive in terms of capital costs. However, it could be improved to make it more efficient, longer lasting, and safer from contamination from the nearby environs. But, in terms of overall economy, efficiency, and environmental considerations, individual hand pumps may not be the best option particularly for relatively large and dense settlements.

### 5.1.5 *Operation and Maintenance Costs and Transfer of Schemes*

Table VII in the Annex, presents some interesting information. Prior to SAP, all water supply and drainage schemes in the four provinces and FATA (excluding ICT, NA, and AJK where communities took over), once completed, were operated and maintained by PHED. Uniform Policy, introduced under SAP, required not only that all new schemes be initiated with community participation at every step and the users eventually take over the scheme for O&M, it also required that the existing schemes, operated and maintained by PHED, be also transferred to the users. Admittedly, there are many factors which make it difficult for these schemes to be transferred. To start with, these schemes were built without any significant community participation in the first place. Hence, many were not based on real need or demand, and thus there was no incentive for the communities to take them over. There were other factors as discussed below:

- (i) Many schemes were far too expensive to be operated and maintained by the generally poor rural communities.
- (ii) A significant factor is the cost of energy for the electricity-based schemes. The costs can be more than seventy per cent of the total O&M costs. **WAPDA does not have a consistent and rational tariff policy for water supply schemes.** Different regional offices of WAPDA apply three different tariffs: domestic, commercial, and agricultural. **There are also issues related to WAPDA procedures for providing power connection to the schemes.** Unless resolved, these issues undermine the very sustainability of the water supply schemes particularly those that are operated and maintained by the communities themselves.

- (iii) There was also the constraint of the limited capacity of the concerned government agency for community mobilization which was a prerequisite for transfer.

Of the nearly 20,000 water supply and drainage schemes in all reportedly completed until CY 2000, a little over 12,000 have been transferred to the users. Nearly 8,000 schemes are still operated and maintained by the public sector at a cost of nearly Rs. 1.00 billion per year.

**Waste in Water Causes Disease!**

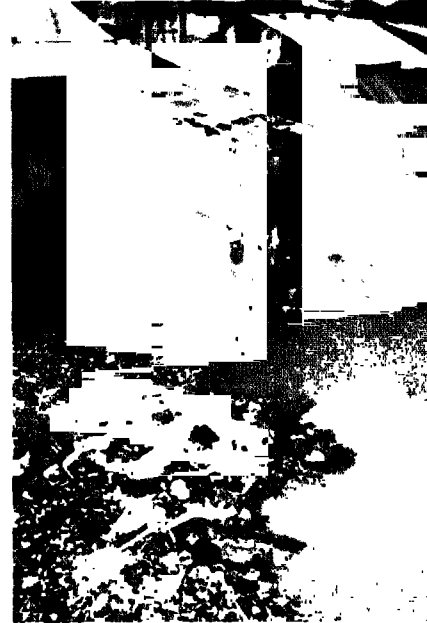


Figure 3 WHO

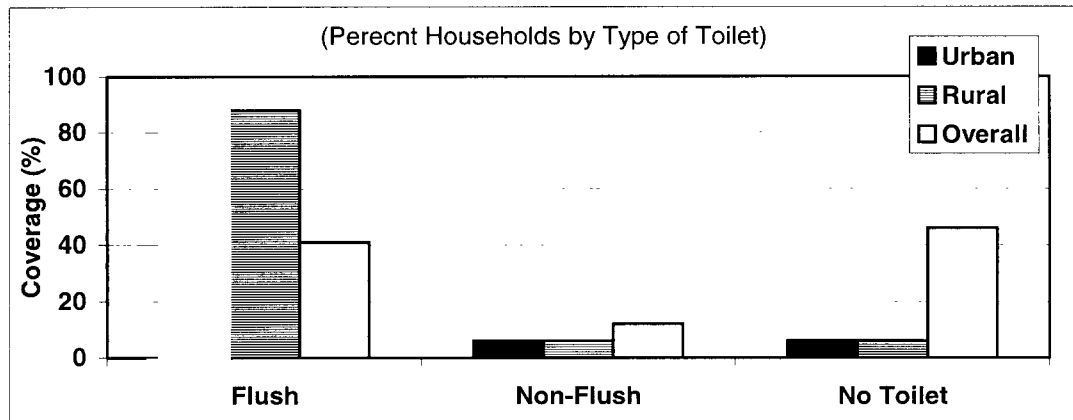
## 5.2 Sanitation

Both the PIHS and the Census figures show that **about half of the population in Pakistan have no toilet facility at the household level**. The PIHS (Figure 3) reports that 53 per cent households have a latrine (either a flush or a non-flush type). The figure for urban households is 94 per cent and that for rural households is only 37 per cent. The overall PIHS figures for households with a latrine in the Punjab, Sindh, and NWFP (the provinces reported by Census) are 46 per cent, 67 per cent, and 58 per cent, respectively. The Census figures (Table III), on the other hand, show that just 26 per cent, 35 per cent, and 24 per cent households in Punjab, Sindh, and NWFP, respectively, have a separate latrine. However, the Census also reports a significant number of households with a "shared" latrine (15 per cent, 30 per cent, and 18 per cent for Punjab, Sindh, and NWFP, respectively). The PIHS, on the other hand, reports that there are no "communal" latrines. The shared and separate latrines reported by Census added together are comparable to the total of flush and non-flush type toilets reported by PIHS.

Presence and use of a latrine is an important indication of sanitary conditions. However, the picture would be incomplete without information relating to disposal of wastes and drainage of the locality. Whereas the Census reports only separate and shared latrines, the PIHS reports (Tables IV-VI) give more details about sanitation and provide information relating to type of the toilet (flush, non-flush, community, etc.), type of sanitation system (underground,

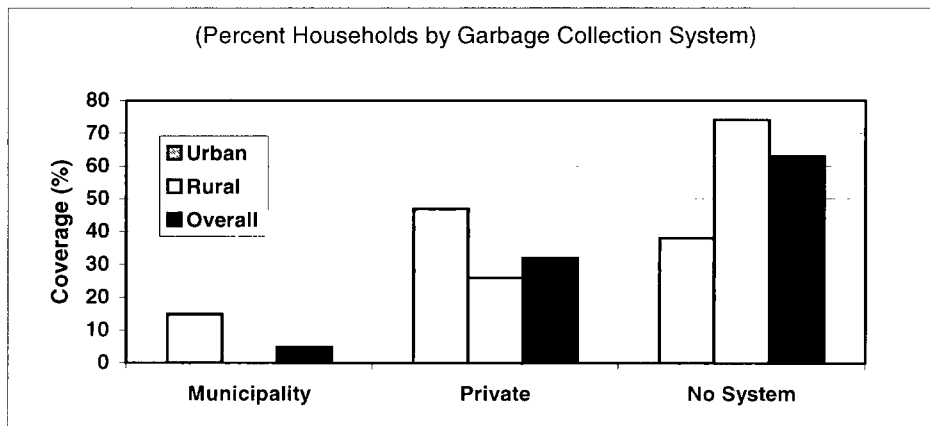
covered, and open drains; soak pits) and garbage collection system (municipal, private, and none).

**Figure 3: Availability of Toilets (PIHS)**



PIHS reports indicate that almost two-thirds (63 per cent) households in the country have no system of garbage collection while one-third reported having some sort of private arrangement (Figure 4). Only 5 per cent households report having access to a municipal garbage collection system all in urban areas! Forty-seven per cent urban and 26 per cent rural households have a “private” system for garbage collection. This raises even greater concerns regarding eventual disposal of wastes. Three quarters of rural and as many as 38 per cent urban households report having no system for collection of garbage.

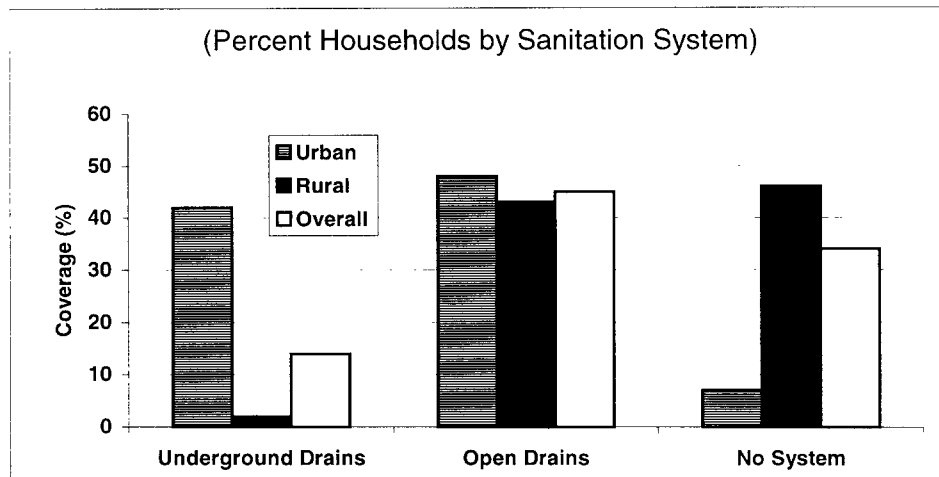
**Figure 4: Garbage Collection System (PIHS)**



Likewise, PIHS reports that one-third of the households do not have any sanitation disposal system (Figure 5). Open drain is the most common system of disposal as 45 per cent of the households are connected to such drains. Only two per cent rural households have

access to underground drains. Urban households fare better (42 per cent) but still the number is far from satisfactory. Nearly half of the households, both urban and rural, have access to open drains. **Almost half of the rural households (46 per cent) do not have access to any drainage system.**

Figure 5: Type of Sanitation System (PIHS)



To summarize, **there is hardly any coverage of systematic collection and disposal of liquid and solid wastes.** With a relatively high availability of water (with questionable quality, quantity, and reliability), albeit through private/individual efforts, as mentioned earlier, **highly inadequate sanitary conditions seems to present a certain recipe for a national disaster!**

### 5.3 Budgetary Allocations and Expenditures

Not the least of the many problems which beset the sector is the inadequate allocation of financial resources. In spite of a steady increase in the allocations (and expenditures) for the rural part of the sector during SAP, the expenditures in the sector peaked at about a mere 0.30 per cent of the GDP in 1995-96. The expenditure for 1998-99, amounting to Rs. 5.24 billion is estimated at 0.18 per cent of the GDP. The following Figure 6 provides public expenditures in WSS over the past few years.

Clearly, in the early 1990s, public expenditures showed a somewhat upward trend in terms of current prices. In 1980/81 prices, however, the change is barely perceptible. Towards the end of the decade, however, the public expenditure on WSS in 1980/81 prices is lower than that in 1988/89!

Figure 6: Total Expenditures on Public Health Services (Water Supply & Sanitation)<sup>8</sup>

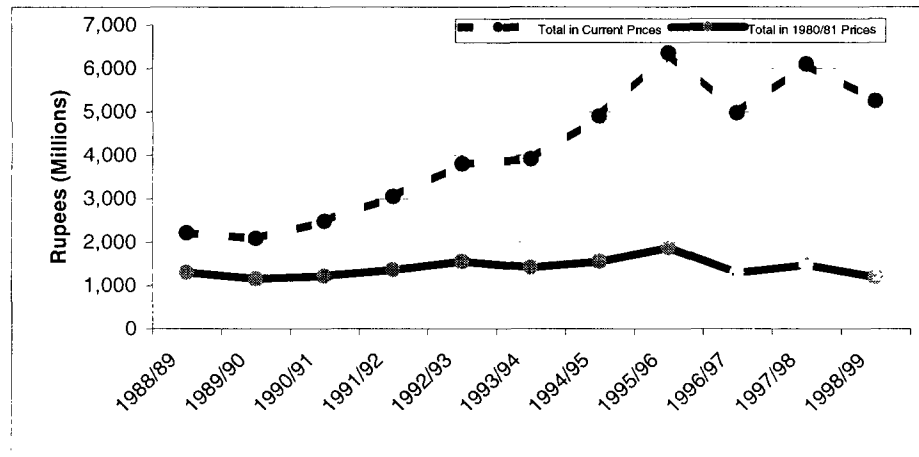
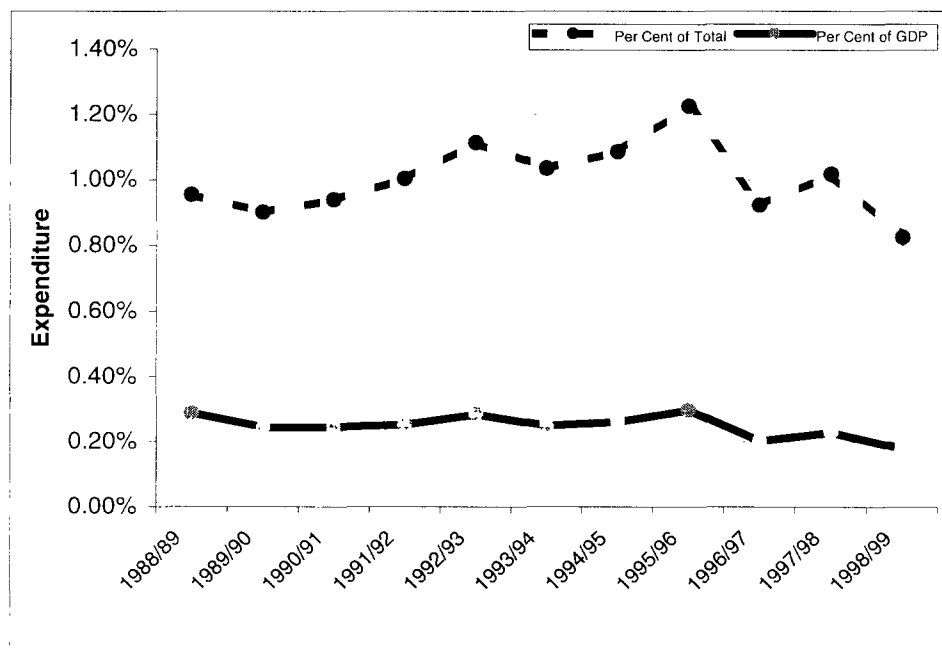


Figure 7: Relative Public Expenditures on Public Health Services (Water Supply & Sanitation)<sup>9</sup>



“Clean and safe water can be brought to ...people around the world for as little as \$50 per person”<sup>10</sup>. This requires careful planning and evaluation, weighing benefits of safe, convenient, reliable water supply in adequate quantity along with sanitary conditions, developing a long term vision for the sector followed by an action plan and its implementation.

<sup>8</sup> Source: Government of Pakistan's Combined Finance Account and Pakistan Economic Survey.

<sup>9</sup> See Footnote on Figure 6.

<sup>10</sup> Water Crisis: Everyone lives Downstream, Global Development Research Center, www.gdrc.org

## **6 Conclusions**

In terms of access to, and equity in, and quality of water supply and sanitation services, issues in Pakistan can be summarized as follows:

- Pakistan spends less than one quarter of a percentage point of its GDP on water supply and sanitation. This is vouchsafed by the fact that 57 per cent of current coverage relates to hand pump.
- What is to be noted, however, is that even in case of good coverage, supply of water is neither adequate (quantity) nor reliable or convenient.
- There are hardly any water quality monitoring programs implemented on a regular basis. Most quality testing is done at the planning and/or inception stage. Subsequent testing is limited to cases where there is report of a problem. Also, the mechanism for water quality testing gradually deteriorates with the passage of time or the close of project initiative. Sanitary conditions are appalling.
- Toilets may be available but a proper system for disposal of wastes does not exist. Systems for disposal of liquid and solid wastes are inadequate.

The issues which plague the sector can be broadly placed in three categories. Each is discussed as follows:

### **6.1 Convenience, Reliability, Quantity, And Quality Of Water Supply; Site Selection And Source Development, Appropriate Technology; Conservation**

Since almost 80 per cent households seem to have a source of drinking water, generally, though, a hand pump inside the house, convenience (and, perhaps, reliability) do not appear to be of major concern. Still a sizable section of populace does not have access to convenient water and it comprises almost entirely of the urban poor and rural areas, and concerns mainly the women.

The issue of site selection is relevant and critical to public sector water supply and sanitation schemes. The schemes must be sited based on merit and carefully established criteria with macro level vision for the sector. In recent years, introduction of a Uniform Policy by all provinces/areas has made significant progress in this regard. This policy and gains made need to be pursued and carried forward.

Issues of source development, appropriate technology, and conservation concerns are very important but of long-term and broader in nature, with mostly urban and peri-urban implications. These must be addressed at macro levels. There is neither incentive nor any capacity at community/user level for the purpose. In the devolved set up, at the tehsil level (let alone at the level of Village or Neighbourhood Councils as currently envisaged), these are likely to be accorded an even lower priority. This needs serious and immediate attention of the government so that future activities are underpinned by a broad-based national vision.

## 6.2 Equity, Community Participation And Awareness

*Collecting water in rural areas is usually a woman's or a girl's job!*

Picture: WHO



As pointed out in the earlier sections, availability of convenient, safe, and adequate quantity of water goes a long way in ensuring reduced burden, greater independence, improved security and safety, better health, and more time for income generating activities as well as leisure. In rural areas, in particular women, are the principal beneficiaries. Women are being involved more through community participation made mandatory through the Uniform Policy. Therefore, development strategy of this sector has a greater emphasis on gender equity. To address spatial equity, in recent years, there has been a concerted effort to focus on rural areas. In the devolved set up, primary responsibility for water and sanitation services has been placed at the tehsil level without any distinction between rural and urban areas. This is expected to further strengthen support for the rural areas.

Under Social Action Programme (SAP), as mentioned earlier, all provinces and federally administered areas as well as AJK have introduced Uniform Policies for Rural Water Supply and Sanitation. **These policies are needed to be continued in the devolved set up.** Under these policies, it is mandatory to involve the user communities in all phases of planning, designing, and implementation of water supply and sanitation schemes. On completion, all such schemes are to be handed over to the users for operation and maintenance. All existing schemes previously operated and maintained by the public sector are also to be handed over to the end users. There were concerns relating to the capacity of the agencies responsible for water supply and sanitation for engaging communities for mobilization and participation. Efforts were underway to build the capacity and to identify and use alternatives. With devolution, the community participation efforts will be strengthened. However, concerns relating to capacity remain. Rather, with restructuring and reorganization of the erstwhile Public Health Engineering and Local Government and Rural Development Departments, there will be some confusion and set back for some time in this regard. Strategies need to be developed for increasing tehsil level capacity and also for making use of the capacity available in the private and non-governmental sector.

Awareness, although emphasized a great deal in recent years and in the Uniform policies, continues to be a weak area. **Awareness needs to be increased among all stake-holders about the critical link between health and water supply and sanitation** and the critical need for improving coordination, the long term potential gains through investment in the sector, the need for development of macro level vision and plans, Uniform Policy itself, importance of community participation, appropriate technology, conservation, monitoring, evaluation, research, and development. There is an extensive range of areas where awareness



among various stakeholders needs to be increased. This must be addressed at provincial and federal levels. Improved awareness will contribute to all facets of the service delivery process from planning, policy and decision making, to implementation, operation and maintenance, and evaluation and monitoring.

### **6.3 Sustainability, Costs And Financing; Operation And Maintenance; Management; Role Of Private Sector; Evaluation, Monitoring, And Research**

The sustainability of rural water supply, at least in the immediate future, could pose serious problems. During a field study, conducted by MSU in NWFP<sup>11</sup>, it was very apparent that the operational and financial sustainability of many systems maintained by the communities hangs by a very thin thread. It is very difficult to foresee what would be the fate of the systems that were maintained by the PHEDs. **There is a possibility that in the initial phase of devolution, the conditions could get much worse before the cycle of improvements could start.** The recent report of MSU on Transfer of Rural Water Supply Schemes in NWFP has some good recommendations on making the community maintained systems more viable. Specifically, the study recommended that scheme site selection criteria developed by PHEDs should be notified, disseminated, and strictly applied, and communities should also contribute to the capital cost. The draft transfer strategy should be amended based on the study's recommendations and then notified followed by preparation of rules and financial regulations. **The present categorization should be reconsidered.** Study recommended **that steps should be taken to make VDO's a legal entity.** There are a number of issues related with WAPDA including tariff, billing, meters, repairs, and energy connection. These need to be taken up with WAPDA by the province. **Project estimates should preferably provide for cost of land.** In the case of donated land, however, the title to the land along with an access road from a public road should be transferred in the name of the government. **A clear policy for dealing with the regular government O&M staff should be evolved and enforced.** The community development units of PHED should be reorganized to work more closely with the engineering staff in the field. **The primary responsibility for scheme transfer should be with the concerned Executive Engineer.** Large settlements (population in excess of 10,000) should be treated differently than small settlements. These recommendations continue to be relevant in the post devolution period and should be considered with modifications as may be necessary, particularly in the context of establishment of TMAs as well as institutional arrangements of Citizen Committee Boards.

The quality of water, the quantity supplied and the sustainability of the systems are inextricably linked to system management. Badly managed urban and rural systems are a great source of misery for the consumers. Even if sufficient quantity of safe water is available at the source, the consumers will not get the right service unless the system is well maintained and managed. **Islamabad is a classic example of an indifferently managed system. The per capita availability of water in this city is one of the highest in the region but even so the distribution system operates intermittently.** It is axiomatic that an intermittently operating system will not deliver safe water to the consumers. During shortages, tankers draw water from the system and supply it to a consumer who is connected to the same system. There could be no better example of a poorly managed utility. **This problem could easily be addressed by wastage control through prevention of leaks, metering and sound tariff policies.** In all likelihood, the system is not be financially sustainable. What has been said about Islamabad is perhaps true for all urban system in the country.

<sup>11</sup> MSU Study: NWFP Transfer of Rural Water Supply Schemes, March 2001.

With increasing fiscal constraints and rising inflation in the recent years, costs and financing of water supply and sanitation services have assumed greater significance. There is a need, therefore, to reduce costs, on the one hand, by improving planning, designing, and efficiency of the systems supported by adequate policies to respond to geographical and demographic requirements. Under Uniform Policy, plan was for the end users to assume all O&M costs. Currently, in the rural areas, end users' share of O&M costs of publicly managed schemes is less than 15 per cent. O&M is one area where it may be possible to gradually increase the users' share of costs to as much as 90 per cent over a few years. On a limited scale, and, on a case by case basis, users may also be asked to share in the capital costs. Because of the communal nature of sector's importance, however, the public sector will continue to bear a significant portion of the costs. However, **this can be mitigated considerably by exploring and facilitating alternative models including that of private sector's role and funding, especially in water distribution in urban and peri-urban areas.**

Until recently, the public sector delivery system, which by far provides the greatest service coverage, was the responsibility primarily of the Public Health Engineering and Local Government and Rural Development Depart in the rural areas and special agencies in the urban areas (municipalities, water and sanitation agencies, authorities, boards, etc.). In the devolved setup, the primary responsibility for provision of all municipal services, including the water and sanitation, in a tehsil will be the primary responsibility of the Tehsil Municipal Administration. There are concerns related to this arrangement which are yet to be addressed. These are: quality monitoring, technical supervision of the delivery system, research and development, development of a macro level vision to facilitate tehsil based planning, etc., which should be done at provincial levels. There are also areas such as human resource and systems development which must be taken up at provincial levels.

There is a great **potential** in the form of **private (for profit) sector involvement in urban areas** and **non-governmental (non-profit) organizations in rural areas** and specific handicapped geographical locations. These organizations can contribute in all facets of the delivery system with human and material resources. From competing for and getting awards for complete planning, implementation, and O&M, to facilitating communities and public sector in improving the delivery, to undertaking innovative actives, the non-public sector has a lot to offer. However, a **regulatory framework is needed to encourage and engage the non-public sector in a fruitful partnership with the public sector for overall expansion and quality of services.**

## 7 Possible Strategies

In order to address the issues discussed, the strategies could be devised to address two sets of considerations: (i) immediate, to avoid or minimize disruption in the existing level of service as devolution progresses; and (ii) to improve the level of the service. The following is a set of recommended strategies presented for purposes of illustration to be taken up and implemented at appropriate levels.

### 7.1 Strengthening of and Support to Tehsil Management Administration (TMA)

#### *Immediate:*

- Reorientation of staff and intra- and extra-tehsil coordination between various entities and stakeholders in the delivery process

- Supervision and monitoring, and prioritization of incomplete, on-going, and in-operational schemes
- Analysis and implementation of Tehsil Transition Reports
- Analysis of Tehsil-based indicative financing position and preparation of the next year's budget

***Consolidation and Improvement:***

- Preparation of TMA's annual, and possibly longer term operational plans
- Compilation and maintenance of data on WSS schemes, development of performance indicators, development and implementation of strategies for schemes' transfer and cost recovery, supervision and monitoring
- Preparation of operational manuals, bye-laws, and rules of business
- Addressing needs of densely, sparsely, and averagely populated tehsils and the needs of less-developed sections of the tehsils
- Flow of Funds to the Tehsil and further down below

**7.2 Appropriate/Macro Level Strategies**

1. Resources (human and financial) should be identified and assigned to:
  - i. Develop sectoral vision statements, standards, as well as policies for tehsil, province, and the country through a consultative and participatory process with all stakeholders for improving: access to, gender and spatial equity, and quality of domestic water supply and sanitation in keeping with the national and international aspirations and environmental considerations
  - ii. Develop plans for implementation of sectoral policies and, subsequently, monitoring their implementation
  - iii. Provide technical assistance to, as needed and requested by, TMAs in resolution of more complex technical problems in their water and sanitation service delivery systems
  - iv. Undertake regular water quality monitoring programmes
  - v. Develop and implement programmes for institutional strengthening and capacity building
  - vi. Maintain and update databases to assist TMAs in planning, monitoring, and implementing the sectoral programmes
  - vii. Assist TMAs in technical supervision of the staff and review and evaluation of more complex projects
  - viii. Formulate a regulatory framework (including policies including taxes/duties, and procedures, documentations, etc.) to encourage and facilitate non-public sector organizations (such as non-profit/non-governmental organizations and for-profit private sector) to participate in the development of sector complimenting public sector efforts
  - ix. Undertake research and development activities focused on improving technology and systems
  - x. Assist TMAs in undertaking activities to increase awareness among various stakeholders about the importance of and benefits emanating from safe and adequate supply of drinking water and hygiene and sanitation.
2. Continue using Uniform Policies for Water Supply and Sanitation including site selection criteria introduced under SAP. National and provincial forums should

be established to review past implementation, lessons learned and propose and incorporate necessary improvements and changes in the policies.

3. Continue efforts to transfer the existing water supply schemes operated and maintained presently by the public sector to the users. Review and refine draft transfer strategies developed under SAP for the purpose.
4. Review, refine, and adopt draft strategies for improving recovery of costs particularly those related to O&M. Such strategies will help public sector in O&M of the schemes which have not been or cannot be transferred to the users. They will also help in improving the transfer rate as well schemes managed by the communities themselves
5. Undertake programmes for ensuring adequate and appropriate capacity at TMA and lower levels for engaging, mobilizing, and supporting communities through awareness campaigns, training, and monitoring and evaluation activities
6. Continue efforts initiated under SAP to engage private (for profit) and non-governmental (non-profit) organizations. These organizations can help increase public sector agencies' capacity for mobilizing and involving communities as well help experiment with innovative activities.

## Annex

Table I: Sources of Drinking Water (PIHS)<sup>12</sup>  
(Per cent of households)

Source	Urban	Rural	Overall
<b>PUNJAB</b>			
Tap in House	45	7	18
Tap Outside House	4	1	2
Hand Pump/M. Pump	49	85	75
Dug Well	1	4	3
River/ Canal/Stream	0	2	2
Other	0	0	0
Total	100	100	100
<b>SINDH</b>			
Tap in House	58	6	29
Tap Outside House	6	1	3
Hand Pump/M. Pump	26	54	42
Dug Well	2	13	8
River/ Canal/Stream	0	23	13
Other	9	3	5
Total	100	100	100
<b>NWFP</b>			
Tap in House	51	23	27
Tap Outside House	11	11	11
Hand Pump/M. Pump	24	19	20
Dug Well	13	19	18
River/ Canal/Stream	2	27	23
Other	0		1
Total	100	100	100
<b>BALUCHISTAN</b>			
Tap in House	69	13	20
Tap Outside House	8	5	5
Hand Pump/M. Pump	5	9	8
Dug Well	13	42	38
River/ Canal/Stream	2	31	27
Other	3	1	1
Total	100	100	100
<b>NATIONAL</b>			
Tap in House	50	9	22
Tap Outside House	5	3	4
Hand Pump/M. Pump	38	65	57
Dug Well	2	11	8
River/ Canal/Stream	0	12	8
Other	3	1	2
Total	100	100	100

<sup>12</sup> Tables I, IV, V, and VI are based on Pakistan Integrated Household Survey (PIHS), Round 3: 1998-99, Federal Bureau of Statistics, Government of Pakistan, Islamabad, October 2000.

Table II: Sources of Drinking Water in Pakistan (Census)<sup>13</sup>  
(Per cent of households)

Source	All Areas		Rural		Urban	
	1980	1998	1980	1998	1980	1998
<b>PUNJAB</b>						
Inside	64.6	86.7	58.9	83.4	81.2	94.2
Tap	10.8	24.3	2.1	11.0	35.7	54.8
Hand Pump	51.2	60.4	54.2	70.6	42.7	36.9
Well	2.6	2.0	2.6	1.8	2.8	2.5
Outside	35.4	13.3	41.1	16.6	18.8	5.8
Tap	3.2	2.2	1.3	1.7	8.4	3.2
Hand Pump	15.5	5.3	18.6	7.1	6.8	1.2
Well	10.3	2.2	12.9	3.1	2.9	0.4
Pond	3.4	1.1	4.4	1.5	0.3	0.1
Others	3.0	2.5	3.9	3.2	0.4	0.9
<b>SINDH</b>						
Inside	38.32	68.86	26.66	56.79	53.17	84.71
Tap	20.85	37.17	3.76	13.53	42.63	68.21
Hand Pump	14.86	29.29	18.92	40.66	9.69	14.36
Well	2.60	2.41	3.98	2.61	0.85	2.14
Outside	61.68	31.14	73.35	43.21	46.82	15.29
Tap	19.21	4.53	4.90	3.29	37.45	6.17
Hand Pump	12.99	7.23	18.94	11.56	5.41	1.53
Well	9.88	6.14	16.52	10.17	1.42	0.84
Pond	1.51	3.15	2.29	5.30	0.51	0.33
Others	18.09	10.09	30.70	12.88	2.03	6.43
<b>NWFP</b>						
Inside	20.3	55.3	25.5	49.8	59.4	82.6
Tap	8.0	27.2	3.6	21.9	34.0	53.5
Hand Pump	2.8	9.7	2.5	9.0	4.4	13.0
Well	19.6	18.4	19.4	18.9	21.0	16.1
Outside	69.6	44.7	74.5	50.2	40.6	17.4
Tap	9.1	12.3	6.7	12.7	23.6	10.1
Hand Pump	0.7	1.2	0.7	1.3	0.4	1.1
Well	17.7	8.4	18.4	9.5	13.4	3.0
Pond	3.5	4.0	4.1	4.8	0.3	0.2
Others	38.6	18.3	44.6	21.9	2.9	3.0

<sup>13</sup> Tables II & III have been reproduced from 1998 Provincial Census Reports of the Punjab, Sindh, and NWFP published by the Population Census Organization, Statistics Division, Government of Pakistan, Islamabad, 2000. Reports for Balochistan, FATA, Northern Areas, and AJK have not been issued as yet.

Table III: Latrine Facilities (Census)<sup>14</sup>  
(Per cent of households)

	All Areas	Rural	Urban	
	1998	1998	1980	1998
<b>PUNJAB</b>				
Separate	26.5	15.1	57.1	52.8
Shared	15.8	7.9	9.6	33.7
None	57.5	77.0	33.3	13.5
<b>SINDH</b>				
Separate	35.36	24.23		49.97
Shared	30.57	20.08		44.33
None	34.08	55.69		5.70
<b>NWFP</b>				
Separate	24.5	21.1	59.7	41.6
Shared	18.2	13.9	7.3	39.7
None	57.3	65.0	33.0	18.7

Table IV: Type of Toilet Used by the Household (PIHS)<sup>15</sup>  
(Per cent of households)

Type of Toilet	Urban	Rural	Overall
<b>PUNJAB</b>			
Flush	88	26	44
Non-Flush	4	2	2
Communal Latrines	-	-	-
No Toilet	9	72	54
Total	100	100	100
<b>SINDH</b>			
Flush	92	14	49
Non-Flush	5	28	18
Communal Latrines	-	-	-
No Toilet	2	58	33
Total	100	100	100
<b>NWFP</b>			
Flush	71	20	28
Non-Flush	20	32	30
Communal Latrines	-	-	-
No Toilet	9	48	42
Total	100	100	100
<b>BALOCHISTAN</b>			
Flush	56	4	10
Non-Flush	40	59	57
Communal Latrines	-	-	-
No Toilet	4	37	33
Total	100	100	100
<b>NATIONAL</b>			
Flush	88	22	41
Non-Flush	6	15	12
Communal Latrines	-	-	-
No Toilet	6	63	46
Total	100	100	100

<sup>14</sup> See footnote on Table II.

<sup>15</sup> See footnote on Table I.





