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Water, Sanitation and Poverty Linkages in Pakistan

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Abstract: Theoretically, water supply, sanitation and poverty are intertwined. This intertwined link is governed by various socio-economic, political and cultural factors. In Pakistan, this interlink is very strong. This paper is designed to assess the extent of this link and to evaluate various options of interventions and their effectiveness. Data analysis suggests that the sector suffers from poor attributes of access, quality, coverage and expenditure constraints. Sector's review indicates that approaches, strategies and priorities suffer from a number of problems. Results imply that water and sanitation approaches are less likely to work well or very effective.At least the approaches are not sustainable in the long run till the situation of the poor people will not be changed. Improvement could only be possible where the services are targeted efficiently with better access with low cost technologies coupled with improved pro-poor financial mechanisms. This can be achieved by extending the services to the income poor and water and sanitation poor and by extending the services in rural areas such as schools where the lack of facilities are visible.

Key words: Water supply, sanitation, poverty, Pakistan, Poverty Reduction Strategy Paper (PRSP).

Introduction and Background

Approximately 884 million people around the world lack adequate water and 2.6 billion people lack adequate sanitation (Life Water Statistics, 2010)[1]. Every year some 3.4 million people around the world, mostly children, die from diseases associated with inadequate water supply, sanitation and hygiene. The water- and sanitation-related diseases claim more lives than any war claims through guns (UNDP, 2006). An estimated 3.575 million people around the world die each year from water-related disease (WHO, 2008)[2]. The impact of inadequate water and sanitation services falls primarily on the poor. Evidence indicates that improved access to water and sanitation reduces diarrhea-related deaths in young children by more than one-third (UN, 2007). By improved hygiene promotion of hand washing, two thirds deaths could be reduced. Simultaneously, safe drinking water and sanitation may spur economic growth. According to World Health Organization (WHO), for every $1 invested, the estimated return is $3-$34 depending on the region and technology (Hutton and Haller, 2004).

A number of studies have recognized the water,

[1] When the flush toilets are considered the sensitive standard to be met, the number of people lacking proper sanitation would even cross the total four billion (Black and Fawcett, 2007). 21 per cent population around the world still does not have access to adequate drinking water (UNDP, 2007/2008). In Sub Sahara 63 per cent of population lacks access to basic sanitation and 45 per cent lack safe drinking water (UNDP, 2007/2008).

[2] Among water-borne diseases, the diarrheal disease continues to be major threat to child health in developing countries around the world. The latest estimates published by WHO indicate that diarrheal disease is responsible for approximately 800,000 deaths of children under the age of five per year, causing a higher no. of under-age-5 deaths than malaria and HIV combined (WHO, 2007).

sanitation and poverty linkages (Bosch et al., 2002; Mara, 2003; Wagstaff, 2002; Chourey and Parkash, 2010; Gunther and Fink, 2010). Bosch et al. (2002) describe how inadequate water and sanitation services to the poor increase their living costs, lower their income earning potentials, damage their well-being and make their life riskier. Mara (2003) reveals that deficient water supply, sanitation and hygiene together are responsible for seven per cent of all deaths and eight per cent of all disability-adjusted life years (DALYs). Wagstaff (2002) describes that poverty breeds ill health and ill health keeps poor people poor; in other words, poverty and ill health are intertwined. Chourey and Parkash (2010) describe "the relationship between water and health is not linear, and is governed by various interlinked socioeconomic, political and cultural factors". Gunter and Fink (2010) describe that "One of the key factors contributing to the frequency and burden of diarrheal disease is the pronounced lack of water and sanitation in a majority of developing countries (Zwane and Kremer, 2007)". The above evidence suggests that water and sanitation services are highly important for the poor and their well-being.

Water and Sanitation Sector in Pakistan

According to UN indicators on water supply and sanitation (UN, 2010), the water and sanitation coverage in Pakistan is 90 per cent and 45 per cent respectively in 2008. The access to improved water source increased from 83 per cent in 1990 to 91 per cent in 2004 (WHO, 2006). Approximately 65 per cent of the population is being considered having access to safe drinking water (GOP-NDWP, 2009) and approximately 63 per cent of the total population has the sanitation facilities available by 2008 (GOP, 2010)[3]. Seventy-one per cent of rural households do not have adequate sanitation coverage. The coverage level remains a disgrace and the burden on the poor remains high. In fact, given the impact of ever increasing population, this burden is increasing. Almost 33.9 per cent of schools around the country have no drinking water facility and 37 per cent have no latrine and 60 per cent have no electricity (GOP, Economic Survey, 2009-10).

Each year more than three million Pakistanis become infected with water-borne diseases. Pakistan, like other developing countries, carries a large burden of water-borne diseases and expends a very negligible fraction of budgetary allocation on water and sanitation. Merely a fraction of a per cent of GDP is allocated to this sector and per capita expenditure is very minimal. Several policy documents emphasize the vast coverage, equality, efficiency and access issues related to water and sanitation along with certain measurable targets but yet government expenditure in water and sanitation is US$ 138 million per year during the last three fiscal years, which is around $0.81 per capita public expenditure on water and sanitation.[4] World Bank (2006) has reported that due to water, sanitation and hygiene related diseases 112 billion rupees cost every year to Pakistan economy and over 300 million rupees a day costs in lost earnings. Diarrheal diseases only costs in the range of Rs. 55 to 80 billion per year.

According to Pakistan's National Water Quality Monitoring Programme, a survey was conducted in 2002; results suggest that about 80 per cent of drinking water is not fit for drinking[5]. Recent evidence MGDs report (GOP, 2010) indicates that percentage of population—both urban and rural—with access to sanitation is improved to 63 per cent by 2008-09 from 30 per cent (baseline 1990-91), while the target is 70 per cent for medium term development framework (MTDF) period and MDG targets is 90 per cent of population for 2015.

The quality of water supply has often been questioned. Water qualitystandards are set by the Ministry of Health but are yet to be implemented or monitored (GOP, 2007; 2008). Newspaper report indicates that Ministry of Environment, Government of Pakistan has finalized the standards for drinking water as part of the National Action Plan, but this has yet to be notified (WASH News, 2009). Provinces are directed to prepare their own strategies as per the national drinking water and sanitation policies. Punjab province has formulated its Urban Water and

[3] According to the government statistics, nearly 45 per cent of all households do not have access to latrines; 51 per cent of all households are not connected to any form of drainage, 34 per cent exposed to open drains and 16 per cent to underground sewerage or open drains (GOP, 2006).

[4] Calculation is based on the past three years' fiscal actual and projected expenditure on water and sanitation sector reported in Economic Survey of Pakistan for the years 2008-09, 2009-10, and 2010-11 (P), which is respectively 11.4 billion, 12.9 billion, and 11.0 billion each year. Average annual expenditure on water sanitation is 11.75 × 85 (exchange rate) = 138.43 US dollars per year. Further divided with 170 million population per capita expenditure is 0.8143 dollar. Source: Author's calculation.

[5] Quality monitoring is conducted in 2002 from 23 major cities, based on monitoring of 48 tehsils out of 64 indicated 885 per cent water samples are unsafe for drinking. (GOP, 2011a)

Sanitation Policy, while other provinces such as Baluchistan, Northern Areas and Sindh provinces have formulated their draft strategies and actions (GOP, MOENV, 2011b).

Besides some progress on strategies, there is little evidence which suggests efficiency in water supply and sanitation sector in Pakistan. Several policy documents affirm the objectives to significantly improve the water and sanitation coverage and quality. But still a lot has to be done. There are some success stories of community-led projects but these are limited in its scope, coverage and broad-based national level or urgency[6].

In this retrospective, this paper is designed to assess and review the progress of the sector and to evaluate the various options of interventions and their effectiveness as to how water and sanitation could be a pathway to address the poverty at large. The conclusion section shall suggest policy recommendations. Rest of the paper is organized as the second section consists of review of literature, followed by a section on water and sanitation policies and poverty nexus in Pakistan. The penultimate section discusses the intervention issues and constraints, while the last section is summary and conclusion.

Review of Literature on Water, Sanitation and Poverty Linkages

Water and sanitation services are linked with various dimensions of poverty such as health, education, gender, social inclusion and income consumption level. Figure 1 demonstrates how the lack of water and sanitation affects poverty through these and other linkages. Availability of water and sanitation is likely to reduce the burden of disease related to other major health issues by reducing the average stress level for the immune system and thus strengthening the immune response to new infections (Mills-Reinke Multiplier-Cutler and Miler, 2005; Ewbank and Preston, 1990).

Bosch et al. (2002) recognize the classical mechanism of transmission of water-borne disease: "short cycle" personal hygiene (excreta>hand>mouth), and environmental pollution, the "long cycle". The transmission mechanism of input (intervention) and outcome (effect) are linked with the health impact as shown in Figure 2.

Bosch et al. (2002), in Figure 3, demonstrate that improvement in personal hygiene and in water and sanitation service could influence the reduction in morbidity and mortality.

Education

Lack of water and sanitation services affects the schooling of the children and restricts their access to education. Enough evidence exists which suggest that millions of school days are lost, girls' school enrolment is reduced and the quality of education is being affected due to lack of these facilities. Besides the illnesses caused by the lack or poor quality of clear drinking water and poor sanitation facilities, approximately 443 million school days are lost each year around the world due to these illnesses (Sparks, 2010). In developing world, Sparks mentions, one hour reduction in water collection activities increases girls' enrolment up to 38 per cent. The author further adds that schools that have water and sanitation facilities attract and retain more students.

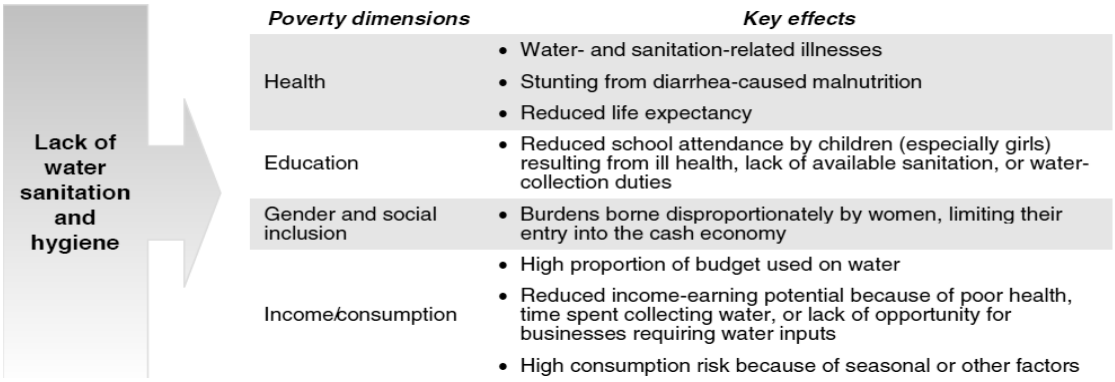

Figure 1: Linkages between poverty and water and sanitation.

Source: Bosch Christophe et al. (2002).

[6] Several community-led projects are successful such as Orangi, Lodhran, Mardan, Water aid community-led total sanitation pilot project etc.

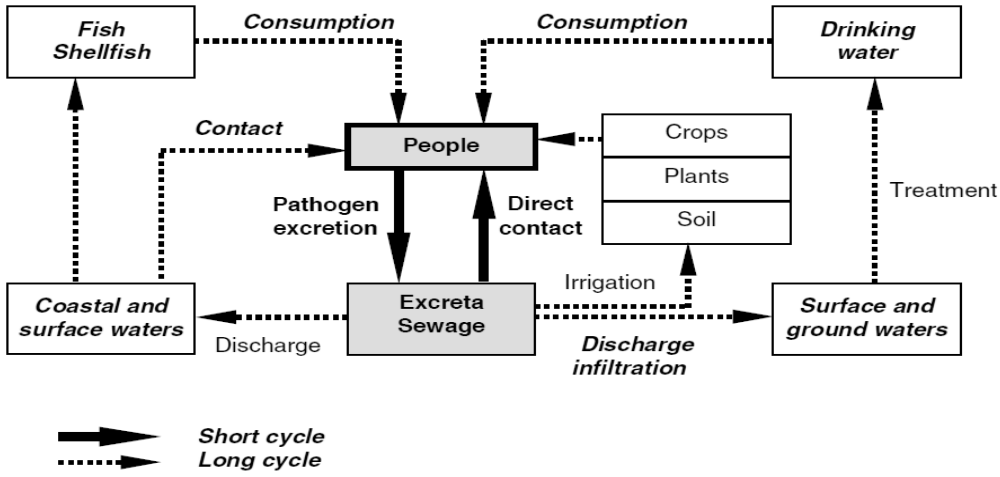

Figure 2: Main pathways of human exposure to pathogens in the aquatic environment.

Source: Bosch Christophe et al. (2002).

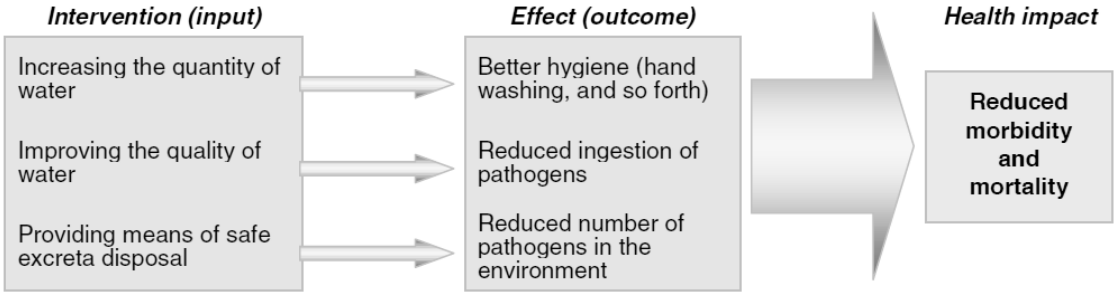

Figure 3: Effects of water and sanitation interventions on health.

Source: Bosch Christophe et al. (2002).

Effects on Ethnic Minorities and on Poor Geographical Areas

Ethnic minorities, poor households and elderly female-headed households are usually among the people who used to be affected disproportionately due to lack of water and sanitation services. These vulnerable groups and poor areas are often voiceless and powerless. They are often neglected in consultation processes, design or implementation of development projects. Women are usually excluded in the decision making processes in conservative areas. Distant geographically groups or ethnic minorities or even marginalized groups are usually excluded. Lack of water and sanitation usually affects women and girls in conservative poor communities or typical tribal practices.

Effects on Income and Consumption

Sparks (2010) describes that economic cost of illness is very high and one of the impediment towards economic progress. Sparks, who has quoted Jae So (Manager of the Water and Sanitation program at World Bank), relates the female literacy highly linked with countries' economic progress. Educating girls is considered one of the important factors for any economic progress and this cannot be achieved without adequate water and sanitation services. It is apparent that improvement in water and sanitation services may lead to reduction in the public expenditure on health related illnesses or diseases. Figure 4 demonstrates the proportion of cost of water supply services to disposable income. The lower is the income, lower the consumption of the services.

Poverty affected areas are largely poor in terms of income, their spending capacity is low and they are unable to afford the basic service provision (the disposable income is the income available to the households at their disposal to expend on necessities). For well off households, the cost of water supply is insignificant to their disposable income, but for poor households the proportion of expenditure on these services is much higher. Naturally the graph depicts the situation that higher level of water services require a higher level of income. Figure 5 demonstrates the profile for developed, intermediate and developing countries in level of disposable income and the per cent of population affordability of these services.

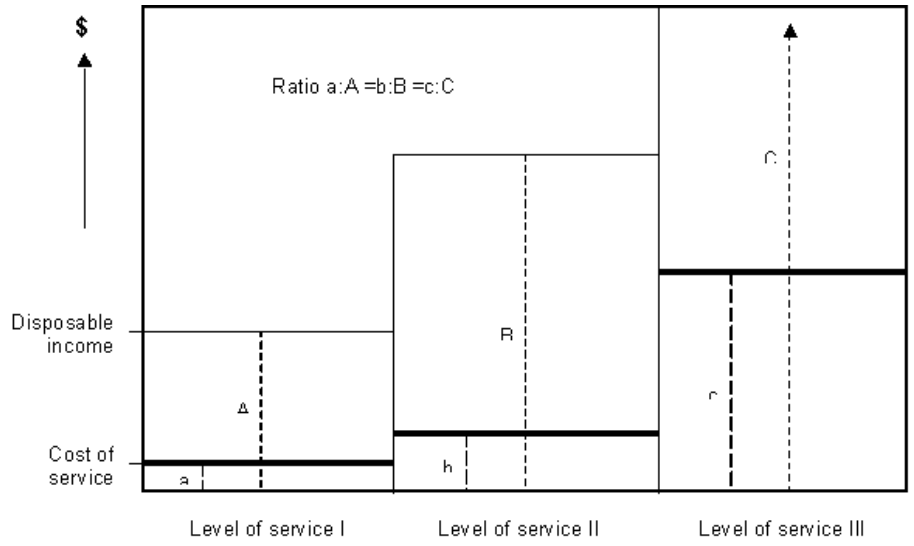

Figure 4: Cost of service as ratio of disposable income.
Source: Abrams (2003).

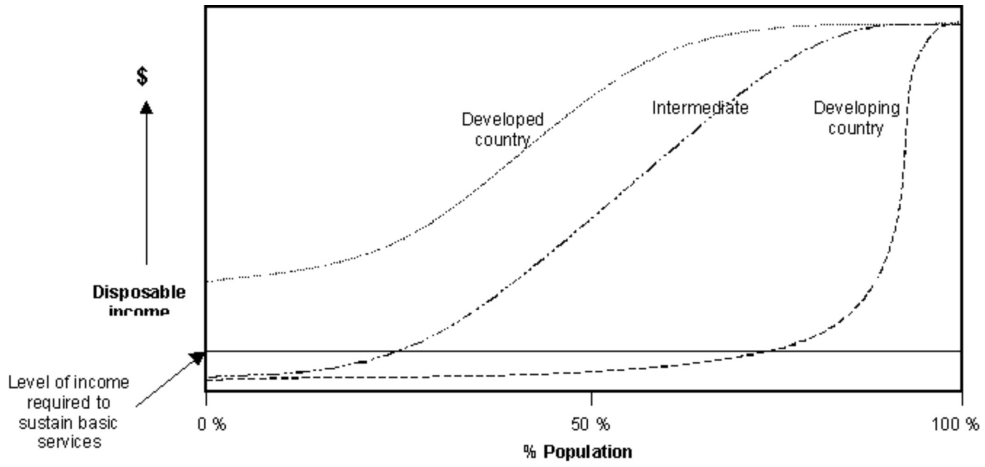

Figure 5: National disposable income profiles.
Source: Abrams (2003).

Water and Sanitation Policies and Poverty Nexus in Pakistan

The fundamental question that arises is whether the water and sanitation sector policies are designed to respond to the needs of the poor. The national experience described below seeks the answer to the question that lack of adequate services could cause disproportionate problems especially in the areas of health and education. In order to answer the above question one must examine the information on the poor themselves and their perceptions of water and sanitation. The important challenge is one that can reexamine and evaluate the related policy goals as to whether these policies have any impact on the lives of the poor or whether the policy directions are supposed to be reoriented in light of the review of the success and failure of achievements of the targets and goals.

Policies, Targets, Progress and Achievements

National Drinking Water Policy (NDWP, GOP, 2009), clearly states policy goals, besides the other objectives, 'to provide access to safe and sustainable drinking water supply to the entire population of Pakistan by 2025'. The national sanitation policy (NSP, GOP, 2006) targets 'to meet the Millennium Development Goals (MDGs) whereby the proportion of the people without sustainable

access to improved sanitation will be reduced by half by the year 2015. 100 per cent population will be served by 2025 with improved sanitation. This means that the number of households in Pakistan having access to improved sanitation will be increased from 55 per cent to 77.5 per cent and that the number of households in urban areas connected to an underground sewage system will be increased from 46 per cent to 73 per cent.

While examining these goals and the impact on the lives of poor, and looking at sanitation targets, the progress in Pakistan in some respects is where the country was 30, or 40 or even 50 years ago. The country is still far away to provide the 100 per cent access to safe drinking water and 100 per cent sanitation services to the entire population by 2025.

All the sources of safe drinking water (tap water, hand pump, motor pump, dug well and other sources) together provide 56 per cent of total households by 2006-07 (GOP, PRSP II). Tap water slightly increased from 34 to 36 per cent between 2005-06 and 2006-07. Access to hand pump decreased from 44 per cent to 30 per cent overall, accesses through motor pump slightly increased (Table 1).

Expenditure Patterns on Sanitation and Water

Table 2 indicates that in terms of water supply, sanitation, health and education, expenditure during 2006-07 and 2008 is respectively 16 and 19 billion but in 2008-09 it declined. But one can see that the percentage expenditure of GDP ratio to health and education is not much different or slightly decreased during the last two years.

Table 3 shows that health allocation in percentage of GDP expenditure declined from 0.57 in 2007-08 to 0.54 in 2009-10. The same is true for education expenditure which also declined from 2.50 per cent of GDP in 2006-07 to 2.05 in 2009-10 (refer to Figure 6 also).

Table 1: Main sources of drinking water in Pakistan (per cent)

Water	*FY 2001/02 PIHS*			*FY 2004/05 PSLM*			*FY 2005/06PSLM*			*FY 2006/07 PSLM*		
sources	*Urban*	*Rural*	*Overall*	*Urban*	*Rural*	*Overall*	*Urban*	*Rural*	*Overall*	*Urban*	*Rural*	*Overall*
Tap water	58	10	25	60	23	39	59	21	34	62	22	36
Hand pump	14	56	44	13	39	27	12	42	32	9	41	30
Motor pump	22	14	17	22	14	18	25	23	24	24	20	21
Dug well	2	10	7	2	9	6	2	7	5	1	6	4
Other	3	10	7	3	16	10	3	8	6	4	10	8
Total*	100	100	100	100	100	100	100	100	100	100	100	100

Source: PRSP II, Federal Bureau of Statistics, PSLM FY 2006/07 (Pakistan Social Living Standard Measures); Planning Commission, Pakistan Millennium Development Goals, Report 2004; and Finance Division, Accelerating Economic Growth and Reducing Poverty: The Road Ahead, Poverty Reduction Strategy Paper, 2003, Government of Pakistan.
* Slightly may differ because of approximation.

Table 2: Water supply, sanitation, health and education expenditures (Rs. in billions)

Sectors	*01/02 Act*	*02/03 Act*	*03/04 Act*	*04/05 Act*	*05/06 Act*	*06/07 Act*	*07/08 Act*	*08/09 Act*	*08/09 J-M Act*	*09/10 J-M Act*	*09/10 Proj*
Water and sanitation	4.6	3.4	5.8	6.5	10.3	16.6	19.5	22.2	11.4	12.9	11.0
Education	66.3	78.4	97.7	116.9	141.7	162.1	187.7	240.4	153.6	175.3	260.6
Health	19.2	22.4	27	31.4	39.2	53.2	62.4	83.7	43.1	55.0	62.1

Source: Economic Survey, 2009-10, Ministry of Finance, Government of Pakistan.

Table 3: Health and education expenditure in % of GDP (2001 to 2009-10) (in billion Rs)

Sectors	*01/02 Act*	*02/03 Act*	*03/04 Act*	*04/05 Act*	*05/06 Act*	*06/07 Act*	*07/08 Act*	*08/09 Act*	*09/10*
Health and nutrition	0.59	0.58	0.57	0.57	0.51	0.57	0.57	0.56	0.54
Education					2.24	2.50	2.47	2.10	2.05

Source: Economic Survey 2009-10, Ministry of Finance, Government of Pakistan.

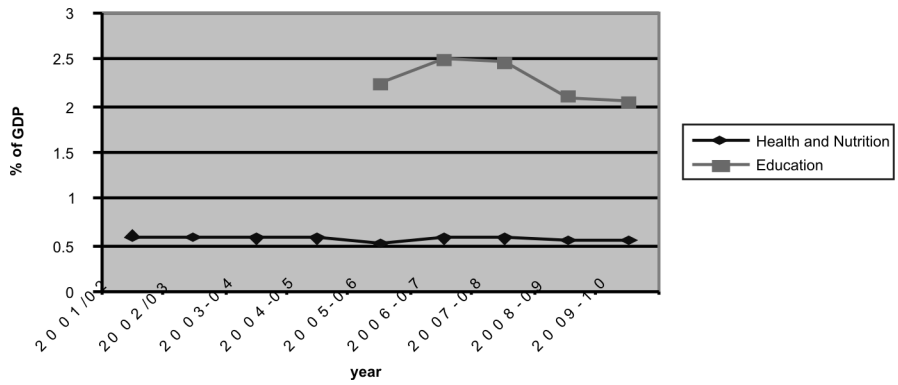

Figure 6: Health and education expenditure as per cent of GDP.

Source: Government of Pakistan, Economic Survey 2009-10.

According to Pakistan Education Statistics, Government of Pakistan (FY 2008-09), about 33.9 per cent of schools in Pakistan lack basic water supply while 36.9 per cent do not have latrine and 59.6 per cent do not have electricity (GOP, 2010, Economic Survey 2009-10). According to PRSP II, about 15 per cent of households in FY 2006-07 had non-flush toilets and 27 per cent did not have any toilet facilities.

A recent newspaper report reveals a nearly three billion US dollar shortfall of finance in meeting the MDGs (Haider, 2009). It seems, in absence of availability of sufficient finance, the social sectors like education, health and water are going to be affected.

The PRSP budgetary expenditure—Planned or Projected—for the next five years (Table 4) reveals not a significant improvement in actual expenditure patterns.

Is the Access Extended to those Who Don't Have Services?

According to national indicators compiled by United Nations (UN, 2010), and MDG database (Table 5) total improved drinking water coverage up to 2008 is 90 per cent of population and for improved sanitation coverage is merely 45 per cent but just 29 per cent for rural population based on broad definition. Access to clean water increased to 84 per cent of population by 2010-11. Access of sanitation will be increased to 63 per cent of population by 2010 (GOP, MDG report 2010).

Recently a report appeared in a national newspaper that Federal Investigating Agency, Government of Pakistan is conducting investigation of 700 million financial corruptions during the implementation of the clean drinking water for all (CDWA) programme (see *Dawn* December 13, 2010). This indicates poor state of affairs in this sector, indirectly.

Table 4: Projected PRSP budgetary expenditure % of GDP (FY 2008-09 to FY 2012-13)

PRSP expenditure	*Actual*	*Baseline*	*Projections (Based upon FY 2008-09 Budget Expenditure)*				
	2007-08	*2008-09*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*
Water and sanitation	0.81	0.11	0.07	0.08	0.08	0.09	0.10
Education	1.74	2.12	1.51	1.82	2.20	2.66	3.22
Health	0.58	0.60	0.34	0.43	0.56	0.71	0.92

Source: PRSP II.

Table 5: National indicators on water supply and sanitation compiled by UN

Country/Area	*Improved drinking water coverage (%) 2008*			*Improved sanitation coverage (%) 2008*		
	Total	*Urban*	*Rural*	*Total*	*Urban*	*Rural*
Pakistan	90	95	87	45	72	29

Source: United Nations, MDG Database, accessible at: http://mdgs.un.org/unsd/mdg/Default.aspx (accessed June 2010).

Table 6 demonstrates the percentage number of schools without building, boundary wall, drinking water, latrine and without electricity. Almost 10.9 per cent of total schools are without building.

It is a well recognized fact that provision of facilities to schools may help in reduction in disease, possible increase in enrolment and enhancement in learning capacities. A large number of schools lack adequate water supply and sanitation facilities (GOP, 2007).

Identifying the Income Poor and the Water and Sanitation Poor

Figure 7 shows the poverty head count rate in Pakistan since 1987-88. Though poverty is declining in both urban and rural areas according to the government statistics since 2001-02 (See Table 7). Table 7 indicates urban poverty declines more than 40 per cent between 2001-02 and 2005-06, while rural poverty declined slightly more than 30 per cent.

Urban poverty is now less than half of the rural poverty in FY 2005-06. That means rural poverty is almost close to double of the urban poverty (Table 8). Looking at the access and provision of services most of the water poor are urban slums and rural poor. The overall number of poor based on 2005-06 is still 22.3 per cent (Table 7).

The share of the poor population in rural areas is 79.5 per cent while in urban areas this ratio is 20.5 per cent (year 2005-06). Most of the poverty category in Table 9 shows that larger share of extremely poor, ultra poor, poor, and vulnerable have a significant proportion in both household expenditures between FY 2001-02 and FY 2005-06.

Figure 8 depicts that the larger the household size, larger is the possibility to be poor; largest households are having larger incidence of poverty. It is also an established fact that the richest 40 per cent of rural households own agricultural land that was on average about four times larger than that owned by the poorest 60 per cent.

Table 6: Missing facilities in government schools 2008-09 (%age)

Area	*Without building*	*Without boundary wall*	*Without drinking water*	*Without latrine*	*Without electricity*
Total Pakistan	17,764	61,274	54,996	59,846	96,769
In %	10.9%	37.7 %	33.9%	36.9%	59.6%

Source: NEMIS 2008-09 AEPAM, Ministry of Education, taken from Economic survey 2009-10

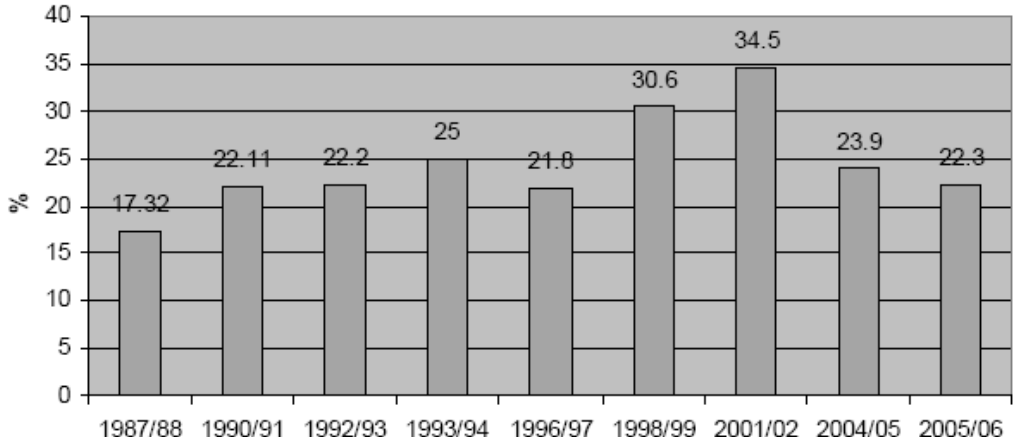

Figure 7: Poverty head count rate in Pakistan FY 1987-88 to FY 2005-06 (per cent of population)

Source: Pakistan Economic Surveys, FY 2001-02 & FY 2007-08

Table 7: Decline in the poverty headcount: FY 2001/02-FY 2005-06

Region	*FY2001/02*	*FY2005/06*	*Per cent decline*
Overall	34.5	22.3	35.4
Urban	22.7	13.1	42.3
Rural	39.3	27.0	31.3

Source: Finance Division, Economic Adviser's Wing, Economic Survey FY 2007/08, Government of Pakistan.

Table 8: Urban-rural breakdowns of poverty statistics in FY 2005/06

Nature of Poverty	Urban	Rural
Headcount rate (per cent)	13.1	27.0
Share of poor population (per cent)	20.5	79.5

Source: Federal Bureau of Statistics, PSLM FY 2005/06, Government of Pakistan.

Table 9: Population distribution by household expenditure per adult equivalent (per cent)

Poverty category		*FY2001-02*	*FY2005-06*
Extremely poor	50% of poverty line or less	1.1	0.5
Ultra poor	50%-75%	10.8	5.4
Poor	75%-100%	22.5	16.4
Vulnerable	100%-125%	22.5	20.5
Quasi non-poor	125%-200%	30.1	36.3
Non-poor	200% of poverty line or above	13.0	20.9

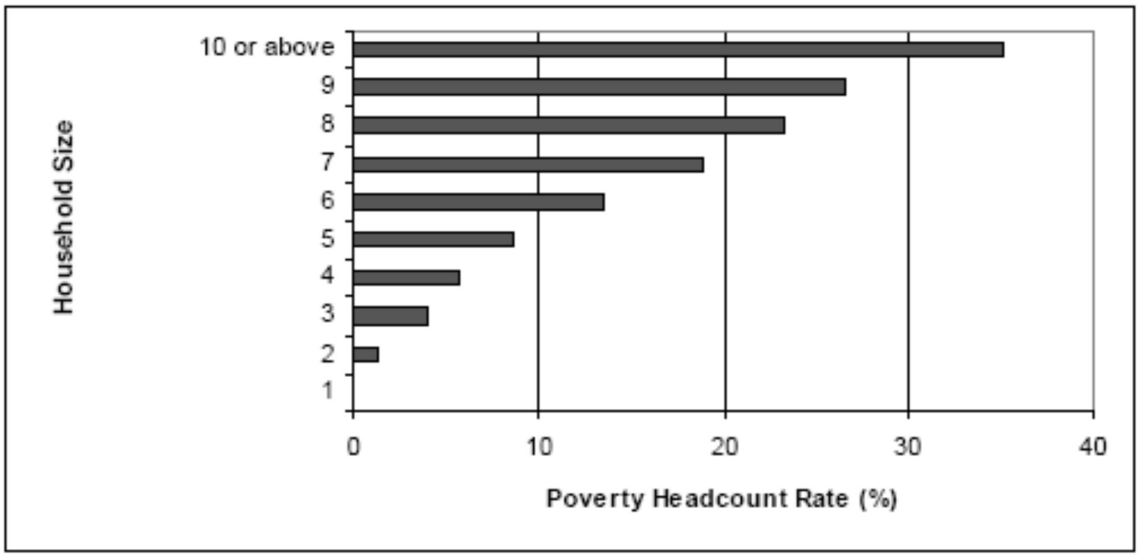

Figure 8: Household size and poverty rate FY 2005-06.
Source: Federal Bureau of Statistics, PSLMFY 2005/06, Government of Pakistan

Educational attainments and occupations of household heads appear to be highly correlated with poverty incidence of the households. Access to key community services is strongly associated with a household's poverty situation. Using the PSLM FY 2004-05, Table 10 indicates the type of practitioner consulted for diarrheal treatment cases such as the nearest primary school, hospital/clinic, family planning facility, or public transport, and poverty. It shows that households closer to the basic community services are in general richer than those isolated from these services (see for detailed discussion PRSP II). It also indicates that the number of patients to private dispensary or hospitals in diarrheal cases are almost around 65-70 per cent in various HIES.

The data show the percentage of diarrheal cases reported at various levels of health establishments in Pakistan. The data indicate the significance of incidence at places and various levels.

How WAS Could be a Pathway to Address Poverty?

Water and sanitation could be pathways to address the poverty in a number of ways. The fundamental question is to know where the incidence of poverty lies, where the most poor people live (it could be in rural areas or semi-urban area), poor locality schools or where are the high incidence of water-borne diseases or where the

Table 10: Type of practitioner consulted for diarrheal treatment (per cent of cases)

Region and practitioner	*Percentage of diarrhea cases*				
	FY 1998/99 PIHS	*FY 2001/02 PIHS*	*FY 2004/05 PSLM*	*FY 2005/06 PSLM*	*FY 2006/07 PSLM*
Private dispensary/Hospital	54	59	68	65	72
Govt hospital/Dispensary	24	21	15	19	13
RHC/BHC	3	3	5	4	6
LHW	0	1	1	0	1
LHV/Nurse	-	-	0	0	0
Chemist/Pharmacy	9	10	6	8	5
Hakeem/Homeopathic/Herbalist	6	4	3	3	3
Other	3	2	1	1	1

Source: Federal Bureau of Statistics, PSLMFY 2006/07, Government of Pakistan.

inadequate facilities are etc. Abrams (2003) mentioned that "… water supply and sanitation services will not be sustainable in the long term under the conditions of poverty. The solution lies outside of the water sector—it lies in the eradication of poverty". In Pakistan case, the evidence indicated despite some success stories of community based development, private sector engagement and government priorities and expenditure patterns speak volumes. The experience in Pakistan indicates that these approaches, strategies and priorities are not working well or unsustainable until the situation of the poor people is not changed.

The solution lies in eradication of poverty and it is not possible to eradicate the poverty, the best alternative is to make sure the basic services are to be provided through strong government intervention or by any other intervention; in fact, absence of these services is an indication of poverty. Where these services are not existent or are inadequate, the people are poor, and it is also very likely to have the poverty indicated in inadequate supply of water and sanitation. In an alternative scenario, the best way to start is to map the income poor and water and sanitation poor and direct the policy towards these groups. In other words, where the majority of the poor, ultra poor, extremely poor or vulnerable live and those who are likely to have no access to sanitation.

It needs to be targeted at highest level of intervention and even the rural schools, which do not have drinking water and sanitation, personal hygiene could be where government could have strong priorities of intervention. Mara (2003), based on the compilation of 172 health survey data, recorded that for those areas which have a well-designed intervention will have likely reduction in diarrheal disease incidence by about 25 per cent.

Intervention Issues and the Constraints

Theory and evidence guide us to the fact that inadequate services has impact on income of the poor and very likely to have higher poverty associated with inadequate supply of water and sanitation. The water, sanitation and poverty linkages are very strong. Poverty is intertwined with lack of water and sanitation facilities. The policy choices could be directed towards identifying where the high incidence of poverty lies, geographically, facility-wise, so that it can better be targeted for the possible government intervention. The needs of the poor like provision of basic health, water and sanitation are not met because of their level of income and inability to afford the cost of these services, and they can be identified with the income poor, water poor or services poor. The options for the government are to address these constraints and assess the needs of the poor easily.

One can assess how the government intervention of 'drinking water for all' is going to benefit the large number of poor, what is the degree of benefit, what is the expected cost and how politically feasible is to choose the target interpenetration in an acceptable timeframe. Government must focus, redefine and map the priorities for those who are income poor, water poor and the areas where these services are absent.

Government can re-evaluate the progress in the sector, whether the sector is on track to achieve the desired objectives of the policies, whether or not reaching the vast majority of the poor. The results suggest that policies should have to be directed towards targeting the areas where there is a lack of services, high incidence of poverty and absence of services. This can be achieved coupled with efficient delivery, improved access to these services, efficient and cost effective technology and better financial mechanism.

The fact of the matter is to look deeper into the eyes of the devil in terms of the severity of the problem, attempt to integrate all the efforts to address the problems of the poor, and apply best practices where these services are being provided with relative success. Appropriate services or incremental development could be one way to address the larger and bigger issues.

Variety of Interventions and Their Effectiveness

The key question is that government must look into the overall improvement in institutional and policy environment and alternative choices of interventions. Who in fact are benefiting from public spending and at what cost, and in what proportion? Whether the key interventions achieve their intended goals or not? Simply is the case for drinking water for all programmes who are the intended beneficiaries (those who have the services or those who don't have). How effective is the kind of programme or policy directives in comparison to several alternative interventions such as the areas with absence of these services.

These are crucial issues one can address for improvement in institutional and policy environment.

Summary and Conclusion

The paper critically evaluates the various options of interventions and their effectiveness as to what extent water and sanitation could be a pathway to address poverty at large. The paper also reviews the best practice framework that suggests re-evaluating water and sanitation strategies by establishing strong links to address the poverty and assess whether the chosen intervention could be effective or not.

The magnitude of problem is large—poverty intertwined with lack of water and sanitation. The fact of the matter is to look deeper into the eyes of the devil in terms of severity of the problem, attempt to integrate all the efforts to address the problems of the poor and apply best practices where these services are being provided with relative success. Appropriate services or incremental development could be one way to address the larger and bigger issues

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