



Punjab **Water & Sanitation** Rural Agenda – July 2014



P&D Department

HUD&PHE Department

LG&CD Department

The Urban Unit

Table of Contents

Acronyms	4
List of Tables and Figures	6
List of Maps	7
Key Definitions	8
1. Introduction	9
1.1 Background	9
1.2 Objectives	9
2. Background of WSS Sector in Punjab	10
2.1 Existing Situations of Rural WSS	12
2.1.1 Pakistan	12
2.1.2 Punjab	13
3. Institutional Framework	18
3.1 Punjab Local Government Act (PLGA) 2013	18
3.2 Punjab Drinking Water Policy	19
4. Institutional Arrangements	19
5. Financing	20
6. Policy and Regulatory Initiative	23
6.1 Draft Municipal Water Act	23
6.2 Draft Sanitation Policy	23
6.3 Draft Behavior Change Communication Strategy	23
6.4 Draft Punjab Waste Management Act	24
7. Analytical Work & Studies	24
8. Rural Water and Sanitation Program Initiatives	26
8.1 Initiatives for Rural Water	26
8.2 Initiatives for Rural Sanitation	29
9. Key Findings: Gaps & Issues in the Sector	33
9.1 Usage of Unimproved Drinking Water Source	34
9.2 Lack of Financial Resources	34
9.3 Lack of Effective O&M System of PHED Schemes	36
9.4 Usage of Unimproved Sanitation Facility	36

9.5	Lack of Impact Assessments Studies	36
10.	Recommendations	36
10.1	Policy	36
10.2	Institutional.....	37
10.3	Financing & Incentives	39
10.4	Monitoring & Evaluation (M&E)	41
12.	Conclusion – Way Forward	42
	References	43



Acronyms

ASB	Anjuman Samaji Behbood
CBOs	Community Based Organizations
CPP	Changa Pani Programme
GIS	Geographical Information System
GoPb	Government of Punjab
HUD&PHED	Housing and Urban Development and Public Health Engineering Department
KOICA	Korean International Cooperation Agency
LG&CDD	Local Government & Community Development Department
LGO	Local Government Ordinance
MDGs	Millennium Development Goals
MICS	Multiple Indicators Cluster Survey
M&E	Monitoring and Evaluation
MIS	Management Information System
ODF	Open Defecation Free
O&M	Operation and Maintenance
PATS	Pakistan Approach to Total Sanitation
P&D	Planning and Development
PESRP	Punjab Education Sector Reform Programme
PLGA	Punjab Local Government Act
PSPC	Punjab Saaf Pani Company
RO	Reverse Osmosis
RWSS	Rural Water Supply and Sanitation

RWSC	Regional Water & Sanitation Corporation
SDA	Service Delivery Assessment
SACOSAN	South Asian Conference on Sanitation
SWM	Solid Waste Management
TMA	Tehsil Municipal Administration
TPV	Third Party Validation
UC	Union Council
UF	Ultra Filtration
WASA	Water and Sanitation Agency
WASH	Water, Sanitation and Hygiene
WSP	Water and Sanitation Programme
WSS	Water Supply and Sanitation



List of Tables and Figures

Table-1: Water Quality Zone

Table-2: PHED water and sanitation projects in nine districts

Table-3: Action Plan for Rural Water Supply and Sanitation Agenda

Figure-1: Composition (in Rs '000s) of water supply and drainage budget allocation (2009-14)

Figure-2: Composition (%) of water supply and sanitation budget allocation (2009-14)

Figure-3: Development partners' contribution (in Rs million) to water and sanitation (2010-14)

Figure-4: Reasons of Failure of Dysfunctional Rural Water Supply

Figure-5: Existing Coverage (%) and Millennium Development Goal Target

Figure-6: Investment Required

Figure-7: Dysfunctional Schemes, Cost Required and Population



List of Maps

Map-1: Water Availability Zones – Punjab Province

Map-2: Percentage of Households Using Improved Water Source

Map-3: Percentage of Households Using Improved Sanitation Facility

Map-4: Waterborne Diseases Spread

Map-5: Status of Rural Water Supply Schemes



Key Definitions

Improved Water Source: A water source is considered to be “improved” if the household has access to piped water (into dwelling, compound, yard or plot, to neighbor, public tap/standpipe), hand pump, motorized pump, tube well/ borehole or turbine, protected well and protected spring¹.

Unimproved Water Source: A source of water is considered to be “unimproved” if it is an unprotected well, unprotected stream, tanker-truck, cart with small tank/drum, surface water, bottled water (MICS Punjab 2011)

Water Quality: Safe drinking water is the water with microbial, chemical and physical characteristics that meet World Health Organization guidelines or national standards on drinking water quality²

Treated Water: Proper in-house water treatment methods to be: boiling, adding bleach or chlorine, using a water filter, and using solar disinfection. (MICS Punjab 2011)

Improved Sanitation: Improved basic sanitation facilities for excreta disposal include flush or pour flush to a piped sewer system, septic tank, or pit latrine; ventilated improved pit latrine, pit latrine with slab, and use of a composting toilet. (MICS Punjab 2011)

Unimproved Sanitation: Unimproved sanitation facilities to dispose excreta include: flush to somewhere other than a piped sewer system, pit latrine without slab / open pit, bucket, other and open defecation. (MICS Punjab 2011)

¹ Multiple Indicator Cluster Survey (MICS) Punjab 2011, Bureau of Statistics, Government of the Punjab

² World Health Organization, *Water Sanitation and Health*, Retrieved June 2014, from http://www.who.int/water_sanitation_health/mdg1/en/

1. Introduction

1.1 Background

Government of Punjab (GoPb) is committed, as per policy and its mandated responsibility, to ensure the provision of safe drinking water and improved sanitation facilities to the rural population of the province. The rural population is faced with the challenges of contaminated drinking water and poor access to improved water supply and sanitation services. This has an adverse impact on women and children particularly as they are part of vulnerable segment of society. The workload has been increased significantly for women due to scarcity of water; however, the requirement is fulfilled by households through fetching water from distant resources from far-flung areas. The marginalized and vulnerable population of the villages is also adversely affected because of the poor and inadequate sanitation conditions, causing burden of disease and loss of productive time and human suffering in the form of various epidemic diseases. The GoPb is committed to reduce the burden of water-borne diseases by providing safe drinking water and improved sanitation facilities to rural communities and un-served areas.

1.2 Objectives

This in-house desk study by the concerned departments assesses the provision of Punjab's rural water supply and sanitation services. This study aims to depict the situation of water, sanitation & solid waste in rural area across Punjab. The study takes stock of the sector across a range of policy, legal, technical, financial and institutional dimensions. It identifies the key issues that are impairments to the provision of safe and sustainable rural water services. In light of the gap-analysis, the report offers recommendations for a way forward to set a Rural Water & Sanitation Agenda for Punjab. This report aims to facilitate the Government of the Punjab in developing rural water and sanitation agenda with improvement in access, quality, and institutional realignment/design of service providers along with integrated financing in the sector with regulation.

To summarize, the objective of this report is to present to policy makers with:

- a) Situation analysis of rural water and sanitation coverage
- b) Institutional Framework, highlighting water and sanitation laws and policies
- c) Initiatives of the Departments to provide safe drinking water & improved sanitation
- d) Gap Analysis and resources / investment required to provide safe drinking water & sanitation to the entire population of rural areas.
- e) Recommendations to address the issues and sectoral priorities

2. Background of WSS Sector in Punjab

The Punjab is the second largest province of Pakistan after Baluchistan with 205,344 km² area. Punjab consists of five city districts, 36 districts, 144 Tehsils, 3,464 union councils and 25,914 villages. Punjab, being the most populous province of Pakistan, inhabits 98 million people which make 56% of total population of Pakistan. Out of 98 million people living in the province, 38% (37 million) live in urban and 62% (61 million) in rural areas while as per gender ratio, 48% are female and 52% are male.³

Punjab Facts

The Multiple Indicator Cluster Survey (MICS) Punjab (2011) shows that:

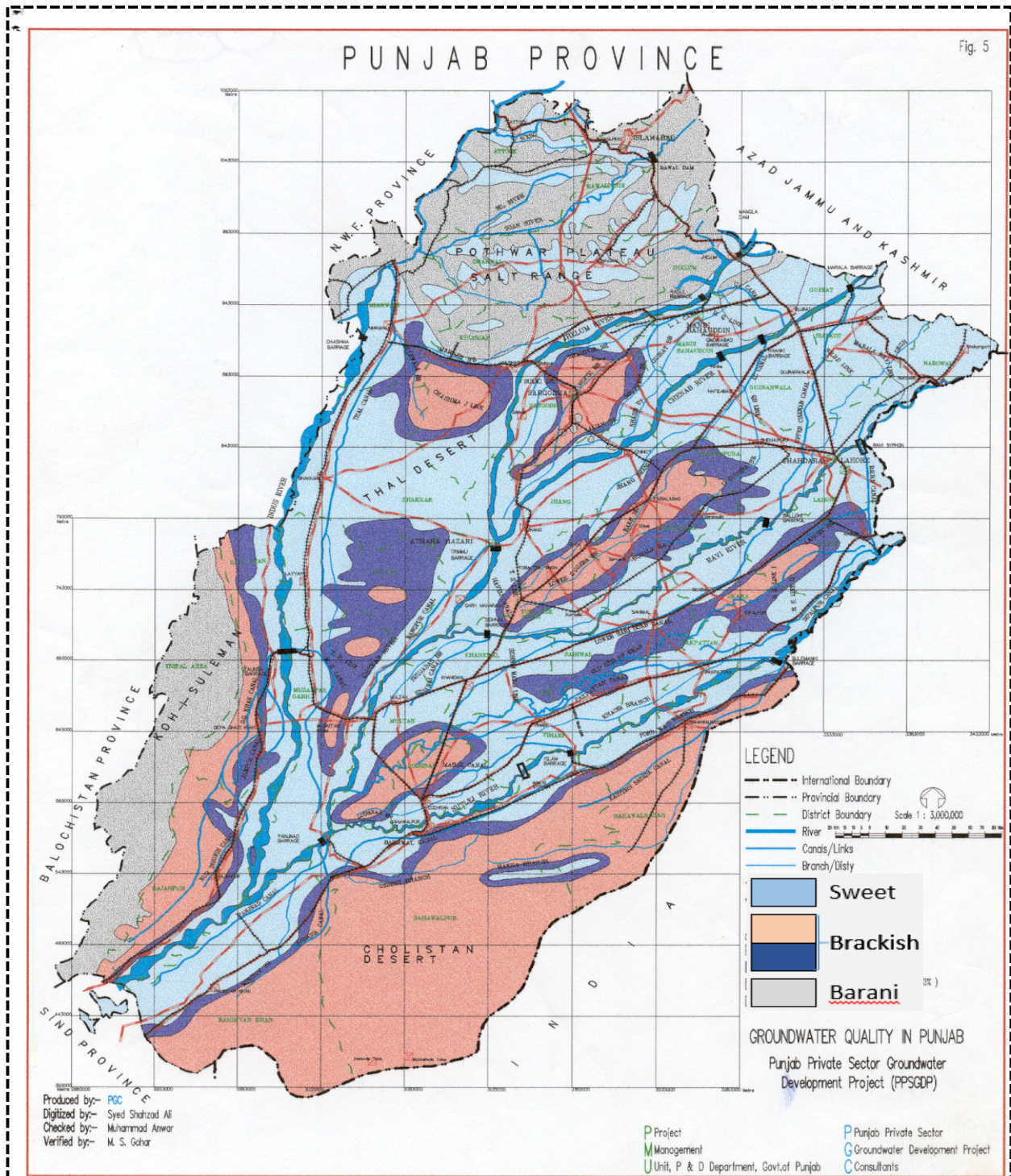
- ✓ Infant Mortality Rate is 82 per 1000 lives
- ✓ Under Five Mortality Rate is 104 per 1000 lives
- ✓ Incidence of Diarrhoea is 16%
- ✓ Incidence of Acute Respiratory Infection (ARI) is 16%
- ✓ Under Weight Prevalence is 33% and
- ✓ Open Defecation is 23%

The province can be divided into four drinking water zones; predominately sweet ground water zone (53%) comprising of districts from central and southern parts, predominately brackish zone (29%) mostly located in southern part, predominately barani areas (18%)

³ Punjab Development Statistics, 2013

comprising of southern and northern parts. The following map illustrates water availability zones in Punjab:

Map-1: Water Availability Zones – Punjab Province



The following table depicts the population distribution according to water quality zone:

Table-1: Water Quality Zone

WQ Zone	Population (000)	District
Sweet	38,220	14
Brackish	35,280	13
Barani	24,500	9
Total	98,000	36

Source: PHED 2014

2.1 Existing Situations of Rural WSS

2.1.1 Pakistan

Pakistan is the sixth most populous country in the world with a population currently (2012) estimated at about 180 million. Its rural population is currently estimated at about 117 million (65%) and it is projected to decrease to 50% by 2030 as a result of rural-urban migration.

The Indus is the country's only major river system, and should current trends continue, decreasing snowfall in the Himalaya and Karakorum mountains may progressively limit this supply of fresh surface water. Underground water sources are fast being depleted due to unsustainably high withdrawals. The amount of per capita water resources has decreased from 5,300 cubic meters (m³) in the 1950s to about 1,000 m³ in 2011 - the international definition of water stress. Irrigation accounts for 69 percent of the water used, industry for 23 percent and municipalities for only 8 percent. Surface water supplies are increasingly threatened by wastewater pollution, because only 50 percent of effluents are collected and only 10 percent of those collected are treated. Groundwater is now being over-exploited in many areas, and its quality is deteriorating.

2.1.2 Punjab

Usage of Improved Drinking Water Source

A water source is considered to be “improved” if the household has access to piped water (into dwelling, compound, yard or plot, to neighbor, public tap/standpipe), hand pump, motorized pump, tube well/ borehole or turbine, protected well and protected spring⁴.

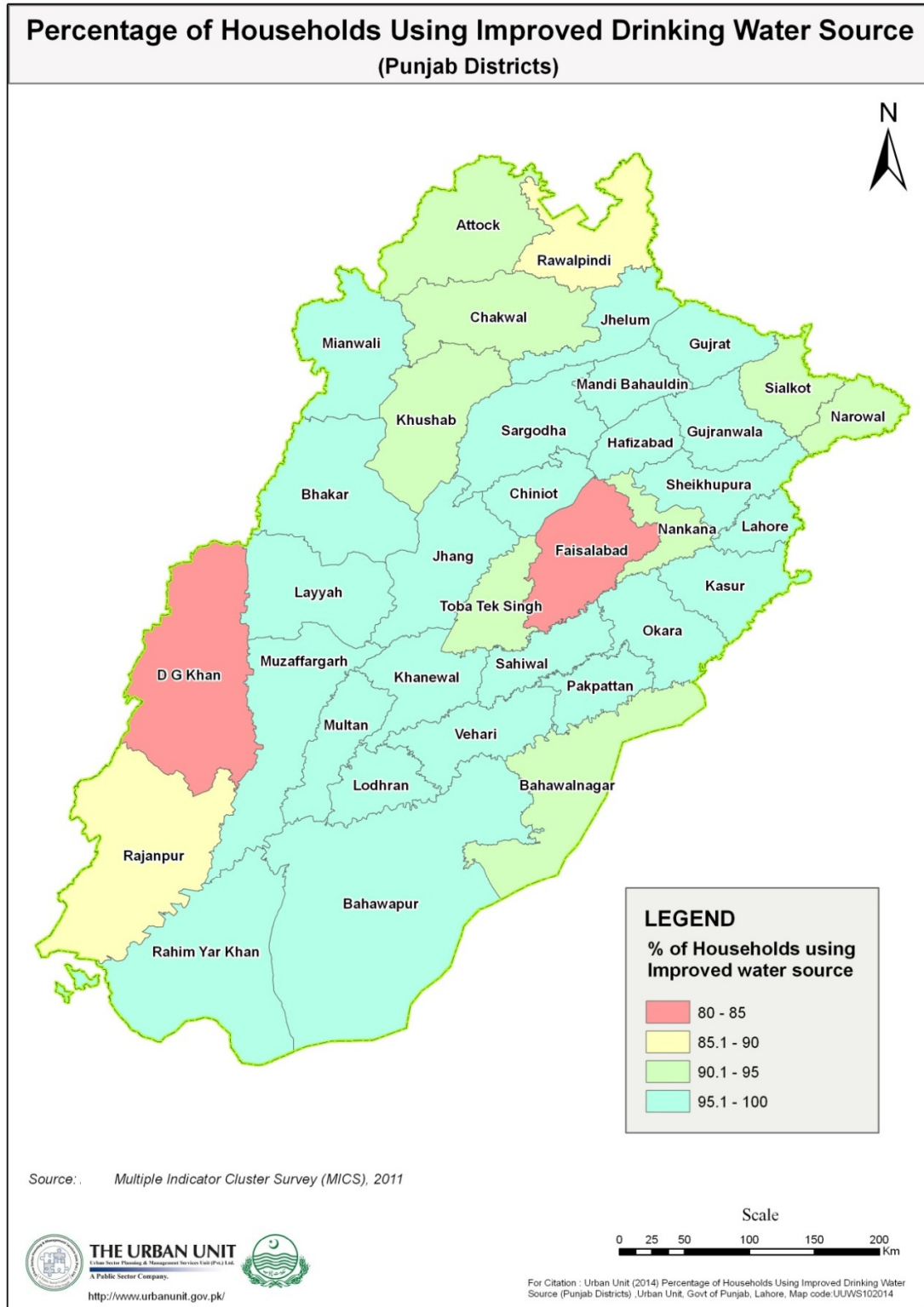
The Multiple Indicator Cluster Survey Punjab (2011) reports that 94% of the population has access to improved water source – 88% in urban areas and 96% in rural. This indicates that Punjab is on-track with regards to the 10th indicator of the Millennium Development Goal-7.⁵

The following map illustrates the percentage of households using improved water sources in Punjab:

⁴ Multiple Indicator Cluster Survey (MICS) Punjab 2011, Bureau of Statistics, Government of the Punjab

⁵ The 10th target of the United Nations Millennium Development Goals entails halving the percentage of population with unimproved water sources

Map-2: Percentage of Households Using Improved Drinking Water Source



Quality of Water

Other than the source of drinking water, it is also imperative to determine whether the water has been treated to ensure that it is safe to drink. According to the World Health Organization guidelines⁶ safe drinking water is the water with microbial, chemical and physical characteristics that meet WHO guidelines or national standards on drinking water quality.

The analysis of Water quality Monitoring Survey 2012 conducted by the PHED in collaboration with UNICEF and Pakistan Council of Research in Water Resources (PCRWR) shows that overall 36% of drinking water from improved sources of Punjab is safe.

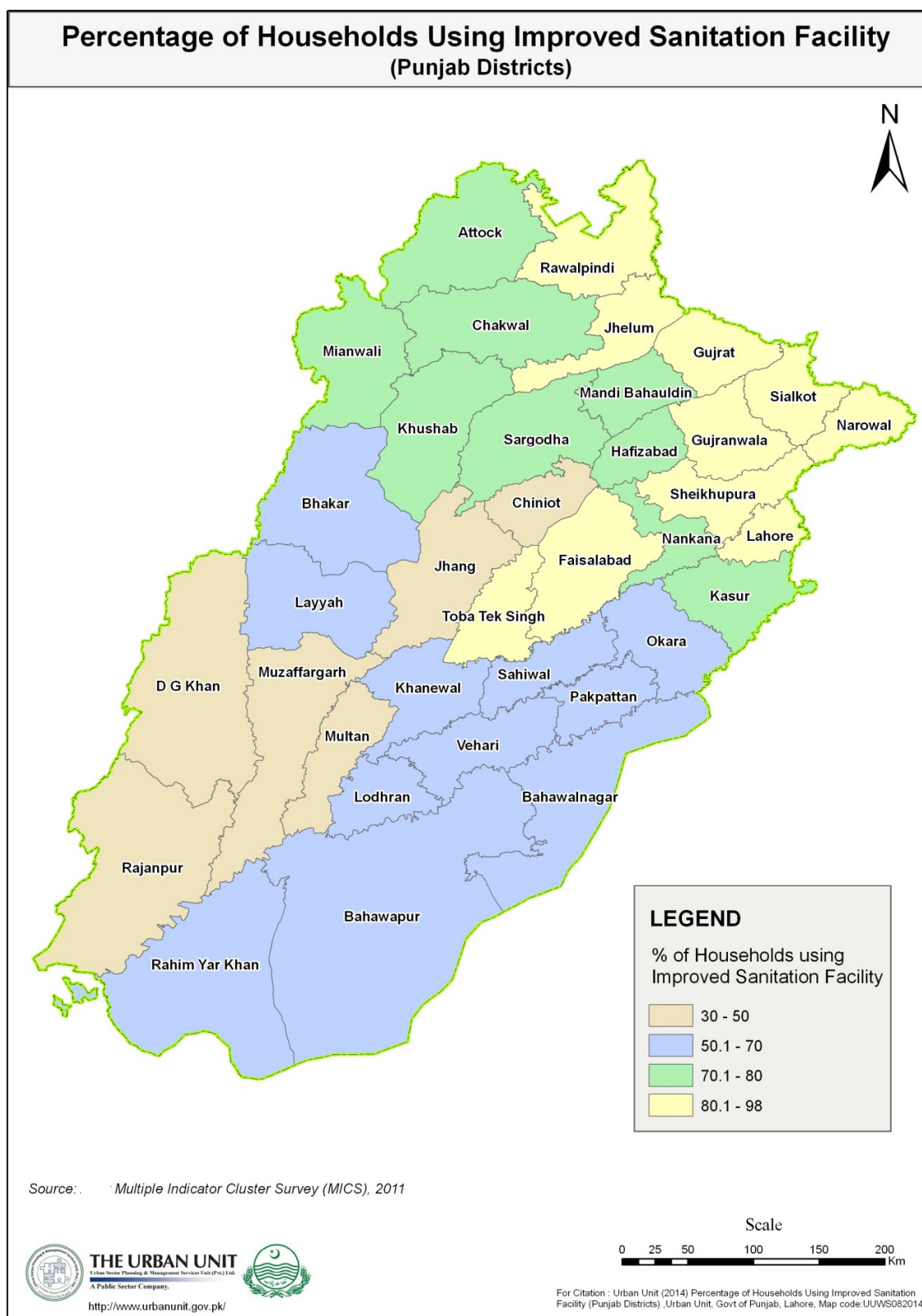
Usage of Improved Sanitation Facility

According to the MICS (2011), improved basic sanitation facilities for excreta disposal include flush or pour flush to a piped sewer system, septic tank, or pit latrine; ventilated improved pit latrine, pit latrine with slab, and use of a composting toilet. Overall, 72% of Punjab's population uses sanitation facilities - 92% in urban and 64% in rural.

The following map illustrates the percentage of households using improved sanitation facilities in Punjab:

⁶ World Health Organization, *Water Sanitation and Health*, Retrieved June 2014, from http://www.who.int/water_sanitation_health/mdg1/en/

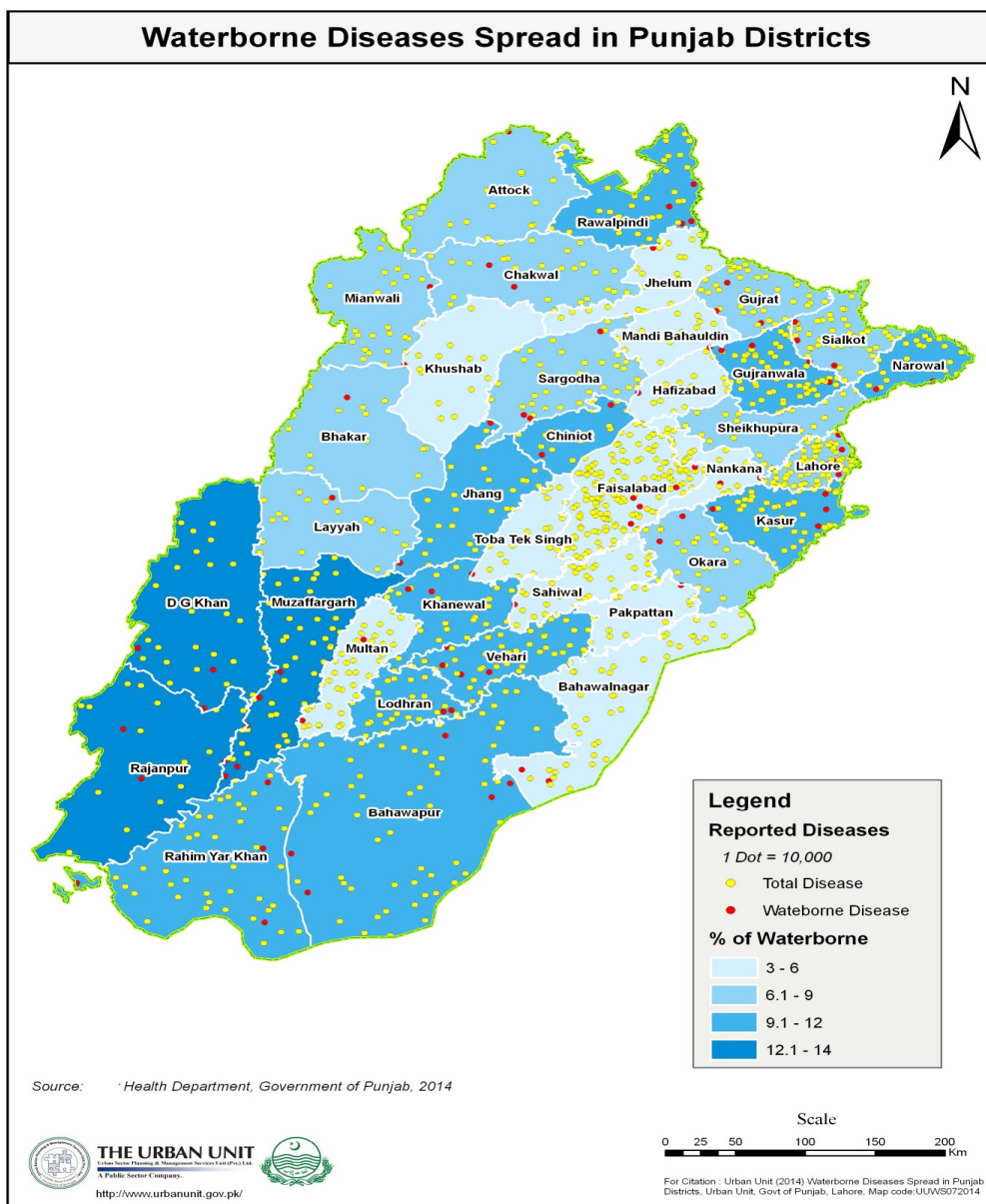
Map-3: Percentage of Households Using Improved Sanitation Facility



Burden of Disease

In Punjab, like elsewhere, supply of less and poor quality drinking water available within the house and system is one of the major contributors to disease and death in Pakistan. This has an adverse effect on the quality of life. The following map illustrates the spread of water borne diseases related and thus, provides evidence that water quality plays a critical role in community health and needs attention especially in most affected districts in Southern Punjab:

Map-4: Waterborne Diseases Spread



Millennium Development Goal

Target 10 of Goal 7 is to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

South Asian Conference on Sanitation (SACOSAN –V)

It commits to have an Open Defecation Free Environment by 2023 and to progressively move towards sustainable environment sanitation.

High Level Meeting, Sanitation and Water for All

At the 2014 SWA HLM, following specific commitments were made to remove barriers to achieve universal access to sanitation and water services:

- Universal access to sanitation and water in Vision 2025 of Government of Pakistan by December 2014.
- Provinces develop provincial sectoral plans of WASH by June 2015 that are accompanied with financial estimates and physical targets to achieve the objectives of improved water, sanitation and hygiene.
- Provincial governments in collaboration with municipalities will introduce behavior change approaches that improve sanitation in at least 5,000 villages and will support these villages to achieve 'open defecation free' status.
- Provinces conduct sector capacity needs assessment and execute a human resource development plan for WASH by June 2015.
- Develop a national monitoring framework, to address inequalities in WASH access, based on provincial frameworks, established for sanitation and drinking water, including research and evidence by June 2015.

3. Institutional Framework

3.1 Punjab Local Government Act (PLGA) 2013

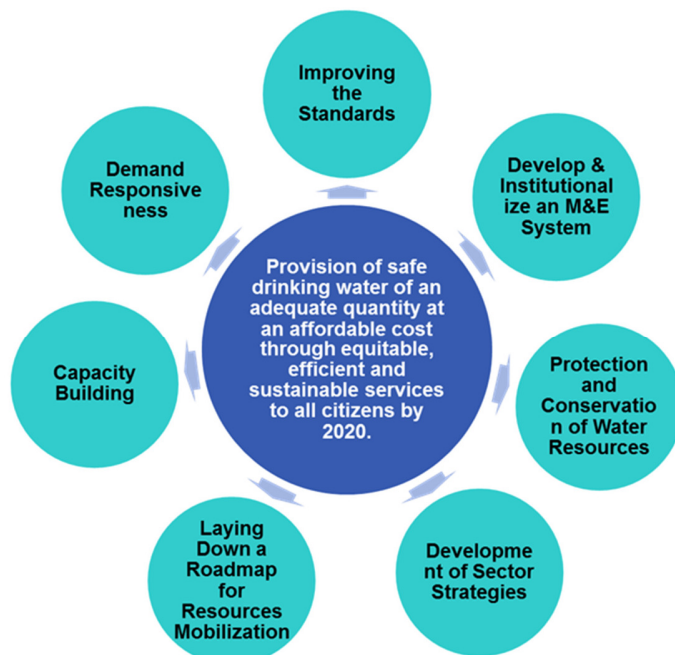
In continuation to Punjab Local Government Ordinance 2001, Government of Punjab approved PLGA 2013 that delegated functions of water and sanitation to local governments (District Councils and Union Councils) to provide services in both urban

and rural areas. Under the Act, the objectives is to provide rural water supply services and public sources of drinking water, including wells, water pumps, tanks, ponds and other works for the supply of water and sanitation facilities and coordinate with the community organizations for proper implementation.

3.2 Punjab Drinking Water Policy

Government of Punjab envisions ensuring the provision of safe drinking water of adequate quantity at an affordable cost through equitable, efficient and sustainable services to all citizens by 2020.

Policy guides to increase access by building new schemes and rehabilitating the old ones, protecting and conserving water resources though water metering, rain harvesting and promoting water efficient techniques, ensuring water treatment and safety, using appropriate technologies and standardization, evolving community participation, raising public awareness, building capacity of service providers and introducing public private partnership. It also involves research and development, coordinated planning and implementation emergency preparedness and response and enforcement of legislation.



4. Institutional Arrangements

The 1973 Constitution made the provision of water supply and sanitation services a provincial responsibility. This was further reinforced by the Local Government Ordinance (LGO) of 2001, which promoted the decentralization process and sought the abolishment of the urban-rural divide and as a consequence prescribed the dissolution of

rural water and sanitation institutions—Public Health Engineering Department (PHED)—at all levels. Punjab Local Government Act 2013 has given this responsibility to local governments. In Punjab, provincial level institution such as PHED develop the schemes which are subsequently operated and maintained by community-based organizations (CBOs) in rural areas.

The main actors in the sector are the Local Government & Community Development Department (LG&CDD) and the Housing, Urban Development and Public Health Engineering Department (HUD&PHED). Communities play a critical role- self-provision is significant in the province, and O&M of rural schemes is undertaken by communities themselves with significant responsibilities given to them without much incentive and support. Legal ownership of assets and the fundamental responsibility for service delivery rests with the local government bodies. There is no regulator for the sector, and there is no agency with responsibility for sector planning.

5. Financing

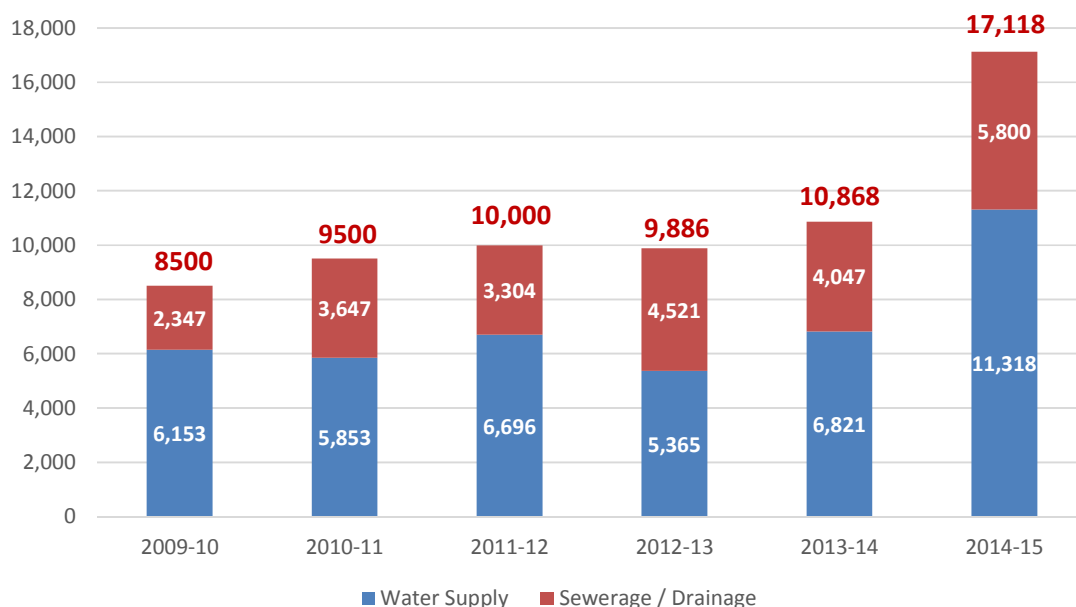
Extending and sustaining water & sanitation programmes and infrastructure requires, among other things, adequate funding and sound financial management. These include investment planning and securing funds for proposed budget.

Funding for water & sanitation is required for new capital investment and for recurrent expenses of operations (operational expenditure), capital maintenance (long-term renewals and rehabilitation), community mobilization, capacity building, research & development and initiatives based on innovations. Funding these water and sanitation costs can come from three main sources:

- Allocations which are funds from government Annual Development Programme
- Tariff which are funds contributed by users of WASH services
- Transfers which are funds from International Development Partners

The investment in water supply and sanitation is gradually increasing with the passage of time. This is evident from the graph below that shows the trend of last 5 years for water supply and sanitation:

Figure-1: Composition (in Rs '000s) of water supply & drainage budget allocation (2009-14)



Source: PHED 2014

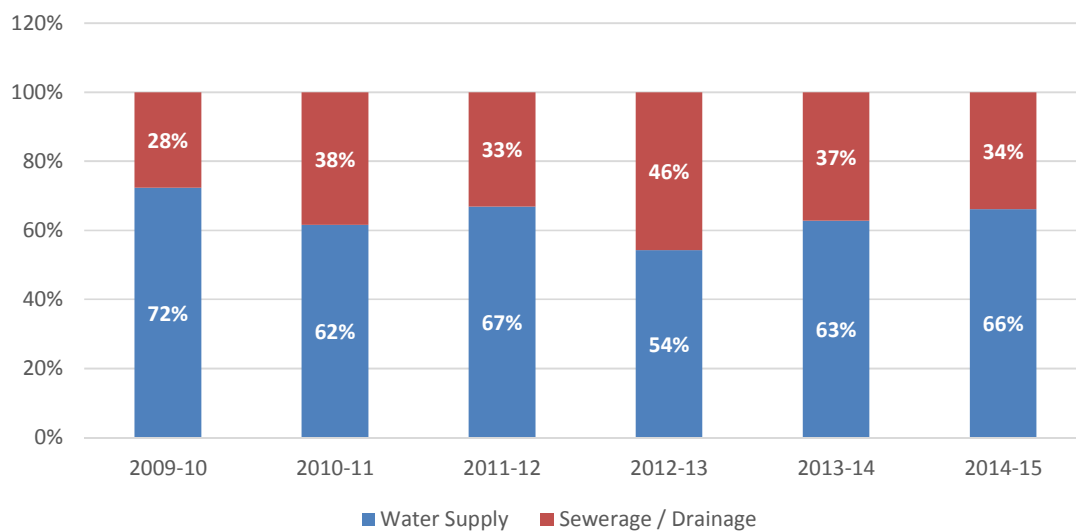
It is important to note that 95% or more of the allocations are released and that there is almost 100% utilization at the district level. Moreover, most of the investment is focused in Gujranwala, Kasur and Sheikhupura, with fluctuations in Mianwali, Multan, Rahim Yar Khan and Rawalpindi.

In addition to this, TMAs under LG&CD Department are also investing Local Government funds for water & sanitation. About, Rs. 4,063 million (Water 42% & Sanitation 58%) have been invested in 107 tehsils of 31 districts of Punjab.

However, the financial allocations as portion of total budget of annual development programme are too low to meet the existing water and sanitation needs. For the year 2013-14, it is only 3.8% (which is Rs. 10.86 billion out of Rs. 290 billion). If this trend continues, it will take more than 20 years to reach 100% coverage. Another important factor to note is that there is no funding allocated in the budget to the soft component i.e. community mobilization and hygiene promotion in water & sanitation both. The past 5 years funding pattern also shows that allocations for sanitation (37%) are lower than

water (63%). The statistics showing the budget allocation to water and sanitation over the past five years are as follows:

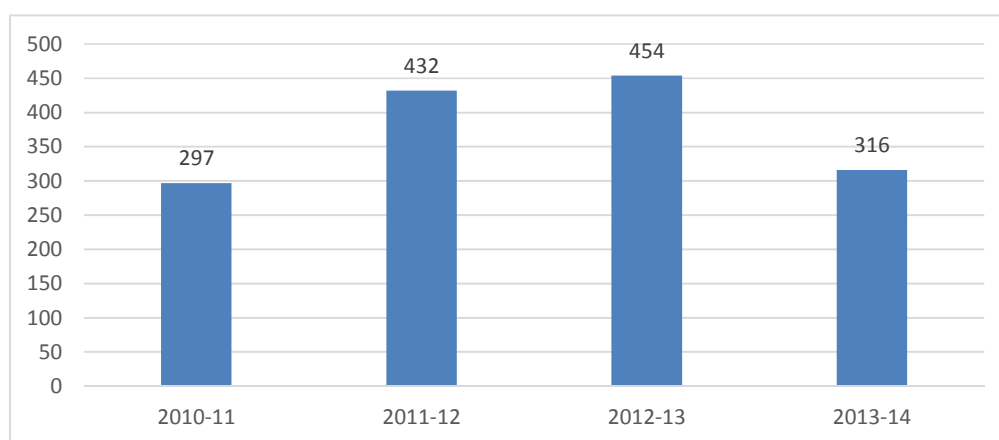
Figure-2: Composition (%) of water supply & sanitation budget allocation (2009-14)



Source: PHED 2014

On the other hand, development partners have also contributed to water and sanitation, in the past 4 years for rural areas of Punjab. About Rs. 1.5 billion has been invested by the UNICEF, Plan International, Korean International Cooperation Agency (KOICA), Water and Sanitation Programme (WSP) etc.

Figure-3: Development partners' contribution (in Rs. million) to water & sanitation (2010-14)



6. Policy and Regulatory Initiative

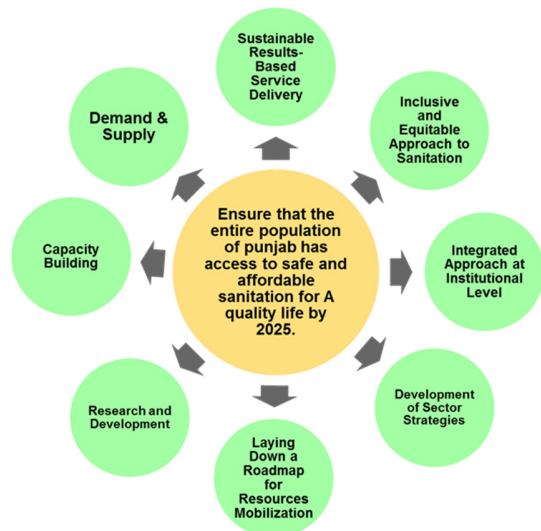
6.1 Draft Municipal Water Act

Punjab Municipal Water Act defines roles and responsibilities of policy makers, regulators and service providers. It states that a water commission will be formed under the Act which will regulate water & sanitation services in the whole province. This Act will ensure registration of service providers, permission before extraction of groundwater and safe disposal of waste water into water bodies. The Act will ensure quality standards and impose penalties on violation of the provisions of the Act.



6.2 Draft Sanitation Policy

Government of Punjab envisions ensuring that the entire population of Punjab has access to safe and affordable sanitation for a quality life by 2025.



6.3 Draft Behavior Change

Communication Strategy

PHE Department has drafted Behaviour Change Communication Strategy to outline measures to create mass realization on safe water consumption, clean environment and personal hygiene. This strategy exhaustively deals with the barriers with regards to behaviour change and strategic actions required for overcoming barriers and facilitating the institutional arrangements are being considered. The conceptual framework provides an overall framework of Government of Punjab to consider interventions at the environmental, service delivery, community and individual levels.

To catalyze change in sanitation behaviour, this communication and change management strategy is designed to cover health and hygiene education, social marketing and media campaigning geared towards affecting behaviour change as an integral part of implementing Pakistan Approach to Total Sanitation (PATs).

6.4 Draft Punjab Waste Management Act

Lahore Waste Management Company has drafted this act to provide for a system of waste management. It aims to provide for a system for the generation, storage, transport, collection, recovery, treatment and disposal of waste which regulates and mitigates the adverse impacts associated with the uncontrolled generation and disposal of waste in a manner that promotes sustainable economic growth, social development and environmental protection.

7. Analytical Work & Studies

Various studies have been conducted so far in WASH sector as mentioned below:

Study on Pakistan Water Supply and Sanitation Sector, 2013

The Water and Sanitation Program (WSP) conducted a study on water supply and sanitation during 2013. It is the first comprehensive study that captures both water and sanitation in both rural and urban across the entire country. The study takes stock of the sector across a range of technical, financial, environmental, and institutional dimensions.

Service Delivery Assessment, 2013

The WSP from the World Bank has carried out Service Delivery Assessment (SDA) in the water and sanitation sector in Punjab with an aim to explore the reasons as to why funds do not translate into improved services. This exercise entails analyzing and evaluating processes such as planning, policy making, budgeting, equity maintenance, sustenance etc. to identify gaps and find solutions to address those gaps.

State of Water & Sanitation in Punjab (Position Paper), June 2011



Punjab Urban Resource Centre published this position paper with the aim to critically examine various dimensions in the prevailing water and sanitation position in Punjab.

The Economic Impact of Inadequate Sanitation in Pakistan

The WSP undertook this study to conduct evidence based research to help advocacy in the sanitation sector. The study aims to empirically estimate the economic impacts of the existing poor sanitation conditions in Pakistan as well as the economic benefits of options for improved conditions. The study's ultimate goal is to provide policy makers, at both national and local levels, with evidence to justify larger investments in improving the sanitation conditions in the country. It also provides recommendations, based on empirical evidence, for effectively planning and implementing sustainable sanitation and hygiene programs.

Analysis of Inequities in Basic Water Supply and Sanitation Services in Pakistan, 2014

The objectives of the study conducted by UNICEF during 2014 are to develop an equity based profile for improved water & sanitation for districts of Pakistan; explain equity distribution and levels (wealth quintiles) for drinking water & sanitation for all districts of Pakistan and; generate interactive mapping in context of equity for all provinces.

Study on Pit Latrines

The latest study on pit latrines and their impacts on ground water pollution from WHO highlighted that most of the people in rural areas use pit latrines as their primary means of sanitation. Studies of pit latrines and groundwater are limited. Groundwater pollution within villages was likely caused by latrines, livestock and stored manure, solid-waste landfills, and leakage from wastewater pits. 15 m is suggested as the safe lateral separation between pit latrines and the groundwater supply. This distance can be reduced if the well is not directly down gradient of the pit. Overall, threats to groundwater quality from on-site sanitation can be mitigated through technology design, risk assessment, development of protection zones, and monitoring. Composting toilets and ecological sanitation technologies may reduce microbial risks and minimize chemical leaching from

pit latrines. Lining of the pit can reduce the threat considerably but it is still an issue for poor families. The study concludes that “In order to improve environmental and human health, future research should examine a larger set of contextual variables, improve measurement approaches, and develop better criteria for siting pit latrines”.

8. Rural Water and Sanitation Program Initiatives

8.1 Initiatives for Rural Water

Government of Punjab (GoPb) has taken various initiatives for provision of improved and safe drinking water for the people of Punjab. These initiatives include:

Saaf Pani Project

In order to provide access to safe drinking water in uncovered contaminated rural, the Chief Minister of Punjab has approved an allocation of Rs. 5 billion in the ADP 2014-15 to provide site specific technological solutions including filtration plants, RO (Reverse Osmosis) plants and UF (Ultra Filtration) plants in Punjab province having contaminated and brackish groundwater to serve 6.8 million population in rural areas. A government owned company named “Punjab Saaf Pani Company (PSPC)” has been formulated to deliver water services with an integrated approach.

Changa Pani Programme

Upon successful testing and implementing of Changa Pani Program at UC 60 Lahore (a project of Water and Sanitation Agency (WASA) Lahore, Anjuman Samaji Behbood (ASB) and Urban Unit P&D Department), the GoPb has taken an initiative to provide clean drinking water through need based W&S schemes with the concept that External Component will be executed by the Government Department and Internal Component will be executed by the community itself. The Government allocated Rs. 1 billion in 2013-14 for execution of this programme.

Sustainable Operation & Maintenance Mechanism of Rural Water Supply Schemes

For the sustainable operation & maintenance mechanism of rural water supply schemes, the Chief Minister allocated Rs. 139.15 million for the year 2013-14 with the concept that Rs. 50,000 will be allocated for each functional scheme which will be utilized for repair

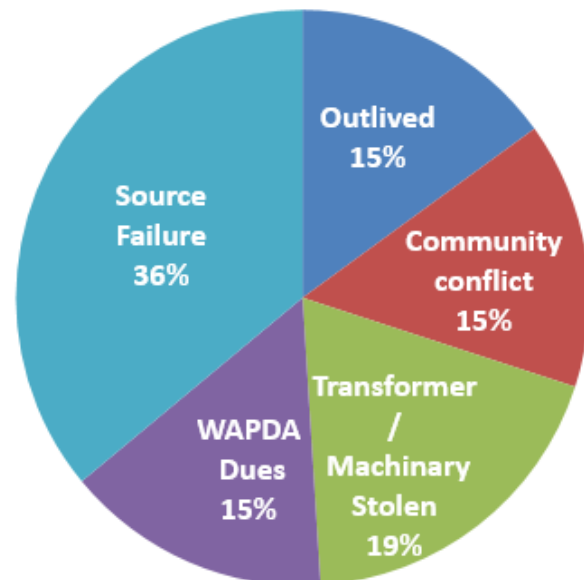
& maintenance, capacity building, technical support, or any other purpose prescribed by the government.

Surveys

The PHED conducted the Water Quality Monitoring Survey in 2012 of all the villages of the Punjab to assess the water quality and to determine the future investment strategy in contaminated and brackish / barani areas. Third Party Validation is in process and after its completion; a report will be shared with all the stakeholders.

Furthermore, survey of 199 Dysfunctional Rural Water Supply Schemes was conducted by the Department with assistance of UNICEF during 2014 to identify the

Figure-4: Reasons of Failure of Dysfunctional Rural Water Supply



reasons of failure, estimate the cost of rehabilitation and learn about the community's willingness and cost sharing. In this regard, Third Party Validation (TPV) conducted a detailed survey and prioritized 170 Rural Water Supply and Sanitation (RWSS) for rehabilitation for which it was estimated that an investment of Rs. 1123 million is required to benefit about one million population. These schemes have been prioritized on the

basis of criteria like presence of scheme in sweet, brackish or barani area, cost sharing by the community, total cost required for rehabilitation and ODF status.

Thirdly, survey on "Water Quality in Schools of Punjab" was also conducted by UNICEF and Punjab Education Sector Reform Programme (PESRP) in 2008-09 in more than 46000 schools. According to which 23% of water facilities in schools are unsafe due to bacterial and arsenic contamination.

Recognizing the Performance of Community Board Organizations (CBOs)

GoPb values the services of CBOs and as a token of its appreciation and to register its commitment, HUD & PHED in association with WSP-SA and UNICEF organized the performance award events twice.

The first Performance Award” was organized by HUD&PHE Department in association with WSP-SA, World Bank on 19-20 April 2011 while the second Performance Award was organized on 29th-31st January, 2013 in Lahore.

Provision of Water Supply Schemes in Tehsil Phalia, M.B.Din

PHE Department has completed the project “Provision of Water Supply System in the Villages Affected by the Effluent of Colony Sugar Mills of Tehsil Phalia, District M.B.Din” in collaboration with Korea International Cooperation Agency (KOICA) which provided grant aid of Rs. 400 million. This project has enabled GoPb to provide safe drinking water to the population of more than 90,000 of 25 affected villages of Tehsil Phalia.

Installation of Handpumps

PHE Department in collaboration with the assistance of UNICEF has installed 1210 Afridev handpumps in the districts of D.G.Khna, Rajanpur, R.Y.Khan and Bahawalpur. In addition to this, LG&CDD has also installed 80 handpumps at district Rajanpur.

Water Testing Laboratories at District Headquarters

PHED also initiated a project of establishing thirty six (36) Water Testing Laboratories at District Headquarters of Punjab in 2009 to monitor periodically the quality of drinking water sources in respective districts.

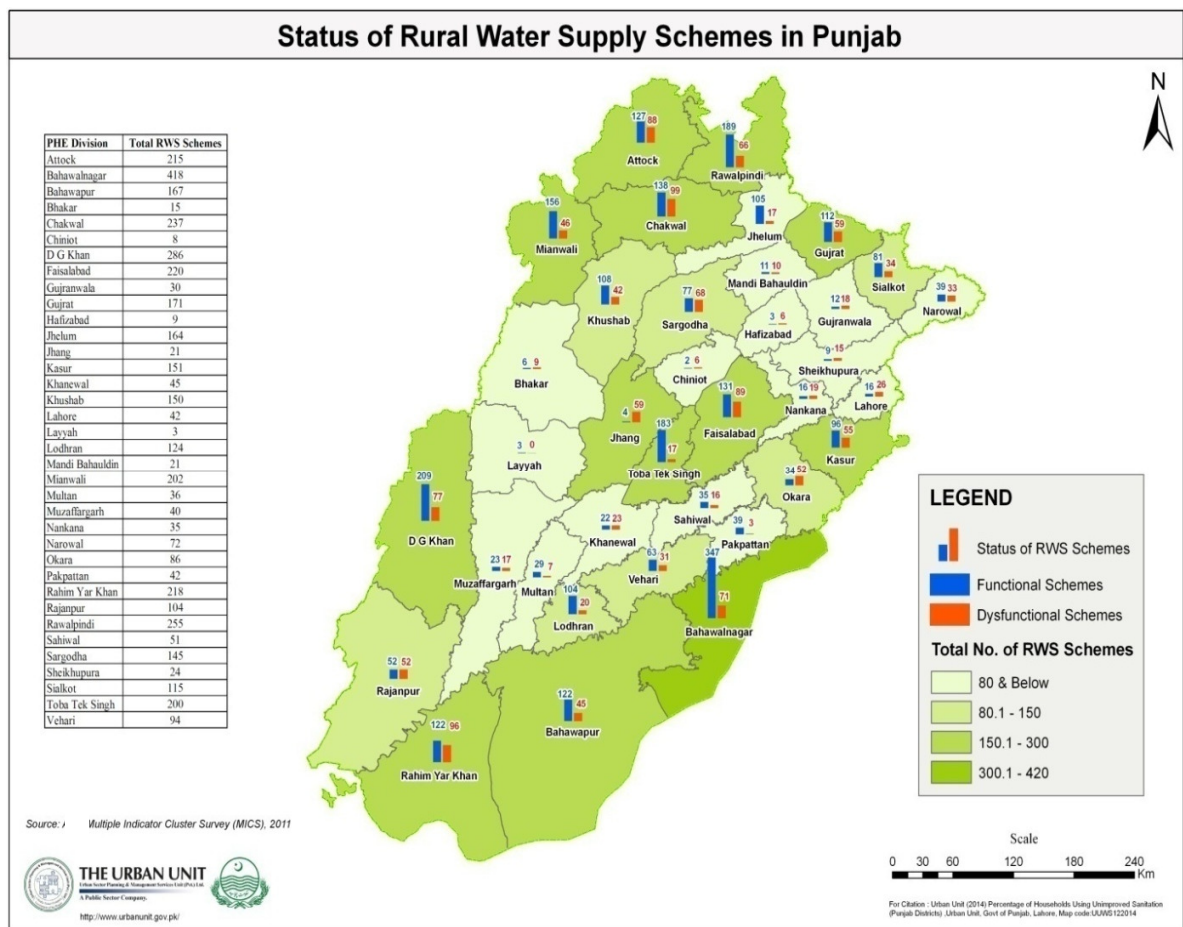
Capacity Building

The institutions responsible for delivery of rural water supply and sanitation services in Punjab lacked formalized & institutional capacity development system for WSS service delivery improvement. A study⁷ titled “Assessment of Capacity and Capacity Building

⁷Urban Unit (2007), *Assessment of Capacity and Capacity Building Initiatives in Development Policy Loans Sectors*, Planning and Development Department, Government of Punjab

Initiatives in Development Policy Loans (DPL) Sectors” carried out by the Urban Unit with financial support of World Bank in 2007 supports this argument. As per study findings, capacity for professional training at national level including capacity of training providers in urban sector and technical professions is limited.

Map-5: Status of Rural Water Supply Schemes



Large number of dysfunctional schemes as per the map above is also an evidence that rural water supply service providers also require enhanced capacity in various areas i.e community managed schemes and WASH integrated approach including technical O&M.

8.2 Initiatives for Rural Sanitation

GoPb has taken various initiatives for provision of improved and safe sanitation for the people of Punjab, which include:

Pakistan Approach to Total Sanitation

The approach leads towards a holistic sanitation model in which all the steps of sanitation ladders are covered including soft and hard components. It covers basic sanitation i.e. open defecation free environment, hygiene promotion, liquid waste management & treatment and solid waste management.

The big initiative in this regard is to implement basic sanitation model as a first step of the ladder through improving the sanitation facilities at the household level and hygiene promotion. Social mobilization, processes are to be carried out along the approach of community led total sanitation and school led total sanitation to declare the villages Open Defecation Free (ODF).

Currently, PHED is implementing the projects in collaboration with UNICEF, Plan International, Water and Sanitation Programme (WSP), WaterAid and other development partners in nine districts (R.Y.Khan, Bahawalpur, D.G.Khan, Rajanpur, Chakwal, Vehari, Layyah, Multan and Muzaffargarh) of the Punjab through its Community Development Unit and other implementing agencies. Through this, 1045 villages have been declared ODF while work is in progress in further 1171 villages of Punjab. The table below shows a complete picture of the coverage:

Table-2: PHED Water and Sanitation Projects in 9 Districts

Sr. No.	District	Total Villages	No. of Intervened Villages			% age Planned Coverage
			Certified	Work Cont.	Total	
1	Bahawalpur	916	36	78	114	12%
2	Chakwal	461	85	121	206	45%
3	D.G.Khan	828	100	35	135	16%
4	Layyah	726	58	39	97	13%
5	Multan	523	26	0	26	5%
6	Muzaffargarh	984	344	200	544	55%
7	Rajanpur	534	200	334	534	100%
8	R.Y.Khan	1,370	130	232	362	26%
9	Vehari	779	66	132	198	25%
Total		7,121	1,045	1,171	2,216	31%

Source: PHED 2014

Further, LG&CD Department is going to launch PATS in 1,012 villages of Punjab in collaboration with different development partners.

Despite this progress, the challenge that still exists is declaring the remaining 2,389 villages of Punjab as open defecation free (ODF). Some of the ODF communities have also been provided the following facilities as a reward to appreciate their efforts and ensure sustainability:

- Rehabilitation of rural water supply schemes
- Small scale sewerage treatment units and wet lands
- Water Ponds
- Afridev hand pumps,
- WASH facilities in schools
- Latrine material to the poorest of poor
- Hygiene / Water Kits

Surveys

In 2010, Punjab sanitation survey was conducted by PHE Department with the assistance of UNICEF. The survey analysis shows that 14,000 rural settlements out of 25,914 (54%) have one or other kind of sanitation system.

Waste Water Treatment

PHE Department has piloted 2 models of waste water treatment through wet lands at district Layyah and Muzaffargarh. Recently, another pilot has also been completed in two ODF villages of District R.Y.khan through installation of solar based small scale sewerage treatment unit benefitting about 150 households.

Elimination of Waste Water Ponds

Local Government and Community Development Department (LG&CDD) has launched a project namely “Elimination of Waste Water Ponds & Solid Waste Management in Rural Areas”. Under the project, 500 waste water ponds will be eliminated to benefit more than one million population of Punjab within a period of 3 years. The objectives of the project are:

- Improving villages environment
- Reduction in pollution of groundwater
- Reduction in vector and water borne diseases

Project is being implemented in three phases. In Phase-I, villages having population of 10,000 persons and above would be undertaken, in phase – II, villages having population between 5,000 to 10,000 persons will be targeted while in phase – III, villages having population of less than 5,000 persons will be selected.

Solid Waste Management

In response to Government of Punjab's aim for a Litter Free Punjab, LG&CDD has planned to launch a programme to develop a Solid Waste Management (SWM) system at the village level in rural areas. The programme will incorporate complete participation and management by the local people. Evidence shows that there is hardly any SWM system existing in the rural areas. The project proposes two models–

- A managerial model in which a village SWM committee shall be formed which will arrange for the collection of solid waste of the entire village in communal containers to be placed at suitable locations in the village. The containers will then be transported by Tehsil Municipal Administration (TMA) to disposal or dumping sites
- A technical model for house and commercial waste for which small and large steel containers shall be placed at suitable locations in the village for use by village residents. A small number of sanitary workers shall be deployed to haul small containers to larger ones. The TMA or a private company shall transport the large containers to disposal or dumping sites.

In addition, the community shall be urged to start an aerobic decomposition of animal dung and fodder/organic waste at the individual level by digging pits of required volume and dumping the animal dung and fodder/organic waste into these pits with earth-cover in 5-6months. This will have converted to excellent manure that can be used in the fields. This will save cost of fertilizer to the village farmers and is also environmentally safe.

Further, LG&CDD has started piloting of the Project on Solid Waste Management in Rural Punjab for conversion of waste into fuel gas through installation of bio gas plants and then laying of need based gas distribution system in village



Disease Surveillance & Control Cell (DSCC) Punjab

LG&CD Department in coordination with Punjab Information Technology Board (PITB) has started surveillance on 8 diseases which directly or indirectly relates to Municipal Services i.e. Acute (upper) Respiratory Infection (ARI), Acute Watery Diarrhea (AWD), Bloody Diarrhea (BD), Diarrhea Acute (AD), Dengue Fever Suspected (DF), Enteric / Typhoid Fever (TF), Malaria Suspected (Mal) and Hepatitis.

WASH Sector Strategic Master Plan

UNICEF is providing support for developing the provincial WASH Sector Strategic Master Plan and it is in process of formulation through a consulting firm. Through this, sector priorities, actions, monitoring and evaluation (M&E) framework and investment profiling will be developed after sector diagnosis, resource mapping, stakeholder and existing strategic priorities analysis. The plan will provide a clear road map and priorities for strategic actions and it will be required to notify a task force at the provincial level for synchronizing the efforts of all stakeholders to plan, coordinate and monitor. The Planning & Development (P&D) Department may lead the Task force comprising all relevant stakeholders.

9. Key Findings: Gaps & Issues in the Sector

The key issue relates to the design of institutional arrangements which are geared towards the creation of capital infrastructure lacking integrated service delivery coupled with accountable and customer focused service provision. The current incentives in the system emphasize capital expenditures only as an input based model, while human resources and finances for system operation & maintenance and service delivery as a full cycle are less likely. The impacts of this are most evident in the sanitation subsectors.

Secondly, there are disconnected service delivery institutional arrangements and structures, because multiple players, having overlapping responsibilities, are involved in the provision of water & sanitation facilities with separate institutions responsible for asset planning and creation and operation and maintenance with varying capacity to perform.

Rural Water Supply & Sanitation (RWSS) area requires service delivery standards, which are not documented and notified by LG&CDD as a binding instrument. In the absence of service delivery indicators, the monitoring and evaluation of government schemes and value of government monies as development intervention is less effective. Moreover, in the absence of service delivery indicators or baseline, an incentive system along with criteria of equity in development schemes allocation cannot be introduced effectively.

9.1 Usage of Unimproved Drinking Water Source

The MICS report shows that 6% population of Punjab is using unimproved drinking water sources. From a disaggregated perspective, there are some districts in Punjab that lag far behind – for instance, one in every five households in Faisalabad has access to unimproved water sources⁸.

The Water Quality Monitoring Survey 2012, conducted by the PHED, shows that while 64% of population has a water source that is unsafe either, physically, chemically or bacterially.

9.2 Lack of Financial Resources

Currently, the rural water supply schemes coverage is 52% and rural sewerage & drainage schemes is 60% of the population of Punjab. There is a challenge of reaching the un-served rural population. The gap may be filled through an investment of Rs. 112,410 million (approximately) with per capita cost of Rs. 3500 for water supply and Rs. 66,911 million for sanitation.

⁸ The MICS (2011) report categorizes a source of water to be “unimproved” if it is an unprotected well, unprotected stream, tanker-truck, cart with small tank/drum, surface water, bottled water.

Figure-5: Existing Coverage (%) and Millennium Development Goal Target

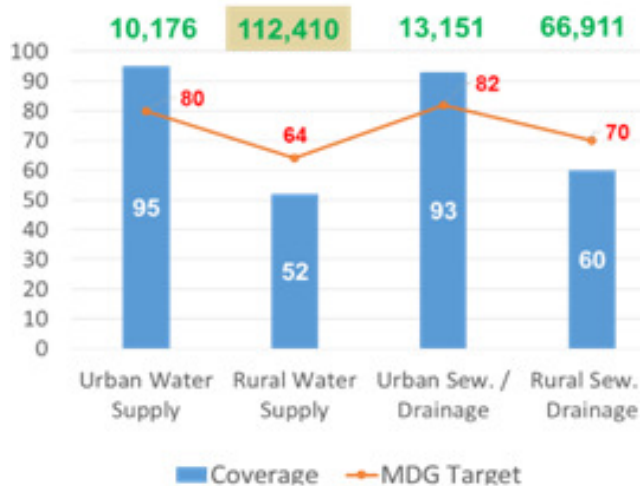
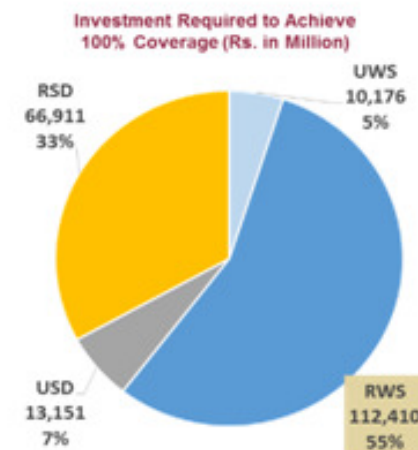


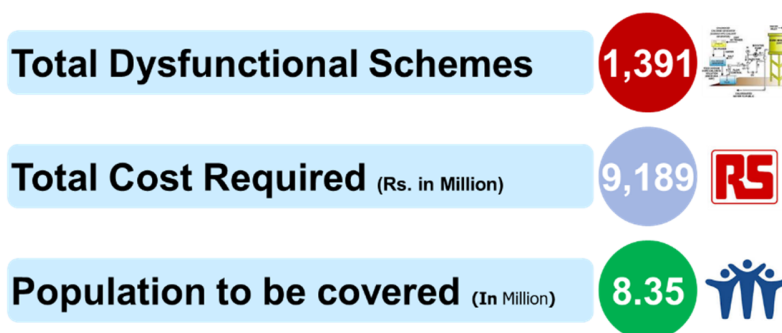
Figure-6: Investment Required



Rehabilitation of Dysfunctional Rural Water Supply Schemes

1,391 (33% of the 4216) dysfunctional rural water supply schemes may be rehabilitated through investing Rs. 9,189 million (approximately) to serve 8.35 million (12%) rural population of Punjab. However, in first phase, the PHED identified 199 dysfunctional RWSS for rehabilitation and conducted a Third Party Validation (TPV) to estimate the cost of rehabilitation and knowing about community willingness and cost sharing.

Figure-8: Dysfunctional Schemes, Cost Required and Population



In this regard, TPV conducted a detailed survey and prioritized 172 RWSS for rehabilitation on cost sharing basis. It was estimated that an investment of Rs. 1123 million is required to benefit about one million population. These schemes have been

prioritized on the basis of criteria like presence of scheme in sweet, brackish or barani area, cost sharing by the community, total cost required for rehabilitation and ODF status. Further, 172 dysfunctional RWS schemes have been taken up in ADP 2014-15 for rehabilitation.

9.3 Lack of Effective O&M System of PHED Schemes

Currently the PHED lacks an effective O&M system to cater the water and sanitation needs of the rural population.

9.4 Usage of Unimproved Sanitation Facility

The MICS 2011 categorizes “unimproved sanitation” facilities to be: flush to somewhere other than a piped sewer system, pit latrine without slab / open pit, bucket, other and open defecation (no toilet). The MICS (2011) report also shows that open defecation status in overall Punjab is 22.7% while its highest (61.8%) in Rajanpur and lowest (1.1%) in Lahore.

9.5 Lack of Impact Assessments Studies

No Impact Assessment carried out to Gauge the Outcomes of Various Interventions like role of Lady Health Workers.

10. Recommendations

10.1 Policy

Scaling Up Pakistan Approach to Total Sanitation (PATs) in Punjab

Pakistan Approach to Total Sanitation (PATs) needs to become part of the Annual Development Programme on regular basis for eradicating 23% open defecation in Punjab and scaling up the ODF interventions in unserved areas

In view of the Government’s commitment (as per SCOSAN-5) to eradicate open defecation by 2023, a structured standard development plan should be prepared to achieve the target. Assistance of donors could then be channelized according to the laid out program.

Every WASH intervention needs to be linked with ODF (the first step of sanitation ladder) to create awareness, sense of ownership, mobilization and contribution of the community and most important to ensure sustainability.

All the Government stakeholders P&DD, HUD&PHED, LG&CDD, Health Department and Education Department need to collaborate and play their roles on WASH.

Development Partners as stakeholders may lead capacity building programmes, pilot projects, research & development, master planning at provincial and district level, case studies etc.

Scaling Up Solid Waste Management Programmes

The model of Solid Waste Management project may be replicated in other villages of Punjab.

10.2 Institutional

Realignment and Clarification of Roles and Responsibilities of PHED and LG&CDD

The Punjab Local Government Act 2013 mandates local governments to only deliver municipal services. The partial implementation of Local Government Ordinance (LGO) 2001 in the last decade has resulted in an extended period of uncertainty in the sector with multiple actors working as a planner, designer and implementing agencies in rural water and sanitation sector. Going forward, based on the experience in Punjab, coupled with national and international experience, the Punjab Government is recommended to move toward instituting service provision models of one entity for planning, design, operation and maintenance for water supply, sewerage and solid waste with strong community roles in the planning, development and operation of RWS schemes.

Existing water and sanitation service delivery is a mandate of local government in the rural areas. The PHED also designs and constructs schemes and or assigns the tasks to community /CBOs or TMAs for operations and maintenance. This existing arrangement may be revisited to make it more effective, with one professional entity for planning, design, construction and operations in specialized area to meet the service delivery standards and constitutional requirement. The existing arrangements and institutional

technical capacity can be rearranged and reorganized to serve the purpose of professional service delivery entity according to economies of scale model in the notified regions.

A number of initiatives are required to strengthen the institutional roles at all levels:

- Prioritize passage of the draft Punjab Municipal Water Act to ensure legal provision for regulation of the sector.
- Mapping of the stakeholders, including international development partners, their current roles and future planning of their contribution.
- Create institutional clarity & arrangement within the sector to align the sector, rationalize mandates and address historical issues of fragmentation.
- Capacity building of the service cadre engaged in sector service delivery (at all levels) on managerial, technical, financial and social aspects.
- M&E system and regulatory regime.
- Training of CBOs and disseminating best practices for rural water supply & sanitation.

Arrangements and Standards of Service Delivery for Rural Water Supply & Sanitation

- The Government may notify guidelines and regulations for the establishment of Community Based Organizations to act as water service providers in such area as may be specified with major asset replacement responsibility resting with government including incentives for better operations and extensions of services.
- The Government may establish divisional level WSS authorities carved from existing institutions to provide water supply, sewerage and solid waste services in rural areas as a professional body for service provision as per requirement in the mandated area.

Capacity Development

The institutions responsible for delivery of rural water supply and sanitation services in Punjab lacked formalized & institutional capacity development system for WSS service delivery improvement. An integrated training arrangement on continuous basis for PHED and LG staff in TMAs is needed. The training shall be linked with promotion. It can be

articulated through new enhanced curriculum and training requirement at Local Government Academy and Punjab Water and Sanitation (WATSAN) Academy on continuous basis from 2014-2015.

10.3 Financing & Incentives

Expansion of Investment Support Programs from Government of Punjab may and Focus on the Delivery of Sustainable Outcomes

Government of Punjab may expand its investment to meet the MDG and address the marginalized community in pockets of poverty, contamination and where there is no access of water and sanitation. This strategy will allow to maximize the impact of every rupee invested in the sector. This objective can best be achieved through provincial sector programs that clearly articulate the specific policy goals to be achieved and lay out the conditions of access to investment funding by Local Governments. As part of this process, governments should also attempt to introduce elements of results- or reform-based financing.

Provincial sector programs through reorganizing service delivery institutions, special purpose vehicle with partnership of communities should focus on broadening access to improved and sustainable water supplies, providing access to improved sanitation and supporting cost-effective rehabilitation of existing but non-functioning or only partially functioning schemes with strong community partnership and contracting out to communities.

Participatory / Component Sharing Approach

Need based 24/7 water supply schemes with participatory / component sharing approach may be initiated on the basis of Changa Paani Programme.

Rewards to ODF Communities

To appraise the efforts of communities and ensuring the sustainability, the communities have been provided some rewards and it is recommended that these efforts continue to grow:

- Rehabilitation of rural water supply schemes

- Construction of Water Ponds
- Installation of Afridev handpumps
- WASH facilities in schools
- Small scale sewerage treatment units and wetlands
- Solid waste management
- Elimination of waste water ponds
- Latrine material to the poorest of poor
- Hygiene / Water Kits
- Providing ODF Certificate

Reinforce Policies of Operation & Maintenance as well as Cost Recovery from User Fees

The costs of water services can be start-up cost, operating costs and provision of renewal of the infrastructure. In Punjab the focus is on the start-up cost with less focus on renewal of schemes or its O&M cost. The high level of non-functioning or partially functioning Rural Water Supply and Sanitation (RWSS) schemes is caused mainly by poor institutional arrangements and inadequate cost recovery (World Bank 2013). The Government of Punjab may review their existing policies for operations & maintenance of the schemes which are transferred to community or run by TMAs. The policy addresses the issue of inadequate O&M cost recovery and sustainability of operations ensured. According to World Bank (2013)⁹ O&M cost recovery is recognized internationally as a critical success factor in sustainability of RWSS schemes and is rarely an issue in terms of consumer affordability.

Provide Resources to Organizations to Implement the Sanitation Strategy

According to World Bank (2013)¹⁰ and international experiences “*The single most important program to improve the rural population’s environmental health and support*

⁹World Bank, Australia Aid, Water and Sanitation Programme (WSP), 2013, Rural Water Supply and Sanitation Study Volume II

¹⁰World Bank, Australia Aid, Water and Sanitation Programme (WSP), 2013, Rural Water Supply and Sanitation Study Volume II

the goals of reducing infant and child mortality is to eliminate open defecation, provide latrines that contain excreta, and enhance hygiene education”.

The government may finance the water and sanitation program based on existing learning of PHED in partnership with UNICEF integrated with WASH approach.

Alternative Means of financial Resources

Alternative avenues of financing through engagement of private sectors such as Corporate Social Responsibility (CSR) are required to be explored.

10.4 Monitoring & Evaluation (M&E)

Develop Sector M&E System, Covering Both Functioning and Nonfunctioning Schemes & Service Delivery Bench Marking

During this study the major challenge was gathering data from various departments, especially in terms of M&E and service delivery standards. The data from various sources was scattered. This has highlighted the challenges in accessing readily available, consistent and comprehensive sector data. The data for planning needs to be formalized, collected and presented for policy makers and regulators.

A provincial level management information GIS based system may be established. The system should capture the WSS and SWM schemes; and its key performance indicators of service delivery, department responsible for operation and maintenance, Asset Inventory and its Management Plan quality of service; levels of supply; and the financial & operating situation and cost. The service delivery standards/ Bench Marking for the Rural Water Supply and Sanitation services to be notified for following parameters for following parameters:

Drinking Water

1. Water Quality Treatment
2. Water Supply coverage
3. Water per capita per day for connected and un connected Household
4. Duration of water supply per day
5. Access to drinking water points
6. Connected to piped system

Sewerage

1. Waste Water Treatment
2. Waste water Coverage
3. Connected to piped system
4. Connected to drain

Solid Waste

1. Primary Collection efficiency
2. Secondary collection efficiency
3. Disposal facility for SWM

12. Conclusion – Way Forward

The Rural Water & Sanitation agenda requires attention at policy level, institutional realignment of service delivery institutions, financing with an integrated approach and strong community participation and partnership. The key to success of this proposed rural water & sanitation agenda is strong provincial commitment for coordination in implementing and support for reform agenda. This will also keep us on track with regards to our international commitments including the Millennium Development Goal.

A core committee is proposed to be formed to deliberate upon the contents of the report and to finalize recommendations. Based on approved recommendations, a time-based action plan may be prepared for implementations of Rural Water Supply Reform Agenda.



References

Multiple Indicator Cluster Survey (MICS) Punjab 2011, Bureau of Statistics, Government of the Punjab

Odrakiewicz, D. (2012), The Connection Between Health and Economic Growth: Policy Implications Re-examined, *Global Management Journal*, Retrieved June 2014 from <http://globalmj.eu/2012/12/29/the-connection-between-health-and-economic-growth-policy-implications-re-examined/>

The Urban Unit (2007) Planning and Development Department, Assessment of Capacity and Capacity Building Initiatives in Development Policy Loans (DPL) Sectors, Government of Punjab

UNICEF and WHO. 2012. Progress on drinking water and sanitation: 2012 update. Retrieved June 2014 from http://www.wssinfo.org/fileadmin/user_upload/resources/JMP-report-2012-en.pdf

World Health Organization, *Water Sanitation and Health*, Retrieved June 2014, from http://www.who.int/water_sanitation_health/mdg1/en/

World Bank, Australia Aid, Water and Sanitation Programme (WSP) 2013 Rural Water Supply and Sanitation Study Volume II

