



Punjab

Water, Sanitation and Hygiene

Sector Status Report

November 2016.....

Foreword

Housing Urban Development & Public Health Engineering Department, Government of Punjab, is pleased to present Punjab Water, Sanitation and Hygiene Sector Status Report 2016.

Improving the quality of life of all people, especially those that are underprivileged and under-served, is pivotal for development. It is not only about poverty reduction, but rather about improving human security, empowering people and enhancing opportunities so that they can make choices in life. There is probably no greater basic human need and fundamental right than access to safe drinking water and adequate sanitation.

As Punjab grapples with several development priorities in a resource constrained environment, allocating adequate resources for each priority becomes a daunting task. However, water and sanitation sector is one of the key priorities of Government of Punjab evident from Sector Development Plan for Water, Sanitation and Hygiene 2014-2024 and has steadily increased sectoral investments three-fold from PKR 8.9 billion in 2009-2010 to PKR 45 billion in 2016-17. Further, Punjab's new growth strategy for 2014-2018 aims for a growth rate of 8% by 2018 with enhanced industrial growth and social services as the main drivers. And last but not least, the new Sustainable Development Goals, and the water and sanitation goal in particular, place great responsibility on national and sub-national governments to achieve the targets.

This report provides the discerning reader with an overview of the situation of drinking water and sanitation in Punjab in context of implementation of WASH Sector Plan 2014 -2024, and will serve as baseline for targets of Drinking Water and Sanitation under Sustainable Development Goals. It highlights some of the many achievements and successes and tries to bring home some of the key bottlenecks of sector that Punjab province faces and is likely to encounter, and describes how these are being addressed under WASH sector plan implementation framework.

It is hoped that the report will also serve a greater purpose of raising awareness, about status of WASH Sector Plan 2014-2024 ,amongst policy and decision makers, sector professionals and frontline practitioners, development organizations, corporate sector and academia.

Capt. (Retd.) Muhammad Khurram Agha
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1. Background

Pakistan has an estimated population of 191.71 million with a population density of 234 persons per sq.km. According to the Joint Monitoring Programme (JMP) Report 2015, Pakistan demonstrated good progress in improved sanitation from 24% in 1990 to 64% in 2015, thereby placing Pakistan among those countries that achieved the Millennium Development Goal (MDG) global target of sanitation. Pakistan has already achieved the target of improved water i.e. 90%. Furthermore, significant progress was also made in reducing open defecation from 49% in 1990 to 13% in 2015. In numerical terms, the number of people practicing open defecation declined from 43 million in 2011-2012 to 25 million in 2015.

Punjab is the most populous province of Pakistan with approximately 55.6% of the country's total population. The population of Punjab increased from 20 million in 1951, to 73 million in 1998, 95 million in 2011 and was 101.391 million in 2015. The population growth rate in 1998 was 2.64%, which decreased to 1.9% in 2011. At the present growth rate of the population, Punjab is expected to double after 36 years. It is estimated that the population growth rate will reach 1.63% by 2030 with a population of 130 million, and by 2050 the population will have increased to 181 million. Rapid urbanisation and a growing population will continue to increase demands for sector and sub-sector services, as the current share of urban population is 31.3%.

The provincial Water, Sanitation and Hygiene (WASH) Sector Plan for 2014-2024 was developed under the aegis of Planning and Development Department of Government of Punjab in collaboration with Housing Urban Development and Public Health Engineering Development (HUD&PHED) and Local Government and Community Development Department (LG&CDD) of Punjab. The plan identified the investment needs of the province on the basis of access and coverage provided in Pakistan Social and Living Standards Measurement Survey (PSLM) 2010-2011 and MICS 2011 Punjab. The plan not only provides a snapshot of the existing situation but also identifies short term, medium term and long-term objectives/strategies for WASH. The plan was officially launched in January 2016, and it is well aligned with the Economic Growth Strategy 2018, and provincial urban development and health sector plans.

The Government of Punjab launched its MICS 2014 report on 15th March 2016. An analysis of MICS 2014 results was conducted to determine the existing status of coverage and access of water and sanitation followed by budgetary analysis of WASH expenditures in Punjab. Based on the latest data available and interventions, Punjab WASH Sector Status Report 2016 was prepared to track the key achievements in relation to the roadmap given in the WASH Sector Plan 2014-2024. This Annual WASH Sector Plan report highlights the current status, key interventions and challenges of the sector especially since the implementation of this sector plan.

2. Process

The overall aim of this report was to track progress on implementation of the Punjab Water, Sanitation and Hygiene (WASH) Sector Development Plan 2014-2024 along with Joint Sector Review focusing on sector wide approaches. The preparation of this report entailed the following process

Review of progress of key achievements were made under the following key areas.

1. Sector Policy and Strategy
2. Service Delivery of Drinking Water along with quality, access to sanitation and waste management, health and hygiene, and education
3. Planning, Monitoring and Review
4. Capacity Development
5. Budgeting and Financing

The above areas were analysed by using the secondary data of Government of Punjab particularly MICS 2014 released in 2016, Punjab Budget 2015-2016 along with Annual Development Programme 2015-2016. Additional information was collected through respective departments and in-depth interviews of key stakeholders where required.

A Joint Sector Review Workshop was organized at PHED Lahore attended by 34 key stakeholders including Government, autonomous and civil society service representatives engaged in WASH. The list is attached as Annexure 1. The facilitators shared the progress of WASH Sector Plan 2014-2024 based on secondary data and in-depth interviews of key stakeholders. The participants clarified the points where information was lacking and added where required. This was followed by WASH Bottleneck Analysis that is attached as Annexure 2.

The participants agreed and developed consensus around the proposed methodology around establishing the baseline of Sustainable Development Goals for the province by using Punjab MICS 2014 and Punjab Water Quality Data 2011-2012.

The overall summary of key progress and challenges against the Roadmap of the WASH Sector Plan 2014 - 2024 has been presented as a concluding section of the report. Further Punjab WASH performance management framework has been updated which is attached as Annexure 3 and detailed updates of WASH Sector Plan 2014-2024 as per WASH Sector Plan strategic actions are presented in Annexure 4.

3. Sector Policy and Strategy

The Government of Punjab approved its Provincial Drinking Water Policy in 2011 that has specific focus on creating necessary legislation and institutional reforms for urban water services, rural water supply and town municipal administration. The draft sanitation policy, which seeks for an integrated approach for improved sanitation and hygiene through collaborative arrangements among different service providers, is still awaiting approval for the last four years. There is lack of clarity and specific frameworks for implementation arrangements/structures for the approved drinking water policy and draft sanitation policy.

The main legislation at present that governs drinking water and sanitation is the Punjab Local Government Act 2013, which is not yet fully operational, as elected representatives have not taken over the charge of respective councils. The Act envisages the responsibilities of provision, access, operation and maintenance of drinking water and improved sanitation services to respective councils within their jurisdictions including urban and rural areas. In larger urban areas, this further includes development of integrated systems of water reservoirs, water sources, treatment plants, drainage, liquid and solid waste disposal, sanitation and other municipal services in addition to sanitation and solid waste collection and sanitary disposal of solid, liquid, industrial and hospital wastes, treatment and disposal including landfill site and recycling plants. All private sources of water supply within the local area of the local government shall be subject to control, regulation and inspection by the local government. The legal framework, even under Punjab LGA 2013/2014 for drinking water, sanitation and hygiene is weak and fragmented especially around operation and maintenance (O&M), community participation, and resource allocations criterion, and further compounded since the new Act is not yet being implemented.

The responsibility of operation and maintenance of water supply and sanitation schemes has been entrusted to local community based organizations (CBOs) since late 1990's that was previously held by Public Health Engineering Department (PHED). This approach has not yielded the desired results and a large number of water supply schemes in Punjab became non-functional over the period of time. Now, the PHED has been revisiting its current approach to identify a viable strategy for operation and maintenance while delegating and sharing responsibilities among PHED, community based organizations, and other stakeholders.

In order to cater for the needs of specific legislation for water supply and sanitation, the Government of Punjab drafted the Punjab Municipal Water Act, which is under review and consideration with Cabinet of Government of Punjab before formal approval and enactment through Punjab Assembly. This Act categorises water into potable domestic for drinking, non-potable domestic, institutional, commercial, industrial, amenity, and environmental remediation use. The draft Act proposed the establishment of a regulatory authority called the Water Commission. Upon establishment of the Commission, the responsibility for regulating the conservation, protection, utilisation, exploitation, development of water resources and the regulation of all municipal water services, including quality assurance of water, water services and tariff shall rest with the Commission. The development of water and sanitation master plans for each district/elected council has been proposed under draft Punjab Municipal Water Act and this has been endorsed in WASH

Sector Plan 2014-2024 as a key strategic action. Further, the local governments are responsible for monitoring and periodic reporting of their master plans to determine successes and deviations.

National Education Policy 2009, which is the guiding document for school education in Punjab province, does not elaborate specific interventions about WASH. Similarly, the draft National Health Policy 2009 did not reflect the WASH component though WASH is an integral component of the Health Sector Plan 2014-2018. WASH at public places has been entrusted to newly elected local councils, but these councils could not be set up so far.

Recently, the Planning and Development Board, Government of Punjab has developed a growth strategy for the province entitled “Punjab Growth Strategy 2018 Accelerating Economic Growth and Social Outcomes”. The document endorses Punjab’s health sector vision and strategy, which emphasises improvement of water, sanitation and hygiene services to prevent communicable diseases. The medium term objective of the Government is to provide Punjab’s cities with basic urban services that make its cities more liveable, healthy and productive. Punjab currently does not have any facility for wastewater treatment, resulting in major damage to public health, environment and productivity of our cities and downstream agriculture areas. Investment in these facilities will be made on a priority basis.

The government of Punjab developed a ten years strategic sector development plan for Water, Sanitation and Hygiene 2014-2024 which was formally approved in February 2016. This serves as the implementation framework for drinking water, sanitation and hygiene in the province with short, medium and long-term strategic actions. In order to strengthen the enabling environment of service delivery, the WASH strategic plan 2014-2024 identifies the need for development of a human resource development road map while underpinning leadership development for WASH covering both technical and managerial areas. The PHED has already conducted a human resource assessment of WASH, and a roadmap for HR development has been developed with an implementation strategy.

4. Institutional arrangements and service delivery

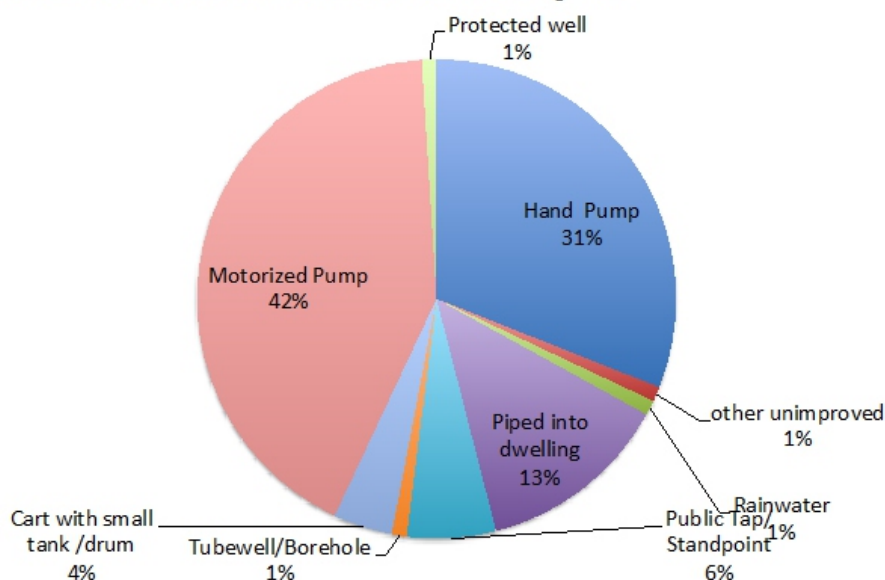
At provincial level, the two main departments that are responsible for water and sanitation are Housing, Urban Development and Public Health Engineering Department (HUD&PHED) and Local Government and Community Development Department (LG&CDD). City District Governments are responsible for carrying out water and sanitation functions through Water and Sanitation Agencies (WASAs) and Solid Waste Management Companies. Town/Tehsil Municipal Administrations (TMAs) take care of both rural and urban water and sanitation in their respective tehsils. Coordination mechanisms between these two departments are improving gradually although there is much that needs to be done to bring it to an optimal level. With regards to governance of water and sanitation, the institutional structure is as follows:

- At the provincial level - Housing, Urban Development and Public Health Engineering Department (HUD&PHED) and Local Government and Community Development Department (LG&CDD).
- Water and Sanitation Agencies (WASAs) are responsible for 5 big cities. All other areas – Town/ Tehsil Municipal Administration (TMAs) are responsible which are likely to be replaced with elected councils very soon- notification awaited.
- Rural Water Supply Schemes – planned, designed and executed by PHED while operation and maintenance (O&M) is the responsibility of TMAs and Community Based Organisations (CBOs).

4.1 Access to Drinking Water

As per the Punjab Multiple Indicator Cluster Survey (MICS) 2014, about 94% of the population uses an improved source of drinking water – 89% in urban areas and 97% in rural. Further, 19.2% population of Punjab province has access to tap water followed by 41.7% motorised pump and 30.6% hand pumps. The proportion of population using tap water as a main supply of drinking water is higher in urban areas, 39.2% as compared to only 9.6% in rural areas. Figure 1 indicates overall distribution of improved water source to households (HHs) in the province.

Figure 1 - Percent Distribution of Household source of Drinking Water



There are disparities and differences across the regions and districts. District Lahore leads all other districts in piped water with 64% population enjoying this facility, while less than 3% of the population in Bhakkar, Layyah, Muzaffargarh, Rajanpur and Jhang use piped water. The highest use of hand pumps is found in Muzaffargarh (84%), motorised pump/tubewell in Gujrat (75%), protected well/spring in Sahiwal (about 18%) and rainwater collection in Khushab (5.3%). Overall, out of those household members who are using unimproved drinking water supply sources, only 2.1% are found using an appropriate water treatment

method, slightly higher in urban (2.4%) than rural (1.6%). About 4.1% are boiling the water followed by 1.8% who use a water filter.

Figure 2 - Access to improved water supply in Punjab by quintiles



A review of access to improved water in different quintiles reveals that the coverage goes down from the poorest to the richest, and it is more visible in urban areas compared to rural areas (Fig. 2). The lowest quintile and no education have better access to improved water's access compared to high quintile and higher education due to high usage of hand-pumps (improved source), which are easy to install within premises at shallow levels compared to the richest quintiles whom has less confidence on ground water extracted by hand pumps. There is evidence from district Faisalabad, where 28.3% bring water in small carts/tanks by either purchasing the water or fetching it themselves. The new definition of SDGs encourages the location of improved water sources within premises, and to be available when needed. Thus this information is key to determine the first and second ladder of SDG for safely managed water. Overall, 80.8% of the population has access to improved water sources located at their premises that is higher in rural areas (84.3%) compared to urban areas (73.7%).

Against the target of 100% piped water supply in cities /towns and 65% in rural areas, Punjab has a coverage of 39.2% in urban areas and 9.6% in rural areas. The Government of Punjab has taken the following key initiatives to enhance the coverage:

1. GIS based spatial database with urban profile, land use mapping infrastructure, and service delivery profile for five major cities started i.e. Lahore, Faisalabad, Multan, Rawalpindi and Gujranwala. Other urban and rural area shall be added in phases.

2. A phased plan for rehabilitation of dysfunctional tube wells/schemes initiated. For 2016-2017, an allocation of PKRs 172.7 million has been made for rehabilitation of dysfunctional schemes. The Government is planning to revisit the strategy for operation and maintenances through defining clear roles and responsibilities for PHED, Local Councils, CBOs and other stakeholders.
3. The process of mapping of shallow tube wells and aging infrastructure has not yet started through allocation for digital mapping and preparation for comprehensive water supply and sanitation schemes has been proposed in 2016-2017 budget. This will include the assessment of additional storage capacity needs of main cities and towns.
4. In order to provide quality water, Government of Punjab established the Punjab Saaf Pani Company that has conducted a survey of functional/dysfunctional water supply schemes in Punjab and has identified 36 Tehsils/Areas as priority in its 8 regions. The company will install water filtration plants at cluster levels in rural areas through active community mobilization for identification of sites followed by management responsibilities including operation and maintenance. An allocation of PKRs 30 billion has been made for 2016-2017 to cover all districts of Punjab.
5. In order to ensure the judicious use of drinking water, the Government of Punjab initiated water metering. As a first step, the procurement of water metering has been started for five urban cities of Punjab, and these are to be installed under the fiscal year of 2016-2017.

4.2 Drinking Water Quality

Water quality is directly linked with human survival including incidence of water borne diseases. This has been further recognized in the newly launched sustainable development goals (SDGs) under one of the key parameters for the newly defined target of safely managed water sources. The technical assessment of water supply schemes in 21 districts in north and central Punjab¹, conducted by the Pakistan Council of Research in Water Resources in 2011 revealed that 35% of the schemes are non-functional. About 88% of the population use ground water and 43% of functional schemes supplied water less than 5 hours per day, while 31% supplied between 5-10 hours per day. In 80% of the schemes, there is no water treatment facility, while only 12% provide some treatment (chlorination, bleaching powder, potassium permanganate, etc.).

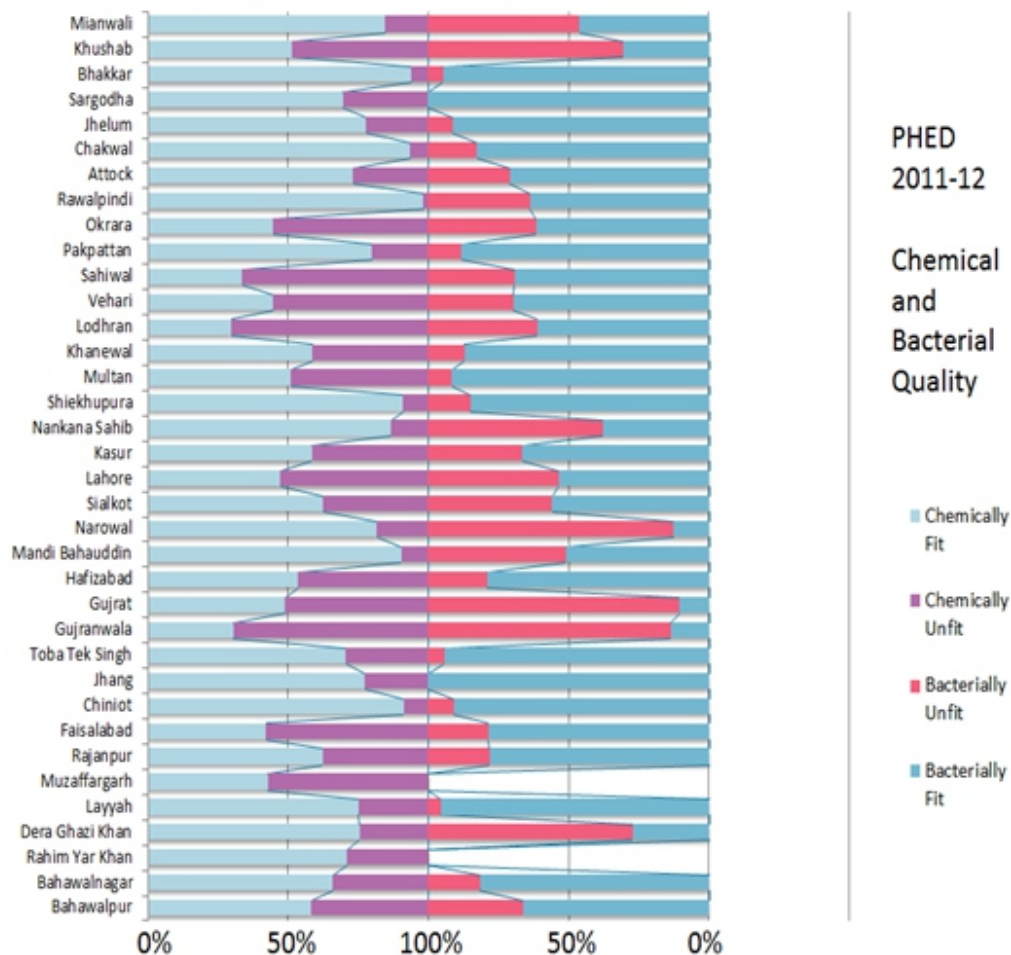
Water samples of the functional water supply schemes indicate that 79% of the total collected samples are unsafe for drinking purposes because of microbiological and chemical contamination (iron, fluoride, nitrates) and physical problems (turbidity, hardness, total dissolved solids).

In 2012, PHED conducted water quality monitoring survey with the assistance of UNICEF of Punjab. Through this survey, 46,000 samples were collected from about 23,000 rural settlements to assess the water quality and to determine the future investment strategy in contaminated and brackish / barani areas. A Third Party Validation of this survey was conducted through PCRWR. The results revealed that in 36.3% of villages the

¹ Report on Technical Assessment of Water Supply Schemes Northern and Central Punjab (Volume-I), 2011. Pakistan Council of Research in Water Resources

drinking water was chemically unfit and in 32.7% of villages it was bacterially unfit for human consumption (Fig. 3) . This indicates that about a third of all villages in Punjab have water that is unfit for drinking. There are some differences of water quality results between PCRWR and PHED results because PCRWR followed WHO standards where PHED applied National approved standards.

Figure 3 - Drinking water quality status in districts in Punjab



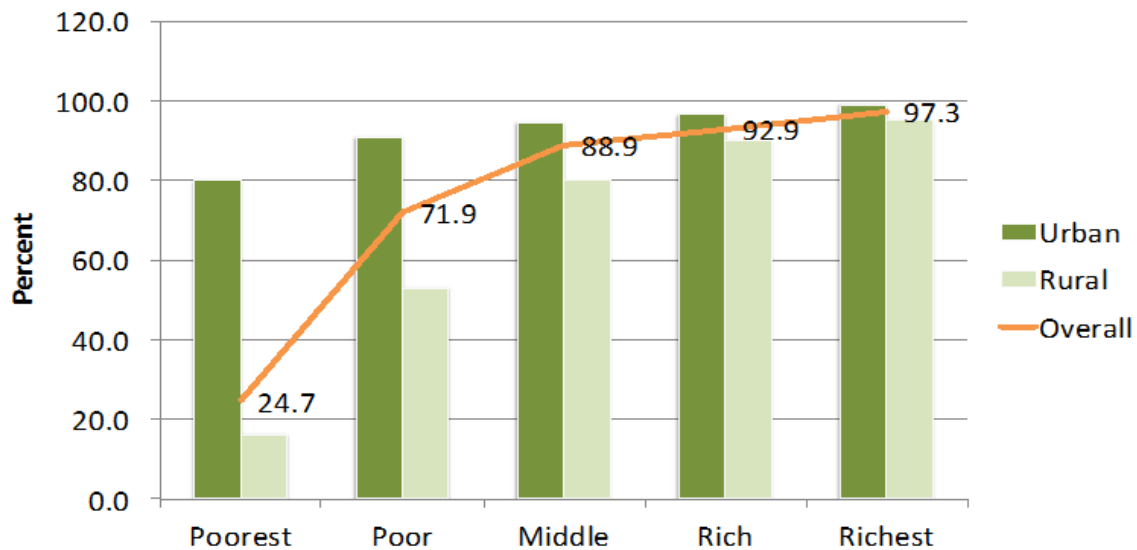
(Source: PHED and UNICEF, 2011-12)

The WASH sector plan 2014-2024 emphasized on strengthening and development of effective water quality laboratories to conduct monthly water quality testing of at least water supply schemes and filtration plants managed by TMAs. This will also provide access to the local communities for their groundwater testing. Key actions/initiatives taken by Government of Punjab during the last one year are:

1. PHED has been developing new PC-1 for enhancing the capacities and outreach of water quality testing labs at the district level has been developed and is proposed under ADP 2016-2017 that includes four Centers of Excellence i.e. Lahore, Rawalpindi, Multan and DG Khan and strengthening the facilities at 31 districts. Water quality survey is proposed under ADP 2016-2017 that includes zoning.
2. There is lack of systematic monitoring for all ground and overhead reservoirs of water supply with any chemical and chlorination treatments. The Punjab Municipal Development Fund Company of Local

it. The use of septic tank is more prevalent in Gujrat, Sialkot and Nankana Sahib where more than 80% of population is using it.

Figure 5 - Access to improved sanitation in Punjab by quintiles



A review of access to improved sanitation with wealth quintiles show a very proportionate relationship that higher the poverty lower the improved sanitation. Compared to 24.7% coverage in the poorest, the access to improved sanitation in the richest is 97.3% (Fig. 5). Similarly, in urban areas, the access to improved sanitation in the lowest quintile is 80% compared to 98.9% in the richest. While in rural areas, the access to improved sanitation in the lowest quintile is 16.2% compared to 95% in the richest.

Presently, 17.5 % population of the province (predominantly living in rural areas) is practicing open defecation compared to 23% in 2011. Based on the success of Pakistan Approach to Total Sanitation (PATS) piloted at 4 Union Councils of Punjab in 2012 by CDU of PHED, the government of Punjab scaled this up across the province by targeting all remaining villages that have a high incidence of open defecation. The PATS is relatively new for PHED, LG&CDD and Government of Punjab where social mobilization is an integral component of the overall strategy, and initial results of this strategy have been very successful.

The WASH Sector Plan set the target of 82% sewerage coverage in cities and towns and 70% sewerage coverage in rural areas. Presently, the coverage is 56.3% in urban areas and 4.1% in rural areas that shows not only huge disparity but also indicates an urgent call of action. Further, only 33.8% of HHs in urban areas and 49.1% in rural areas indicated their flush connection with septic tanks that falls under the category of on-site treatment or management of human excreta. Thus, around 65.4% of HHs have appropriate connections of their latrines at HH levels. MICS and PSLM surveys do not provide information about off site treatment so no information is available about coverage of off-site treatment that has now been introduced as a new target under SDGs.

In urban areas, about 64% of solid waste is collected by municipal services or privately. Data obtained from Tehsil/Town Municipal Administrations show that the percentage of waste that is disposed of per month ranges between 50% to 70%. There are significant numbers of TMAs whose performance is less than 50%. LG&CDD has conducted a comprehensive survey of 106 TMAs of Punjab to develop a solid waste management system. Findings of this survey showed that there are 68 TMAs with sufficient machinery and human resources. There are 22 TMAs in which insufficient machinery and human resources are available for solid waste management. There are 15 TMAs in which neither machinery nor human resources are available to deal with the solid waste. No significant progress has been made around safe hospital waste management, safe hygienic slaughterhouses and efficient and effective management of industrial solid and liquid waste management. The key interventions and initiatives of Government of Punjab are:

1. Government has allocated PKR 399.705 million for scaling up PATS programme to reduce Open Defecation in all 36 Districts of Punjab. During 2015-16, PKR 170.407 million spent and PKR 100 million allocated for 2016-17. The objectives of PATS project are: ensuring 100% safe management of excreta, attaining and sustaining the open defecation free status; promoting the use of safe, hygienic latrines and other sanitation facilities for men, women and children living; and managing liquid waste and its treatment in number of villages as reward of ODF status.
2. PMDFC is conducting asset management and verification study for all TMAs of Punjab that includes water supply and sanitation related equipment under phase-II of the study that is expected to take place in 2017.
3. Sewage flows determined for all cities and towns, and de-silting and cleaning of 30% drains and sewers with safe sludge disposal per quarter in TMAs and zones in cities. WASAs and respective TMAs are managing and monitoring the sewerage systems and flows, but there is lack of systematic monitoring, reporting and remedial action plans.
4. For elimination of stagnant ponds and prevention of ponding, LG&CDD has identified 7000 sewer ponds in Punjab. So far, 151 ponds have been eliminated by June 2016; these can be linked as rewards with PATS programme where possible to enhance the coverage and access.
5. Feasibility Studies for Waste Water & Sanitation Treatment related activities has been planned for 2016-2017 but this has not yet been approved under ADP 2016-17
6. EPA requested capacity development in monitoring the industrial effluents, and approaches to introduce necessary guidelines with implementation, and funds have been requested
7. A pilot project "Solid Waste Management in Rural Areas of Punjab" has been initiated in 6 selected villages of Punjab. Similarly, solid waste management companies have formed in 7 cities of Punjab that started work.

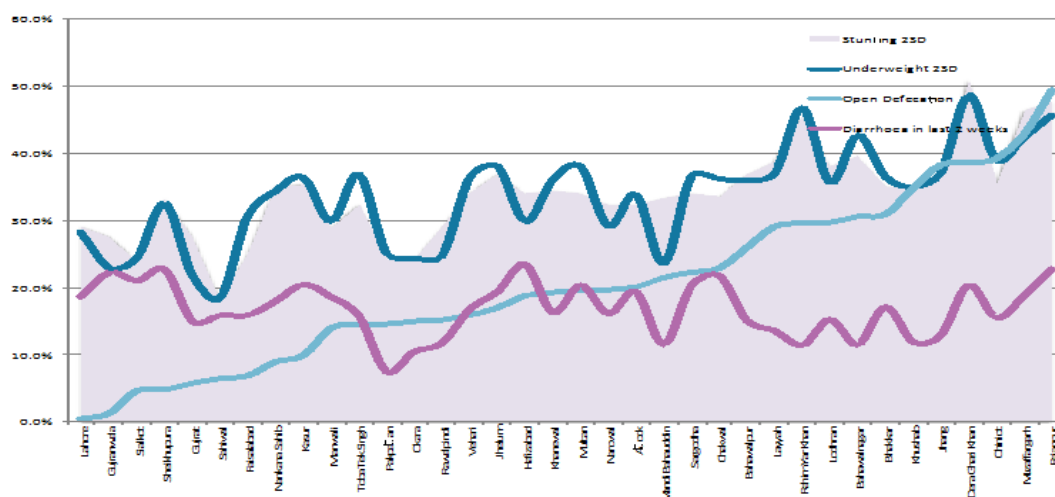
4.4 Health and Hygiene

Infant Mortality Rate (IMR) and Under 5 Mortality Rate (U5MR) remain high in Punjab. The MICS 2014 found an IMR of 76 per 1000 live births and U5MR of 96 per 1000 live births. Evidence suggests that pneumonia, diarrhoea and malaria cause about 50% of all deaths in children in Pakistan. In Pakistan, 53,000 children die

every year from diarrhoea. Recent data from the Punjab MICS 2014 has shown that 33.7% of children under 5 years are underweight, 33.5% are stunted and 17.5% are wasted.

Analysis of data from MICS 2014 showed that districts that have high child mortality rates also have high rates of children who are underweight or stunted. Districts that have high rates of diarrhoea in the last two weeks show a similar picture to underweight and stunting patterns. Furthermore, a similar pattern is seen in districts that have high 'open defecation' rates. The findings suggest that poor sanitation; diarrhoea and nutritional status have a close correlation but this has not been yet validated with an appropriate research study.

Figure 6– Stunting with Open Defecation, Underweight and Diarrhoea



As per MICS 2014, it was observed that about 98% of the households had a specific place for hand washing, while only 0.5% households could not indicate a specific place where household members usually washed their hands. Among households where a place for hand washing was observed, almost 80% had both water and soap (or another cleansing agent) present at the specific place, and this was higher in urban (93%) as compared to rural areas (73%). In 17% of the households, only water was available at a specific place, while in 0.6% of the households the place had soap but no water. The remaining 2.5% of households had neither water nor soap available at the specific place for hand washing.

Under PATS, the lady health workers (LHWs), frontline worker of health department, responsible for primary health care and health promotion have been actively engaged. These LHWs played a key role in social mobilization while underpinning behavioural change for construction and use of latrines along with other stakeholders. The role of LHWs especially their motivation, commitment and reporting is key to sustainability of the programme as these LHWs have access to each and every house of their catchment and command areas. The status of key interventions and strategic actions defined in WASH Sector Plan 2014-2024 are:

1. WASH is integral component of Health Sector Plan 2014 2018-.LHWs module for WASH training has been developed but it has not been integrated into curriculum as overall LHWs curriculum of Punjab Province

is under review. Advocacy and sustained engagement with health sector would be required in 2016 - 2017.

2. PHED, LG&CDD and other partners including UNICEF have been actively pursuing the integration of WASH activities in health campaigns, health weeks and MCH weeks.
3. Disease Surveillance System in Punjab is operational, and is linked with LG &CDD for water borne diseases, which makes and ensures necessary follows up with relevant TMAs.
4. There is lack of data about functional WASH facilities at health facilities, and an assessment would be integrated into existing data collections from health facilities from 2017.
5. Approximately 2500 school Health & Nutrition Supervisors positions exist, 1600 have been recruited and trained in 22 districts while recruitment & training in 13 remaining districts is under process. All these would be trained and capacitated in WASH related interventions.

4.5 Education

The Government of Punjab has given special emphasis on the integration of WASH in schools as acknowledged in the National Education Policy 2009 that identifies provision of missing facilities as critical for retention and quality education. In last few years, there has been significant progress regarding water and sanitation services in schools. As per PMU of Education Department, overall 96% of schools in Punjab have access to drinking water and 93% of primary and 97% of elementary schools have functional latrines. The status and update of key interventions in relation to education are:

1. The education sector plan and education road map of Punjab emphasized on school WASH facilities but there is need to follow, develop and implement school WASH quality standards in terms of number of WASH facilities per student population, knowledge and practices of hygiene, and periodic review of WASH services. WASH in School Strategy for school education department is under development with the support of UNICEF, which will identify the key areas for curriculum wing and training programme for school teachers.
2. There is need to integrate menstrual hygiene management practices and assurance for functional WASH in school education to enhance girls retention. The primary and lower secondary schools data for each district is available that will help to identify priority areas for lobbying and advocacy for school WASH.
3. In collaboration with School Education department and school health programme, launch of a Chief Ministers Water Ambassadors Programme for primary and middle school children has not yet been achieved. The purpose of this programme is developing children leaders to act as ambassadors for water conservation and family hygiene.
4. Menstrual hygiene management (MHM) integrated in health and hygiene for girls - pilot projects are under implementation in collaboration with CSOs, PHED and school education department for menstrual hygiene management with the purpose to identify the strategy and approach for MHM.

5. Planning, Monitoring and Review

The Government of Punjab developed a Planning Manual in May 2015 that provides guidelines and framework for the project identification, project formulation, project execution, monitoring and evaluation.

According to this manual, the main instrument to implement a plan is the Annual Development Programme (ADP). This document, commonly known as ADP, includes all those programmes and projects that are duly approved and funded. More recently, the concept of the Medium-Term Development Framework (MTDF) has evolved to develop a longer-term perspective for planning, which consists of plans for the next three years.

Formulation of the ADP should follow the medium-term perspective, with the objectives of ensuring predictability of flow of funds and the ability to plan with a longer-term horizon in view, while realising fiscal discipline and allocation and operational efficiencies. In line with the MTDF, the ADP should comprise a portfolio of development schemes for the next year and projections for the two subsequent financial years in the prescribed format. Line departments are required to submit a write-up on the department/sector's vision, objectives/policy and strategic interventions to be achieved in the next two–three years. Punjab WASH Sector Plan 2014-2014 has been developed to provide a vision and strategic roadmaps to respective departments for alignment.

It is also recognised that government priorities are often driven by the political agenda derived from political party manifestos, and advocacy of the international and national partners based on research and evidence. This is evident from the institutionalization of PATS under annual development programme of Government of Punjab. Similarly, water quality is being underpinned in recent initiatives. Significant increases in budgetary allocation of WASH in both rural and urban areas showed that advocacy efforts with politicians and decision makers have been proving effective.

Currently, the national and provincial elected political representatives play a key role in identification of WASH related priorities of their areas but this is not fully supported with comprehensive need assessments. Often, this approach negates inclusive and equitable distribution of resources evident from coverage, access and financial data. Further, during 2015-2016, nearly 33% of total water and sanitation schemes were added as supplementary schemes after approval of the budget indicating weaknesses in the planning process. Hence, areas with strong political voices are more advantaged compared to other areas with less active political representation.

WASH sector is overseen by a number of departments, including Public Health Engineering, Urban Development, Local Government & Community Development, Planning and Development Department, Works and Services, Health and Education. The responsibility of planning, funding, regulating, monitoring and service delivery for water and sanitation at district and sub-district levels rests with Public Health Engineering Department of Punjab except for five major cities where autonomous Water and Sanitation Agencies (WASAs) have been created that works under Urban Development which is part of Housing & Urban Development Department. Both PHED and Urban Development fall under one department called Housing, Urban Development and Public Health Engineering Department. Both complement and supplement each other where support and facilitation is required at the planning, execution and reporting. The Local Government & Community Development Department (LGCD) through TMAs works with PHED for seeking

technical support in infrastructure development especially in relation to complex schemes. The local community organisations are responsible for operation and maintenance of water supply schemes under PHED, and similar emphasis is being given to sanitation interventions through Local Government. The detailed guidelines for developing effective community based organisations have been developed by both governmental departments that provide the basis for developing effective linkages and voices of the communities.

Monitoring and reporting activities of WASH sector and its sub-sector take place at various levels but these are fragmented. The coverage and access of WASH is being tracked through sampled households surveys. Punjab leads on Multiple Indicator Cluster Survey (MICS) that generally happens with a frequency of 3-4 years. It is one of the most sophisticated surveys conducted at the provincial level that provides information up to district levels. In addition to MICS, another household survey, led by Federal Bureau of Statistics, called Pakistan Social Living Standards Measurement Survey (PSLM) provides information about access and coverage of water supply and sanitation on annual basis. However both surveys have limitations in terms of comprehensive assessment and tracking of WASH services especially in the context of water quality, connections, onsite and offsite treatment, etc. A Performance Management Framework for WASH was defined in Economic Growth Strategy of Punjab and is an integral component of the WASH Sector Plan 2014 - 2024.

PHED of Government of Punjab identified the need for development of a comprehensive management information system for WASH based on android for real time entry in the field. The MIS will generate outputs by feeding input data from the field and district offices. Presently, it is being piloted and PHED is confident to make it operational from 2017 financial year. Furthermore, there are challenges of coordination for monitoring and reporting due to complexities in the roles and responsibilities of different stakeholders in the government, cantonment boards and defence housing authorities, non-government and private sectors.

At the provincial level several mechanisms exist for providing overviews, for instance, the provincial PRSP Report, Medium Term Development Framework (MTDF), Medium Term Budgetary Framework (MTBF) and Annual Development Plans (ADP). Generally, the ADP provides the basis for planning, but current arrangements do not support a comprehensive assessment or access to capital expenditure on sanitation and hygiene. No single regulatory and monitoring authority exists for M&E and reporting of drinking water, sanitation and hygiene in the province. Multiple institutions/departments conduct need assessment and execution of WASH projects with poor coordination and knowledge management. In absence of a template for a Sector/sub-sector Performance Report, it is difficult to consolidate the input and output data to have an overall picture of the sector i.e. investments, operational costs, output/outcome data, etc. While each project/scheme does in theory have a project cycle, based on a series of documents from PC-I to PC-V, the end of project evaluation stage (PC-V) is undertaken infrequently, bypassing yet another institutional monitoring mechanism.

Different provincial departments responsible for WASH are in need of developing an integrated approach to envision and design common implementation plans that are owned by multiple departments and supported by all major support organisations. Currently, issue specific coordination arrangements through different committees exist in the province where stakeholders share their perspectives and initiatives, but there is no single coordinating focal point that holds the different sub-sector strands together. The WASH Sector Plan 2014-2024 proposed the creation of Programme Management Unit (PMU) at provincial level that not only steers the implementation and reporting of WASH sector plan but also provides a platform for coordination, joint planning and periodic sector review to overcome the duplication of efforts and resources.

The status and update of key interventions in relation to budgeting and financing are:

1. The P&D in collaboration with PHED and UNICEF organized a capacity development training for key staff involved in the preparation of ADPs. Based on the feedback, a “Planning Manual” for WASH related ADPs has been prepared for guidance and reference of staff under the overall Planning Manual of P&D.
2. For improved governance mechanisms of coordination, Punjab WASH Steering Committee has been constituted. In addition to relevant government departments, the donors and NGOs are members of the steering committee.
3. The WASH Sector plan emphasized on improved operational performance and information and knowledge management for which a Project Management Unit was suggested. This could not be established in 2015-2016, but has been proposed under 2016-2017 ADP.
4. A performance management framework for the province was devised as a part of Economic Growth Strategy of the province, and this is an integral component of WASH Sector plan. The M&E framework of Sector Plan is pending because of delays in the creation of PMU.
5. PHED requested the creation of a research and development cell under 2016-2017, but funds have not been allocated so far.
6. The Pakistan Water Operators Network has been mobilizing the WASAs to collate necessary data for quarterly updates. More advocacy and capacity building is required as there are inconsistencies in reporting. Punjab Municipal Development Fund Company is facilitating TMAs to develop a tracking system - this process is underway. Punjab Intermediate Cities Programme starting from 2016 has a key focus in enhancing management performance of water and sanitation at TMA levels especially financial management, tracking, etc.
7. For Consolidated Dashboard of sub-sector performance, the development of GIS based MIS under PHED has been started, and consultations are underway with different departments. The Dashboard will be part of MIS and shall be housed initially at PHED, and these will be partially functional from 2017.
8. For production of an annual sector status report PHED is leading on Annual WASH Sector Review 2016. The MICS 2014 data has been analyzed to establish benchmarks for international reports and commitments .

6. Capacity Development

HUD&PHED provides leadership to WASH in the province in collaboration with Local Government and P&D. Punjab's new Growth Strategy 2018 clearly articulates the highest level of government commitment and a strategic direction for accelerating economic growth and improving social outcomes. In spite of impressive and commendable progress made by Punjab in the last few years, the province has capacity constraints at the individual as well as institutional levels. This has been highlighted in the WASH Sector Plan 2014-2024 as a key challenge and a human resource capacity assessment has been identified as a key priority to ensure that necessary capabilities and skills are available to achieve the strategic objectives.

Two assessments one for urban² and other for local councils, highlighted an unsatisfactory professional development process which only exacerbates the limited technical capacities of WASA, PHED and Local Government in the sector, call into question their role of community development when more than four-fifths of the officials and technical staff have no training in community mobilisation and development. The leading local government training institution is lacking knowledge and expertise about emerging technical solutions. Traditionally, systematic capacity building has been less focused. With increasing investments being made by Government of Punjab and the changing nature of sustainable development goals that emphasize on quality, treatment and recycling approach, there is need for a systematic capacity development approach focussing on all aspects including staff, capabilities and resources.

At present, three professional development organizations are catering to specialized and generalized capacity building requirements of WASH sector HR in Punjab. These include Management and Professional Development Department (MPDD), Local Government Services Academy, Lala Musa and JICA-supported WASA Academy (Al-Jazari) in Lahore. While former essentially caters to generalized capacity building requirements of WASH sector HR in Punjab, the latter two represent dedicated institutional mechanisms for providing pre-service and in-service training opportunities to WASH sector employees in selected number of professional disciplines of relevance to their work streams. WASH sector employees may have very limited capacity building opportunities at some of the other training institutions such as Punjab Engineering Academy. However, this category of technical institutions primarily caters to in-service training requirements of engineering staff from Irrigation or Communication & Works Department and is rarely available to technical staff working in WASH-related sectors. The status and update of key interventions in relation to budgeting and financing are:

1. The PHED conducted a human resource capacity assessment of WASH followed by a roadmap of Human Resource Development Plan.
2. The concept paper is under discussion for creation of a Punjab Municipal Services Institute, and this role may be delegated to one of the existing three training institutes. For improved performance in five urban areas, WASA academy with the support of JICA is expected to start from 2017.

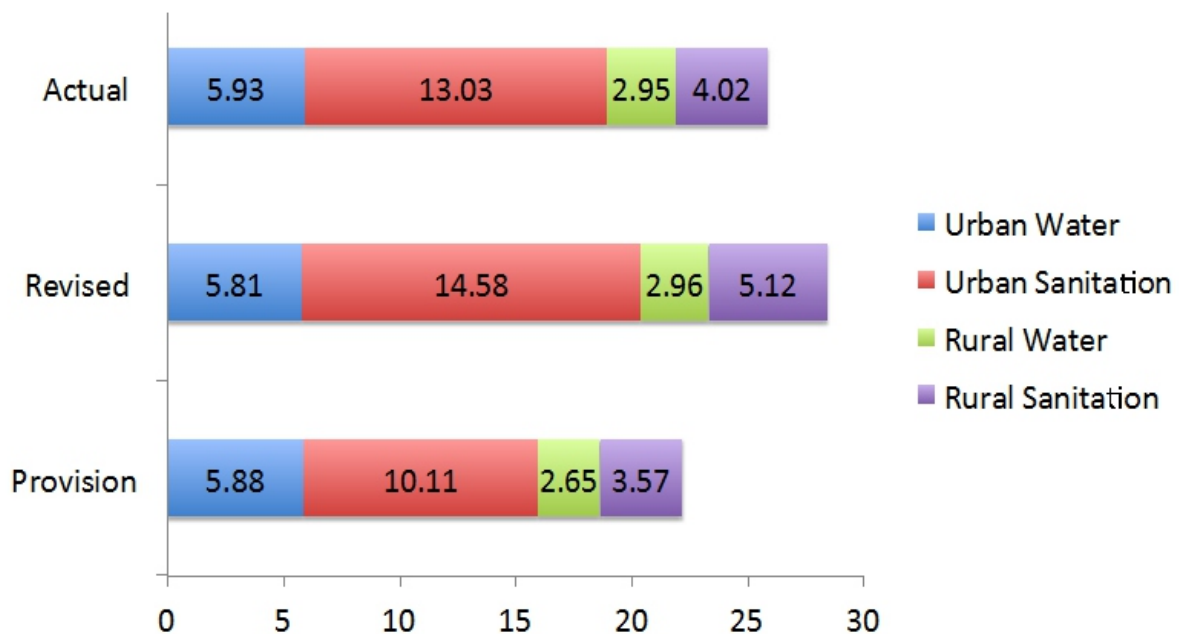
² Urban Water Supply and Sewerage Reform Strategy, 2006. Government of Punjab and World Bank

3. The up gradation of Local Government Academy has started with the support of KOICA. Further assessment of Local Government Academy is underway, and it would be upgraded under Punjab Intermediate Cities Improvement Programme starting from 2017. Sector partners supported in reviewing WASH curriculum and necessary accessories for effective training at limited levels.
4. The Community Development Unit of PHED and Staff of Local Government are actively engaging the CBOs for water conservation, and ODF under PATS. The sector partners are financing the capacity development of CBOs.

7. Budgeting and Financing

The Government of Punjab has steadily been increasing its investments in water supply and sanitation, despite major emergencies and disasters in the 2010 floods. The investment trends show a three -fold increase from PKR 8.9 billion in 2009 10-to PKR 26 billion in 2015-16. Water Supply and Sanitation Budget in Punjab is comprised of two main parts led by Housing, Urban Development and Public Health Engineering Department along with Local Government and Community Development Department.

Figure 7: Allocation and Expenditures 2015_2016 _ PKRs Billion



The overall budgetary allocation for 2015-2016 (including water supply 063 and urban development) is PKRs 22.21 billion which was revised to PKRs 28.47 billion and final expenditures for 2015-2016 are PKRs 25.93 billion. These expenditures are about 89% of the total revised allocations. The share of urban water supply, urban sanitation (drainage and sewerage), rural water supply and rural sanitation (drainage and sewerage) are shown in Fig.7 It is interesting to note that share of urban sanitation and rural sanitation is higher than urban water and rural sanitation respectively.

extensive process of deliberations was adopted to finalize the goals with an open working group (OWG). Almost 70 countries participated in the initial draft of SDG, whereas an extensive feedback was sought to finalize the 17 goals with 169 sub-goal/targets as a final SDG agenda till 2030. Transforming the new SDG development framework into an action framework requires revising existing policies, resourcing the SDG framework and action plan, redesigning the monitoring framework and realigning the governance structure.

The SDGs were formally launched in Pakistan in October 2015 by the Ministry of Planning, Development and Reform. On 19th February 2016, Pakistan became the first country in the world whose National Assembly passed a unanimous Resolution adopting the SDGs Agenda as its own national development agenda. This not only reflects the broad political support for the SDGs, but also clearly indicates that SDGs Agenda is now Pakistan's Development Agenda being called Pakistan Development Goals (PDGs). Further, the Speaker, National Assembly inaugurated a state-of-the-art SDGs Secretariat in the Parliament building in February 2016, which is now serving as a resource centre.

The SDG 6 and its sub-goals 6.1 and 6.2 are related to drinking water and sanitation. To transform the SDGs into implementation plans with specific targets, the provincial and regional strategies and annual development plans need to be aligned with the SDGs, there is a need to know the current level of coverage (to serve as baseline as well as bench mark) newly defined SDGs related to water and sanitation.

SDG 6: Ensure availability and sustainable management of water and sanitation for all

SDG 6.1: Achieve universal and equitable access to safe and affordable drinking water for all.

SDG 6.2: Achieve access to adequate and equitable sanitation and hygiene for all and end open defecation paying special attention to the needs of women and girls and those in vulnerable situations.

SDG -6.1: Safely Managed Water Services

Target 6.1: Achieve universal and equitable access to safe and affordable drinking water for all.

Indicator: Percentage of the population using safely managed drinking water services.

Definition: Population using an improved drinking water source, which is: located on premises, available when needed, and free of faecal and priority chemical contamination. Based on above definition, by using MICS 2014 data and quality data furnished by PHED and PCRWR, the SDG for Punjab is 54.13%

Table 1: Definition of drinking water as per the SDGs

MDG-SDG	Service ladder	Definitions	Coverage (%)	Source of information
SDG 6.1	Safely managed drinking water	Improved water supply facility that is located on premises, available when needed and that results in drinking water free from bacterial contamination	54.13% – PHED 35.55% - PCRWR	MICS 2014 Improved Water/Basic Water: 94.3% Water accessible and available in premises: 80.8% 33% of HHs reported having bacterial contamination as per PHED data so water free from bacterial contamination is: 67% Or 56% of HHs reported having bacterial contamination as per PCRWR data so water free from bacterial contamination is: 44% HHs using an improved water supply facility that is located on premises and free from bacterial contamination: $80.8\% \times 0.67 = 54.13\%$ as per PHED $80.8\% \times 0.44 = 35.55\%$ as per PCRWAR
MDG continuity	Basic water/ Improved Water	Piped Water of all types, Motorized Pump, Hand Pump, protected well & spring, bottled water- mineral	94.3%	MICS 2014
	Unimproved water	Unprotected well & Spring, Pond (Toba), Tanker Truck, Cart with small tank/drum, surface water (river, stream, dam, lake), other, missing	5.7%	MICS 2014
TOTAL OF THE ABOVE THREE CATEGORIES:			100%	

There are challenges in terms of having water quality data as bifurcation for rural and urban areas has not been possible. Therefore, the same value is used for both urban as well as rural areas. Table 5 provides an overall district summary of access to safely managed drinking water services. There are mixed kinds of zones having poor access to safely managed water ranging from northern, central and southern Punjab.

Table 2: Safely Managed Drinking Water Services

Region/District	Overall Improved Water for MICS 2014	Improved Water in Premises MICS 2014	PHED Quality Data		PCRWR Quality Data	
			Bacterially Fit as per PHED	Safely Managed Water	Bacterially Fit as per PCRWR	Safely Managed Water
Punjab	94.41	80.79	0.67	54.13	0.44	35.55
Urban	89.08	73.70	0.67	49.38	0.44	32.43
Rural	97.04	84.28	0.67	56.47	0.44	37.08
Gujrat	99.21	71.69	0.10	7.50	0.37	26.53
Narowal	98.52	74.85	0.12	9.30	0.40	29.94
Gujranwala	98.60	81.53	0.13	10.91	0.00	0.00
Khushab	100.00	59.44	0.30	18.03	0.39	23.18
DG Khan	98.05	75.46	0.27	20.40	0.52	39.46
Nankana Sahib	98.10	71.96	0.38	27.19	0.77	55.41
Mianwali	97.19	84.71	0.46	38.94	0.37	31.34
Rawalpindi	97.53	62.43	0.63	39.33	0.18	11.24
Mandi Bahauddin	91.43	79.49	0.51	40.45	0.38	30.21
Faisalabad	69.80	52.65	0.78	41.32	0.42	22.11
Sialkot	100.00	76.09	0.56	42.44	0.72	54.78
Lahore	87.82	82.99	0.54	44.44	NA	NA
Okara	94.28	80.63	0.62	49.62	0.00	0.00
Lodhran	98.14	89.06	0.61	54.38	0.37	33.22
Bahawalpur	92.72	84.58	0.66	55.83	0.48	40.48
Attock	96.47	79.16	0.71	56.21	0.48	38.00
Kasur	97.44	86.91	0.66	57.72	0.86	74.74
Sahiwal	97.60	87.87	0.69	60.68	0.39	34.32
Vehari	96.12	87.83	0.69	61.03	0.38	33.78
Bahawalnagar	97.65	80.62	0.81	65.66	0.91	73.06
Rajanpur	93.61	84.44	0.78	65.98	0.86	72.96
Hafizabad	95.96	85.38	0.79	67.40	0.15	12.81
Chakwal	99.43	83.55	0.83	68.96	0.52	43.45
Jhelum	99.48	80.77	0.91	73.60	0.35	28.27
Sheikhupura	91.88	89.38	0.85	75.93	0.99	88.49
Sargodha	96.97	76.84	1.00	76.84	0.39	29.97
Pakpattan	94.14	87.68	0.88	77.23	NA	NA
TT Singh	92.65	85.43	0.94	80.54	0.80	68.34
Multan	97.53	89.32	0.91	81.71	0.15	13.74
Khanewal	98.19	95.06	0.87	82.65	0.42	40.30
Chiniot	98.17	93.01	0.91	84.46	NA	NA
Bhakkar	90.25	97.86	0.95	92.52	0.91	89.05
Layyah	98.45	98.30	0.96	94.01	0.00	0.00
Jhang	94.20	94.80	1.00	94.80	0.50	47.40
Muzaffargarh	99.06	96.19	NA	NA	0.35	34.08
RY Khan	96.29	79.72	NA	NA	0.50	39.86

SDG 6.2 - Safely Managed Sanitation Services

SDG Target 6.2: Achieve access to adequate and equitable sanitation and hygiene for all and end open defecation paying special attention to the needs of women and girls and those in vulnerable situations.

Indicator: percentage of the population using safely managed sanitation services, including a hand-washing facility with water and soap.

Definition: population using an improved sanitation facility (including a hand washing facility with water and soap) that is not shared with other households and where the excreta are safely disposed in situ or transported and treated off-site.

Based on above definition, by using MICS 2014 data for improved sanitation and hand washing with water and soap, the safely managed improved sanitation services at HHs level in Punjab is 51%. The basis of calculations is given below.

Table 3: Definition of sanitation as per SDGs

MDG-SDG	Service ladder	Definitions	Coverage (%)	Source of information
SDG 6.2	Safely managed sanitation	Private improved facility where faecal wastes are safely disposed on site or transported and treated off-site, plus a hand washing facility with soap and water	51%	HHs from Improved Sanitation that contains only connections with septic tanks and sewers are: 65.36% HHs having hand washing with water and soap: 78.1% DISCOUNTED for the proportion that has a hand washing facility with soap and water: $65.36 * 0.78 = 51\%$
MDG continuity	Basic sanitation/ Improved Sanitation	Flush: with piod sewer, septic tanks, pit latrine; VIP, pit latrines with salbs, and composting toilet	75.1%	MICS 2014
	Unimproved sanitation	Flush to somewhere else, pit latrines without slabs, bucket, etc.	24.9%	MICS 2014
	No service	Open defecation, missing, others	17.8%	MICS 2014
	TOTAL OF THE ABOVE FOUR CATEGORIES:		100%	

The safely managed sanitation services are 81.55% in urban areas and 38.30% in rural areas. The table below clearly shows that districts from Southern Punjab are highly marginalized with poor coverage of safely managed sanitation services.

Table 4: Safely Managed Sanitation Services at HH Levels.

Area	SDG using Improved Sanitation of MICS 2014			SDG using improved sanitation of only sewer/ septic tanks from MICS 2014		
	Improved Sanitation of all types	Hand Wash with water & Soap	Safely Managed Sanitation Services	Improved Sanitation- Sewer and Septic only	Hand Wash with water & Soap	Safely Managed Sanitation Services
Punjab	75.10	78.10	58.58	65.36	78.10	51.05
Urban	92.10	90.50	83.35	90.11	90.50	81.55
Rural	66.80	72.00	48.10	53.20	72.00	38.30
Bahawalpur	62.80	63.10	39.63	40.15	63.10	25.33
Bahawalnagar	57.30	67.50	38.68	24.48	67.50	16.53
R Y Khan	59.10	61.30	36.23	26.41	61.30	16.19
D G Khan	56.40	44.20	24.93	42.85	44.20	18.94
Layyah	69.10	66.50	45.95	62.48	66.50	41.55
Muzaffargarh	54.80	55.70	30.52	46.97	55.70	26.16
Rajanpur	49.60	44.40	22.02	43.22	44.40	19.19
Faisalabad	92.00	91.10	83.81	91.39	91.10	83.25
Chiniot	58.80	74.60	43.86	58.34	74.60	43.52
Jhang	51.30	73.60	37.76	48.41	73.60	35.63
T T Singh	80.50	79.10	63.68	75.41	79.10	59.65
Gujranwala	96.00	90.30	86.69	95.92	90.30	86.61
Gujrat	92.90	93.20	86.58	92.94	93.20	86.62
Hafizabad	80.00	87.70	70.16	79.89	87.70	70.07
M Bahauddin	75.60	89.10	67.36	74.90	89.10	66.74
Narowal	78.30	87.10	68.20	78.26	87.10	68.16
Sialkot	92.70	88.60	82.13	92.73	88.60	82.16
Lahore	96.90	93.50	90.60	95.16	93.50	88.98
Kasur	68.60	76.70	52.62	67.96	76.70	52.13
Nankana Sahib	89.20	87.10	77.69	89.00	87.10	77.52
Sheikhupura	91.90	91.50	84.09	91.64	91.50	83.85
Multan	52.30	72.10	37.71	46.93	72.10	33.84
Khanewal	45.70	71.70	32.77	34.06	71.70	24.42
Lodhran	54.30	68.10	36.98	26.85	68.10	18.29
Vehari	51.80	76.80	39.78	35.22	76.80	27.05
Sahiwal	77.30	86.20	66.63	76.06	86.20	65.57
Pakpattan	71.50	84.50	60.42	54.64	84.50	46.17
Okara	67.40	81.80	55.13	58.30	81.80	47.69
Rawalpindi	91.40	78.40	71.66	68.85	78.40	53.98
Attock	81.80	86.10	70.43	66.14	86.10	56.95
Chakwal	83.10	87.40	72.63	62.43	87.40	54.56
Jhelum	83.40	90.30	75.31	56.67	90.30	51.17
Sargodha	76.80	78.30	60.13	75.52	78.30	59.13
Bhakkar	68.80	59.40	40.87	37.10	59.40	22.04
Khushab	64.50	62.80	40.51	47.29	62.80	29.70
Mianwali	85.50	62.90	53.78	32.19	62.90	20.25

9. Summary of WASH Sector Plan 2014-2024 Update

A Joint Sector Review Meeting was held in Lahore to understand the current status of WASH Sector Plan. The List of the participants attached as Annexure 1. The participants shared their perspectives around key bottlenecks and opportunities under bottleneck analysis framework, which is attached as Annexure 2. This was followed by review of the WASH performance framework and is attached as Annexure 3.

As part of the Punjab WASH Sector Development Plan 2014-2024, below is a summary of key discussions held by the participants under the Roadmap for WASH Sector Plan. The details against each strategic action is found in Annexure 4.

1. The Government of Punjab should expedite the process of approval of Sanitation Policy. In addition, the province should explore the options for the establishment of Water Commission to regulate, facilitate and monitor WASH Sector. Further, formulation of Human Resource Development along with a roadmap provides the basis for capacity development of municipal service providers.
2. The province has started to make headway for effective water resource management. The provincial climate change policy and HRD plan under process is expected to underpin WASH resilience and adaptation. Rainwater harvesting is being piloted in 16 tehsils, while water metering is being introduced in five mega cities. Further, water filtration plants are being installed in phases to overcome quality issues. There is still slow progress in the following areas: joint programming with irrigation department to map potential areas for surface water use; appropriate understanding of storm water management; and lack of maintenance plans and strategy for new and existing schemes. PHED should prepare a concept note for a pilot project on segregating Storm Water Drainage and Sewerage System.
3. Efforts to address water quality issues are being addressed partly through installation of water filtration plants. The budgetary allocation for Saaf Pani increased to PKRs 30 billion annually for North and South Zones. Four centers of excellence and 32 water quality laboratories have been proposed under 2016-2017 budgets, while a water quality survey has also been proposed under 2016-2017 budget. The key challenges include: nearly 33% of water sources in Punjab are bacterially contaminated, and another 29% are chemically contaminated. Therefore, one-third of the population has poor access to water of safe and acceptable quality. Still there is lack of systematic periodic monitoring of the water distribution network as well as consumer levels. The chlorination process is not well defined and documented.
4. A steady progress is being noted in the areas of sanitation i.e. 75% population has improved sanitation. About 56% of cities had sewerage coverage against a target of 82% whereas only 4.1% of rural areas had sewerage coverage. There have been substantially increased budgetary allocations for urban and rural sanitation including sewerage and drainage in 2015-2016 budget. The key challenges include: optimal sewage flow in cities is not being maintained; and GIS mapping and asset management of TMAs for WASH is delayed.

5. The Government of Punjab recognized the framework of Pakistan Approach to Total Sanitation (PATS) with a key focus to end open defecation by 2018. Presently, PATS is being implemented in all 36 districts of Punjab with financing from Government of Punjab as well collaboration with local and international partners. The capacity development for PATS is being institutionalized through Local Government Academy and formation of district WASH committees.
6. Although waste water remains a challenging area, the following key efforts have been made: Elimination of stagnant ponds and prevention of ponding has started, feasibility studies for Water, Sanitation & Treatment related activities are under way, while three wastewater treatment plants have been initiated. Industrial/effluent waste management has been identified as a key issue in the industrial sector plan. The key challenges include: the pace of ending open ponds is slow; poor functionality of wastewater treatment plants in Punjab; lack of clarity about off-site treatment of sewage; and lack of capacities in EPA to cope with industrial/effluent waste management issues
7. The two main sectors that are closely linked with WASH are health and education. WASH is reflected in the Punjab Health Sector Plan 2014-2018, while WASH as missing facilities is an integral component of the School Education Road Map of Punjab. The key challenges that have not been addressed so far are: WASH has not been fully integrated in the LHWs curriculum yet though WASH in curriculum, job description and monitoring responsibility has been reflected in revised course of action. A standard school WASH strategy is under development by consultants and School WASH ambassador is one of its components (but the title of the component may not be the same).
8. One of the key short term strategic actions of the WASH sector plan was to establish a WASH PMU for improved coordination, monitoring, reporting and implementation. The PMU has been proposed under ADP 2016-2017 budget. The coordination and collaboration among departments and stakeholders is improving but still challenging due to absence of PMU

Additional Recommendations

1. A need of review of provincial drinking water and sanitation policies for alignment with SDG 6.1 and SDG 6.2 has been recognized. This would subsequently provide the basis of alignment to the respective provincial drinking sectoral plans.
2. Punjab Saaf Pani Company has conducted a village level water quality survey for different districts of Punjab. The data is being analyzed. The Punjab Saaf Pani Company will share their data with PHED who will coordinate with relevant stakeholders. This data is required for comparison with PHED and PCRWR data of water quality and to be used for establishing the SDG baseline of drinking water.

3. Presently, a significant investment is being made for enhancing water quality in Punjab through installation of water filtration plants under Saaf Pani Company. The new SDGs require access to improved water within premises as basic indicators. The Saaf Pani Company should be requested to develop a concept paper to share how the interventions of Saaf Pani Company will be aligned with SDGs.
4. There is paucity of data regarding the contributions of the private sector and even not for profit sector in the development and implementation of WASH sector strategies. The participants emphasized on the creation of PMU for WASH sector plan so that all stakeholders could be accessed and approached to collect information regarding private sector investment in WASH.
5. There is need of advocacy and lobbying at two levels for WASH indicators: 1) with institutes of national surveys i.e. PSLM, PDHS and MICS on how they will address the need of data for SDGs; 2) SDG-6 Sector committee of Ministry of Planning and Reform to add required indicators in national surveys.
9. The concept of rainwater harvesting is being implemented by ABAD in northern Punjab. PHED will coordinate with ABAD to clarify that whether their rainwater harvesting schemes are only for irrigation or for drinking purposes as well. In case of drinking purpose also, data of beneficiaries and schemes also needs to be collected from ABAD.
10. Presently, there is lack of data of beneficiaries covered under different water supply projects. All necessary measures should be taken to calculate the actual beneficiaries. As a first step, the Saaf Pani Company will provide the basis of its calculation of beneficiaries and how that data is being verified. PHED can facilitate Saaf Pani Company for membership in district WASH committees, and for this to happen, the company will coordinate with PHED at provincial and relevant PHED focal persons at the district levels.

Annexure 1. Participants of Joint Sector Review Lahore

Sr. No	Name	Designation	Department / Organization
1	Abu Rehan	Programme Manager	WaterAid
2	Ahsan Shah	Research Officer	PHED
3	Annus Azhar	Research Fellow	Punjab Economic Research Institute- PERI
4	Arshad Mahmood	Chairman BOD	FFO
5	Atif Zia	DD MIS&ME	PHED
6	Dr. Saira Khan	Nutrition Coordinator	PSPU
7	Dr. Zahir Ud Din Khan	CTO	Punjab Saaf Pani Company
8	Farakat Ali	Provincial Coordinator	WaterAid
9	Haibat Ali Khan	Chief (PPH)	P&D Department
10	Harish Ahmad	Chief Operating Officer	Lodhran Pilot Project
11	Kamran Naeem	WASH Specialist	UNICEF
12	Khalid Bukhari	Director- W&A	PHED
13	M Amer Nazeer	M.D	PMDFC
14	M Arshad Mahar	SO(T)	HUD&PHE Department
15	M Sajid Zaman	Programme Manager	Avicenna Consulting
17	Maleeha Sajjad Naqvi	WASH Officer	UNICEF
18	Mr. Salman Yusuf	Additional Secretary	HUD&PHED
19	Mubarak Ali Sarwar	CEO	AGAHE
20	Muhamad Zaman	Dy. Director	LG&CD Department
21	Muhammad Abdullah Fahad	Coordinator	HUD&PHED
22	Muhammad Rizwan Saeed	Manager	Lahore Waste Management Company (LWMC)
23	Niaz Ullah Khan	Lead Consultant	Avicenna Consulting
24	Noman Ghani	PMER Specialist	UNICEF
25	Sabahat Ambreen	WASH Specialist	UNICEF
26	Saleem Raza	Chief Engineer (South)	PHED
27	Shazia Ghaffar	Research Officer	PCRWR
28	Syed Waqar Ul Hassan	Director	Bureau of Statistics
29	Tanya Khan	Representative	WSSCC
30	Tariq Mehmood	DD CDU	PHED
31	Zahid Mushtaq	Sr. Manager Ops	LWMC
32	Zahra Masood	Program Associate	UNICEF
33	Zamir Ahmad	Regional Director	PCRWR
34	Zubair Shafique	Chief Engineer (North)	PHED
34	Zulqarnain Fida	SO(PH-N)	PHED

Annexure 2. Bottleneck Analysis

Determinants	Bottlenecks Identified	Opportunities Description
Enabling Environment		
Social Norms	Political interests of the government guide the budgetary allocations rather than inequities /needs of local communities. Water is generally considered a free and infinite source, and no voice and accountability mechanism is in place for injudicious use of water. Need assessment, planning and budgeting is top down- wider community consultations rarely held for the preparation of project proposals (PC-1) Sanitation and sewerage is politically less attractive especially in rural context compared to water supply. The provision and maintenance of WASH in schools, health facilities and public buildings is considered responsibility of state, and demand is very weak.	WASH budget especially for drinking water is increasing mostly on water filtration in Punjab- advocacy with elected representatives to address regional inequities. The political leadership and media shaping the voices for depleting water resources, poor water quality, inapt water management and climate change impacting life. Capacity development of provinces to refer SDGs in provincial budget- Extend support in preparing planning manuals to improve quality of Govt. project proposals (PC1) Increasing knowledge and information about burden of poor sanitation on health and economy.
Legislation/ Policy	Lack of implementation arrangements/ structures for approved drinking water policy and drafted sanitation policy. The legal framework, even under Punjab LGA 2013/2014 for drinking water, sanitation and hygiene is weak and fragmented especially around O&M, community participation, and resource allocations criterion, and new Act is not yet being implemented. Lack of comprehensive WASH frameworks for rural areas especially, water quality, open defecation and hygienic latrines in the provinces	Punjab, have approved provincial drinking water policy whereas draft Punjab Municipal Water Act and draft Punjab Sanitation Policy is with provincial cabinet since last year. There is need for comprehensive legislative review for drinking water, sanitation and hygiene. Both provincial drinking water and sanitation needs alignment with SDGs and Vision 2025 Pakistan. The Punjab Education Sector Plan emphasized and defined activities for school WASH, and there is special provision of funds for

	National Education Policy 2009, which is guiding document for school education in Punjab province, does not elaborate specific interventions about WASH. Draft National Health Policy 2009 did not reflect WASH component though WASH has been integral component of Health Sector Plan 2014-2018. The WASH at public place has been entrusted to newly elected local councils but these councils could not set up so far.	missing facilities in schools including school WASH. Punjab Health Sector Plan 2014-2018 has a specific objective of access to improved water and sanitation, and this should be advocated for all other provinces. Engage local representative and communities for legislation/enforcement of public latrines /WASH at work place.
Budget/ Expenditure	Need assessment, planning and budgeting is top down- wider community consultations rarely held for project proposals (PC-1) Sectoral WASH expenditure data is not readily accessible and available- including funds spent by CSOs, LG and private sector The sanitation expenditures are difficult to track under current financial reporting. Fragmented information about budget allocated and spent on WASH in schools- that is mostly with missing facilities. No budgetary information about WASH in health facilities. No budgetary information about public toilets.	Advocacy with Finance/ P&D to track WASH expenditures through their existing system, with bifurcation by sector and source of financing. Regular Joint Sector Reviews to identify financing strategies for removal of bottlenecks are in federal and provincial government plans Capacity development to refer SDGs in provincial budget- Extend support in preparing planning manuals to improve quality of Govt. project proposals (PC1) Engage with PPHI and health department for reporting on WASH budget in health facilities Advocate LG for specific budget on public toilets
Management/ Coordination	No single regularity and monitoring authority exist for M&E and reporting of drinking water, sanitation and hygiene in the province. Multiple institutions/ departments conduct need assessment and execution of WASH projects with poor coordination and knowledge	The government is accepting the role of development partners to provide technical support in capacity assessments for systems strengthening The development of guidelines for water supply, sanitation and hygiene under new LGAs

	management Poor coordination mechanism between health, education, PHED and LG around institutional WASH at the district level. The district WASH committees have lack of necessary legislative backing and upward reporting to single body. Government recognized the need for Programme Management Unit or Steering Committee for WASH in the provinces for sector coordination, supervision and monitoring under WASH Sector Plan 2014-2024.	The programme management unit for WASH should be advocated for setting up at the provincial level with line reporting from education, health, LG and PHED, P&D and environment with reporting from districts and TMAs. Activate and capacitate the provincial and district WASH coordination committees. The provincial government advocated for endorsing ToRs of district WASH committees The GIS based android monitoring system be introduced for WASH monitoring in the province.
Supply		
Availability of essential commodities / inputs	Energy crisis: regular breakdown of power supplies and increasing electricity costs limits efficiency of water supply schemes in rural and urban areas. Lack of necessary machinery equipment, tools and techniques for effective WASH service delivery especially lack of disposal stations and sanitation appropriate wastewater treatments along with financing for O&M Lack of access and availability of sanitation accessories especially to rural communities Lack of necessary data/ information from health facilities, school WASH and public toilets about availability of WASH including accessories like soap, detergent, etc. Lack of accessibility in WinS, WASH in health and WASH in public and work place.	Develop provincial & district water supply plans validated by a wide range of stakeholders, defining clear targets, indicators, and budgeted activities. Assess and pilot new technological innovations like solar energy, water metering, O&M financing, sanitation marketing, wastewater treatments and sustainability-Learning should be documented. Create a database for availability of inputs/ commodities for monitoring by the SMCs/ health service providers and relevant department periodically. Develop accessibility guidelines including designs, manuals and training for accessible WASH.

Access to adequately staffed services, facilities and information	Systematic professional capacity development is lacking both for urban as well as rural WASH. Lack of aging and efficiency profiling of equipment/ tools and machinery Lack of uniformity on WASH indicators under different HHs surveys and MIS of government and corporate bodies. Ad-hoc training of school teachers and health facility staff around WASH. The current EMIS, HMIS and MIS provide insufficient information about WASH. No information about public toilets is available	The capacity assessment of human resources for WASH in Punjab is expected to follow by capacity enhancement of training institutes with courses and infrastructure. Provincial & district based aging profiling of equipment, tools and machinery. Collaborate with LGCD, PHED, Education and Health departments to integrate the capacity assessment of WASH under their staff appraisal and development. Engagement with education, health and LG department to integrate WASH information in EMIS/HMIS/MIS. Add public toilets in the LG surveys.
Demand		
Financial Access	Available funds are not distributed among the districts and tehsils on equity and need basis. Lack of information about contributions and resources available from public and private sources. Lack of necessary information at provincial and district levels about WASH expenditures at schools, BHUs and public places- community contributions under SMCs for WASH are not reported.	Periodic mapping of inequities for safe water for advocacy with political leadership & donors for resource mobilization. Budgetary analysis at the provincial/districts levels for advocacy Engage with Education, Health and LG departments to compile and collate information about expenditures made on WASH either through public funds or community or private sources periodically.
Social and Cultural Practices and Beliefs	Beliefs that water is free and readily available and disempowerment of rights holders including women and children impedes their demand for accountability from WASH service providers Open defecation in rural areas is part of their social behavior and cultural practices.	Adoption of bottom up sustainable behavioral approaches to generate demand for safely managed water services and sanitation services by ensuring that perspectives, concerns and voices of all, including marginalized groups, are reflected in upstream policy dialogue, decision making, and interventions

	Knowledge gap exists in proper hygiene practices. Cleanliness of WASH facilities is considered a delegated job to specific people. Facility and Community based hygiene is rarely recognized as collective responsibility of people and service providers.	Promote communication for social change initiatives that engage, motivate and empower communities and networks to influence or strengthen social norms and cultural practices that supports long term sustainable social change for sanitation practices
Continuity of Use	The implementation arrangements are not backed with necessary legislation that defined roles and responsibilities of communities & stakeholders around O&M of water infrastructure, and construction, operation and maintenance of sanitation infrastructure for sustainability. The SMCs and School WASH clubs exist in majority of places but less confident about audit issues like procurement of soaps, accessories, etc.	Integrate strong social mobilization for all community based WASH projects initiated both public as well as private sector for ownership and accountability with a key focus on ODF, water security and hygiene practices. Explore the mechanisms of conditional cash transfers under nutrition and health programmes be linked with O&M of drinking water and improved sanitation supported by the Government of Punjab The national and provincial hygiene campaigns should be integrated into existing PATS, Saaf Pani, water quality, etc other initiatives of Government of Punjab.
Quality		
Quality	Sector monitoring, learning and accountability system face gaps in their capacity to plan, monitor and adapt in a structured and iterative way, based on evidence and joint reflection The quality standard of sanitation are not well defined and agreed. The NEQS include sanitation but not followed or practiced widely. Draft WinS quality standards in schools and minimum service delivery standards including WASH in health facilities exist but not being implemented and monitored.	Review and develop water quality standards in line with international and SDGs needs. Capacitate stakeholders and local organizations on water quality The PATS plus and community programmes should include quality standards linked with improved sanitation as integral component of programme delivery Develop and finalize WinS quality standards with respective department of education and other stakeholders in the provinces.

Annexure 3. Progress as per Performance Measurement Framework

Result Statements	Performance Indicators	Targets for 2018	Progress
Outcome Results			
Access to improved water sources and sanitation	Proportion of Population with Access to Improved Water Sources (%)	93% Rural 100% Urban	97% Rural 89% Urban MICS 2014
	Proportion of Population with Access to Improved Sanitation (%)	90% Rural 100% Urban	66.8% Rural 92.1% Urban MICS 2014
Reduced Child Mortality	Proportion of Children Under 5 Who Suffered from Diarrhoea in the Last 30 Days (%)	<10%	17.4% in last two weeks- MICS 2014 10% in past 30 days- PSLM 2014-15
Outputs			
1. Village water ponds causing contamination eliminated	Number of villages where ponds are eliminated	500	151
2. Solid waste management in villages	Number of villages with solid waste management system	6	7 villages
3. Implementation of sanitation schemes	Number of sanitation schemes implemented	95 42 Rural 53 Urban	For 2015-2016 249 (urban 65, and rural 184) completed 599 (urban 149 and rural 450) in progress
4. Implementation of water supply schemes	Number of water supply schemes implemented	78 37 Rural 41 Urban	For 2015-2016 211 (urban 54 and rural 157) completed 241 (urban 63 and rural 178) in progress
	Rehabilitation of Dysfunctional schemes	172	73 water supply schemes (71 rural & 2 urban) And 3 sanitation schemes (urban)
5. Implementation of ODF in villages	Number of villages ODF certified	3360	2,142 certified and 4,790 are in progress
6. Water filtration Plants established	Number of filtration plants installed and operational	1479	307
	Number of beneficiaries getting clean drinking water		Data was not available

7. District Water quality testing labs	Number of water quality testing laboratories in operation	36	PC-1 prepared and submitted for approval under 2016-17 that includes up gradation of 4 center of excellences and 32 district labs				
	Number of water samples examined		Progress Report				
			Year	Number of Samples Tested			
				Chemical	Bacteria	Heavy Metal	
				2014	19,059	9,056	5,071
				2015	20,341	10,283	5,524
2016	9,970	8,100	188				
8. Water resources effectively managed	Number of cities with schemes for rain water harvesting initiated	19	16 tehsils- Rain Water Harvesting Project for all villages in Potohar Area by ABAD (GoPb) Rawalpindi, Attock, Chakwal, Jhelum , All tehsils (16) - PKRs 122 million allocated under 2016-2017				
9. Environment friendly disposal of sewage water	Number of pilot decentralised sewage water treatment system constructed	1 big city, one small and one intermediate	2 un approved in Lahore Urban Development ADP 2013-14 1 in Jhelum and 1 in Rahim Yar Khan ADP 2016-17 but not approved				
10. Improved sectoral governance	Number of cities with Master Plans for sanitation, water supply and drainage up to 2035	4 big cities 4 intermediate cities	Sialkot, Lahore, Murree				
	Consumer water meters installed for accurate billing for small and medium cities (water supplies) and big cities (through service connection fee/ government support)	10 small and intermediate cities 5 big cities	Procurement of 94,000 meters for five big cities under way- Source PHED For small cities the metering projects under way at Chakwal and, Bhalwal				
	Number of cities where bulk meters installed at major distribution system, tubewells, distribution stations and overhead reservoirs to measure quantity pumped of water	30 small and intermediate cities 5 big cities	Procurement started for five cities				
	Number of cities with Master plans for solid	20 cities	7 cities (Lahore, Faisalabad, Gujranwala, Sialkot, Rawalpindi, Multan and				

	waste management		Bahawalpur) where waste management companies exist
11. Enhanced solid waste collection	Percentage of garbage/waste collected against the estimated amount of garbage produced	70% 20 cities	LWMC 90% FWMC 63% GWMC 70% SWMC No Data RWMC 90% MWMC No data BWMC 70%
	Number of cities where secondary collection points established for small and medium cities	20 cities	53 TMAs report round the year for secondary collection Annual Report 2013-14 Punjab Municipal Development Company Fund
12. Improved waste disposal system	Percentage of waste finally disposed	70% 20 cities	TMAs out of 105 collect and dispose of more than 70% solid waste Annual Report 2013-14 Punjab Municipal Development Company Fund
	Number of cities where hospital hazardous waste shall be managed and disposed of	40	The concept paper initiated by the health department.
	Percentage of waste disposed at land fill sites against the total waste collected for cities	75% 20 cities	To be check by Punjab Municipal Development Company Fund

Annexure 4. Progress as per Strategic Actions of Wash Sector Plan

Legislations, Regulations, Policies and Strategies

Strategic Goal	Short Term 1 - 3 years	Progress
Finalisation of drafted policies and strategies and their implementation	Approval of Draft Sanitation Policy and Strategy, Punjab Drinking Water Strategy, Draft Behaviour Change Communication Strategy and their implementation	Punjab Sanitation Policy is awaiting for approval from the cabinet. Whereas Punjab WASH Sector Plan 2014-2024 provides framework for the implementation of approved drinking water policy, draft sanitation policy and BCC strategy.
	Develop and implement bye-laws of solid waste management at town and metropolitan level	The bye laws are being developed, and are under discussions-
A legal framework that governs municipal water	Enactment and promulgation of the Punjab Municipal Water Act	The draft Act is still under discussions with Cabinet of Punjab Government for approval.

Punjab Water Commission that acts as a regulatory body	Establishment of the Punjab Water Commission	The discussions are underway to identify the options for its creation and role as water covers a range of areas.
Municipal services duty bearers have necessary managerial and leadership skills for an integrated water supply, sewerage and drainage, and solid waste management programme	Capacity building programme of city, town and union council officials on application of regulations, policies and strategies in planning, development and delivery of municipal services	The Human Resource Development Plan developed along with a detailed capacity assessment report.
Water Resources		
Sectoral capacity for climate change adaptation and mitigation developed	Sub-sector climate change adaptation and mitigation strategies developed	The Government of Punjab is developing Climate Change Policy that shall provide the basic framework for developing climate change adaptation and mitigation strategies developed.
Municipal services duty bearers fully conversant with climate change and its mitigation strategies	Need assessment of sub-sector human resources for climate change adaptation and mitigation	The Human Resource Development Plan for WASH developed that included capacities for climate change adaptation and mitigation.
Mega and intermediate cities with ample precipitation have rainwater harvesting systems in place	Rainwater harvesting pilot projects evaluated and plan to extend to other feasible cities developed	The rainwater harvesting is being implemented in 16 tehsils. The next phase of the project is being started in 2016-2017. An evaluation is being proposed for 2017-2018
Increase use of surface water for municipal services	Joint programme with Irrigation department to map potential areas for surface water use	
Artificial recharging of groundwater enhanced	Storm water management plan developed for cities and town with ample precipitation	Concept paper is being developed by PHED for discussions
Water Supply		
All rural areas, cities and towns have surveys, strategies and action plans for integrated water supply, sewerage and drainage, and solid waste management	All cities have completed surveys, GIS mapping and strategies, and start implementing action plans for integrated water supply, sewerage and drainage, and solid waste management	GIS-enabled spatial database with urban profile, land use mapping, infrastructure, and service delivery profile for Punjab, starting with five large cities including Lahore, Faisalabad, Multan, Rawalpindi and Gujranwala has developed.
Dysfunctional tube wells/schemes adequately rehabilitated and	A phased plan for rehabilitation of dysfunctional tube wells/schemes developed according to district and TMA	Annual allocation for dysfunctional water supply schemes is part of 2016-2017 budgets under the head of Punjab basis. Rs. 172.7 million

maintained	and implemented in a phased manner	have been allocated this year with total cost of Rs. 3 billion for MTDf.
Shallow tube wells replaced by deep tube wells	Mapping of shallow tube wells by districts and TMAs	Yet to be started. Engagement is required with irrigation department
Rehabilitation and replacement of old infrastructure	Each city and town has mapped out old infrastructure and leaky mains that need rehabilitation or replacement	Digital Survey Mapping for preparation of comprehensive plans for Urban Water Supply Scheme, Sewerage Scheme and Treatment Solution has approved in ADP 2016-17
Existing functional tube wells/schemes continue to perform optimally	Each district and TMA has a scheduled tube well/scheme maintenance plan	The maintenance plan developed but not fully functional.
Energy efficient water supply schemes	Map areas that have persistent power shortage- Introduce solar energy supported water supply schemes At least 20% of water supply schemes converted to solar energy All new water supply schemes are solar energy compliant where feasible	Model installation of tube wells Solar Driven for urban/rural water supply Schemes with estimate cost of 49.990 million approved in ADP 2016-17
100% piped water coverage in cities and towns	Extend distribution networks and supply lines to provide 60% coverage in cities and towns	39.1% MICS 2014
65% piped water coverage in rural areas	Extend distribution networks and supply lines to provide 20% coverage in rural areas (depending on baseline)	9.7% MICS 2014
Enhanced coverage of filtration plants in zones with high hand/motor pump use	High prevalence hand/motor pump use areas mapped in all TMAs Filtration plants installed in 25% of areas with high hand/motor pump use	Punjab Saaf Pani Company has conducted a survey of functional/dysfunctional water supply schemes in Punjab and has identified 36 Tehsils/Areas as priority in its 8 regions. Although community mobilization and identification of water supply solution is in process.
Water flows monitored at tube wells	Bulk flow meters and pressure gauges installed at 20% of tube wells	Water metering is being initiated in five major cities from 2017. Procurement for meter started.
Additional water storage capacity developed	Storage capacity needs of cities and towns determined	Digital Survey Mapping for preparation of comprehensive plans for Urban Water Supply Scheme, Sewerage Scheme and

		Treatment Solution has approved in ADP 2016-1
Water Quality		
Monthly water quality testing at water source	PHED water testing laboratories conduct monthly water quality tests of TMA water supplies and filtration plants, and quarterly testing of at least 25% of tube wells	New PC-1 for enhancing the capacities and outreach of water quality testing labs at the district level has been developed and is proposed under ADP 2016-2017 that includes four Center of Excellences i.e. Lahore, Rawalpindi, Multan and DG Khan and strengthening the facilities at 31 districts.
Periodic water quality testing of distribution network	At least 30% coverage of distribution system every quarter Water quality testing linked with health alerts from disease surveillance cell	Discussions are underway at PHED to enhance the capacities of the labs and create a formal linkage with health alert. After strengthening of the labs, regular monitoring will be part of the action plan.
Periodic monitoring of water quality zones	PHED, PCRWR and Irrigation department conduct joint mapping of sweet, brackish and salt water zones and arsenic zones every two years. Remedial measures monitored and reported Upgrade PHED laboratories to test for heavy metals	PHED proposed few regional water testing labs in 2016-2017 ADP to have the capacities to detect heavy metals Water quality survey is proposed under ADP 2016-2017 that includes zoning.
All ground and overhead reservoirs supplied with chlorination treatment	Status of ground and overhead reservoirs in cities and towns determined Scheduled quarterly cleaning and maintenance of all reservoirs	Lack of systematic monitoring- PMDFC is conducting a survey to understand the current practices of chlorination in TMAs.
Sanitation (Sewerage and Drainage)		
All cities and towns have surveys, strategies and action plans for integrated water supply, sewerage and drainage, and solid waste management	All cities have completed surveys, GIS mapping and strategies, and start implementing action plans for integrated water supply, sewerage and drainage, and solid waste management	GIS-enabled spatial database with urban profile, land use mapping, infrastructure, and service delivery profile for Punjab, starting with five large cities including Lahore, Faisalabad, Multan, Rawalpindi and Gujranwala
Optimal sewage flow capacity maintained	Sewage flows determined for all cities and towns, and de-silting and cleaning of 30% drains and sewers with safe sludge disposal per quarter in TMAs and zones	WASAs and respective TMAs are managing and monitoring the sewerage systems and flows, but there is lack of systematic monitoring, reporting and remedial

	in cities	action plans.
Optimal status of sewer maintenance equipment (sucking machine, jetting machine, sucking/jetting machine)	Status of equipment availability and functionality determined for each TMA and city zone At least 30% of TMAs and city zones equipped with sewer maintenance equipment	PMDFC is conducting asset management and verification study for all TMAs of Punjab that includes water supply and sanitation under phase-II of the study that is expected in 2017.
Adequate and functional collector and branch sewers	Status of collector and branch sewers in each city determined Phased replacement or laying of new lines instituted	The concept paper initiated and PMDFC will consider to collect this data in 2017
Optimal functionality of pumping stations	Status of pumping stations in each city and TMA determined Phased rehabilitation plan instituted for at least 30% dysfunctional pumping stations	No Reporting mechanisms developed yet
82% sewerage coverage in cities and towns	Extend sewerage system lines to provide 60% coverage in cities and towns	56.3% <i>Further need to be checked from Urban unit</i>
70% sewerage coverage in rural areas	Extend sewerage system lines to provide 10% coverage in rural areas	4.1% <i>Further need to be checked from Urban unit</i>
Replacement of open drains by sewers	Replace 10% open drains with sewers and install wastewater treatment with maintenance plan	PHED started to emphasis on sewers for replacement of open drains where possible.
Promote safe sanitation practices in high open defecation zones	Develop provincial and district level road maps on PATS/ODF for 11,904 villages in 21 priority districts Government allocates funds through its regular programme for soft component and facilitates 30% villages to obtain the status of ODF Incentivising the ODF villages by laying of water supply scheme, sewerage system, waste water treatment, provision of hand pumps etc	ODF planning formulation is under process and will be completed this year Government has allocated PKR 399.705 million for Scaling up PATS programme to reduce Open Defecation in all 36 Districts of Punjab during 2015-16 PKR 170.407 million spent and PKR 100 million allocated for 2016-17
Wastewater Management		
Strategic Goal	Short Term 1 - 3 years	Progress
Elimination of stagnant	Mapping of ponds in each TMA	LGCD has identified 7000 sewer

ponds and prevention of ponding	and categorise by size and level of risk Prioritise cleaning of large and high risk ponds At least 50% of mapped ponds eliminated and preventive measures instituted	ponds in Punjab out of them 151 during 2013-15 Local Government Punjab website
Water supply and sanitation schemes linked with wastewater treatment	At least 25% of new schemes have in-built wastewater treatment facility Incorporate wastewater treatment options (like oxidation ponds, wetlands, sewerage treatment units, community septic tanks) in rural sanitation schemes	Feasibility Studies for Water, Sanitation & Treatment related activities-Un Approved ADP 2016-17
Wastewater treatment plants for cities	Each mega city has at least one wastewater treatment plant functional	Concept Papers under discussions and three Waste Water Treatment plants are under development i.e. Jhelum, Rahim Yar Khan, Multan, etc.
Monitor contamination levels of industrial effluent	PHED, Land Reclamation department, PCSIR and Punjab Environment Protection Agency map major industrial wastewater flows in relevant districts and conduct periodic wastewater testing and public reporting of industrial effluent quality	EPA requested capacity development in monitoring the industrial effluents, and approaches to introduce necessary guidelines with implementation methodologies.
Increased proportion of treated industrial wastewater	Set up Combined Effluent Treatment Plant (CETP) for cluster of industries where feasible focusing on Faisalabad, Lahore, Sialkot, Gujranwala, Sheikhpura and Rahim Yar Khan as priority districts	Concept Papers for CETP are under discussions at P&D and PHED.
Solid Waste Management		
All cities and towns have surveys, strategies and action plans for integrated water supply, sewerage and drainage, and solid waste management	All cities have completed surveys, GIS mapping and strategies, and start implementing action plans for integrated water supply, sewerage and drainage, and solid waste management	GIS-enabled spatial database with urban profile, land use mapping, infrastructure, and service delivery profile for Punjab, starting with five large cities including Lahore, Faisalabad, Multan, Rawalpindi and Gujranwala has developed.

Solid waste collection and disposal	At least 70% of solid waste generated is collected and disposed of per day At least 30% TMAs providing door to door collection service Village based solid waste management piloted in selected villages	SWM data for 105 TMAs for the year 2013 – 2014 reveals that only four TMAs out of 105 collect and dispose of more than 70% solid waste. A pilot project “Solid Waste Management in Rural Areas of Punjab” has been initiated in 6 selected villages of Punjab
Effective solid waste management	Establish water and sanitation companies in large and intermediate cities whose mandate includes solid waste management and specify service zones Develop a minimum standards list of hardware and equipment for solid waste management and upgrade in 30% of TMAs Establish an Enforcement Wing to ensure effective solid waste management	Solid waste management companies has formed in 7 cities of Punjab; LGCD has conducted a comprehensive survey of 106 TMAs of Punjab to develop a solid waste management system. Findings of this survey are as under; 68 TMAs in which sufficient machinery and human resources are available. 22 TMAs in which in sufficient machinery and human resources are affecting the solid waste management. 15 TMAs in which neither machinery nor human resources are available to deal with the solid waste
Efficient Solid waste disposal and recycling	At least 30% TMAs establish transfer stations to reduce disposal time Recycle at least 10% of solid waste by systematic separation	The pilot project started in three TMAs i.e. Lodhran, Chinoit and Bahawalnagar in 2015-2016 to determine viable mechanisms of solid waste disposals and recycling.
Waste to Energy	Formalise contracts with companies for waste to energy options	Lahore Waste Management Company is developing waste to energy project to generate 35MW energy from 2016.
Safe hospital high risk waste disposal	TMAs and Department of Health orient each hospital waste management committee oriented on Environmental and Medical Waste Management Guidelines, municipal solid waste and high risk waste and their separate disposal	The concept paper under discussion.
Safe and hygienic Slaughterhouses	Update status of slaughterhouses in each TMA	The concept paper for guidelines under discussions with relevant

	and prioritise those for rehabilitation, solid waste and wastewater management Develop slaughterhouse safety and hygiene practice guidelines and orient 100% slaughterhouse staff in TMAs in safe handling and disposal of carcass, entrails, hides, and wastewater	stakeholders
Efficient and effective management of Industrial Solid Waste	Determine the current status of industrial solid waste production and disposal	Capacity Building of EPA Punjab for Enforcement of Environment Standards in Punjab including Combined Effluent Treatment Plants (CETPs) and Industrial Estates (IEs) under J&C Program. This is proposed under 2016-2017 Annual Development Programme
Health and Hygiene		
WASH integrated in health promotion in primary health care	WASH health education module added to curriculum of Lady Health Workers with supporting training material Master trainers, district trainers and facility trainers oriented in key WASH messages and LHWs provided training on WASH health promotion and hygiene At least 100% of LHWs trained in WASH health promotion and hygiene	LHWs WASH module has been developed but it has not been integrated into curriculum yet as overall LHWs curriculum is under review. WASH is integral component of Health Sector Plan 2014-2018
WASH integrated in health campaigns and health weeks	WASH component of health promotion and hygiene integrated in mother and child health weeks At least two WASH health promotion and hygiene campaigns run every year in each district with regional, local, cultural festivals and events	WASH is being integrated in MCH weeks
Effective disease surveillance cell	Dissemination of health alerts linked with TMAs using mobile technology At least 50% TMAs have a	Disease Surveillance System in Punjab is operational, and is linked with LGCD for water borne diseases. Currently, TMAs are being informed by LGCD on phone, and direct link is

	technology system to receive health alerts	being explored.
Fully functional water and sanitation services in health facilities	TMA's collaborate with district health administration to ensure all health facilities have functional water and sanitation services, soap and hand sanitizers At least 50% of first level health facilities have usable water and sanitation services	Health Facility Assessment for WASH is lacking-
School health promotes WASH	WASH integrated into school health programme run by School Health Nutrition Supervisors At least 25% of schools receive WASH health promotion and hygiene	Approximately 2500 school Health & Nutrition Supervisors positions exist, 1600 have been recruited and trained in 22 districts while recruitment & training in 13 remaining districts is under process.
Education		
WASH integrated in teacher training programme	Collaborate with Curriculum Wing and incorporate WASH hygiene promotion in teacher training programme	WASH in School Strategy for school education department is under development with the support of UNICEF, which will identify the key areas for curriculum wing and training programme for schoolteachers.
WASH integrated in schools curriculum	Collaborate with Textbook Board for inclusion of topics on water, sanitation and hygiene in curriculum for classes 1 to 12	WASH in school strategy in process to identify the areas of inclusion in curriculum
All schools have usable drinking water and usable latrines	Collaborate with PMIU PESRP on status of missing facilities in schools More than 80% of schools have usable drinking water and usable latrines	According to Punjab School Census October 2015 95% of govt. schools have at least 1 toilet in school while 9% schools need any toilet repairmen 98% schools have drinking water sources
Chief Minister's Water Ambassadors Programme	In collaboration with School Education department and school health programme, launch a Chief Ministers Water Ambassadors Programme for primary and middle school children. Children leaders	Not yet started

	trained to act ambassadors for water conservation and family hygiene	
Menstrual hygiene management integrated in health and hygiene for girls	WASH hygiene promotion module incorporates menstrual hygiene management for girls	Pilot projects are under implementation in collaboration with CSOs, PHED and school education department.
Sector Efficiency		
Improved and efficient use of Water Production	Public education campaign launched about water conservation In areas with production of more than 200 L/capita/day, reduce water production to 136 L/capita/day (30 gallons/capita/day) In areas with production of 100-200 L/capita/day, maintain at 136 L/capita/day (30 gallons/capita/day) Revise 50 gallons per capita per day formula and reduce to 30 gallons per capita per day and use for all new schemes	The concept paper for hygiene campaign with sector partners under discussions. The concept paper for efficient use of water production is under consultation.
Improved water conservation through improved water consumption practices	In areas with consumption of more than 200 L/capita/day, reduce water consumption to 114 L/capita/day (25 gallons/capita/day) In areas with consumption of 100-200 L/capita/day, maintain at 114 L/capita/day (25 gallons/capita/day)	The baseline data is being compiled
Reduced systems leakages of Non Revenue Water and Unaccounted for Water	Reduce to 20% or less Outsource at least 25% of revenue collection	The concept paper will be developed in 2017
Increased household water metering	Introduce water metering in phases All new connections to be metered At least 100% of high income areas have metering in place All commercial and business premises have water metering	Johar Town Water Supply scheme Lahore 100% Metering (Bulk, Distribution and Consumer Levels), Lahore- <i>Under construction</i>

Water flows monitored at tube wells	Bulk flow meters and pressure gauges installed at 20% of tube wells	Johar Town Water Supply scheme Lahore 100% Metering (Bulk, Distribution and Consumer Levels), Lahore- <i>Under construction</i>
Cost and Staffing efficiency	Water staff rate reduced to 2-3 per 1000 connection Wastewater staff rate reduced to 2-3 per 1000 connections	HRD Plan Development
Efficient Billing and Collection	Collection period reduced to less than 30 days Billing efficiency increased to 50% Financial collection efficiency increased to 50% Outsource billing and collection	The process initiated and documentation will be done in 2017
Enhanced and sustainable Financial Performance	Operating cost coverage ratio of 0.5 achieved Working ratio reduced to 2.0 or less	The process not started yet
Enhanced and sustainable financial performance by TMAs	At least 30% of TMAs have a working ratio of 4.0 or less	The process not started yet
A functional Biometric tracking system in all cities and TMAs	All mega cities have an installed and functional biometric tracking system for staff, equipment/vehicles	The concept and modalities are under discussion for pilot phase
Sector Capacity		
Improved human resource development and management	Each sub-sector covering cities and TMAs conducts a human resource development assessment, need for professional staff placements and develops an action plan	The Human Resource Development Plan of WASH for Punjab along with a roadmap has been developed.
Establish a Punjab Municipal Services Institute	A municipal services institute established for professional and technical training of TMA staff Core curricula and faculty development plan formulated Professional and continuing education programmes launched	Concept under discussions
Local Government Academy upgraded	Infrastructure and capacity development plan developed for Local Government Academy at Lala Musa	Assessment is underway, and it would be upgraded under Punjab Intermediate Cities Improvement Programme starting from 2017.

	Administration training curricula reviewed and updated Core package of administration and soft skills training developed Upgradation plan initiated	Sector partners supported in reviewing WASH curriculum and necessary accessories for effective training at limited levels.
Improved performance of WASAs	Complete process of capacity and performance assessment of all WASAs	Urban Unit and WASA academy started work around it.
Establish a Water and Sanitation Academy for WASA staff	Water and Sanitation Academy established Core curricula and faculty development plan formulated Professional and continuing education programmes launched	A MoU signed between Urban Unit and Lahore WASA to establish WASA academy with financial support of JICA. A strategic plan with faculty needs is developed with support of JICA.
CBOs capacities strengthened	Strengthen CBO through their capacity building and registration under the Government Act	The Community Development Unit of PHED and Staff of Local Government are actively engaging the CBOs for water conservation, and ODF under PATS. The sector partners financing the capacity development of CBOs.
Sector Financing		
Increased Own Source Revenue (OSR) in sub-sectors by TMAs	Incentivise by providing matching grants to TMAs related to sub-sector OSR At least 30% of TMAs increase their baseline sub-sector OSR by 100% or more	The local councils, responsible to manage the TMAs, have not been taken over by elected representatives. Thus, own source revenue process has not yet started.
Increased regulated private sector participation in sub-sectors	Incentivise private sector with subsidies to provide water supply, filtration plants, O&M services, rehabilitation of dysfunctional schemes, solid waste management, wastewater treatment in selected areas and city and town zones Determine type of contract arrangement and ensure regulatory mechanism in place	Punjab Saaf Pani Company is working with private sector to address water quality issues. Different concepts for engagement of private sector are under discussions. Presently, PHED managing some schemes on self help or community financing arrangements.
Increased development expenditure allocation	Proportionate increase in sub-sector development expenditure	89% utilization of WASH allocations under 2015-2016 showing a good

to sub-sectors	allocation and release with increase in overall development expenditure allocation. At least 80% of sector development allocation requirement and release achieved	improvement.
Punjab Town Improvement Programme	Town Improvement Programme for 105 towns developed that incorporates integrated water supply, sewerage and drainage, wastewater treatment and solid waste management, and climate change adaptation and mitigation	Punjab Municipal Services Improvement Project – II is expected to start from January 2017.
Fast track approach for declaring priority districts ODF	At least 30% of 11,904 villages in priority districts declared ODF	2142 village (8%) declared as ODF and 4,790 (19%) are in process
Sector Coordination		
Improved governance mechanism for coordination	Constitute a Punjab Steering Committee on WASH under the Punjab Water Commission Set up sub-sector Task Forces under the Steering Committee	Punjab WASH Steering Committee constituted, however Punjab Water Commission has not been constituted so far. Sector Partners and NGOs are on board on WASH Steering Committee.
Improved operational performance and information and knowledge management	Establish a Project Management Unit (PMU) for the sector plan to support the Punjab Water Commission PMU devises M&E framework PMU provides updates to Punjab Steering Committee and presents progress on operational performance according to M&E framework to Chief Minister every quarter	Establishment of PMU is proposed under ADP 2016-2017, and awaiting for approval. Performance Management Framework for province was agreed in 2015-2016. The M&E framework is under development.
Special Panel on Research	A Special Panel on Research constituted under the Punjab Water Commission to review existing evidence and recommend wastewater treatment options for different urban, peri-urban and rural settings	Concept under discussions and is being linked with creation of PMU at PHED.

Sector Monitoring and Evaluation		
Enhanced management performance of water and sanitation operators and TMAs	Each WASA ensures quarterly updating of WASA performance indicators of previous quarter and updated on website Each TMA ensures quarterly updating of sub-sector indicators of previous quarter and updated on TMA website	The Pakistan Water Operators Network has been mobilizing the WASAs to collate necessary data for quarterly updates. More advocacy and capacity building is required. Punjab Municipal Development Fund Company is facilitating TMAs to develop tracking system- process underway. Punjab Intermediate cities programme starting from 2016 have a key focus in enhancing management performance of water and sanitation at TMA levels especially financial management, tracking, etc.
Consolidated Dashboard of sub-sector performance	Collaboration with Urban Unit and Punjab Information Technology Board to develop web-based information management system that links WASA performance system, TMA performance system, District Water Quality monitoring Dashboard housed and operated by PMU, which generates a quarterly District Scorecard and provides updates on its website	The development of GIS based MIS under PHED has been started, and consultations are underway with different departments The Dashboard will be part of MIS and shall be housed initially at PHED.
Production of an annual sector status report	PMU produces an annual “State of Water, Sanitation and Solid Waste in Punjab’ Report PMU produces biennial provincial data for JMP and GLAAS reports	PHED is leading on Annual WASH Sector Review 2016 The MICS 2014 data has been analyzed to establish benchmarks for international reports and commitments
Periodic sector review	Strategic review of sector plan at end of short term	Annual Sector Review in September 2016

**Annexure 5. Overall district-wise Total Water and Sanitation Allocation and Expenditures
2015-2016**

District	Budget/ Provisio n	Allocatio n under special Initiative	Total Allocatio n	Total Expense s	Saaf Pani Expense s 2014- 2016	(PKRs Million)	
						Percentage Utilization for 2015- 2016	Per capita Expenses for 2015- 2016- Rs.
Attock	356.491	0	356.491	281.799	23.51	79%	183.59
Bahawalnagar	335.224	0	335.224	338.161	204.11	101%	197.84
Bahawalpur	129.659	0	129.659	220.014	200.10	170%	120.55
Bhakkar	121.408	0	121.408	96	13.38	79%	75.59
Chakwal	455.368	0	455.368	375.443	23.51	82%	290.15
Chiniot	108.089	0	108.089	47	13.38	43%	49.33
Dera G Khan	507.595	0	507.595	353.185	53.47	70%	168.39
Faisalabad	1585.325	38.879	1624.204	1094.495	69.30	67%	81.58
Gujranwala	1934.511	135.439	2069.95	1802.319	23.42	87%	135.19
Gujrat	295.056	0	295.056	657.386	24.45	223%	255.27
Hafizabad	191.509	0	191.509	178.59	22.48	93%	184.30
Jhang	6.93	15.865	22.795	0	17.82	0%	7.31
Jhelum	74.469	5.45	79.919	122.004	23.51	153%	120.96
Kasur	1298.579	0	1298.579	1378.169	57.70	106%	443.58
Khanewal	171.235	0	171.235	268.241	17.82	157%	103.46
Khushab	448.513	18.5	467.013	435.375	13.38	93%	387.86
Lahore	11018.49	84.517	11103.007	9509.182	22.48	86%	1008.96
Layyah	74.644	0	74.644	50.246	43.95	67%	58.47
Lodhran	124.791	0	124.791	103.287	404.31	83%	313.72
M Bahauddin	472.321	0	472.321	448.195	23.51	95%	324.19
Mianwali	135.859	0	135.859	177.554	13.38	131%	136.58
Multan	1097.439	0	1097.439	1569.279	20.30	143%	369.93
Muzaffargarh	146.312	22	168.312	73.586	43.95	44%	30.13
Nankana Sahib	456.516	29	485.516	257.585	57.70	53%	243.08
Narowal	323.273	0	323.273	235.763	25.22	73%	162.91
Okara	855.044	26.528	881.572	864.684	57.70	98%	310.15
Pakpattan	159.741	0	159.741	129.361	17.82	81%	85.03
Rahim Yar Khan	391.808	0	391.808	335.672	192.34	86%	115.79
Rajanpur	329.518	0	329.518	308.389	43.95	94%	218.03
Rawalpindi	1021.369	0	1021.369	993.676	25.23	97%	219.03
Sahiwal	60.658	0	60.658	159.435	57.70	263%	91.08

Sargodha	621.337	5	626.337	658.715	17.07	105%	200.11
Sheikhupura	1398.09	40.447	1438.537	773.221	22.48	54%	256.76
Sialkot	807.03	90.163	897.193	560.706	24.45	62%	160.49
Toba Tek Singh	725.993	10	735.993	657.889	57.70	89%	342.39
Vehari	230.74	0	230.74	181.966	17.82	79%	69.56
Provincial project	488	0	488	552	417.29	113%	0.00
Total	28958.934	521.788	29480.722	26248.572	2407.69	89%	264.45

* Saaf Pani expenditures of 2014-2016 had been added in total expense while calculating per capita expenditures