

REPORT ON  
LOCALIZATION OF SDG 6  
CLEAN WATER AND SANITATION  
IN SINDH



SUSTAINABLE  
DEVELOPMENT GOALS



SDGs Support Unit Sindh  
Planning & Development Board  
Government of Sindh







# REPORT ON LOCALIZATION OF SDG 6 CLEAN WATER AND SANITATION IN SINDH

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**SUSTAINABLE  
DEVELOPMENT** **GOALS**





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# EXECUTIVE SUMMARY

In 2016, the Government of Pakistan (GoP) endorsed and adopted the global Sustainable Development Goals (SDGs) agenda. This has been further reiterated by Government of Sindh (GoS) through establishing an SDGs Support unit in collaboration with United Nations Development Programme (UNDP) in 2017. The GoP enacted the 18th Constitutional Amendment in April 2010, which resulted in the shift of certain legislative and administrative authority from the Federation to the Provinces; including the policy planning and management functions of water and sanitation. Under Vision 2025 Sindh, GoS has identified drinking water and sanitation as one of six prioritized SDGs. The SDGs Support Unit Sindh commissioned a study to determine SDG-6 baseline and targets for the province. The methodology includes a review of existing literature, secondary data, defining targets and indicators as per global and national guidelines. This also included, consultation meetings with stakeholders and presenting findings to Thematic Sub-Committee on SDG-6 at Planning and Development Department, GoS.

The GoP has approved National Water Policy in 2018 that emphasizes on the provision of drinking water and sanitation services along with integrated water resource management. The GoS approved Sindh Drinking Water Policy 2017 and Sindh Sanitation Policy 2017 along with 10-year long Drinking Water, Sanitation and Hygiene (WASH) Sector Development Plan (2016-2026). These policies also highlighted the need for necessary legislative reforms and regulations with required finances for developing sustainable water and sanitation services in the province. In 2018, Local Government Department of Sindh organized a joint sector review of WASH with the support of Ministry of Climate Change and UNICEF to determine existing positioning and required resources for drinking water and sanitation.

Following summary of baseline figures of SDG-6 indicators for Sindh are developed in consultation with key stakeholders, and with endorsement from the provincial Thematic Sub-Committee on Public Health Engineering, Rural Development and Local Government and Housing & Town Planning:

## 6.1.1 Proportion of population using safely managed drinking water services

- Overall access to improved water sources in Sindh is 89%
- Water accessible at premises is 72%
- Water available when needed is 86%
- Water free from contamination is 19%
- The lowest figure of all three indicators is 'free from contamination' – which is 19%, which is the baseline figure of safely managed water in Sindh

## 6.2.1 Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water

- Overall access to improved sanitation is 42%
- The access to hand washing with water and soap is 52%
- Reliable data on On-Site and Off-Site treatment of human excreta is not available
- The lowest figure of all three is On-site and Off-site Treatment – which is 0%, which is the baseline figure of safely managed sanitation in Sindh

## 6.3.1 Proportion of wastewater safely treated

- The wastewater treatments including municipal and industrial waste were almost zero in 2017
- In 2018, it is around 5%
- However, here the baseline figures for 2017 are considered zero

## 6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resource

- As per World Bank Report 2018, Sindh Water Renewable Resource is 65 billion cubic meters against the withdrawal of 55 billion cubic meters indicating water stress of 85%

## 6.5.1 Degree of integrated water resources management (IWRM) implementation (0- 100)

- Pakistan's score of integrated water resource management is 50
- Average score of four key pillars of integrated resource management are: (Policies 67%), (Institution 51%), (Management Tools 41%) and (Financing 40%)
- Same score is applied to Sindh

## 6.5.2 Percentage of Trans-boundary basin area with an operational arrangement for Water cooperation

- Sindh Surface Water Shared as per Pakistan Water Accord 1991 is 48.76 million-acre feet and this was 48.44 million-acre feet in 2016 as per Pakistan Statistical year book 2017

## 6.6.1 Percentage of change in water-related ecosystems over time

- As per UN Water Report 2018 for Eco System, Pakistan National Spatial Context for Open Bodies is 2,469 Km<sup>2</sup>
- National Water quality is 36% and per capita is 885 Cubic Meters
- While spatial data for Sindh is not available, water quality is 19% and per capita availability is 1,158 Cubic Meters



6.a.1 Amount of water and sanitation related Official Development Assistance that is part of a government coordinated spending plan

The approved budget for 2018-19 for water and sanitation is PKR. 40 billion and around 10% of these come from Official Development Assistance (ODA)

6.b.1 Percentage of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management

The existing committees for water and sanitation include: Provincial Steering Committee at P&D Level; Technical Working Group at administrative department level; District Coordination Committee at district level; District ODF Committee being a sub-committee of DCC and Farmers' association for water distribution and management

The SDG costing tool, developed by World Bank and UNICEF for water and sanitation, adapted in Pakistan, calculated an annual need of Rs 114 billion in Sindh to achieve 100% coverage of water and sanitation services in the province by 2030. With current rate of allocation, Sindh is likely to have 2.4% incremental coverage in safely managed water and sanitation services.

Currently only 19% coverage of water falls under safely managed services, whereas, there is no sanitation coverage falling under safely managed services. Hence by 2030, the coverage of safely managed water services will be 50.8% and safely managed sanitation services will be 32% at current allocation trends. However, if government of Sindh assures a commitment of 10% annual increase for next 13 years excluding inflation, Sindh is likely to achieve 71.2% safely managed water and 52 % safely managed sanitation services.

Private Sector and other stakeholders are likely to contribute around an additional 1/4th in achieving of these targets thus making the total targets of safely managed water 83% and safely managed sanitation 64%. These targets were discussed in the consultation meeting at the provincial and national levels and endorsed by the participants.

In addition, the Government of Sindh needs to develop a provincial integrated Water Resource Management Strategy and Implementation Plan for ensuring appropriate levels of water efficiency and water stress ratios along with effective implementation of policies and Sindh WASH sector development plans.



# BACKGROUND

Pakistan was one of the first few countries to express commitment to the Agenda 2030, at its launch in New York in 2015, setting forth onto a bold and transformative journey. In February 2016, under a unanimous resolution, the National Assembly of Pakistan endorsed the SDGs as Pakistan's Development Goals, and the Federal Government effervescently initiated a National Initiative on SDGs, endeavoring focused efforts towards the ambitious, universal policy agenda for sustainable development. Government of Sindh has spearheaded efforts to support the mainstreaming, localization, and implementation of the 2030 Agenda through a support project for SDGs implementation in Sindh, at a cost of Rs. 594 million, jointly-funded by Government of Sindh and United Nations Development Programme (UNDP), with the aim to address soaring socio-economic challenges in the province and steer it in a progressive direction.

Under the project, an SDGs support unit has been established in Planning & Development Department, with effect from May 2017. The Unit works in coordination with the National SDGs Unit, that has been established in the Ministry of Planning, Development and Reform, as well as Federal and Provincial Parliamentary Task Forces, line departments of Government of Sindh, as well as UN Agencies, civil society organizations, academia and the private sector to integrate the strategies and policies with the 2030 Agenda and implement sustainable development goals in Sindh, contributing towards accelerating progress in Pakistan. Specifically, the unit is working on the following activities to support SDGs implementation in Sindh.

The Sustainable Development Goals (SDGs), also known as the Global Goals, are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity.

Policies and Plans	Data Reporting	Financing	Innovation
Mainstreaming SDGs in local development plans and strategies clearly delineating the resource requirements	Strengthening coordination, reporting and monitoring mechanisms for SDGs	Financing flows increasingly aligned with 2030 Agenda	Supporting integrated and innovative approaches to accelerate progress on SDGs on priority areas

As per final results of Census 2017, Sindh has a population of 47.88 million<sup>1</sup> with 24.91 million residing in urban areas and 22.98 million residing in rural areas. It has 29 districts and six divisions. The total area of Sindh province is 140,914 Square Kilometers. The Government of Pakistan enacted the 18th Constitutional Amendment in April 2010, which resulted in the shift of legislative and administrative authority from the Federation to the Provinces. In 2011, the policy planning and management functions of water and sanitation were also shifted to the provinces, though the execution part was already part of the provincial governments under 1973 constitution.

The Public Health Engineering (PHE), Rural Development, Local Government (LG), Housing & Town Planning (HTP) Departments are key service providers. Sindh Environmental Protection Agency (SEPA) is the regulatory body for controlling environmental pollution and enforcement of Sindh Environmental Protection Act 2014 and Sindh Environmental Quality Standards (NEQS). Sindh Bureau of Statistics (BoS) and Pakistan Council for Research in Water Resources (PCRWR) are playing key role through collection and provision of data on coverage and quality of Water, Sanitation & Hygiene (WASH) services respectively. The importance of drinking water and sanitation has been recognized in the Vision 2025 document of Ministry of Planning, Development and Reforms (MoPDR), Government of Pakistan (GoP). The document emphasizes on the provision of safe drinking water and improved sanitation through an integrated development strategy.

As per Vision 2025 document of GoP, water contamination and poor water quality have direct and significant impact on people's health, with water borne diseases accounting for 70% of all common diseases.

The Government of Sindh has recently approved Sindh WASH Sector Development Plan 2016-2026 along with Sindh Drinking Water Policy and Sindh Sanitation Policy. Moreover, drinking water and sanitation has been identified as key priority in Vision 2025 Sindh. All these documents emphasized on developing strategies and implementation approaches for achieving SDGs. As the first step towards mainstreaming and localizing SDGs in Sindh, the GoS prioritized six SDGs that also includes *Goal-6: Clean Water and Sanitation*. As per Vision 2025 document of GoP, water contamination and poor water quality have a direct and significant impact on people's health, with water borne diseases accounting for 70% of all common diseases. This has been further recognized in the SDGs as one of the key parameters for the newly defined target of safely managed water and sanitation sources especially free from contamination under water and onsite/off-site treatment of human excreta. Now, there is a need to set the baseline and targets for SDG-6 for the province of Sindh. Hence, this study is meant to develop a baseline and targets in consensus with key stakeholders, and with endorsement from the provincial Sub-Committee on Public Health Engineering, Rural Development and Local Government and Housing & Town Planning.

<sup>1</sup> <http://sindhbos.gov.pk/wp-content/uploads/2018/05/SAG-2017-1.pdf>



# REVIEW OF SECTOR POLICIES AND LEGISLATIVE FRAMEWORK

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## NATIONAL WATER POLICY

The Government of Pakistan developed and approved National Water Policy in April 2018 to provide a broader national framework and guidelines for the provinces, following a comprehensive consultation process with signatures and endorsements from all provinces of Pakistan.

Table 1: Salient Features of National Water Policy

1. Promoting sustainable consumption and production patterns throughout the water sector, from exploitation to utilization
2. Augmentation of the available water resources of the country through judicious and equitable utilization via reservoirs, conservation and efficient use
3. Improving availability, reliability and quality of fresh water resources to meet critical municipal, agricultural, energy, security and environmental needs
4. Improving urban water management by increasing system efficiency and reducing non-revenue water through adequate investments to address drinking water demand, sewage disposal, handling of wastewater and industrial effluents
5. Promoting behavioural change to reduce wastage of water by raising public awareness through media campaigns and incorporating water conservation lessons in syllabi/curricula at primary, secondary and tertiary levels
6. Developing hydropower to increase the share of renewable energy
7. Providing food security and expanding water availability to help adapt to climate change, population and other large-scale stresses
8. Treating and reusing waste water for domestic, agricultural and industrial use
9. Upgrading water sector information systems for improved asset management and to derive evidence and data driven decision making
10. Improving watershed management through extensive soil conservation, catchment area treatment, preservation of forests and increasing forest cover
11. Restoring and maintaining the health of environment and water related eco systems
12. Undertaking flood management to mitigate floods and minimize their damages
13. Undertaking drought management with emphasis on long term vulnerability reduction
14. Managing Security of benefit streams of the water related infrastructure for sustained provision of services
15. Promoting appropriate technologies for rain water harvesting in rural as well as urban areas
16. Regulating groundwater withdrawals for curbing over-abstraction and promoting aquifer recharge
17. Adequate water pricing (Abiana) for irrigation and proper operation and maintenance of the irrigation system as well as other user sectors
18. Promoting measures for long term sustainability of the Irrigation System
19. Encouraging beneficiary participation and public-private partnerships
20. Strengthening and Capacity building of water sector institutions
21. Inculcating profitable use of flood water towards promotion of local irrigation practices
22. Exploiting vast potential of water generated through hill torrents
23. Protecting wetlands and Ramsar Sites for prevention of wild life, flora and fauna
24. Stoppage of further sea water intrusion into Sindh (upstream from coastline) for the sustainability of coastal environment, flora and fauna and mangrove growth including the use of skimming dug- wells in coastal areas
25. Establishing Hydro-meteorological disaster risk reduction complied integrated water resources management regime
26. Enhancing water productivity through infrastructure development and adoption of improved technologies in a sustainable manner;
27. Assessing climate change impact and adapting sustainable water resources development and management
28. Promoting research on water resources related issues of national importance and building capacity/delineating roles and responsibilities of Federal research institutions and promoting coordination among them
29. Setting major national targets for the water sector including those for water conservation, water storage, Irrigation, water treatment and drinking water. These targets can be firmed up in consultation with the Provincial Governments and reviewed periodically for inclusion in the 12th and 13th Five Year Plans and future plans
30. Securing Katcha areas and economy
31. Preserving delta area by providing sufficient supplies regularly
32. Managing rainwater in plains where it cannot be disposed off or diverted to the river
33. Effective implementation of the 1991 Water Apportionment Accord in letter and spirit

Table 1 provides salient features of the policy, which emphasize integrated water resource management.

## SINDH DRINKING WATER POLICY 2017

The Government of Sindh has approved its provincial Drinking Water Policy, 2017 and Sindh Sanitation Policy, 2017 vide notification No.SO (B A) PHE-223/2016. The Sindh Drinking Water Policy envisions improving the quality of life of people of Sindh by reducing morbidity and mortality caused by water-borne diseases. This is to be done through provision of safely managed and potable drinking water to the entire population that is located on premises, available when needed, and free from contamination, affordable and of sufficient quantity, and in a way that is efficient, equitable and sustainable. This is aligned with definition of SDG-6. The policy underpins creation of an enabling environment through sector reforms and consensus building among the political leadership with the active participation of all key stakeholders, including the beneficiary and target communities. The salient features of the provincial drinking water policy are:

Table 2: Salient Objectives of Sindh Drinking Water Policy

1. Introduce legislative measures and regulations to create an enabling framework for safely managed drinking water supply, regulation of water usage, extraction, treatment, transportation and distribution
2. Ensure that all drinking water resources and supply systems are protected with community involvement
3. Develop district level drinking water availability plans for urban and rural areas to ensure improved planning for equitable access
4. Enhance the coverage of safely managed drinking water supply in the province to achieve SDG-6 targets of universal access
5. Develop criteria for installation of new drinking water supply schemes and ensure that all new schemes are safely managed, rationalized and constructed through need-based criteria so that all areas and communities are served
6. Develop standardized service delivery models for both urban and rural drinking water supply schemes to improve efficiency, cost-effectiveness, improve monitoring and sustainability
7. Develop mechanisms for reuse, recycle and recharge of wastewater for other municipal and productive uses
8. Ensure that all drinking water supply systems are designed and constructed in line with the National Drinking Water Quality Standards, and all municipal discharges comply with National Environment Quality Standards (NEQS)
9. Install water treatment plants at existing drinking water supply schemes where required and incorporate water treatment facilities in all new drinking water supply schemes
10. Ensure development of water safety plans for all drinking water supply systems
11. Develop and sustain regular drinking water quality monitoring and surveillance, and Institute mechanisms for remedial action
12. Increase public awareness about water borne and water-related diseases (including polio), nutrition and hygiene, and enhance the role of communities for household water treatment/storage, water safety and conservation, and safe hygiene practices
13. Ensure that drinking water supply projects are nutrition sensitive and integrated in health, nutrition and school health programs
14. Institutionalize WASH in schools (infrastructure and three stars approach) and introduce curriculum change to incorporate health, nutrition and hygiene and improved and safe water and sanitation practices among school children
15. Institute adaptation measures and disaster risk reduction and mitigation strategies to minimize the impact of climatic events on drinking water supply systems

## SINDH SANITATION POLICY 2017

The Sindh Sanitation Policy 2017 envisions that population shall have access to sustainable and safely managed sanitation services by 2030 for a healthy and prosperous Sindh. The term sanitation, however, refers to the principles and practices related to the collection, removal or disposal of human excreta, solid waste and wastewater, since they have impact upon users, operators and the environment.



The policy guides on the principles of safely managed sanitation service as a fundamental right for all persons in the province; prioritizes areas that pose the greatest risk to human health; and recognizes that inadequate and unsafe water supply and sanitation are a major cause of diarrhoea and nutritional deficiency in children. It emphasizes on promotion of community led approaches; introducing affordable cost-effective solutions, and independent monitoring and evaluation, etc. The salient features of the sanitation policy are given in Table 3.

**Table 3: Salient Features of Sanitation Policy**

1. Introduce legislative measures and regulations to create an enabling framework for safely managed sanitation services, regulation of wastewater treatment and sludge management
2. Enhance the coverage of safely managed sanitation services in the province to achieve SDGs targets of universal access
3. Strive for and ensure an environment which is open-defecation free and has proper disposal and management of liquid and solid waste of municipal, industrial, agricultural sectors, and promotes health and hygiene practices
4. Provide access to basic level of sanitation services, including promotion of latrines in each household, in rural and urban areas, construction of latrines at schools, bus stations and important public places and densely populated areas
5. Promote Pakistan Approach to Total Sanitation (PATS) for integrated total sanitation through community led total sanitation, school led total sanitation, component sharing, and sanitation marketing
6. Bring behavioural change in the communities and other stakeholders and increasing awareness among masses on sanitation through community mobilization
7. Facilitate and integrate sanitation aspects into various development programmes and regional planning policies such as health, environment, education and housing, etc.
8. Strengthen and enhance the capacities of all direct and indirect stakeholders including Government agencies, NGOs and other civil-society organisations
9. Develop criteria for new sanitation services to ensure that all new services are safely managed and constructed through need-based criteria so that all areas and communities are served
10. Develop standardized service delivery models for both urban and rural sanitation programmes to improve efficiency, cost-effectiveness, improve monitoring and sustainability
11. Develop mechanisms for reuse, recycle and recharge of wastewater for other municipal and productive uses
12. Ensure that all sanitation programs are designed and constructed in line with National Environment Quality Standards (NEQS)
13. Develop and sustain regular sanitation program monitoring and surveillance, and Institute mechanisms for remedial action
14. Increase public awareness about water borne and water-related diseases (including polio), nutrition and hygiene, and enhance the role of communities for household water treatment/storage, safe management of human excreta and improved hygiene practices.
15. Institute adaptation measures and disaster risk reduction and mitigation strategies to minimize the impact of climatic events on WASH, especially sanitation programs

Sindh Drinking Water, Sanitation and Hygiene Strategic Sector Plan 2016-2026 guides for interventions in the areas of legislation, regulations, policy and strategies; water resources; water supply; water quality; sanitation; solid waste; health, hygiene and nutrition; education; sector efficiency and capacity; sector financing; sector coordination and sector monitoring.

Though National Drinking Water Policy and provincial policies (water and sanitation) seek an integrated approach for safely managed drinking water and sanitation through collaborative arrangements among different service providers, there is need for further clarity and ownership at all levels. Although these policies are aligned with SDGs and Sindh Sanitation Policy has also forecasted some targets for eradication of open defecation, access to basic sanitation, wastewater treatment, solid waste management and hygiene, the specific targets of SDG 6.1 and 6.2 with consideration of existing and future financial investment had not been articulated.

The GoS adopted the Sindh Strategic WASH Sector Plan 2016-26 in May 2017. This strategic sector plan guides for interventions in the areas of legislation, regulations, policies, strategies for water resources, water supply, water quality, sanitation, solid waste, health, hygiene, nutrition, education, sector efficiency and capacity, sector financing, sector coordination and sector monitoring. In addition, the Department of Local Government Sindh in collaboration with Ministry of Climate Change (MoCC) and UNICEF organized

a provincial Joint Sector Review (JSR) for WASH in October 2018 to review the overall policy environment, institutional development, financial needs and expenditures along with setting the targets for SDGs. The extracts from Sindh JSR Report has been adapted in the analysis and reference in the section of legislative framework, access to water and sanitation, and financing/budgeting.

## LEGISLATIVE FRAMEWORK

Drinking water and sanitation related legislation in Sindh includes Sindh Water Management Act (Amendment) 2005, Sindh Municipal Water Act (Draft) 2012, Sindh Environmental Protection Act 2014, Sindh Local Government Act 2013 (with amendments in 2016), Sindh Solid Waste Management Board Act 2014, Karachi Water and Sewerage Board Act 1996 etc. However, these laws need more alignment and cohesiveness to overcome the duplication in roles and duties assigned to different stakeholders.

2017 notification by Government of Sindh Services, General Administration and Coordination Department (Regulation Wing) No. SoRI (SGA&CD)2-4/2013 has made the amendments in Sindh Rules of Business 1986, delegating the responsibilities to PHE wing of PHE&RDD for execution of urban and rural water supply and drainage schemes except KW&SB areas and Hyderabad WASA areas. Now, the mandate of operation and maintenance of water supply and drainage schemes specially assigned to PHED; and service matters of officers/officials in PHED except those assigned by SGA&CD.

On the other hand, Sindh Local Government Act 2013 envisages the responsibilities of provision, access, operation and maintenance of drinking water and improved sanitation services to respective councils within their jurisdictions at district, sub district/taluka and union council levels. This includes development of integrated systems of water reservoirs, water sources, treatment plants, drainage, liquid and solid waste disposal, sanitation and other municipal services. Taluka/Town Municipal Administrations in Sindh have been mandated for the municipal service including water and sanitation in their respective jurisdictions. Union Councils are responsible for Union Council level infrastructure, with special focus on potable water and sanitation through active coordination.

Sindh Environmental Protection Act, 2014, delegates the responsibility of monitoring, controlling, and surveillance of National Environmental Quality Standards on municipal/industrial effluents, drinking water, noise and air, etc., to Sindh Environmental Protection Agency (SEPA). Besides, Supreme Court Karachi Registry has also endorsed the role of SEPA as a regulatory and monitoring authority for environmental issues in Constitutional Petition No. 38 of 2016. The court in the petition further observed that SEPA has failed to perform its delegated role in Sindh Environmental Protection Act, 2014. The court also issued directives to SEPA to submit annual environment report to registrar of the court for next five years. However, there is no comprehensive legislation that empowers any particular agency to play the functions, such as preparing rules and standards for regulating public and private sectors water service providers including financial management regulations, licensing and regulating private service providers, controlling the pricing of retail and bulk consumers, service standards and performance indicators, and customer service regulations with powers of public hearing for complaints/grievances. Thus, necessary legislation is required for establishing a water and sanitation

Sindh Environmental Protection Act, 2014, delegates the responsibility of monitoring, controlling and surveillance of national environment quality standards on municipal/industrial effluents, drinking water, noise and air etc., to Sindh Environmental Protection Agency (SEPA).

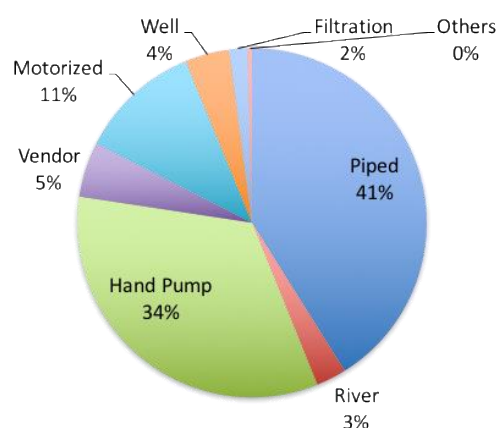


services regulatory authority with legal cover and administrative and financial autonomy.

## ACCESS TO DRINKING WATER

As per Pakistan Social Living Standards Measurement (PSLM) Survey 2014-15 (latest available), about 89% Households (HHs) of Sindh province have access to improved water mainly from tap water (41%), followed by Hand Pumps (33%), Motorized Pumps (11%), and Dug- Well (4%). However, use of tap water in Sindh has decreased from 43% in 2012-13 to 41% in 2014-15.<sup>2</sup> An analysis of rural and urban water coverage shows that piped water is the main source of drinking water in urban area with 69.2% coverage. The Hand pump coverage of households in rural area is 63.2%. The second leading source of drinking water in both territories is motorized pump with 11.9% coverage in urban area and 11% in rural area.

Figure 1: Drinking Water Sources in Sindh



According to MICS 2014, 90.5% of the households are using an improved source of drinking water; 89.7% in urban areas and 91.3% in rural areas. In 72.9% (81.5% in Urban Areas and 63.5% in rural areas) of households, drinking water is available on their premises.<sup>3</sup> Additionally, as per PSLM 2013-2014, the water delivery system in Sindh - dominated by Local Government - is 47%, which is followed by self-provision (Household itself) which is 37%, while Non-Government Organizations (NGOs) cater the services for 16% of households.<sup>4</sup>

## DRINKING WATER QUALITY

In 2002, PCRWR started a "National Water Quality Monitoring Program". This initiative generated the first detailed water quality profile of the country covering 23 major cities of Pakistan including four districts from Sindh province. The Phase-I of the project was completed from 2002 to 2006 on yearly basis. Under Phase -II (2015-2016), a total of 84 water samples were collected from Sindh Province. The results indicated that overall 16 samples (19%) were safe, whereas, 68 samples (81%) were found to be unsafe.<sup>5</sup> However, Sindh MICS-2014 has reported that 53.6% of total 1,758 samples from all over Sindh are above the permissible level ( $\geq 1$  cfu/ml) total coliform bacteria showing only 46.4% water have low levels of contamination.

<sup>2</sup> PSLM 2014-15 (latest available data, because PSLM survey was not conducted for 2016-17)

<sup>3</sup> MICS Sindh 2014

<sup>4</sup> PSLM 2013-14

<sup>5</sup> Water Quality Status of Major Cities of Pakistan 2015-16

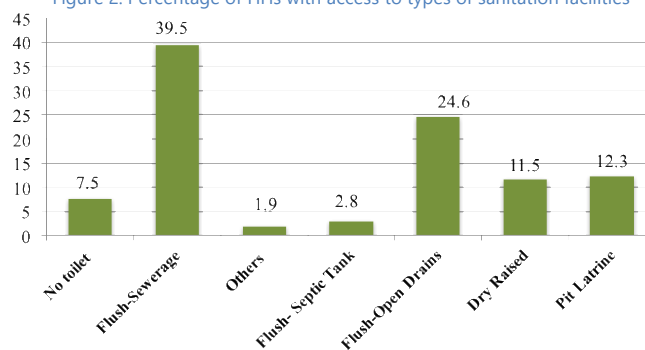
PSLM Survey, that stands for Pakistan Social and Living Standards Measurement, is a regular activity of PBS since 1<sup>st</sup> July 2015, designed to provide Social & Economic indicators at provincial and district levels. Though, survey for 2016-17 was

National Water Quality Monitoring Program covers 23 major cities of Pakistan, including four districts from Sindh province.

## ACCESS TO SANITATION

As per PSLM 2014-15, in Sindh 67% HHs have access to flush latrines followed by 26% HHs with non-flush latrines, and 7% HHs without any toilet/latrine facility. An analysis of rural-urban coverage showed that around 97% HHs have flush latrines in urban areas while such coverage is only 31% in rural areas.<sup>6</sup> Compared to urban areas where only 1% of HHs does not have toilet facility, 16% of rural HHs are without toilets in Sindh.<sup>7</sup>

Figure 2: Percentage of HHs with access to types of sanitation facilities



According to MICS 2014, in Sindh 72.9% of the HHs have access to improved sanitation facilities i.e. 95.9% in urban areas and 47.7% in rural areas<sup>8</sup>. Inadequate disposal of human excreta and lack of personal hygiene are the major causes of multiple diseases, like diarrhea, and polio, which can be reduced through hygiene practices for proper disposal of human excreta. As per PSLM 2013-2014, 42% of HHs are connected with underground/covered drains for wastewater disposal, 17% with open drains and 41% are without any drainage system in Sindh.<sup>9</sup> In urban areas, 73% HHs have underground/covered drains and 23% with open drains while 3% HHs are without any wastewater disposal system. In rural areas, 5% HHs are connected with underground drains, 10% with open drains while 84% are without any system.<sup>10</sup>

UNICEF assists countries in collecting and analyzing data to fill data gaps for monitoring the situation of children and women through its international household survey initiative - the Multiple Indicator Cluster Survey (MICS).

## HAND WASHING WITH SOAP

As per Pakistan Demographic Health Survey (PDHS) 2017-2018, about 61% of HHs in Sindh have water and soap available at a dedicated place for hand washing. This is followed by 2.6% HHs with water and other cleansing agent, 17.5% with water only, while 16% HHs do not have water and cleaning agent at hand washing place.<sup>11</sup> However, according to MICS Sindh 2014, around 66.5% HHs in Sindh have water and soap available at dedicated place for hand washing.

## FINANCING AND BUDGETING

<sup>6</sup> Ibid

<sup>7</sup> PSLM 2014-15

<sup>8</sup> MICS Sindh 2014.

<sup>9</sup> PSLM 2013-14

<sup>10</sup> Ibid

<sup>11</sup> PDHS 2017-18



The financial planning and budgeting for water and sanitation is mainly driven by LG&HTPD and PHE&RDD of Sindh province. While Constitutional Petition No. 38/ 2016 has observed that local Councils/Municipalities, etc. are held responsible for operation and maintenance, “But since the councils have no structural capacity to maintain the same according to the requirement, no real improvement in service delivery to the people has been materialized”. In the Annual Budget Statements 2018-19, under Water Supply budget head, the GoS allocated PKR 9,020 million for development and PKR 6,826 million as current revenue expenditures. However, the detailed analysis of Annual Development Plan 2018-19 revealed that drinking water and sanitation related allocation are also made to some other departments while the Annual Budget Statements only indicate the budget of PHED as drinking water and sanitation related allocation. In total, GoS has allocated PKR 42,840 million to various departments including; LG&HTPD, PHE&RDD and Works and Services Department solely for the development of schemes in Water and Sanitation. The break up for the Sindh ADP<sup>12</sup> 2018-19 is given in below table.

In the Annual Budget Statement 2018-19, Government of Sindh allocated a total of PKR 42,840 million for water and sanitation schemes.

Table 4: Sindh WASH related Budget in ADP 2018-19

Department	Budget of WASH. Million in PKRs
PHED - Development	9,020
PHED –Current	6,826.5
Wastewater and Environment- Current	1,044
Administration Development	375
Local Government (Water Supply and Sanitation)	11,649
Matching Allocation (Related to WASH)	11,650
Mega Schemes of Karachi (Related to WASH)	309
Rural Development (Water and Sanitation)	168
Sindh Solid Waste	1,799
Total (Water supply & Sanitation and Environment)	42,840.5

<sup>12</sup> All new and rehabilitation schemes are catered under ADP, as gaps in services shall be met through ADP.

Table 5: Overall Water and Sanitation Budget in Sindh- Three Years Trend- Million in PKRs

Budget Head	Budget Code	2015-2016		2016-2017		2017-2018	
		Budget	Exp.	Budget	Exp.	Budget	Exp.
<b>Current Budget and Expenditures as per budgetary codes of PRSP reports</b>							
Waste Management	51	-	-	-	-	-	-
Waste Water Management	52	420.00	-	420.00	-	420.00	366.64
Pollution Abatement	53	532.62	448.72	221.35	187.83	221.62	285.36
R&D Environment	54	-	-	-	-	-	-
Administration Expenditures	55	48.35	24.19	277.57	118.54	267.39	105.23
Others	56	-	-	-	-	-	-
Water Supply	63	1,538.07	1,839.80	1,482.53	2,051.90	1,591.86	2,571.98
Total Current		<b>2,539.04</b>	<b>2,312.71</b>	<b>2,401.45</b>	<b>2,358.27</b>	<b>2,500.87</b>	<b>3,329.20</b>
<b>Development Budget and Expenditures as per budgetary codes of PRSP reports</b>							
Waste Management	51	-	-	-	-	-	-
Waste Water Management	52	3,143.78	3,002.12	-	-	-	-
Pollution Abatement	53	-	-	-	-	-	-
R&D Environment	54	-	-	-	-	-	-
Administration Expenditures	55	1,090.74	433.21	455.00	228.75	400.00	230.67
Others	56	-	-	-	-	-	-
Water Supply	63	3,197.17	2,710.14	4,267.00	4,451.30	5,973.80	7,814.38
Total Development		<b>7,431.69</b>	<b>6,145.47</b>	<b>4,722.00</b>	<b>4,680.05</b>	<b>6,373.80</b>	<b>8,045.05</b>
Total PHED		<b>9,970.73</b>	<b>8,458.18</b>	<b>7,123.45</b>	<b>7,038.32</b>	<b>8,874.67</b>	<b>11,374.25</b>
<b>Water and Sanitary Budget and Expenditures other than PRSP codes</b>							
Local Government (Water Supply and Sanitation)		5,995.1	2,687.5	5,506.6	5,308.8	11,767.0	5,921.1
Matching Allocation (Related to WASH)		4,000.0	1,962.3	7,500.0	7,211.5	7,200.0	9,904.2
Mega Schemes of Karachi (Related to WASH)		-	-	1,200.0	250.0	517.9	150.0
Special Initiatives		2,703.0	1,918.7	3,046.1	1,131.0	467.9	-
Works and Services (Storm Water Drains)		5.0	5.0	10.0	10.0	23.5	-
Sub Total		<b>12,703.1</b>	<b>6,573.5</b>	<b>17,262.7</b>	<b>13,911.3</b>	<b>19,976.3</b>	<b>15,975.3</b>
Grand Total-WASH Budget		<b>22,673.8</b>	<b>15,031.7</b>	<b>24,386.2</b>	<b>20,949.6</b>	<b>28,851.0</b>	<b>27,349.5</b>

# METHODOLOGY AND APPROACH

03

## SDG-6 TARGETS

Water and sanitation are at the very core of sustainable development, critical to the survival of people and the planet. Goal- 6 not only addresses the issues relating to drinking water, sanitation and hygiene, but also the quality and sustainability of water resource management. Globally, goal-6 has 11 targets in six thematic areas. Below is summary of SDG-6 targets.

Table 6: SDG 6 Targets

6.1.1 Proportion of population using safely managed drinking water services  
6.2.1 Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water  
6.3.1 Proportion of wastewater safely treated  
6.3.2 Proportion of bodies of water with good ambient water quality  
6.4.1 Change in water-use efficiency over time  
6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resource  
6.5.1 Degree of integrated water resources management (IWRM) implementation (0- 100)  
6.5.2 Percentage of Trans-boundary basin area with an operational arrangement for Water cooperation  
6.6.1 Percentage of change in water-related ecosystems over time  
6.a.1 Amount of water and sanitation related Official Development Assistance that is part of a government coordinated spending plan  
6.b.1 Percentage of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management

## METHOD OF COMPUTATION AND REPORTING

For each SDG-6 indicator, the template given below specifies how data will be collected (e.g. household survey, etc.) and reported. An SDG-6 tracking sheet was developed for mapping the target indicators with methods of computations, segregation and source with baseline values and frequency of collection, with the following template:

Indicators and Sub Indicators	Source Name	Baseline Value	Last Year Reported	Frequency	Data Collection	Provincial and District
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## DATA DISAGGREGATION

The template allows for data disaggregation based on residence, gender, groups, etc. In this report, data has been disaggregated for each Indicator to:

- Specify the source name



- Baseline value
- Unit
- Last year reporting
- Frequency of reporting

# RESOURCES Vs TARGETS OF SDGs IN SINDH PROVINCE

04

The global SDG costing tool for drinking water and sanitation has been developed by the World Bank and UNICEF. This has been adapted by Pakistan to define and set the provincial targets, which will be consolidated, at the national levels. Below is the summary of the anticipated SDG targets for safely managed water and safely managed sanitation services in Sindh, based on available financial resources.

Population of Sindh-Population Census 2017 <sup>13</sup> :	47.88 million
PKR	
Population Growth Rate:	2.41%
Estimated Population in 2030:	60.50 million PKR

WASH Sector Development Plan 2016-2026 identified that around PKR 100 billion will be required annually from 2017 till 2030 for getting 100% coverage of safely managed water and sanitation services. By using SDG costing tool developed by World Bank and UNICEF, it is estimated that Sindh would need PKRs 1,481 billion to meet its SDG targets for water and sanitation. The tool has been simplified for local context to identify a unit cost for different ladders of SDGs for WASH. The table 2 provides an overview of cost required for different ladders and safely managed water and sanitation services. An average annual cost for next thirteen years will be PKR 114 billion. These were discussed and endorsed in the JSR and consultative meeting held for SDG-6 with the support of Department of Local Government Sindh, UNICEF, UNDP and MoCC.

Table 16: WASH SDG Costing and Coverage

Description	Pop.20 17 in Million	Pop.2 030 In Millio n	Baseline	Per Capita- PKR	Total Required PKR in million	Yearly required PKR in million
Improved Water Premises	7.18	9.83	85%	5,000	49,125	3,779
	13.79	18.86	71%	7,500	141,480	10,883
Safely Managed Water	38.78	53.06	19%	12,500	663,188	51,014
Improved Sanitation	27.77	37.99	0.42	5,000	189,950	14,612
Safely Managed Sanitation	47.88	65.50	0.00	12,500	818,750	62,981
Safely Managed WASH Services (Safe Water and Safe Sanitation)					1,481,938	113,995

<sup>13</sup> <http://sindhbos.gov.pk/wp-content/uploads/2018/05/SAG-2017-1.pdf>

Table 17: WASH related Budget in ADP 2018-19

Department	Budget in WASH. PKR in Million
PHED - Development	9,395
PHED –Current	7,872
Local Government (Water Supply and Sanitation)	11,649
Matching Allocation (Related to WASH)	11,650
Mega Schemes of Karachi (Related to WASH)	309
Rural Development (Water and Sanitation)	168
Sindh Solid Waste Board	1,799
Total (Water Supply, Sanitation and Environment)	42,842

Table 18: Estimates for SDG 6 for Water and Sanitation

	Populations in Need		Baseline	Per Capita	Total Required	Per year
	2018	2023				
Improved Water	7.18	9.83	85%	5,000	49,125	9825
Premises	13.79	18.86	71%	7,500	141,480	28296
Safe Water	38.78	53.06	19%	12,500	663,188	132638
Improved Sanitation	27.77	37.99	75%	5,000	189,950	37990
Safe Sanitation	47.80	65.50	0	12,500	818,750	163750
Safe WASH				25,000	1,481,938	113,995
Year	Allocation- Million	GAP- Million	Pop. Per Year Served	Coverage Per Year	Water Coverage	Sanitation Coverage
2018-2019	40,000	73,995	1.600	2.4%	21.4%	2.4%
2019-2020	44,000	69,995	1.760	2.7%	24.1%	5.1%
2020-2021	48,400	65,595	1.936	3.0%	27.1%	8.1%
2021-2022	53,240	60,755	2.130	3.3%	30.3%	11.3%
2022-2023	58,564	55,431	2.343	3.6%	33.9%	14.9%
2023-2024	64,420	49,575	2.577	3.9%	37.8%	18.8%
2024-2025	70,862	43,133	2.834	4.3%	42.2%	23.2%
2025-2026	77,949	36,047	3.118	4.8%	46.9%	27.9%
2026-2027	85,744	28,252	3.430	5.2%	52.2%	33.2%
2027-2028	94,318	19,677	3.773	5.8%	57.9%	38.9%
2028-2029	103,750	10,245	4.150	6.3%	64.3%	45.3%
2029-2030	114,125	(129)	4.565	7.0%	71.2%	52.2%
<b>Overall - Government</b>			<b>34.215</b>	<b>52.2%</b>	<b>71.2%</b>	<b>52.2%</b>
<b>Private Sector - contributed 1/4th of</b>						
<b>Government</b>			<b>17.107</b>	<b>13%</b>	<b>12%</b>	<b>12%</b>
<b>Total Achievemtns</b>			<b>51.32</b>	<b>65%</b>	<b>83%</b>	<b>64%</b>

With current rate of allocation, Sindh is likely to have 2.4% incremental coverage in safely managed water and sanitation services. Though currently only 19% coverage of water falls under safely managed services, whereas, there is no sanitation coverage falling under safely managed services. Hence by 2030, the coverage of safely managed water services will be 50.8% and safely managed sanitation services will be 32%. However, if government of Sindh assures a commitment of 10% annual increase for next 13 years excluding inflation, Sindh is likely to achieve 71.2% safely managed water and 52 % safely



managed sanitation services. Private Sector and other stakeholders are likely to contribute around 1/4<sup>th</sup> of these targets thus making the total targets of safely managed water 83% and safely managed sanitation 64%. This is further reiterated in table 3 with different scenarios.

Table 19: SDG WASH Options with Annual Increase in Budget

Required per year million PKRs	Yearly Increase in ADP-%	Annual Allocation- Million	Annual GAP- Million	Pop. Per Year Served	Coverage- % Per Year	Water by 2030	Sanitation by 2030
113,995	0%	40,000	73,995	1,600,000	2.4%	50.8%	32%
113,995	5%	60,000	53,995	2,400,000	3.7%	66.6%	48%
113,995	7.5%	70,000	43,995	2,800,000	4.3%	74.6%	56%
113,995	10%	80,000	33,995	3,200,000	4.9%	82.5%	64%

# KEY FINDINGS

05

A consultative workshop was organized on 12th February 2019, where initial findings were presented to gather expert feedback on localization of SDG-6. This section presents SDG-6 indicator-wise definitions, corresponding policy documents, lead departments and summarizes the key findings for policy decision making.

## INDICATOR 6.1.1 PROPORTION OF POPULATION USING SAFELY MANAGED DRINKING WATER SERVICES

### DEFINITION

Population using a basic drinking water source ('improved' sources of drinking water used for MDG monitoring i.e. piped water into dwelling, yard or plot; public taps or standpipes; boreholes or tube wells; protected dug wells; protected springs and rainwater), which is located on premises and available when needed and free of fecal (and priority chemical) contamination.

Table 20: Findings on Indicator 6.1.1 Proportion of population using safely managed drinking water services

Indicators and Sub indicators	Source Name	Baseline Value	Last Reported	Year	Frequency	Data Collection	Reporting Levels
Basic Improved Source	PLSM	89%	2014-15		Biannual	HH Survey	Provincial and District
	MICS Sindh	90.5	2014		Three years	HH Survey	Provincial and District
Premises	PSLM	71.5%	2015		Biannual	HH survey	Provincial
	MICS Sindh	73%	2014		Three years	HH survey	Provincial and District
Available	PSLM	86%	2015		Biannual	HH survey	Provincial
	MICS Sindh		2014		Three years	HH survey	Provincial and District
Free from Contamination	MICS Sindh- only bacterial Contamination only	53%	2014		Three years	HH survey at cluster level collection of samples	Divisional
	PCRWR Water Quality Data 2015	19%	2015		4- 5 years	Selected three to four districts including source and consumer levels	Provincial

### SEGREGATION OF DATA

The data for improved drinking water is available at HH level and can be segregated based on socio- economic profile and geographically i.e. rural and urban. However, it cannot be segregated for gender and vulnerable groups.

## KEY POLICY DOCUMENTS

National Drinking Water Policy 2009, National Water Policy 2018, Sindh Drinking Water Policy 2017 and Sindh WASH Sector Development Plan 2016-2026.

## LEAD DEPARTMENTS

1. Public Health Engineering and Rural Development Department, and
2. Local Government and HTP Department of Government of Sindh
3. Sindh Environmental Protection Agency

Overall, access to improved water sources is 89%. The break up of three key indicators for safe drinking water are:

- Water accessible at premises: 72%
- Water available when needed: 86%
- Water free from contamination: 19%.

The lowest figure of all above indicators is free from contamination. Thus, 19% is the baseline figure of safely managed water in Sindh.

## INDICATOR 6.2.1 PERCENTAGE OF POPULATION USING SAFELY MANAGED SANITATION SERVICES

### DEFINITION

Population using a basic sanitation facility at the household level ('improved' sanitation facilities used for MDG monitoring i.e. flush or pour flush toilets to sewer systems, septic tanks or pit latrines, ventilated improved pit latrines, pit latrines with a slab, and composting toilets) which is not shared with other households and where excreta is safely disposed in situ or treated off-site.

Table 21: Findings on indicator 6.2.1 percentage of population using safely managed sanitation services

Indicators and Sub indicators	Source Name	Baseline Value	Last Year Reported	Frequency	Data Collection	Provincial and District
Type of Toilets- No Toilets	PLSM	8%	2015	Biannual	HH Survey	Provincial and District
	MICS Sindh	20%	2014	Three years	HH Survey	Provincial and District
Improved sanitation	PSLM	42%	2015	Biannual	HH survey	Provincial
	MICS Sindh	72.9%	2014	Three years	HH survey	Provincial and District
On-site Treatment -	PSLM	NA	2015	Biannual	HH survey	Provincial
	MICS Sindh	NA	2014	Three years	HH survey	Provincial and District



Off-Site Treatment	Water and Sanitation Utilities and Boards	10% estimates of Sindh	2017	Annual	Utilities Data	District and Regional
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## INDICATOR 6.2.2 PERCENTAGE OF POPULATION WITH A HAND WASHING FACILITY WITH SOAP AND WATER AT HOME

### DEFINITION

Population with a hand washing facility (a device to contain, transport or regulate the flow of water to facilitate hand washing) with soap and water at home.

Table 21: Findings on Indicator 6.2.2 Percentage of population with a hand washing facility with soap and water at home

Indicators and Sub indicators	Source Name	Baseline Value	Last Year Reported	Frequency	Data Collection	Provincial and District
Hand Washing Facility with Water	PDHS	31.3%	2012-13	Five Years	HH Survey	Provincial
	MICS Sindh	19.8%	2014	Three years	HH Survey	Provincial and District
Hand Washing Facility with Water and Soap	PDHS	52.4%	2012-13	Five Years	HH survey	Provincial
	MICS Sindh	66.5%	2014	Three years	HH survey	Provincial and District

### KEY POLICY DOCUMENTS

National Sanitation Policy 2006, National Water Policy 2018, Sindh Sanitation Policy 2017, Sindh Drinking Water Policy 2017 and Sindh WASH Sector Development Plan 2016-2026.

### LEAD DEPARTMENTS

1. Local Government and HTP Department of Government of Sindh
2. Public Health Engineering and Rural Development Department
3. Environment Protection Authority Sindh

The break-up of key indicators for Safely Managed Sanitation Services are:

- Access to improved sanitation: 42%
- Hand Washing with Water and Soap: 52%
- Reliable data on on-site and off-site treatment in Sindh: Not available/0%.

The lowest figure of all three is On-site and Off-site Treatment. Hence the baseline figure of safely managed sanitation in Sindh zero.

## INDICATOR 6.3.1 PERCENTAGE OF WASTEWATER SAFELY TREATED

## DEFINITION

Proportion of wastewater generated both by the households (sewage and fecal sludge) and the economic activities (Safely treated as compared to total wastewater generated both through households and economic activities). While the definition conceptually includes wastewater generated from all economic activities, monitoring will focus on wastewater generated from hazardous industries.

Table 22: Findings on Indicator 6.3.1 Percentage of wastewater safely treated

Indicators and Sub indicators	Source Name	Baseline Value	Last Year Reported	Frequency	Data Collection	Provincial and District
Municipal (sewage and fecal sludge treatment)	Water and Sanitation Utilities and Boards Only for Karachi data available	10% for Karachi 5% for Sindh	2018	Annual	Data generated by Utilities	District
Industrial waste treatment	Environment Protection Agency Sindh	71 out of 1576 industries in Karachi  Total 3415 Units in Sindh	2018	Annual	Data collected by EPA Staff	Regional

## SEGREGATION

The data cannot be segregated at HH level and socio-economic profiles. It can be done only at regional and catchment areas.

## KEY POLICY DOCUMENTS

National Sanitation Policy 2006, National Water Policy 2018, Sindh Sanitation Policy 2017, Sindh Solid Waste Management 2014 and Sindh WASH Sector Development Plan 2016-2026.

## LEAD DEPARTMENTS

1. Environment Protection Authority Sindh
2. Local Government and HTP Department of Government of Sindh
3. Public Health Engineering and Rural Development Department, Government of Sindh
4. Pakistan Council on Research of Water Resources – PCRWR

The wastewater treatments including municipal and industrial waste were almost zero in 2017<sup>14</sup>. It started work in 2018 on the notice of supreme court of Pakistan. In 2018, it is around 5% for Sindh and for Karachi it is 10%, as per KWSB. However, here the baseline figures for 2017 is being taken, i.e. zero.

## INDICATOR 6.3.2 PERCENTAGE OF WATER BODIES WITH GOOD AMBIENT WATER QUALITY

### DEFINITION

Proportion of water bodies (area) in a country with good ambient water quality compared to all water bodies in the country. "Good" indicates an ambient water quality that does not damage ecosystem function and human health according to core ambient water quality indicators.

Good ambient water quality means that the target values have been met at least 80% of the time during the assessment period. Bodies of water may refer to sections of a river or a small river sub-basin, a lake or an aquifer.

Indicator 6.3.2 is reported at the national level, but also at the subnational level based on river basins.

Table 23: Findings on Indicator 6.3.2 Percentage of water bodies with good ambient water quality

Indicators and Sub indicators	Source Name	Baseline Value		Last Year Reported	Frequency	Data Collection	Provincial and District
		Ground water	Soil				
Dissolved Oxygen	PCRWR	12.099 ds/m	3.676 ds/m	2017	Occasional	Sample	Regional
Electrical Conductivity							
Total Oxidized Nitrogen							
Nitrate							
Orthophosphate							
Ph	PCRWR	7.435	7.9245	2017	Occasional	Sample	Regional
SAR	PCRWR	19.280	5.798	2017	Occasional	Sample	Regional
Total Dissolved Solids	PCRWR	5600mg/l	-	2017	Occasional	Sample	Regional

Source: Manchar Lake Data 2016-2017

### SEGREGATION

The data cannot be segregated at HH level and socio- economic profiles. It can be done only at regional and catchment areas levels.

### KEY POLICY DOCUMENTS

National Water Policy 2018, Sindh Drinking Water Policy, Sindh Sanitation Policy 2017, Sind Environmental Protection Act 2014, Sindh Solid Waste Management Board 2014 and Sindh WASH Sector Development Plan 2016-2026.

### LEAD DEPARTMENTS

1. Sindh Environmental Protection Agency
2. Pakistan Council on Research of Water Resources – PCRWR
3. Irrigation Department

<sup>14</sup> <https://washdata.org/sites/default/files/documents/reports/2018-07/JMP-2017-annual-report.pdf>



4. Local Government and HTP Department of Government of Sindh
5. Public Health Engineering and Rural Development Department

Indicator 6.3.2 is reported at the national level, but also at the subnational level based on river basins. Presently, representative data was not available

## INDICATOR 6.4.1 CHANGE IN WATER USE EFFICIENCY OVER TIME

### DEFINITION

This indicator is defined as the output over time of a given major sector per volume of (net) water withdrawn (showing the trend in water use efficiency). The sectors are:

Table 24: Findings on Indicator 6.4.1 Change in water use efficiency over time

Indicators and Sub indicators	Source Name	Pakistan Baseline Value billion m <sup>3</sup>	Sindh Baseline Value billion m <sup>3</sup>	Last Year Reported	Frequency	Data Collection	Provincial and District
Agriculture	FAO	172.371-94%	5091%	2011 and 2017 FAO	10 years		National
Municipal Services		9.650- 5%	35.5%	and World Bank Reports			
Industries		1.40- 1%	23.5%				
Total		184 bcm	55 bcm				
Per Inhabitant		885 m <sup>3</sup> /inhabitant	1,138 m <sup>3</sup>				

### KEY POLICY DOCUMENT

Pakistan Water Accord 1991, National Water Policy 2018, and Working Draft Sindh Water Policy by SIDA.

### LEAD DEPARTMENTS

1. Irrigation Department
2. Environment Protection Authority
3. WAPDA
4. IRSA and SIDA

As per the World Bank 2018 report, withdrawal of water in Sindh is 55 billion cubic meters of total withdrawal of 184 billion cubic meters in Pakistan. The break-up of withdrawal is:

- Agriculture: 45 BCM-91%
- Municipal Service: 3 BCM- 5.5%
- Industries: 2 BCM- 3.5%
- Per Capita withdrawal: 1,138 cubic meters

## INDICATOR 6.4.2 LEVEL OF WATER STRESS: FRESHWATER WITHDRAWAL IN PERCENTAGE OF AVAILABLE FRESHWATER RESOURCES

### DEFINITION

Ratio between total freshwater withdrawn by all major sectors and total renewable freshwater resources, taking into account environmental water requirements

Table 25: Findings on Indicator 6.4.2 Level of water stress: freshwater withdrawal in percentage of available freshwater resources

Indicator s and Sub indicator s	Source Name	Baseline Value Billion m <sup>3</sup>	Last Year Reported	Frequency	Data Collect ion	Provincial and District
Total Renewabl e Resource s	–	60.14- Water Accord, 3 – runoff, 2- Groundw ater <b>Total 65</b>				
Total Water Withdraw al Ratio		55  84%				

## KEY POLICY DOCUMENTS

Pakistan Water Accord 1991, National Water Policy 2018, and Working Draft Sindh Water Policy by SIDA.

## LEAD DEPARTMENTS

1. Irrigation Department
2. Environment Protection Authority
3. WAPDA
4. IRSA and SIDA

As per World Bank Report 2018, Sindh Water Renewable Resource is 65 billion cubic meters against the withdrawal of 55 billion cubic meters indicating a water stress of 85%. The break-up of the sector is:

Total Sindh Water Renewable Water: 65 BCM

- Water Accord: 60.14 BCM
- Run Off Water: 3 BCM
- Ground Water: 2 BCM
- Per Capita Available: 1,360 M<sup>3</sup>

Total Sindh Water Withdrawal: 50 BCM

- Agriculture: 50 BCM-91%
- Municipal Service: 3 CBM- 5.5%
- Industries: 2 BCM- 3.5%
- Per Capita withdrawal: 1,138 M<sup>3</sup>
- Water Stress: 85%

## INDICATOR 6.5.1 DEGREE OF INTEGRATED WATER RESOURCES MANAGEMENT (IWRM) IMPLEMENTATION (0- 100)

### DEFINITION

This indicator reflects the extent to which integrated water resources management (IWRM) is implemented, structured in 4 components: policies, institutions, management tools, and financing. It takes into account the

various users and uses of water with the aim of promoting positive social, economic and environmental impacts on all levels, including Trans-boundary, where appropriate.

Table 26: Findings on Indicator 6.5.1 Degree of Integrated Water Resources Management (IWRM) implementation (0-100)

Indicators and Sub indicators	Source Name	Pakistan Baseline Value	Last Year Reported	Frequency	Data Collection	Provincial and District
	UN Water		2018			National
Policies		67				
Institutions		51				
Management Tools		41				
Financing		40				
Total Score		50				

Source: Pakistan Baseline by UN Water

## SEGREGATION

The data cannot be segregated at HH level and socio-economic profiles. It can be done only at regional levels.

## KEY POLICY DOCUMENTS

National Water Policy 2018, National Drinking Water Policy 2009, Sindh Drinking Water Policy 2017, Sindh WASH Sector Development Plan 2016-2026.

## LEAD DEPARTMENTS

1. Irrigation Department
2. Public Health Engineering Department
3. Local Government Department.
4. Sindh Environment Protection Agency
5. WAPDA, IRSA and SIDA
6. PCRWR

Pakistan's score of integrated water resource management is 50<sup>15</sup>. Average score of four key pillars of integrated resource management are:

- Policies: 67
- Institutions: 51
- Management Tools: 41
- Financing: 40

## INDICATOR 6.5.2 PERCENTAGE OF TRANS-BOUNDARY BASIN AREA WITH AN OPERATIONAL ARRANGEMENT FOR WATER COOPERATION

### DEFINITION

Proportion of surface area of Trans-boundary basins that have an operational agreement/arrangement and/or institution for Trans-boundary water cooperation. Regular meetings of the riparian countries to discuss IWRM and exchange information are required for an arrangement to be defined as "operational".

<sup>15</sup> Pakistan Baseline by UN Water 2018.

Table 27: Findings on Indicator 6.5.2 Percentage of trans-boundary basin area with an operational arrangement for water cooperation

Indicator s and Sub indicator s	Source Name	Sindh Baseline Value	Last Year Reported	Frequency	Data Collect ion	Provincial and District
Sindh Surface Water Share Current Baseline	Pakistan Water Accord 1991 Pakistan Statistic al Year Book 2017	48.76 MAF 48.44 MAF	2017	Annual	WAPD A- Seco ndary Source	National and Provincial

Source: WAPDA Website

## KEY POLICY DOCUMENTS

Pakistan Water Accord 1991, National Water Policy 2018, and Working Draft Sindh Water Policy by SIDA

## LEAD DEPARTMENTS

1. Irrigation Department
2. Public Health Engineering Department
3. Local Government Department
4. Environment Protection Authority
5. WAPDA, IRSA and SIDA
6. PCRWR

Table 28: Findings on Indicator 6.6.1 Change in water related ecosystems over time

Indicators and Sub indicators	Source Name	Sindh Baseline Value	Last Year Reported	Frequency	Data Collection	Provincial and District
Spatial Extent Quality Quantity Total Score		19% 1158 m <sup>3</sup>				

Sindh Surface Water Shared as per Pakistan Water Accord 1991 is 48.76 million-acre feet and this was 48.44 million-acre feet in 2016 as per Pakistan Statistical year book 2017.

## INDICATOR 6.6.1 PERCENTAGE OF CHANGE IN WATER-RELATED ECOSYSTEMS OVER TIME

### DEFINITION

Percentage of change in water-related ecosystems over time (% change/year). The indicator would track changes over time in the extent of wetlands, forests and dry lands, and in the minimum flows of rivers, volumes of freshwater in lakes and dams, and the groundwater table. The Ramsar Convention broad definition of "Wetland" is used, which includes rivers and lakes, enabling three



of the biome types mentioned in the target to be assessed - wetlands, rivers, lakes - plus other wetland types.

National Spatial Context of Open Bodies in Pakistan – 2,468.87 Km<sup>2</sup>  
National Water Quality Baseline: 36%  
National Per Capita Quantity? 1017 m<sup>3</sup>

### KEY POLICY DOCUMENTS

National Water Policy 2018  
Sindh Drinking Water Policy  
Draft Sindh Wildlife & Protected Areas Act, 2010  
Sindh Environmental Protection Act 2014  
National Climate Change Policy 2012

### LEAD DEPARTMENTS

Sindh Wild Life Department,  
Sindh Irrigation Department,  
Public Health Engineering Department  
Sindh Environmental Protection Agency

As per UN Water Report 2018 for Eco System, Pakistan National Spatial Context for Open Bodies is 2,469 Km<sup>2</sup>. National Water quality is 36% and per capita is 885 Cubic Meters. While spatial data for Sindh is not available, water quality is 19% and per capita availability is 1,158 Cubic Meters

### INDICATOR 6.A.1 AMOUNT OF WATER AND SANITATION RELATED OFFICIAL DEVELOPMENT ASSISTANCE THAT IS PART OF A GOVERNMENT COORDINATED SPENDING PLAN

#### DEFINITION

Official Development Assistance (ODA) is defined as flows of official financing administered with the promotion of the economic development and welfare of developing countries as the main objective, and which are concessional in character with a grant element of at least 25%. A government coordinated spending plan is defined as a financing plan/budget for the water and sanitation sector, clearly assessing the available sources of finance and strategies for financing future needs. The indicator is computed as the proportion between the amount of water and sanitation related Official Development Assistance a government receives, and the total amount budgeted for water and sanitation in a government coordinated spending plan, which allows for a better understanding of how much countries depend/rely on ODA and highlighting countries total water and sanitation budgets over time.

Table 29: Findings on Indicator 6.a.1 Amount of water and sanitation related official development assistance that is part of a government coordinated spending plan

Indicator s and Sub indicator s	Source Name	Sindh Baseline Value	Last Year Reported	Frequency	Data Colle ction	Provincial and District
Total Budget for Drinking Water and Sanitatio n Services	Annual budget stateme nt – Govern ment of Sindh OECD – Rs. 4 billion Economi c Affair Division	Rs. 40 Billion		Annual		Provincial
Water Related budget	Annual budget stateme nt – Govern ment of Sindh OECD- Economi c Affairs Division			Annual		

### SEGREGATION

The data cannot be segregated at HH level and relative to socio-economic profiles. It can be done only at provincial level. Even drinking water and sanitation cannot be segregated.

### KEY POLICY DOCUMENTS

National Water Policy 2018, National Drinking Water Policy 2009, Sindh Drinking Water Policy 2017, Sindh WASH Sector Development Plan 2016-2026.

### LEAD DEPARTMENTS

1. Finance Department, Government of Sindh
2. Planning and Development Board, Government of Sindh
3. Local Government and HTP Department of Government of Sindh
4. Public Health Engineering and Rural Development Department
5. Environment Protection Agency
6. Irrigation Department

The approved budget for 2018-19 for water and sanitation is PKR. 40 billion and around 10% of these come from Official Development Assistance (ODA)

## INDICATOR 6.B.1 PERCENTAGE OF LOCAL ADMINISTRATIVE UNITS WITH ESTABLISHED AND OPERATIONAL POLICIES AND PROCEDURES FOR PARTICIPATION OF LOCAL COMMUNITIES IN WATER AND SANITATION MANAGEMENT

### DEFINITION

Indicator tracks the presence, at the national level, of clearly defined procedures in laws or policies for participation by service users (for aspects related to WASH), and the presence of formal stakeholder structures established at sub catchment level (for aspects related to the management of water, wastewater and ecosystem resources).

Table 30: Findings on Indicator 6.b.1 Percentage of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management

Indicators and Sub indicators	Source Name	Baseline Value	Last Year Reported	Frequency	Data Collection	Provincial and District
District WASH Committees	Local Government					
Water User Associations	SIDA					

### SEGREGATION

The data cannot be segregated at HH level and for socio-economic profiles. It can be done only at regional and catchment areas.

### KEY POLICY DOCUMENTS

National Water Policy 2018, Sindh Drinking Water Policy, Sindh Sanitation Policy 2017, Sindh Environmental Protection Act 2014, Sindh Solid Waste Management 2014 and Sindh WASH Sector Development Plan 2016-2026.

### LEAD DEPARTMENTS

1. Sindh Irrigation and Drainage Authority - Irrigation Department
2. Local Government and HTP Department of Government of Sindh
3. Public Health Engineering and Rural Development Department

The following are existing committees;

1. Provincial Steering Committee at P&D Level
2. Technical Working Group at administrative department level
3. District Coordination Committee at district level
4. District ODF Committee being a sub-committee of DCC
5. Farmer association for water distribution and management

# KEY CHALLENGES AND RECOMMENDATIONS 06

KEY CHALLENGES IN DATA COLLECTION AND REPORTING	SUGGESTIONS/ RECOMMENDATIONS FOR IMPROVEMENT
1. Reliable population-based data for type of sources, connection and quantity of water is not available. Information about coverage and accesses is derived from sampled surveys or limited information extracted from service providers	Encourage the development of MIS at the service delivery levels to determine the connection and service provided under PHED and Local Government
2. Water Quality Surveillance Framework is not well defined at the provincial and national level. The data for water quality is sporadic. Hence, it is difficult to set a bench mark for all districts of Sindh	Development of Water Quality Surveillance for the province that includes frequency of data collection and reporting. Support the local government and PHED to generate the data of water quality at the service delivery levels
3. The data for waste water treatment is not compiled and largely not available except for estimates of 2011 by independent sources. Water Utilities, PHED and Local Government lacks the system and human resources to monitor and report access and coverage of water and sanitation services	Development of Municipal Sewerage Surveillance for the province that includes frequency of data collection and reporting. Support the local government and PHED to generate the data of at the service delivery levels. Develop and implement an implementation and monitoring framework for wastewater treatment and fecal sludge management system/guidelines
4. Lack of comprehensive mapping of type of industrial waste water systems and processes. Non-Cooperative attitude of industrial sector	Development of Industrial waste management and wastewater treatment guidelines followed by capacity development and enforcement through Chamber of Commerce and Industries followed by an agreement for joint monitoring and reporting of industrial waste water
5. Lack of any comprehensive arrangement at the provincial level to monitor water ambient bodies	Establishment of a national Level agreement for monitoring of water ambient with provincial chapters and recommendation for surveillance and monitoring
6. Absence of any water regulator or third party to determine the reliability and robustness of systems of data collection and reporting for water and sanitation services including irrigation, groundwater, etc.	Encouragement of the national and provincial government to bring necessary legislation for the establishment of water regulatory authority having mandates of judicious use of water resources, tariff setting, complaint handling, monitoring and surveillance of service delivery etc.
7. Lack of comprehensive cropping assessments to determine the water needs and provisions required under different seasons	Revision of the water rates based on comprehensive cropping assessment and use of water for different purposes Necessary institutional capacity development and reforms for water pricing and recoveries including fines
8. Sindh water policy is under development for last many years, though it has drinking water and sanitation policies. National Water Policy 2018 is approved but it needs to be translated into strategy in the context for Sindh	Formal launching of drinking water and sanitation policies including their availability into local languages to create awareness Translate national water policy into an action plan along with provincial water policy
9. There is overlap between Agriculture and Irrigation Departments for water pricing and data collection. It is the same for PHED and Local Government regarding drinking water and sanitation services	Government of Sindh to encourage the relevant stakeholders to revisit their business rules along with necessary legislation and institutional reforms to build leadership and synergies for integrated water resource management
10. The current financing for water and sanitation services is insufficient	Encouragement of the government to increase minimum 10% per annum, each year for water related interventions



11. Sindh province is downstream hence there are challenges of water contamination and equitable distribution of water resources to overcome the challenge of salinity and water logging	Determination of the water Quality and its reporting as an integral part of inter-provincial trans boundary distribution and reporting arrangements
12. Reliable data for wetland eco-system coverage is not available. Spatial land coverage is yet to be determined	Undertaking of a comprehensive mapping of spatial land, in particular, the wet lands, ground water, lakes, etc. in the province to determine its current coverage and access
13. Water quality data for wetland and lakes is not regularly collected as part of Eco-System	A national and provincial surveillance for water quality having clear roles and responsibilities with time framework and coverage of spatial lands and other sources should be developed and implemented. The PCRWR should be encouraged to develop baseline including Indus baseline for a national and provincial estimate
14. Data on financial allocation for drinking water and sanitation is often reported in a combined budget item. Hence, it becomes difficult to ascertain the investments on water and sanitation services separately  The data for water and sanitation services covered outside Local Government and PHED is either under-reported or over-estimated like special initiatives under rural development and community initiatives	Department of Finance and the relevant line department(s) to revise and separate the budget codes for water and sanitation services  Introduction of sub-codes under the departments to track the investment on sub sectors and areas. Encourage the use and access to financial accounting reporting to the local stakeholders
15. The Official Development Assistance (ODA) for water and sanitation especially out-of-budget support by international/national partners is also under-reported or not widely available	Introduction of mechanisms for reporting of out-of-budget support through provincial PMUs and P&DD
16. Overall data related to investment on water especially under irrigation, agriculture, and drainages is also erratic; which makes it difficult to track and determine the overall contribution	Drinking Water and Sanitation Dashboard is already developed under PHED. This should be made accessible and be cascaded for all initiatives related to drinking water and sanitation services
17. In addition to Government, the CSOs, UN agencies, academia and private sector are represented in different provincial forums. However, a unified voice on the water & sanitation issues and active participation and consultation among wider stakeholders is not happening, as desired.	The CSOs and other stakeholders in the province should be encouraged to form their alliances for sharing the knowledge and learning. The forums should be encouraged to meet more frequently
18. District Coordination Committees also have the mandate of coordination among WASH stakeholders, which works under Deputy Commissioners. However, it has limited effectiveness due to absence of necessary institutional and administrative support	The district administration should be encouraged to convene regular meeting of district committees. The minutes of the meeting should be shared with provincial steering committee and respective departments
19. Farmer's Association work on distribution and judicious use of water but data about effectiveness of such groups is not widely accessible	SIDA and Irrigation Department should develop a provincial dashboard with details of different groups including coverage and access, along with their impact

# ANNEXURE

## GROUP- 1 SAFE DRINKING WATER AND SANITATION SERVICES

Indicators Areas	Possible Source Name and Last time Reported	Frequency- (Monthly/ Annual)	Baseline Value	Data Collection Approach	Level of Reporting	Key Challenges in Data Collection and Reporting	Suggestions for Improvement
<b>6.1.1 Proportion of population using safely managed drinking water services</b>							
<i>Improved Water Source</i>	PSLM 2015	1-2 years	89%	Sampled Survey	Provincial / District	Reliable population-based data for type of sources, connection and quantity of water is not available so we depend upon sampled surveys or limited information from service providers	Alignment of MICS and PSLM Questionnaires  Encourage the development of MIS at the service delivery levels to determine the connection and service provisions for PHED and Local Government
<i>Accessible- Premises</i>	PSLM 2015	1-2 years	71.5%	Sampled Survey			
<i>Available when needed</i>	PSLM 2015	1-2 years	86%	Sampled Survey			
<i>Free from Contamination</i>	PCRWR 2015	4-5 years	19%	Sampled Collections	Provincial average	Water Quality Surveillance Framework is not well defined at the provincial and national level. The data for water quality is sporadic. Hence difficult to set a bench mark for all districts of Sindh	Development of Water Quality Surveillance for the province that includes frequency of data collection and reporting.  Support the local government to generate the data of water quality at the service delivery levels

Indicators Areas	Possible Source Name and Last time Reported	Frequency (Monthly/ Annual)	Baseline Value	Data Collection Approach	Provincial / District	Key Challenges in Data Collection and Reporting	Suggestions for Improvement
<b>6.2.1 Percentage of population using safely managed sanitation services</b>							
<b>6.2.2 Percentage of population with a hand washing facility with soap and water at home</b>							
Type of Latrine	PSLM 2014-2015	1-2 years	8%	Sampled Household Survey	District and Provincial	Reliable population-based data for type of latrines and connection is not available so we are dependent upon sampled surveys or limited information from service providers	Alignment of MICS and PSLM Questionnaires
Improved Sanitation- Flush latrines with appropriate connections	PSLM 2014-2015	1-2 years	42%	Sampled Household Survey	District and Provincial		Encourage the development of MIS at the service delivery levels to determine the connection and service provisions
On-Site Treatment	PSLM- Data not reliable	1-2 years	0%	Sampled Household Survey	District and Provincial		
Off-Site Treatment	Local Government and PHED	Not Available		Input data from service providers	District and Provincial	The data for waste water treatment is not compiled and largely not available except for estimates of 2011 by independent sources	Development of Municipal Sewerage Surveillance for the province that includes frequency of data collection and reporting  Support the local government to generate the data at the service delivery levels
Hand Washing Facility with water and soap	MICS and PDHS	4-5 years	52.4%	Sampled Household Survey	District and Provincial	PSLM did not include hand washing data	PSLM 2018 included hand washing in its data collection streams

## GROUP –II- WATER TREATMENT AND EFFICIENCY

Indicators Areas	Possible Source Name and Last time Reported	Frequency- (Monthly/ Annual)	Baseline Value	Data Collection Approach	Provincial / District	Key Challenges in Data Collection and Reporting	Suggestions for Improvement
<b>6.3.1 Percentage of wastewater safely treated</b>							
Municipal (sewage and fecal sludge treatment)	Local Government, PHED and Water Utilities Data along with Environmental Protection Agency Sindh	Monthly	Only Karachi available in 2018 – 10% of total	Service Providers Data based on the technology used	Regional	Water Utilities, PHED and Local Government lack the system and human resources to monitor and report the data	Development of fecal sludge management guidelines in the province  Develop and implement an implementation and monitoring

[illegible]

Total – Renewable Resources	<b>FAO 2011 and World Bank 2018</b>	60.14- Water Accord, 3 – runoff, 2- Groundwater <b>Total 65 BCM</b>			collection and reporting of comprehensive cropping assessments to determine accurate water needs and provisions	Revise the water rates based on comprehensive cropping assessment and use of water for different purposes  Necessary institutional capacity development and reforms for water pricing and recoveries including fines
Total Water Withdrawal		<b>55 BCM</b>				
Ratio		<b>84%</b>				

## GROUP- III- WATER MANAGEMENT

Indicators Areas	Possible Source Name and Last time Reported	Frequency (Monthly/ Annual)	Baseline Value	Data Collection Approach	Provincial/D istrict	Key Challenges in Data Collection and Reporting	Suggestions for Improvement
<b>6.5.1 Degree of integrated water resources management (IWRM) implementation (0- 100)</b>							
<i>Policy</i>	UN Report 2018 for Pakistan	Occasional	67	Consultative meeting with stakeholders and review of literature	National	Sindh water policy is under development for last many years, though it has drinking water and sanitation policies  National Water Policy 2018 has been approved but it needs to be translated into a strategy that matches Sindh's needs  There is overlap between Agriculture and Irrigation Departments for Agriculture. Similarly,	Formal launching of drinking water and sanitation policies including their availability into local languages to create awareness.  Translate national water policy into an action plan along with provincial water policy  Encourage the relevant stakeholders to revisit the business rules of Government of Sindh along with necessary legislation and institutional reforms to build leadership and synergies for integrated water resource management  Encourage the government to increase minimum 10% per annum,
<i>Institutional Arrangements</i>			51				
<i>Management Tools</i>			41				
<i>Financing</i>			40				
<b>Total</b>			<b>50</b>				



						<p>there is confusion between PHED and Local Government for drinking water and sanitation services</p> <p>The current financing for water and sanitation services is insufficient</p>	each year for water related interventions
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Indicators Areas	Possible Source Name and Last time Reported	Frequency (Monthly/ Annual)	Baseline Value	Data Collection Approach	Provincial / District	Key Challenges in Data Collection and Reporting	Suggestions for Improvement
<b>6.5.2 Percentage of trans boundary basin area with an operational arrangement for Water cooperation</b>							
Sindh Surface Water Share	Pakistan Water Accord 1991	Annual	48.76 MAF	Service providers WAPDA	National level compilation.	This will be collated at the national level as the provincial data appears disparate and inconsistent	The provincial level framework followed by an effective monitoring and reporting system is desirable for inter provincial transboundary arrangements
Current Baseline -2017	Pakistan Statistical Year Book 2017	Annual	48.44 MAF		Provincial data extracted but not reliable.	<p>Sindh province is downstream hence there are challenges of water contamination and equitable distribution of water resources to overcome the challenge of salinity and water logging as well</p>	Water Quality should be determined and reported as integral part of inter provincial transboundary distribution and reporting arrangements

Indicators Areas	Possible Source Name and Last time Reported	Frequency (Monthly/Annually)	Baseline Value	Data Collection Approach	Provincial / District	Key Challenges in Data Collection and Reporting	Suggestions for Improvement
<b>6.6.1 Percentage of change in water-related ecosystems over time</b>							
Spatial Land	PCRWR, PHED, Irrigation, reclamation, and Local Governments	10 years	NA	Not Known	Regional	No reliable data for wetland eco system coverage- though number of wetlands in Sindh are given. Spatial Land coverage to be determined	A comprehensive mapping of Spatial land especially addressing wet land, ground water, lakes, etc. in the province to determine its current coverage and access
Water Quality		3-4 years	19%	Sampled Survey	Regional	Water quality data for wetland and lake is not regularly collected as part of Eco System. The PCRWR should be encouraged to develop baseline including Indus baseline for a national and provincial estimate	A national and provincial surveillance for water quality having clear roles and responsibilities with time framework and coverage of spatial lands and other sources should be developed and implemented
Water Quantity		Yearly	<b>1,158 m<sup>3</sup></b>	WB and FAO	Regional	A comprehensive system is lacking. These estimates are being calculated of data being generated by WAPDA	A national study to determine the arrangements of water quality followed by agreed formulas and mechanisms to determine water quantity in each province

Indicators Areas	Possible Source Name and Last time Reported	Frequency- (Monthly/annually)	Baseline Value 2016-2017	Data Collection Approach	Provincial / District	Key Challenges in Data Collection and Reporting	Suggestions for Improvement
<b>6.a.1 Amount of water and sanitation related Official Development Assistance that is part of a government coordinated spending plan</b>							
Data for Government Spending	PRSP and ADPs	Annual	Rs 40 Billion for drinking water and sanitation	Secondary Documents of Government of Sindh	Provincial	Data for drinking water and sanitation is reported as one code so difficult to ascertain	Advocacy with Department of Finance to revise and separate the budget codes for water and sanitation services

Data for ODA	Planning and Development and Finance Departments	Annual	Rs 4 Billion	Secondary Documents of Government of Sindh	Provincial	<p>the investments on water and sanitation services separately</p> <p>The data for water and sanitation services covered outside Local Government and PHED is either under-reported or over-estimated like special initiatives under rural development and community initiatives</p> <p>Overall data of investment on water especially under irrigation, agriculture, and drainage is also erratic so difficult to track and determine the contribution</p> <p>The ODA for water and sanitation especially off-budget support by international partners is also under reported or not widely available</p>	<p>Introduce sub-codes under the departments to track the investment on sub sectors and areas. Encourage the use and access to financial accounting reporting to the local stakeholders</p> <p>Drinking Water and Sanitation Dashboard developed under PHED should be made accessible and be cascaded for all initiatives related to drinking water and sanitation services</p> <p>Introduce mechanism for off-budget support through provincial PMUs</p>
<b>Indicators Areas</b>	<b>Possible Source Name and Last time Reported</b>	<b>Frequency- (Monthly/annually)</b>	<b>Baseline Value 2016-2017</b>	<b>Data Collection Approach</b>	<b>Provincial / District</b>	<b>Key Challenges in Data Collection and Reporting</b>	<b>Suggestions for Improvement</b>
<b>6.b.1 Percentage of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management</b>							
Provincial Project Steering Committee for Saaf Suthro Sindh	Local Government Sindh	NA	Yes	Secondary Documents	Provincial	In addition to government, the CSO and private sector are represented in different provincial	The CSOs of the province should be encouraged to form their alliances for sharing the knowledge and learning

						steering committees including SDG 6 water and sanitation. However, an active participation and consultation from wider stakeholders is still required	The steering committees should be encouraged to meet on quarterly basis
District WASH Committees	Local Government Sindh and PHED	NA	All Districts	Secondary Documents	Regional	District WASH committees work under Deputy Commissioners but less effective because of absence of necessary legislative and administrative support from the political leadership	The district administration should be encouraged to convene regular meeting of district committees. The minutes of the meeting should be shared with provincial steering committee and respective departments
Farmer Associations	Sindh Irrigation and Development Authority	NA	1000	SIDA verbal data	Regional	Farmers Association works on distribution and judicious use of water but data about effectiveness of the group is not widely accessible	SIDA and Irrigation Department should develop a provincial dashboard with details of different groups including coverage and access







6 CLEAN WATER  
AND SANITATION

