BEST PRACTICES AND KEY LEARNING

Water Governance and Capacity Building Support WGCB Jacobabad

Best Practices and Key Learning

Submitted to:

Zulfikar A. Gorar
COR USAID

Submitted by:

Ghulam Mustafa Zaor
Chief of Party- CoP-
WG&CB Activity
Tel: +92.21. 34532804
Email: ghulam.mustafa@hands.org.pk

Contract Number:

No. 72039119C00001

This Report was made possible by the support of the American people through the United States Agency for International Development (USAID). The contents are the sole responsibility of HANDS and do not necessarily reflect the views of USAID or the U.S. government.

TABLE OF CONTENTS

1. Framework for Water Governance

1.1 Background

The world's water resources are increasingly under pressure with climate change only set to exacerbate the challenges ahead. It is now widely acknowledged that, at global to local scales, "the scarcity at the heart of the global water crisis is rooted in power, poverty and inequality, not in physical availability". In a dynamic and fast changing background—i.e., with continuous changes in political, legal, economic, social and technological aspects around water—it is important to ensure that efforts to improve water resources management and services over the best long term prospects. With the increasing relevance of the concepts of sustainable development and resilience, the approaches to how water resources and services are managed and governed have seen a significant shift over the years. The engineering- and technology-driven management approaches are currently being scrutinized, and more integrated approaches emphasizing good governance have emerged.

1.2 Governance

Governance is a prerequisite for improving water management. Governance can be defined as "the process of decision-making and the process by which decisions are implemented (or not implemented)". In Graham et al. governance is described as "the interactions among structures, processes and traditions that determine how power and responsibilities are exercised, how decisions are taken, and how citizens or other stakeholders have their say". The characteristics or the attributes of governance have also evolved from a state-centric and hierarchical problemsolving approach, to 'good' governance, promoting openness, efficiency, rule of law, justice, transparency, accountability, broad participation, decentralization and deliberation. The World

Bank report entitled 'Governance and Development', sets out the definition of good governance as the manner in which power is exercised in the management of a country's economic and social resources for development . There are other layers of governance attributes which have emerged recently, and these are described as the 'new governance' models, which are society-centric, multilevel, collaborative and market-based. In the resilience discourse, adaptive governance, and its attributes, appears as the most common approach towards building resilience capacity.

Resilience scholars define adaptive governance as the ability to evolve, adapt or transform in a situation of change, through a range of interaction and actions that occurs between divergent actors in a social-ecological system, in order to meet a desired state.

1.3 Water Governance

Water governance appeared in the scientific literature with the evolving nature of natural resources management approaches. Pahl-Wostl provides a clear distinction between the two, where water management is described as the activities to analyze and monitor resources along with measures developed and implemented to keep the resources within a desirable condition, and water governance as a social function that helps regulate development and management of the water resources and services along with providing guidance towards a desirable state and away from an undesirable state.

In the last two decades, the definition of water governance has been disputed by practitioners and researchers alike. Different schools of thought have adopted and interpreted governance from different perspectives, and international forums and platforms have understood and used this term with divergent interests, and sometimes with conflicting objectives. Water governance has been referred to both as a process and as an outcome, which gives rise to different usage of the term. Allan defines water governance systems as those that determine who gets what water, when and how and who has the right to water and related services and their benefits. His focus is on the outcome. Lautze et al., on the other hand, review various definitions of water governance and conclude that (i) governance is consistently viewed as the processes involved in decision-making; (ii) the processes of decision-making take place through institutions (including mechanisms, systems and traditions); and (iii) the processes and institutions of decision-making involves multiple actors. In doing so, they relate governance to the processes and institutions involved in decision-making, and not to the outcomes of that decision-making.

1.4 Core Governance Areas Applied to Water Areas

Based on literature review, we summarize the core governance actions in following framework which is water supply and sanitation focused as under;

Core Governance Areas	Application to Water and Sanitation
Policy and Strategy	Water and sanitation services related policies, legislations and strategies. Recognition of the human rights to water and sanitation
Coordination	Effective coordination among all actors involved in service delivery—national and local government, donors, service providers, users and other stakeholders
Planning and preparedness	Developing water and sanitation infrastructure, increasing the level of service and sustaining it over time. Increasing preparedness and contingency planning for more resilient services. Strategic and annual planning. Hazard and vulnerability assessments for services
Financing	Sustainable financing of the entire lifecycle of water and sanitation services. Operating and maintenance costs; institutional support costs; rehabilitation and expansion costs. Tariff setting and revenue collection; water-related taxes; willingness to pay; pro-poor financing strategies; subsidies. Reduction of non-revenue water. Private sector engagement in financing of services.
Management Arrangements	Asset ownership and management of infrastructure; service provision modalities (e.g., public utility, local government, private operator, community-based model, self-supply, etc.). Infrastructure development arrangements, including expansion and rehabilitation Operation and maintenance arrangements. Strategies, arrangements and guidelines for water treatment and re-use. Mechanisms in place for the provision of alternative water supply (e.g., water trucking) and contingency planning in case of failing systems due to extreme events.
Monitoring, Evaluation and Learning	Systematic, routine monitoring of services and service delivery, including equity in access, service levels (in terms of quantity, quality, reliability), and functionality. Resource centers; knowledgesharing and peer learning mechanisms.

Regulation	Regulation of both the service provider and the service itself, including explanations of competency, economic regulation and tariff, service quality, consumer protection, public health and
	environment. Mechanisms for enforcement at different levels
Capacity Development	Capacity development strategies and centers for continuous training for staff, service providers, regulators, CSOs and users; Capacity development for both individuals and organizations. In decentralized contexts, it might require continuous technical support for the local actors who have assumed new institutional roles.

1.5 Governance Attributes

Water governance attributes describe how the governance functions are performed. Published literature identifies following key attributes;

Multilevel governance implies that there are decision-making centers or governing authorities at different levels (vertical) or layers (horizontal i.e., arrangements that may not necessarily stand in hierarchical order but have a certain level of independence and interdependence between institutions within the same level of governance). Within this, nested and polycentric governance are common descriptors used in academic literature. In this case the Jacobabad Municipality has nested multilevel governance, where the Municipality is fairly independent but borrows its legitimacy from the Local Government Department.

Participation implies the meaningful and active involvement of a broad spectrum of stakeholders, including vulnerable or marginalized groups in decision making processes.

Deliberation features mechanisms that facilitate open communication and discussion through mediums of debate, dissent, mediation and negotiation to create a common ground of collective action.

Inclusiveness is recognizing the rights of individuals and groups across different categories, needs and vulnerabilities, and without any kind of discrimination based on race, color, age, gender,

religious affiliation, ethnicity, language, disability, economic backgrounds or any other conditions of origin.

Accountability and transparency

Refers to the principle whereby elected officials and those that have a responsibility in water services or water resources management account for their actions and answer to those they serve. It also implies openness and public access to information so that citizens can understand the decision-making processes that affect them, and are knowledgeable about the standards to expect from public officials".

Evidence-based decision-making around water seeks to identify and leverage reliable technical and scientific, empirical and contextual evidence for decision-making.

Efficiency in process management means that processes and institutions produce results that meet the needs of society while making the best use of resources at their disposal. This includes workflows, specific activities, and steps that must be taken with the objective of providing a clear idea of how the processes serve to transform the inputs to an effective and sustainable output.

Impartiality and Rule of law refers to having legal frameworks and mechanisms that are designed and enforced impartially, in a fair and non-discriminatory manner, reflective of the human rights-based approach.

A last attribute is adaptiveness to all kind of challenges.

2. Methodology

By interviewing and engaging the internal project employees and external stakeholders, we triangulated information available on the project. We used the framework stated above and put information as per the Governance attributes for Water Governance and attempted to define the

practices and approaches, adopted by the Project. By doing this, we have created compilation of the best practices adapted by the project. These best practices can be critically reviewed, discussed and be replicated elsewhere.

3. Approaches and actions which can be termed best practices

3.1 Policy and Strategy

Developing a policy and strategy in the WATSAN sector is globally recognized to have challenges. In majority of the cases, (a) scattered decision making within different ministries (b) non recognition of water supply as a human right and (c) dysfunctional water utilities are the reasons. Successful policy and reform implementation requires political will and facilitation, but technical, economic, environmental and social considerations are also important. The impediments to implementation are complex, and effective solutions are demanding and highly interrelated. In the case of Jacobabad Water Supply Scheme, the Water Governance Project has adopted a two pronged approach; at one end the project has engaged a varied group of members of Sindh Parliament and on the other hand project has adroitly worked on creating demand for the WASH services. The engagement with the Sindh Parliamentarians has culminated into formation of a loosely knot WASH Caucus in the Assembly. The Caucus provides an avenue to interact and generate a debate on the water, sanitation and health issues in the Assembly. The action of forming a caucus is an established practice in the Parliament around the world. This practice needs to perpetuate and connected up with the services demand, created within the recipient population.

3.2 Coordination

This function comprises the processes, mechanisms, instruments and platforms that promote and ensure multilevel, multi sectorial, and multi-stakeholder cooperation among all actors—relevant ministries and departments of central, regional and local governments, civil society, academia, external support agencies and the private sector. It entails information sharing, dialogue and collaborative decision-making, linked to policy making and planning. When Project activities are matched against the framework of best practices, the Water Governance Project has successfully attained all coordination functions. Over past 14 months, the Project has engaged all relevant stakeholders from the end beneficiary to the highest policy maker. A terse and effective coordination mechanism has been established between community and decision makers. This mechanism has

multiple layers. By establishing Muhalla WASH Committees, a coordination structure was created for the life of project, which would create a sustained demand for the quality water related services. A next level the complaint cell was established at the Jacobabad Municipality. The complaint cell is a place where any citizen of Jacobabad can come and lodge a complaint related to water supply services. These complaints are resolved in time, up till now the complaint resolution rate is 25%, this is low; but what project is attempting to do can be equated with, creating ripples in a still pond. The innermost wave of ripple always takes some time to reach to the brink of the pond. This practice is unique among the local government institutions of the Province of Sindh, not even the largest Municipal Corporation can claim to have. With a continuous process of raising grievance, the system starts adapting and responding.The Project has successfully provided coordination platforms for all important actors to interact and share experiences. One such example is holding of quarterly coordination meeting. In addition to these actions, the Project has successfully coordinated with USAID and its partner in the construction of the Water System, the Municipal Services Delivery Program. The coordination has been mainly in the shape of in person meetings, written feedbacks and sharing of the information. We can easily conclude that the Project has done coordination par excellence, with all the tiers in Government and with all the relevant stakeholders.

3.4 Planning and Preparedness

Planning is the process of data collection and analysis, formulation of actionable plans and estimation of costs. Planning typically produces time-bound roadmaps with estimations of human and financial resources. Plans not only focus on expanding or increasing the level of service or securing water of adequate quality for different purposes, but also on sustaining service levels while developing water resources sustainably, by ensuring continued investment in asset maintenance and adequate management regimes. Preparedness refers to the arrangements, capacities and knowledge developed by governments, response organizations, external agencies, communities and individuals to anticipate and plan, to be able to mitigate and respond effectively to the impact of potential or current shocks and stresses, including those related to climate change. The water supply and distribution network, laid within the city limits of the Jacobabad, remains exposed and vulnerable to the damages caused by other public sector utilities. Over past 14 months of the Project implementation, damage to the infrastructure has been done multiple times. The Project teams have

proved to become more resilient to the damages and interruption of the water supply. Now the community workers are not only vigilant and on the look for any such damage, but more importantly, these workers have inculcated a sense of unique ownership within the populace. Now the city dwellers, citizens, have to be satisfied that the water supply line will not be damaged as a result of any other civic activity.

3.5 Monitoring Evaluation and Learning

This function refers to ongoing, systematic processes of collecting, analyzing, evaluating, and using data to track performance and inform planning and decision-making. Evaluation is an exercise to systematically and objectively assess progress and achievement of an outcome, which may include assessment of an activity, project, program, strategy, policy, topic, theme, sector, operational area or institution's performance. Evaluation helps in determining the relevance, impact, effectiveness, efficiency and sustainability of the intervention. Learning includes formal and informal processes, whereby stakeholders exchange good practices and information and use the newly acquired knowledge in managerial decisions to adapt and improve policies and programs. Information based decision making is hall mark of a learning organization.

In order to transform the Jacobabad Municipality from a "business as usual" water utility, into a well performing and learning organization, Water Governance Project team has maintained a heavy focus on the data collection, compilation and its use for the decision making in the Municipal Water Supply. The data collection has been done for the;

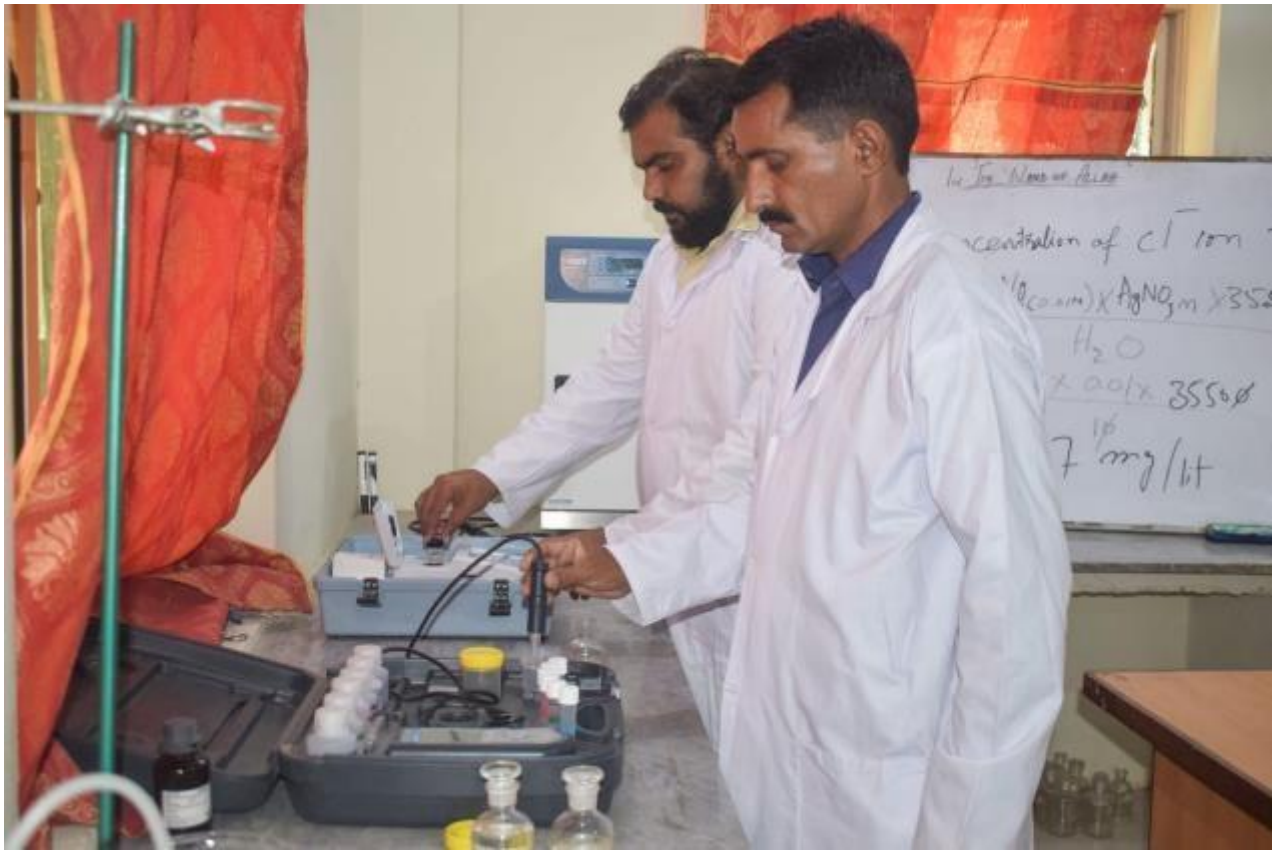
(a) water supply in million Gallons - **annex 1**,
(b) status of water supplied in the distribution network - **annex 2**,
(c) a comprehensive and detailed record of the physic-chemical status of the water being supplied for the human consumption – **annex 3** and most importantly
(d) keeping a detailed log of the electricity supplied for pumping water in the supply system - **annex 4**.

3.5 Lessons from Field - 1

The good example for data based strategic decision making, is the compilation of electric supply log. The Project team, painstakingly maintained record of, the hours and minutes, the electricity is supplied for the water supply system. By doing this team was able to generate powerful and convincing evidence. This evidence when put forth, in front of the decision makers, resulted in an instant change of the strategy. Based on the data and evidence, subsequent raids were made by the law and order personnel to cut off the illegal electricity connections. These raids were made a number of times. Thus the evidence was used as a tool for accountability of the Sukkur Power Supply Company (SEPCO), it kick started a series of actions, which not only made the electric supply stable for the water supply system but also eliminated the illegal connections.

3.6 Lessons from Field – 2

Unlike any other municipal institution in the Province of Sindh, the Jacobabad Municipal Committee is regularly conducting the physical and chemical assessments of the water, at different segments of the water supply system. These tests are being done at the source of the water, the reservoirs, the water filtration plant and the over head reservoirs. The Project team has been able to conduct these tests at the consumer level. This practice is unique to Jacobabad and has only been possible through the continuous Project support. The practice has identified many critical areas within city, where Coliform bacteria were located. Based on this finding a cause of contamination was located and rectified. This level of precision testing, using the physic-chemical test to pin-point contamination is not practiced in other municipal institutes of the Province. This activity is completely sustainable, because the Municipality resources are used; financial as well human.



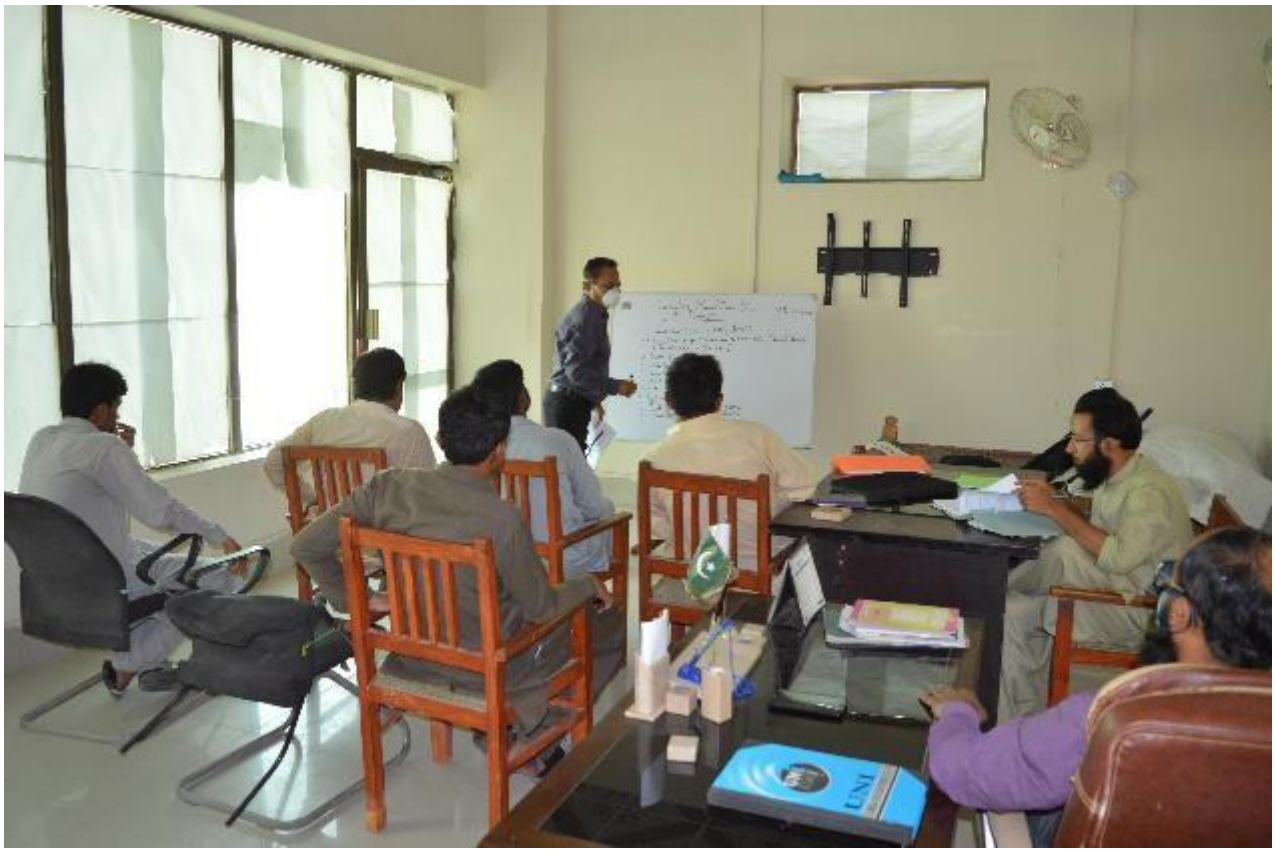
3.7 Capacity Development

This function refers to the processes by which organizations, society and individuals systematically stimulate, develop, strengthen and maintain their capabilities over time to set and develop their goals and objectives to be able to manage water services and resources sustainably. This could be through knowledge development, awareness building, training and skills development, and improving systems and processes.

Water Quality Testing:

The Sindh Water Commission, mandated by the Supreme Court of Pakistan, declared 80% of the water samples in the Province of Sindh to be unfit for the drinking purposes. The commission made a binding recommendation to the municipal institutions for a regular testing and analysis of the quality of water being supplied to the citizens. Accurate and precise water quality findings require competent analyst who is furnished with necessary analytical facilities.

Unqualified individuals need to consult qualified analyst for the same analytical assistance. Researchers with limited analytical skills only require working concurrently with the qualified analyst; when this is not practical, subcontracted water samples should be accompanied by relevant commercial certified matrices of known concentration for tracing result validity.

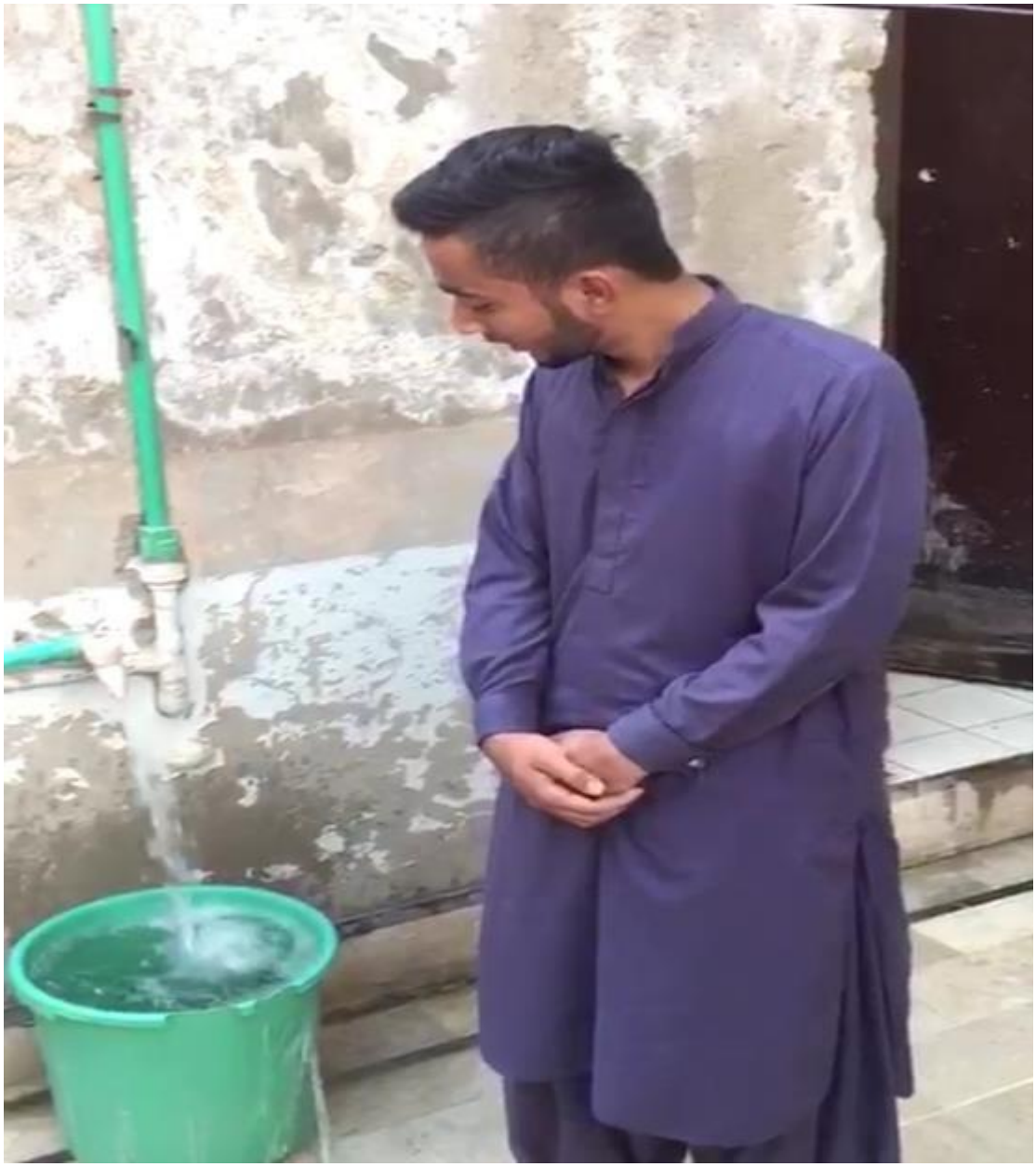


Water quality managers can omit the burden of extensive water quality parameters to be analyzed; this is possible when EC values are preliminarily assessed. Hence, time and financial resources can be served; focus on other parameters of concern (e.g trace elements) can be preferred. National water quality database can simply be constructed in developing countries; characteristics of respective water storages such as aquifers can be identified, and the need for new testing on the same region can be minimized. The Project team has made a drastic improvement and lasting impact on the capacity of the Municipality staff. This impact is glaringly visible in the capacity of the municipal staff to conduct the chemical tests in the laboratory. Adopting sage like zeal, the Chief Chemist of the Project trained the municipal employees diligently. As a result, Municipal Committee Jacobabad is probably the only Municipal Institution in the Province

which budgets the availability of the chemical parameters and does the chemical analysis of the water on regular basis. This is a feat for a medium sized Municipality in the remote Northern region of Sindh. The Water Governance Project and its approach proved to be a catalyst and enabled the Jacobabad Municipality to conduct regular analysis of the water quality and take corrective measures, where these are possible.

Water supply to the citizens of the Jacobabad

The Municipality in Jacobabad was endowed with a water supply scheme in 2007, but it could not be used and utilized for the citizens. The reasons were myriad; however chief among many was the technical expertise and capacity to run a big water supply system.



Being cognizant of the fact, the Water Governance Project adopted a three pronged approach of (a) doing a baseline assessment of the municipal staff, (b) designing a training specific for the staff of the Municipality and creating an opportunity of "learning by doing". The learning by doing opportunity occurs, when the water is being supplied to the city, the municipal staff assigned works closely with the field engineers of the Water Governance Project. The work entails, observing, being mentored in the mechanics of the water supply, e.g. maintaining the pressure gauges, surveillance for a leakage and making water reach up to the last mile. These actions are easier said than done,

because each of it requires presence in field, a complete and thorough knowledge of how the water runs flows and behaves in the pipes and above all an inquisitive mind to ask questions on the impediments.

In the last 6 months, the field engineers of the Water Governance and Capacity Building Project have transmitted these concepts slowly and gradually to the staff. The municipal hydrology concept-transference has always been coupled with the actual performance in field. The model has worked well and now the mid level managerial staff of the Municipality works with confidence and operates the system, albeit chaperoned by the Project team, with more confidence.

The Project team enabled the Jacobabad Municipality staff, to operate a big water supply system, has contributed enormously to the sustainability of the system. This is one of the best practices of the Project and in the longer run the approach can be more refined and adopted at formal capacity building institutes in the water sector.

4. Conclusion

The Water Governance Project was commissioned by the United States Agency for International Development, to implement a radical set of reforms in the Jacobabad Municipality. These reforms are catalyst to pull an institution, out from its state of apathy to public service, into an arena of responsive service delivery to the citizens.

Governance as described above is a complex concept; it has non-linear ramifications into multiple folds of individual, institutional and collective life. For instance, the UN “good governance” principles identify some of the governance qualities that establish a baseline for good governance. They include promoting legitimacy and voice through participation, consensus, and informed decisions; the performance of institutions and processes through responsiveness, effectiveness, and efficiency; promoting accountability and transparency; ensuring fairness by implementing equity, rule of law, and conflict management. These principles are reiterated through the Human Rights Based Approach (HRBA) to water governance, derived from the 1948 Universal Declaration of

Human Rights which includes the principles of universality and inalienability; indivisibility; interdependence and inter-relatedness; equality and non-discrimination; participation and inclusion; and accountability and rule of law. These principles are part of the content of all human rights, including the human rights to water and sanitation. The Project team is using most of the actions identified in the theoretical framework to make Jacobabad Municipality a test case for the other such institutes of the country and the Province.

We see the ability of the Municipality to conduct water quality testing as the biggest achievement of the project, which should be widely publicized. To the best of our knowledge not other local council is doing the regular testing and analysis.

After the water testing, we see the adaptive and cyclic approach to the improvement in water supply which is responsive to the community grievances and demands, as a best practice. What project's field engineers are doing as part of their duty is actually the classic text book approach for making a water supply work in a municipal council.

Based on project activities we will now summarize the lessons learned and recommendations as follows;

5. Lessons Learned / key learning

Political Ownership:

Water supply and sanitation services possess a number of characteristics that make the process of reform inherently political. Water has many social dimensions and is often regarded as a public good. At Jacobabad, the city cumulatively pays 60 million PKR per month to the informal water vendors, while the cost of supplying the water through the USAID built system in 25 million per month. As such, in the rural Municipal Councils of Sindh, where financing is scarce or unpredictable, the safest political course is to hold tariffs down to keep customer expectations low. For these reasons, local politicians, faced with financial constraints of short -term political objectives, tend to starve water utilities of funds to the extent they can, without being held

accountable. They appease community with promises of holding down tariffs and effectively block the road to reform. Political commitment to reforms is therefore important ingredient needed to initiate and sustain the proces.

Private Sector VS Public Sector:

Private sector participation has been viewed as the logical alternative for turning performance around in the water and sanitation sector. Due to the nature of the sector the water provision cannot be fully privatized. One such example is the North Sindh Urban Services Corporation. After a series of disappointments experienced over the last decade with purely private models, there is now the fear that the pendulum may be swinging the other way, and the public sector is again being looked to, to provide the quick-fix solution to the problems of water and sanitation. The reality is that there are no quick-fix solutions, and the sooner the focus is shifted toward fundamental reforms in the sector, the sooner real improvements will be achieved for either public or private models. The market is weak and fragmented in Jacobabad and working with Municipal Committee is the lowest hanging fruit in this case.

Legal and official impediments for the Municipality:

The Sindh Local Government ACT 2013 gives substantial financial and other authorities to the Municipal Councils. However there is substantial infringement on this authority by the Provincial authorities. A long term dialogue may be initiated with the Government to remove the bottlenecks and allow the Municipality to take its own financial and administrative decisions.

Consumers should be involved in the decision-making:

Customers / citizens of Jacobabad can play an effective role in supporting Municipal Committee Jacobabad. In our conversations with the citizens of Jacobabad, we found an extreme level of mistrust on the Municipal Committee. Various citizen fora are very active in Jacobabad like
Citizen Forum, Shehri Ittehad. The public energy of these fora should be utilized for the public benefit. Citizens need to be organized and to create a power base that forces the rebalancing of powers and accountabilities toward their interests. For this reason, customer orientation is an

important indicator of a utility's organizational maturity because it links financial sustainability with the notion that the utility is actually serving a customer base.

5. Recommendations

Based on the project activities and lessons learned during the implementation of the project, the biggest recommendation is to disseminate the information to the consumers about the working of a water utility and the constitutional mandate of the different organizations. We think that once the citizens are empowered by the knowledge and information, they find solutions to their problems. This is the most sustainable way to work with a local council.

We also recommend that, in order to assess the impact of withdrawal of the project, a sudden pulling out of the activities may be tested temporarily. This will be helpful in gauging the status of the institutionalization of the actions undertaken by the Project till date.

Annex-1: Water supply in million Gallons

QUANTITY OF WATER SUPPLIED THROUGH OHR-1 (FORCE GROUND) TO ZONE-1.					
Date	**Water Supplied to Zone #**	**Water Supplied duration**	**Qty of water supplied**	**Month**	**Total Water Supplied**
		Hours	Imperial Gallons		Imperial Gallons
05/01/20	1	1.42	229500	January, 2020	945000
20/01/20	1	2.00	324000		
28/01/20	1	2.42	391500		
02/02/20	1	2.58	418500	February, 2020	3294000
07/02/20	1	2.58	418500		
11/02/20	1	2.42	391500		
14/02/20	1	2.5	405000		
19/02/20	1	3	486000		
21/02/20	1	2.5	405000		
24/02/20	1	2.5	405000		
26/02/20	1	2.25	364500		

01/03/20	1	2.5	405000	March, 2020	3780000
14/03/20	1	1.25	202500		
17/03/20	1	3.00	486000		
20/03/20	1	4.00	648000		
22/03/20	1	3.00	486000		
25/03/20	1	2.00	324000		
28/03/20	1	3.50	567000		
31/03/20	1	4.08	661500		
04/04/20	1	2.50	405000	April, 2020	3658500
07/04/20	1	4.42	715500		
10/04/20	1	4.67	756000		
14/04/20	1	3.58	580500		
21/04/20	1	3.42	553500		
25/04/20	1	4.00	648000		
18/05/20	1	4.00	648000	May, 2020	1134000
31/05/20	1	3.00	486000		
04/06/20	1	4.50	729000	June, 2020	10962000
07/06/20	1	5.00	810000		
10/06/20	1	5.00	810000		
12/06/20	1	5.00	810000		
14/06/20	1	5.00	810000		
16/06/20	1	5.00	810000		

18/06/20	1	6.00	972000		
20/06/20	1	6.00	972000		
22/06/20	1	5.50	891000		
24/06/20	1	5.50	891000		
26/06/20	1	5.00	810000		
28/06/20	1	4.67	756000		
30/06/20	1	5.5	891000		
02/07/20	1	5.50	891000	July, 2020	4698000
04/07/20	1	5.50	891000		
06/07/20	1	2.75	445500		
07/07/20	1	5.50	891000		
08/07/20	1	4.50	729000		
10/07/20	1	5.25	850500		
12/07/20	1	4.50	729000		
15/07/20	1	2.00	324000		
16/07/20	1	3.50	567000		

QUANTITY OF WATER SUPPLIED THROUGH OHR-2 (BUS STAND) TO ZONE-2.					
Date	**Water Supplied to Zone #**	**Water Supplied duration**	**Qty of water supplied**	**Month**	**Total Water Supplied**
		Hours	Imperial Gallons		Imperial Gallons
15/01/20	2	1.33	216000	January, 2020	607500
20/01/20	2	1.00	162000		
29/01/20	2	1.42	229500		
07/02/20	2	1.75	283500	February, 2020	2295000
11/02/20	2	2.25	364500		
12/02/20	2	1.67	270000		
14/02/20	2	1.50	243000		
18/02/20	2	1.50	243000		
21/02/20	2	1.83	297000		
24/02/20	2	2.08	337500		
26/02/20	2	1.58	256500		
02/03/20	2	1.50	243000	March, 2020	2200500
04/03/20	2	1.67	270000		
14/03/20	2	1.50	243000		
17/03/20	2	2.00	324000		
21/03/20	2	1.58	256500		
23/03/20	2	1.58	256500		
25/03/20	2	0.75	121500		
28/03/20	2	1.50	243000		
31/03/20	2	1.50	243000		
04/04/20	2	2.00	324000	April, 2020	1795500
07/04/20	2	1.50	243000		
10/04/20	2	1.50	243000		
14/04/20	2	1.67	270000		
20/04/20	2	1.75	283500		
25/04/20	2	1.17	189000		
28/04/20	2	1.5	243000		
17/05/20	2	2	324000	May, 2020	324000
01/06/20	2	2	324000	June, 2020	5468040
05/06/20	2	2	324000		
08/06/20	2	2	324000		

10/06/20	2	2	324000		
12/06/20	2	2	324000		
14/06/20	2	2	324000		
16/06/20	2	2.25	364500		
18/06/20	2	2.25	364500		
19/06/20	2	1.67	270540		
20/06/20	2	2	324000		
22/06/20	2	3	486000		
24/06/20	2	2.83	459000		
26/06/20	2	3	486000		
28/06/20	2	1.75	283500		
30/06/20	2	3	486000		
02/07/20	2	3	486000	July, 2020	3267000
04/07/20	2	3	486000		
06/07/20	2	1.75	283500		
08/07/20	2	3	486000		
10/07/20	2	2.75	445500		
12/07/20	2	2.5	405000		
15/07/20	2	1.92	310500		
16/07/20	2	2.25	364500		

QUANTITY OF WATER SUPPLIED THROUGH OHR-3 (TMA) TO ZONE-3.

Date	**Water Supplied to Zone #**	**Water Supplied duration**	**Qty of water supplied**	**Month**	**Total Water Supplied**
		Hours	Imperial Gallons		Imperial Gallons
03/01/20	3	1.783333333	288900	January, 2020	1584900
15/01/20	3	1.916666667	310500		
19/01/20	3	1.666666667	270000		
22/01/20	3	1.5	243000		
28/01/20	3	1.416666667	229500		
30/01/20	3	1.5	243000		
06/02/20	3	2	324000	February, 2020	2862000
08/02/20	3	1.166666667	189000		
09/02/20	3	1.666666667	270000		
10/02/20	3	1.666666667	270000		
13/02/20	3	1.833333333	297000		

17/02/20	3	2.75	445500		
19/02/20	3	1.666666667	270000		
23/02/20	3	1.75	283500		
25/02/20	3	1.666666667	270000		
29/02/20	3	1.5	243000		
01/03/20	3	1.5	243000	March, 2020	4468500
03/03/20	3	1.25	202500		
04/03/20	3	1.333333333	216000		
12/03/20	3	2	324000		
13/03/20	3	2	324000		
16/03/20	3	3.5	567000		
18/03/20	3	3.666666667	594000		
20/03/20	3	2.25	364500		
23/03/20	3	1.5	243000		
26/03/20	3	1.5	243000		
28/03/20	3	3.333333333	540000		
29/03/20	3	1.333333333	216000		
31/03/20	3	2.416666667	391500		
03/04/20	3	1.5	243000	April, 2020	3469500
04/04/20	3	2.166666667	351000		
05/04/20	3	2	324000		
06/04/20	3	1.5	243000		
07/04/20	3	1.5	243000		
09/04/20	3	1.416666667	229500		
13/04/20	3	2.5	405000		
17/04/20	3	1.5	243000		
19/04/20	3	2	324000		
24/04/20	3	2.833333333	459000		
27/04/20	3	1.5	243000		
30/04/20	3	1	162000		
16/05/20	3	1.58	256500	May, 2020	999000
17/05/20	3	0.83	135000		
29/05/20	3	3.75	607500		
02/06/20	3	4.00	648000	June, 2020	9895500
04/06/20	3	4.00	648000		
06/06/20	3	2.00	324000		

07/06/20	3	2.00	324000		
09/06/20	3	5.00	810000		
11/06/20	3	4.00	648000		
13/06/20	3	4.50	729000		
15/06/20	3	4.50	729000		
17/06/20	3	4.00	648000		
19/06/20	3	4.00	648000		
21/06/20	3	5.00	810000		
23/06/20	3	4.00	648000		
25/06/20	3	4.00	648000		
27/06/20	3	5.08	823500		
29/06/20	3	5.00	810000		
01/07/20	3	4.00	648000		
03/07/20	3	4.00	648000		
05/07/20	3	4.00	648000		
07/07/20	3	4.25	688500		
09/07/20	3	4.50	729000	July, 2020	5130000
11/07/20	3	5.00	810000		
14/07/20	3	0.75	121500		
15/07/20	3	3.67	594000		
17/07/20	3	1.5	243000		

QUANTITY OF WATER SUPPLIED THROUGH OHR-4 (MOUCHI BASTI) TO ZONE-4.

Date	**Water Supplied to Zone #**	**Water Supplied duration**	**Qty of water supplied**	**Month**	**Total Water Supplied**
		Hours	Imperial Gallons		Imperial Gallons
12/02/20	4	1.42	229500	February, 2020	1131300
17/02/20	4	1.15	186300		
22/02/20	4	1.67	270000		
24/02/20	4	1.00	162000		
26/02/20	4	1.75	283500		
02/03/20	4	1.75	283500	March, 2020	1323000
13/03/20	4	1.50	243000		
17/03/20	4	1.50	243000		
24/03/20	4	1.67	270000		

29/03/20	4	1.75	283500		
02/04/20	4	1.50	243000	April, 2020	1012500
06/04/20	4	1.42	229500		
15/04/20	4	1.58	256500		
22/04/20	4	1.75	283500		
04/05/20	4	2	324000	May, 2020	526500
29/05/20	4	1.25	202500		
03/06/20	4	2	324000	June, 2020	3470040
06/06/20	4	2	324000		
08/06/20	4	2	324000		
15/06/20	4	2	324000		
17/06/20	4	2	324000		
19/06/20	4	1.42	230040		
21/06/20	4	2	324000		
23/06/20	4	2	324000		
25/06/20	4	2	324000		
27/06/20	4	2	324000		
29/06/20	4	2	324000		
01/07/20	4	2	324000	July, 2020	1674000
03/07/20	4	2	324000		
06/07/20	4	2.83	459000		
11/07/20	4	2	324000		
15/07/20	4	1.5	243000		

QUANTITY OF WATER SUPPLIED THROUGH OHR-5 (NUMAISH) TO ZONE-5.

Date	**Water Supplied to Zone #**	**Water Supplied duration**	**Qty of water supplied**	**Month**	**Total Water Supplied**
		Hours	Imperial Gallons		Imperial Gallons
03/03/20	5	1.157407407	187500	March, 2020	187500
10/06/20	5	3	486000	June, 2020	2046500
14/06/20	5	4	648000		
15/06/20	5	1.25	202500		
19/06/20	5	4	200000		
26/06/20	5	1.23	200000		
27/06/20	5	2	200000		
29/06/20	5	2	110000		
01/07/20	5	2	50000	July, 2020	500000

02/07/20	5	1.20	195000		
03/07/20	5	2	50000		
05/07/20	5	2	50000		
07/07/20	5	2	75000		
09/07/20	5	2.25	75000		
11/07/20	5	2.5			
16/07/20	5	1.23	200000		

QUANTITY OF WATER SUPPLIED THROUGH OHR-6 (CIRCUIT HOUSE) TO ZONE-6.					
Date	**Water Supplied to Zone #**	**Water Supplied duration**	**Qty of water supplied**	**Month**	**Total Water Supplied**
		Hours	Imperial Gallons		Imperial Gallons
08/01/20	6	0.75	121500	January, 2020	195750
14/01/20	6	0.46	74250		
06/06/20	6	2.75	445500	June, 2020	1197720
14/06/20	6	0.81	131220		
24/06/20	6	1.83	297000		
28/06/20	6	2.00	324000		
01/07/20	6	2.83	459000	July, 2020	1954500
04/07/20	6	3.00	486000		
05/07/20	6	0.81	132000		
06/07/20	6	1.5	49500		
07/07/20	6	2.00	66000		
08/07/20	6	2.33	82500		
09/07/20	6	1.50	49500		
10/07/20	6	1.50	49500		
11/07/20	6	1.50	243000		
16/07/20	6	2.08	337500		

Annex-2 Status of water supplied in the distribution network

WEEKLY PUMPING REPORT SUMMARY (Quantity of Water Pumped in MG)												
Jan - Mar 2020												
Week	**Jan (Wk -1)**	**Jan (Wk -2)**	**Jan (Wk -3)**	**Jan (Wk -4)**	**Feb (Wk -1)**	**Feb (Wk -2)**	**Feb (Wk -3)**	**Feb (Wk -4)**	**Mar (Wk -1)**	**Mar (Wk-2)**	**Mar (Wk-3)**	**Mar (Wk-4)**

Low lift Pumping	4.75	2.66	0.57	1.9	6.65	6.65	5.7	3.8	3.8	4.725	4.725	3.024
High Lift Pumping	2.48	2.29	4.63	3.16	4.24	3.71	3.62	1.99	2.67	3.06	3.879	4.4676
Water Filtration Plant Pumping	2.79	1.62	3.82	2.84	3.56	3	2.61	2.5	2.13	2.2815	3.1887	5.31
Supply to Zones	2	2	3	2	2.5	1	1	2	1	2	3	4

Annex-3 A comprehensive and detailed record of the physic-chemical status of the water being supplied for the human consumption

April

Source chemical report of April 30/3 to 4/4					Source 20/4		
	Khirthar	L-1	L-3		Khirthar	L-1	L-3
pH	7.82	7.97	7.95		8.14	8.09	8.28
E.C.	462	462	569		838	657	789
TDS	296	296	364		536	420	505
Turbidity	40.9	31.2	4.87		84.7	171	9.94

Clarifier report of month April 2020

	1	2	3	4	6	7	8	9	10	11	13	14	15	16	17	18	20	21	22	23	24	25	27	28	29	30
pH	8.4	8.5	8.49	8.43	8.26	8.27	8.24	8.18	7.91	8.1	8.56	8.45	8.65	8.49	8.44	8.49	8.36	8.52	8.41	8.63	8.22	8.29	8.58	8.16	8.6	8.24
E.C.	515	521	537	533	527	564	555	551	538	497	533	609	627	672	558	552	602	580	577	570	560	574	615	587	598	605
TDS	330	349	359	357	337	361	352	360	344	318	341	389	342	430	357	369	385	371	386	381	376	369	394	376	382	387
Turbidity	4.2	5.3	5.45	5.00	6.86	3.96	3.09	3.00	3.40	4.95	4.59	4.3	4.57	9.15	5.41	4.95	4.43	5.75	5.00	4.27	5.00	5.49	3.83	4.29	4.03	3.34

Treated Water report of month April 2020

	1	2	3	4	6	7	8	9	10	11	13	14	15	16	17	18	20	21	22	23	24	25	27	28	29	30
pH	8.4	8.3	8.4	8.31	8.26	8.33	8.3	8.18	7.82	7.99	8.34	8.36	8.39	8.38	8.3	8.39	8.36	8.52	8.41	8.63	8.2	8.32	8.18	8.17	8.18	7.97
E.C.	514	516	521	518	527	532	528	551	540	549	536	552	560	559	562	549	602	580	577	570	540	587	620	596	599	598
TDS	429	345	349	347	337	340	335	360	346	351	343	353	375	358	359	364	385	371	386	381	362	376	397	382	383	383
Turbidity	2.6	2.9	3.07	2.95	1.82	1.79	1.4	3	1.32	1.89	2.75	2.17	2.33	1.93	1.88	1.72	4.43	5.75	5.00	4.27	2.0	2.16	2.84	1.95	1.95	1.5

Storage Tank report of month April 2020

	1	2	3	4	6	7	8	9	10	11	13	14	15	16	17	18	20	21	22	23	24	25	27	28	29	30
pH	8.3	8.2	8.3	8.3	8.18	8.23	8.21	8.17	7.68	8.01	8.16	8.19	8.22	8.24	8.06	8.11	8.08	8.32	8.27	8.22	8.12	8.23	8.11	8.13	8.13	7.81
E.C.	514	571	515	509	522	529	520	517	540	531	532	543	549	559	558	546	580	587	573	541	530	584	597	598	598	602
TDS	329	342	345	341	334	339	328	346	346	338	341	347	367	358	357	359	371	376	387	362	355	373	382	383	383	385
Turbidity	3.2	2.47	3.4	2	2.44	2.23	2.98	2.77	1.46	2.49	4.15	2.98	3.00	2.45	2.32	2.14	2.85	2.87	2.43	2.21	2.45	3.29	2.21	2.75	2.75	2.9

End Users sample analysis															
	13/4 to 18/4						20/4 to 25/4					27/4 to 2/5			
	EU-1	EU-2	EU-3	EU-4	EU-5		EU-1	EU-2	EU-3	EU-4		EU-1	EU-2	EU-3	EU-4
pH	7.39	7.76	7.56	7.74	7.39		7.75	7.73	7.81	7.7		6.95	6.73	7.42	6.66
E.C.	594	721	635	545	2920		674	577	566	604		609	318	648	694
TDS	380	462	407	349	1867		431	369	362	387		390	204	415	444
Turbidity	2.62	14.3	3.08	3.1	35.9		5.23	3.45	2.8	16		3.47	6.8	3.1	2.37

May 2020

Source 16/5			
	Khirthar	L-1	L-3
pH	8.14	8.09	8.28
E.C.	838	657	789
TDS	536	420	505
Turbidity	84.7	171	9.94

Clarifier report of month May 2020

	1	2	4	5	6	7	8	9	11	12	13	14	15	16	17	18	19	20	21	22	23	25	26	27	28	29	30	31
pH	8.4	8.6	8.6	8.45	8.31	8.57	8.63	8.57						8.14	8.18	8.3	8.34	8.45	8.42	8.53	8.45				8.76	8.02	8.01	
E.C.	584	590	597	607	629	618	599	595						637	689	742	775	776	762	746	775				750	608	608	
TDS	374	395	382	402	402	396	383	381						407	441	475	496	476	488	477	495				480	389	389	
Turbidity	3.4	5.91	3.54	5.01	5.0	4.25	4.1	4.25						12.9	17.2	30.5	22.5	20.9	40.8	23.3	20.5				5.32	16.6	16.6	

Treated Water report of month May 2020

	1	2	4	5	6	7	8	9	11	12	13	14	15	16	17	18	19	20	21	22	23	25	26	27	28	29	30	31

pH	8.4	8.5	8.41	8.27	8.03	8.5	8.38	8.5						8.13	8.28	8.45	8.16	8.5	8.37	8.39	8.3				8.68	8.66	8.15	
E.C.	605	611	603	590	606	618	631	618						648	693	737	766	787	734	735	789				717	616	600	
TDS	392	409	386	395	388	396	404	396						415	493	472	491	509	470	470	508				459	394	384	
Turbidity	1.5	2.6	1.46	1.31	1.6	1.65	1.57	1.65						6.05	6.93	7.3	7.1	7.4	7.15	6.9	7.5				4.91	9.15	8.3	

Storage Tank report of month May 2020																											
	1	2	4	5	6	7	8	9	11	12	13	14	15	16	17	18	19	20	21	22	23	25	26	27	28	29	30	31
pH	8.3	8.4	8.56	8.31	8.09	8.38	8.3	8.38						8.13	8.45	8.19	8.19	8.22	8.32	8.36	8.27				8.59	8.59	8.01	
E.C.	604	607	618	597	623	615	614	615						676	678	752	755	761	763	760	765				730	655	620	
TDS	386	404	396	398	399	394	393	394						432	431	481	483	487	489	486	486				467	419	397	
Turbidity	2.3	2.97	1.65	2.9	3.07	2.67	2.59	2.67						9.39	9.39	13.7	12.7	10.5	11.2	9.9	9.15				15.6	23.7	8.77	

End Users sample analysis							
	4/5 to 9/5				18/5 to 23/5		
	EU-1	EU-2	EU-3	EU-4		EU-1	EU-2
pH	7.85	7.92	6.44	7.63		8.24	8.2
E.C.	839	611	878	609		877	910
TDS	537	391	562	390		570	592
Turbidity	4.82	3.63	3.51	4.24		11.21	10.5

June 2020

Source chemical report 4/6/2020			
	Khirthar	L-1	L-3
pH			872
E.C.			969

So rce 8/6		
Khirthar	L-1	L-3
8.19	8.44	8.2
261	293	1164

Source 25/6		
Khirthar	L-1	L-3
	7.9	8.1
	332	656

Source 29/6		
Khirthar	L-1	L-3
8.1	8.0	7.0
234	322	583

TDS			620		167	187	745			212	420		150	206	373
Turbidity			8.75		503	134	13.4			10.9	5.26		1000	90.4	15.2

Clarifier report of month April 2020

	1	2	3	4	5	6	8	9	10	11	12	13	15	16	17	18	19	20	22	23	24	25	26	27	29	30
pH	8.9	8.7	8.51	8.8	8.7	8.61	8.2	8.32	7.95	8.43	8.35	8.49	8.2	7.83	7.23	8.1	7.9	7.94	8.01	7.09	7.08	7.9	8.2	7.8	7.9	7.9
E.C.	633	587	547	517	489	466	385	425	537	541	894	896	746	766	730	801	732	726	702	647	617	592	565	630	619	565
TDS	405	375	350	331	313	298	245	272	359	346	572	600	499	491	467	536	468	465	449	414	395	379	362	403	414	361
Turbidity	16	11	8.43	5.57	3.66	3.00	4.27	4.25	3.75	2.49	13.9	5.6	7.3	4.41	4.92	5.33	3.98	9.44	3.51	2.83	3.37	2.96	3.13	3.19	3.07	4.83

Treated Water report of month April 2020

	1	2	3	4	5	6	8	9	10	11	12	13	15	16	17	18	19	20	22	23	24	25	26	27	29	30
pH	8.7	8.59	8.34	8.77	8.66	8.54	8.24	8.18	8.74	7.86	8.16	8.07	8.11	7.79	7.19	7.79	7.75	7.9	7.06	7.06	7.06	7.6	7.8	7.7	7.4	7.6
E.C.	649	629	533	516	488	433	381	284	490	486	776	735	721	630	705	704	694	721	717	579	620	592	551	550	543	503
TDS	415	403	341	330	311	277	244	245	328	311	497	492	483	403	451	471	444	461	459	371	397	379	351	352	363	322
Turbidity	4.5	5.38	5.04	3.56	2.09	1.77	1.65	2.53	1.95	2.8	2.96	2.3	3.25	2.54	3.39	3.14	1.3	1.3	1.7	1.72	1.8	1.51	1.9	2.82	2.61	2.06

Storage Tank report of month April 2020

	1	2	3	4	5	6	8	9	10	11	12	13	15	16	17	18	19	20	22	23	24	25	26	27	29	30
pH	8.8	8 .6	8.4	8.77	8.62	8.57	8.16	8.18	7.66	7.86	8.88	8.6	8.47	7.84	7.06	8.21	7.8	7.8	7.08	7.07	7.07	7.8	7.8	7.8	7.5	7.07
E.C.	620	630	578	570	509	455	384	396	455	469	783	744	698	794	744	789	714	697	659	634	606	582	556	559	551	642
TDS	397	403	370	346	326	291	245	254	304	300	501	498	467	508	476	528	457	446	422	405	388	372	356	358	369	347
Turbidity	15	5.7	4.91	4.05	2.67	2.66	2.3	1.97	1.37	2.02	3.9	2.97	3.19	3.1	4.06	4.4	7.92	3.34	2.42	2.13	1.75	1.66	1.88	1.9	1.45	2.44

End Users sample analysis

	1/6 to 6/6				8/6 to 13/6			15/6 to 20/6				22/6 to 6276						20/4 to 25/4	
	EU-1	EU-2	EU-3	EU-4	EU-1	EU-2	EU-3	EU-1	EU-2	EU-3	EU-4	EU-1	EU-2	EU-3	EU-4	EU-5	EU-6	EU-7	EU-8
pH	8.54	8.55	8.29	8.25	8.0	8.01	8.07	8.13	8.06	8.06	8.1	7.05	7	7.02	7.05	7.7	7.7	7.7	7.8
E.C.	626	612	684	1535	401	428	400	864	851	**1238**	882	681	1033	659	647	608	598	605	608
TDS	401	392	437	982	257	274	256	553	544	792	564	436	661	422	478	389	383	387	389
Turbidity	**10.1**	**9.77**	**22**	**13.7**	**16.5**	**23.2**	**10.3**	3.12	4.3	4.43	6.79	2.17	1.75	2.83	2.97	3.65	4.8	2	3.37

Annex-4: Keeping a detailed log of the electricity supplied for pumping water in the supply system

ELECTRICITY SUPPLY & BREAKDOWN STATUS OF WATER FILTERATION PLANT JACOBABAD.					
Date	**Time (8 am to 8 pm)**		**Electricity Supply Duration**	**Power Failure Duration**	**Remarks**
	On	off	Total Hours	Total Hours	
01/05/2020	10:50 AM	10:55 AM	1:30	10:30	Kirthar Fault
01/05/2020	3:13 PM	3:44 PM			
01/05/2020	3:50 PM	4:30 PM			
01/05/2020	05:40 PM	05:41 PM			
01/05/2020	05:42 PM	05:49 PM			
01/05/2020	06:00 PM	06:06 PM			
02/05/2020	11:30 AM	03:45 PM	5:00	07:00	
02/05/2020	04:01 PM	04:18 PM			Kirthar Fault
02/05/2020	04:24 PM	04:28 PM			
02/05/2020	04:34 PM	04:37 PM			
02/05/2020	05:57 PM	06:00 PM			
02/05/2020	06:40 PM	06:45 PM			
02/05/2020	06:50 PM	06:55 PM			
02/05/2020	07:39 PM	07:42 PM			
02/05/2020	07:45 PM	07:50 PM			
03/05/2020	08:05 AM	10:25 AM	9:54	02:06	
03/05/2020	10:40 AM	11:05 AM			
03/05/2020	11:10 AM	11:30 AM			
03/05/2020	11:36 AM	12:58 PM			
03/05/2020	01:12 PM	01:19 PM			
03/05/2020	02:05 PM	04:00 PM			
03/05/2020	04:29 PM	07:54 PM			
04/05/2020	08:17 AM	11:03 AM	10:53	01:07	
04/05/2020	11:17 AM	02:03 PM			
04/05/2020	02:18 PM	05:07 PM			
04/05/2020	05:10 PM	05:11 PM			
04/05/2020	05:19 PM	07:50 PM			
05/05/2020	11:05 AM	11:40 AM	5:33	06:27	
05/05/2020	01:56 PM	01:58 PM			
05/05/2020	02:00 PM	03:18 PM			
05/05/2020	03:25 PM	05:00 PM			

05/05/2020	05:57 PM	08:00 PM			
06/05/2020	02:22 PM	04:05 PM	1:51	10:09	
06/05/2020	05:12 PM	05:15 PM			
06/05/2020	07:55 PM	08:00 PM			
07/05/2020	05:05 PM	07:38 PM	2:45	09:15	Electricity off due to action
07/05/2020	07:40 PM	07:42 PM			
07/05/2020	07:50 PM	08:00 PM			Phase drop at Kirthar.
08/05/2020	01:45 PM	01:52 PM	4:03	07:57	
08/05/2020	04:17 PM	08:08 PM			
08/05/2020	08:26 PM	08:27 PM			
08/05/2020	08:31 PM	08:35 PM			
09/05/2020	11:10 AM	12:10 PM	5:04	06:54	
09/05/2020	12:40 PM	12:50 PM			
09/05/2020	01:00 PM	01:18 PM			
09/05/2020	01:33 PM	02:10 PM			
09/05/2020	02:26 PM	03:34 PM			
09/05/2020	03:41 PM	03:46 PM			
09/05/2020	03:55 PM	04:30 PM			
09/05/2020	04:45 PM	05:15 PM			
09/05/2020	05:32 PM	06:00 PM			
09/05/2020	07:32 PM	07:45 PM			
10/05/2020	02:10 PM	04:20 PM	4:50	07:10	
10/05/2020	04:50 PM	07:15 PM			
10/05/2020	07:27 PM	07:42 PM			
11/05/2020	02:20 PM	02:25 PM	2:15	09:45	
11/05/2020	05:37 PM	05:45 PM			
11/05/2020	05:48 PM	05:55 PM			
11/05/2020	06:05 PM	08:00 PM			
12/05/2020	01:00 PM	01:40 PM	4:33	07:27	
12/05/2020	02:45 PM	05:43 PM			
12/05/2020	07:35 PM	08:30 PM			
13/05/2020	06:10 PM	06:58 PM	0:52	11:08	
13/05/2020	07:00 PM	07:04 PM			
14/05/2020	11:50 AM	12:10 PM	4:00	8	
14/05/2020	12:30 PM	12:50 PM			
14/05/2020	01:05 PM	01:15 PM			
14/05/2020	01:45 PM	02:55 PM			
14/05/2020	03:15 PM	03:30 PM			

14/05/2020	06:00 PM	07:45 PM			
15/05/2020	08:00 AM	05:30 PM	11:37	00:23	
15/05/2020	05:42 PM	07:34 PM			

15/05/2020	07:38 PM	07:50 PM			
15/05/2020	07:57 PM	08:00 PM			
16/05/2020	11:10 AM	07:33 PM	8:35	03:25	
16/05/2020	07:35 PM	07:45 PM			
16/05/2020	07:47 PM	07:48 PM			
16/05/2020	07:51 PM	07:52 PM			
17/05/2020	10:50 AM	11:17 AM	6:30	05:30	
17/05/2020	11:50 AM	12:50 PM			
17/05/2020	02:15 PM	04:07 PM			
17/05/2020	04:30 PM	07:35 PM			
17/05/2020	07:45 PM	07:51 PM			
18/05/2020	08:00 AM	08:04 AM	0:31	11:29	
18/05/2020	10:20 AM	10:42 AM			
18/05/2020	07:55 PM	08:00 PM			
19/05/2020	10:03 AM	10:07 AM	1:34	10:26	
19/05/2020	11:00 AM	12:30 PM			
20/05/2020	08:00 AM	09:00 AM	6:45	05:15	
20/05/2020	09:30 AM	09:55 AM			
20/05/2020	10:30 AM	10:50 AM			
20/05/2020	11:40 AM	12:45 PM			
20/05/2020	01:15 PM	02:00 PM			
20/05/2020	03:20 PM	03:49 PM			
20/05/2020	04:51 PM	05:57 PM			
20/05/2020	06:05 PM	06:16 PM			
20/05/2020	06:36 PM	08:00 PM			
21/05/2020	08:03 AM	09:03 AM	6:49	05:11	
21/05/2020	09:07 AM	09:16 AM			
21/05/2020	09:24 AM	09:54 AM			
21/05/2020	10:48 AM	11:03 AM			
21/05/2020	11:06 AM	01:08 PM			
21/05/2020	01:50 PM	02:30 PM			
21/05/2020	03:10 PM	03:20 PM			
21/05/2020	03:36 PM	03:39 PM			
21/05/2020	05:21 PM	07:17 PM			

21/05/2020	07:19 PM	07:23 PM			
22/05/2020	08:00 AM	08:05 AM	9:06	02:54	
22/05/2020	08:30 AM	08:50 AM			
22/05/2020	09:30 AM	10:15 AM			
22/05/2020	10:20 AM	10:30 AM			
22/05/2020	10:50 AM	11:00 AM			

22/05/2020	11:10 AM	11:20 AM			
22/05/2020	11:30 AM	11:35 AM			
22/05/2020	11:48 AM	11:51 AM			
22/05/2020	12:02 PM	07:10 PM			
22/05/2020	07:15 PM	07:25 PM			
23/05/2020	11:00 AM	08:00 PM	9:00	3	
24/05/2020			0:00	12	No electric supply.
25/05/2020	08:40 AM	02:35 PM	10:57	01:03	
25/05/2020	02:50 PM	06:37 PM			
25/05/2020	06:45 PM	08:00 PM			
26/05/2020	08:00 AM	04:44 PM	8:44	03:16	
27/05/2020	08:00 AM	11:55 AM	7:03	04:57	
27/05/2020	02:10 PM	02:45 PM			
27/05/2020	03:05 PM	05:38 PM			
28/05/2020	05:50 PM	05:55 PM	0:05	11:55	
29/05/2020	10:10 AM	10:35 AM	6:27	05:33	
29/05/2020	10:38 AM	10:50 AM			
29/05/2020	11:25 AM	11:50 AM			
29/05/2020	12:15 PM	12:25 PM			
29/05/2020	12:30 PM	12:45 PM			
29/05/2020	01:30 PM	06:30 PM			
30/05/2020	08:00 AM	08:01 AM	4:52	07:08	
30/05/2020	02:00 PM	04:30 PM			
30/05/2020	05:35 PM	06:01 PM			
30/05/2020	06:05 PM	08:00 PM			
31/05/2020	08:56 AM	10:57 AM	6:31	05:29	
31/05/2020	11:02 AM	11:09 AM			
31/05/2020	11:14 AM	11:15 AM			
31/05/2020	11:17 AM	11:38 AM			
31/05/2020	11:41 AM	11:50 AM			
31/05/2020	12:00 PM	12:05 PM			

31/05/2020	12:26 PM	12:28 PM			
31/05/2020	04:00 PM	07:45 PM			