



**SPECIAL STUDY REPORT**  
**ON**  
**MECHANISM OF REVENUE GENERATION**  
**BY REVENUE RESOURCE GENERATION**  
**DEPARTMENT, KW&SB**  
**AUDIT YEAR 2019-20**

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**AUDITOR-GENERAL OF PAKISTAN**

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## **Preface**

The Auditor General conducts audit in terms of Articles 169 and 170 of the Constitution of the Islamic Republic of Pakistan 1973 read with Section 10 of the Auditor- General's (Functions, Powers and Terms and Conditions of Service) Ordinance 2001. The special study on Mechanism of Revenue Generation by Revenue Resource Generation Department, Karachi Water & Sewerage Board was carried out accordingly.

The Directorate General Audit Local Councils Sindh conducted special study on Mechanism of Revenue Generation by Revenue Resource Generation, Department, Karachi Water & Sewerage Board during January to February, 2020 with a view to report significant findings to stakeholders. In addition, Audit also assessed whether the management complied with applicable laws, rules, and regulations. The special study report indicates specific actions that, if taken, will help the management to realize the objectives of the department.

The report has been finalized without incorporating the viewpoint of the management as no response to the audit observations was received, whereas PAO, Secretary Local Government & Housing Town Planning Department did not convene DAC meeting despite pursuance by Audit.

The Special Study Report is presented to the Governor of Sindh in pursuance of Article 171 of the Constitution of the Islamic Republic of Pakistan, 1973 read with Section 116 of the Sindh Local Government Act 2013, for causing it to be laid before the Provincial Assembly of the Sindh.

Islamabad  
Dated:

**(Muhammad Ajmal Gondal)**  
Auditor General of Pakistan



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## **Abbreviations and Acronyms**

DAC	Departmental Accounts Committee
F.Y	Financial Year
HRD&A	Human Resources Development & Administration
INTOSAI	International Organization of Supreme Audit Institutions
KMC	Karachi Municipal Corporation
KW&SB	Karachi Water & Sewerage Board
MGD	Million Gallons per Day
MIS	Management Information System
NOC	No Objection Certificate
OPP	Orangi Pilot Project
PAO	Principal Accounting Officer
PQA	Port Qasim Authority
RRG	Revenue Resource Generation
SFR	Sindh Financial Rules
WSPs	Water Service Providers





## Executive Summary

The Directorate General Audit, Local Councils, Sindh conducted Special Study on Mechanism of Revenue Generation by Revenue Resource Generation (RRG) Department of Karachi Water & Sewerage Board from January to February, 2020. This office has mandate to conduct Special Study with a view to report significant findings to the stakeholders. The main objective of the study was to examine various aspects of the mechanism of revenue generation by RRG department of Karachi Water & Sewerage Board.

The RRG department is one of the most important components of Karachi Water & Sewerage Board. This department is responsible:

- a) to comply with the decisions of the Board through the Chairman and the Managing Director regarding revenue matters;
- b) to facilitate the Directors (Retail, Bulk & Industries) for providing all the Management Information System (MIS) reports regarding billing, demand, collection from area, union council, town and division on monthly basis through deputy director; and
- c) to formulate policies, issuance of instructions and guidelines to the Directors from time to time and monitor implementation at the Town / Division level for enhancing the revenue as well as plan the resources for revenue generation.

The mechanism of revenue generation of RRG department, KW&SB, works through eight sections, viz; administration section, accounts section, billing section, consumer service center, bulk revenue recovery section, industrial revenue recovery section, retail revenue recovery section, and metered consumers cell.

### Key Audit Findings:

- i. There was a constant trend of shortfall (average 35%) against annual targeted revenue collection since 2014-15 onwards<sup>1</sup>.
- ii. Outstanding dues amounting to Rs69,645.129 million as on 31<sup>st</sup> January 2020 could not be recovered by the management from the bulk and retail consumers of water connection<sup>2</sup>.

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<sup>1</sup> Para No. 5.1.1

<sup>2</sup> Para No. 5.1.2

- iii. Out of total 9,514 bulk consumers of water, only 1,675 consumers were metered for billing on actual consumption; whereas the majority were not tracked through meters.<sup>3</sup>
- iv. Arrears of Conservancy & Fire amounting to Rs8,649.415 million were also outstanding against bulk and retail consumers as on 31<sup>st</sup> January 2020.<sup>4</sup>
- v. There was no mechanism to control water theft and leakages in water distribution system resulting in 35% of non-revenue water<sup>5</sup>.
- vi. There was misuse of water distribution system by illegal hydrants/tanker mafia resultantly citizens were compelled to purchase costly water through tankers.<sup>6</sup>
- vii. Outstanding dues amounting to Rs694.081 million accumulated from January 2016 to June 2019 were not recovered against the water supplies to various areas (Katchi Abadis)<sup>7</sup>

**Audit Recommendations:**

- i. Efforts may be made to achieve the annual targeted revenues.
- ii. Efforts should be made to devise mechanism for recovery of outstanding dues to minimize the trend of default by consumers.
- iii. The meters should be installed for judicious tracking of bulk water supply consumption and billing accordingly.
- iv. Necessary steps may be taken by facilitating the legal connections to increase consumer base.
- v. Steps should be taken for recovery of outstanding dues on Conservancy & Fire.
- vi. Efforts should be made by the management to maximize the revenue by converting non-revenue water into revenue generating water.
- vii. Action should be taken against illegal hydrants to minimize losses on account of water theft and legal supply of water to habitants of the city.

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<sup>3</sup> Para No. 5.1.3

<sup>4</sup> Para No. 5.1.4

<sup>5</sup> Para No. 5.1.5

<sup>6</sup> Para No. 5.1.6

<sup>7</sup> Para No. 5.1.7

# **1. Introduction**

## **1.1 Karachi Water & Sewerage Board**

The supply and distribution of water to Karachi had been undertaken by various agencies in the past. The Karachi Joint Water Board was constituted in 1953 as a first entity to be assigned the task of executing the first major expansion of Karachi's water supply system from the Indus River. It was subsequently decided to form a new authority to operate the entire water supply system. Accordingly, in 1981, the Karachi Water Management Board (KWMB) was created to meet the task, which was assigned responsibility for water distribution throughout the metropolitan and was given enhanced powers of cost recovery. Subsequently, the Government of Sindh enacted the Sindh Local Government (Amendment) Ordinance February 1983 leading to creation of the Karachi Water & Sewerage Board under the umbrella of KMC.

In the year 1996, a new Act called the Karachi Water & Sewerage Board Act, 1996 was passed. Under this Act, the Karachi Water & Sewerage Board was separated from KMC and its annual budget is approved by the Government. The legal frame work, specification of functions, as well as financial guidelines and delegation of powers are provided in the Karachi Water & Sewerage Board Act, 1996.

### **KWSB's Management:**

Karachi Water & Sewerage Board is headed by Chairman assisted by Vice Chairman and Managing Director. Furthermore, following officers perform the role as head of relevant wings;

- i. Deputy Managing Director, Technical Services;
- ii. Deputy Managing Director, Finance;
- iii. Deputy Managing Director, Human Resources Development & Admin (HRD&A);
- iv. Deputy Managing Director, Planning & Projects;
- v. Deputy Managing Director, Revenue & Resources Generation (RRG); and
- vi. Director, Information Technologies.

The Special Study focused on Mechanism of Revenue Generation by Revenue Resource Generation (RRG) Department, KW&SB.

## **1.2 Purpose of organizations**

### **i. Role of Deputy Managing Director (RRG)**

The RRG Deputy Managing Director is responsible for:

- a) Formulating of policies, issuance of instructions and guidelines to the Directors from time to time and monitor implementation at the town/division level for enhancing the revenue as well as plan the resources for revenue generation.
- b) To facilitate the Director (Retail, Bulk & Industries) for providing all the Management Information System (MIS) Reports regarding billing, demand, collection from area, union council, town and division on monthly basis through deputy director.
- c) Compliance of the decisions of the Board as conveyed by the Chairman and the Managing Director regarding revenue matter.

### **ii. Sections under RRG Department**

The Revenue Resource Generation Department, KW&SB is comprised of the following Sections:

- a) Administration Section
- b) Accounts Section
- c) Billing Section
- d) Consumer Service Centre
- e) Bulk Revenue Recovery Section
- f) Industrial Revenue Recovery Section
- g) Retail Revenue Recovery Section
- h) Metered Consumers Cell

## **1.3 Regulatory Framework**

- i. Karachi Water & Sewerage Board Act, 1996.
- ii. Sindh Public Procurement Rules, 2010
- iii. The Sindh Financial Rules Vol. I & II.

## **1.4 Checking for legal aspects of the organization**

The legal frame work, functions as well as financial guidelines and delegation of powers are provided in the Karachi Water & Sewerage Board Act, 1996.

## **1.5 Layout of Internal control system of organization**

- i. According to Section-3 of KW&SB Act, 1996, the Board shall: (ii) levy, collect or recover rates, charges of fees for water supply and sewerage service, including arrears thereof, (iv) have the power to impose surcharge, not exceeding double the amount due, if rates, charges or fees for water supply or sewerage service of the arrears thereof are not paid within the time fixed by the Board.
- ii. According to Appendix-18-A of Sindh Financial Rules, “every government officer should realize fully and clearly that he will be held personally responsible for any loss sustained by Government through fraud or negligence on his part and that he will also be held personally responsible for any loss arising from fraud or negligence on the part of any other Government officer to the extent to which it may be shown that he contributed to the loss by his own action or negligence”.
- iii. According to Rule 41(a) of SFR volume-I,” the department controlling officers should see that all sums due to government are regularly received and checked against demands and that they are paid into the treasury”.

## **2. Study Defined**

### **2.1 Purpose of Study**

The main objective of the study was to review the mechanism of revenue generation by Revenue Resource Generation Department (RRG), KW&SB; and to analyze different factors causing shortfall in revenue generation and propose corrective measures for enhancement of the overall revenue generation.

### **2.2 Scope of Study**

- i. Gathering core information about functioning of the RRG Department.
- ii. Scrutinizing the records pertaining to different sections of RRG department.

Hindrance in the achievement of the scope of study was faced due to non-providing access to record regarding NOCs granted for new connections.

## **2.3 Beneficiary of Study**

- i. KW&SB
- ii. Local Government Department

## **3. Study Design**

### **3.1 Time period**

The special study was conducted from 27-01-2020 to 17-02-2020.

### **3.2 Data**

Gathering of information from record including data of billing and recovery was the base of conducting of the special study. Audit team also reviewed previous year's audit reports relating to RRG Department to get information about deficient areas of the entity.

### **3.3 Methodology**

This Special Study was finalized after meetings with the management of RRG Department, KW&SB to develop an understanding of the mechanism of revenue generation by RRG department. Audit team compared the actual recoveries, collected the estimated collections and related documents maintained in support of the recovery.

## **4. Data Analysis**

Qualitative and quantitative data analysis was made by scrutinizing following record and data provided during the course of Special Study:

- a. Information collected by interviews with the management.
- b. Quantitative data about recoveries, billing and meter reading collected from respective sections of RRG Department.
- c. Various studies and media reports available online were studied.
- d. Raised findings and obtained their clarifications to evaluate the results.

## 5. Study Findings and Recommendation

### 5.1 With reference to purpose of study

#### 5.1.1 Constant trend of shortfall in annual targeted revenue

According to Section-3 of KW&SB Act 1996, the Board shall: (ii) levy, collect or recover rates, charges of fees for water supply and sewerage service, including arrears thereof. (iv) have the power to impose surcharge, not exceeding double the amount due, if rates, charges or fees for water supply or sewerage service of the arrears thereof are not paid within the time fixed by the Board.

During special study on Mechanism of Revenue Generation by Revenue Resource Generation Department, KW&SB, it was observed that the management could only manage to collect overall 65% of targeted revenue over the period of last five years. It was mainly because of no result-oriented measures adopted by the management to achieve targeted revenue. Year-wise details are as follows:

(Rs in million)

Sr. No.	Head	Financial Year	Demand	Actual collection	Percentage of actual collection	Less-recovery	Percentage of less-recovery
1	Bulk	2014-15	6,561.15	4,286.37	65.3	2,274.78	34.7
	Retail		3,211.28	1,954.60	60.9	1,256.68	39.1
2	Bulk	2015-16	7,186.62	4,369.23	60.8	2,817.39	39.2
	Retail		3,570.66	2,136.95	59.8	1,433.70	40.2
3	Bulk	2016-17	7,096.96	4,790.89	67.5	2,306.07	32.5
	Retail		4,026.37	2,401.14	59.6	1,625.23	40.4
4	Bulk	2017-18	7,103.52	5,123.51	72.1	1,980.01	27.9
	Retail		4,161.19	2,584.36	62.1	1,576.83	37.9
5	Bulk	2018-19	6,887.28	4,894.90	71.1	1,992.38	28.9
	Retail		4,200.90	2,648.57	63	1,552.33	36.9
<b>Total</b>			<b>54,005.93</b>	<b>35,190.52</b>	<b>65.2</b>	<b>18,815.41</b>	<b>34.8</b>

Audit was of the view that constant trend of shortfall of revenue realization depicts poor financial management.

The matter was reported to the management in March 2020, but no reply was received. The PAO did not convene DAC meeting despite pursuance by Audit.

Audit recommends revisiting of the system of revenue collection against set targets for efficient results.

### 5.1.2 Non-recovery of outstanding dues – Rs69,645.129 million

According to Section-3 of KW&SB Act 1996, the Board shall: - (ii) levy, collect or recover rates, charges of fees for water supply and sewerage service, including arrears thereof. (iv) have the power to impose surcharge, not exceeding double the amount due, if rates, charges or fees for water supply or sewerage service of the arrears thereof are not paid within the time fixed by the Board.

During special study on Mechanism of Revenue Generation by Revenue Resource Generation Department, KW&SB, it was observed that the management could not recover huge outstanding amount of Rs69,645.129 million (as on 31st January 2020). Detail is as follows:

(Rs in million)					
Sr. No.	Head of A/C	No. of Connections	No. of defaulters	Disconnected consumers	Outstanding dues as on 31-01-2020
1	Bulk	9,521	1,650	1022	43,135.720
2	Retail	1,178,048	562,205	-	26,509.409
<b>Total</b>		<b>1,187,569</b>	<b>563,855</b>	<b>1022</b>	<b>69,645.129</b>

Audit was of the view that management failed to recover the outstanding dues which adversely effected the financial health of the organization related to service delivery for citizens of Karachi.

The matter was reported to the management in March 2020, but no reply was received. The PAO did not convene DAC meeting despite pursuance by Audit.

Audit recommends taking concrete steps for recovery of the dues, besides fixing of responsibility on the person(s) at fault.

### 5.1.3 Non-installation of meters on Bulk Supply of water

According to Section-3 of KW&SB Act, 1996, the Board shall: (ii) levy, collect or recover rates, charges of fees for water supply and sewerage service, including arrears thereof, (iv) have the power to impose surcharge, not exceeding double the amount due,



if rates, charges or fees for water supply or sewerage service of the arrears thereof are not paid within the time fixed by the Board.

During special study on “Mechanism of Revenue Generation by Revenue Resource Generation Department, KW&SB”, it was observed that the management failed to install meters for 7,839 consumers of bulk supply water upto January 2020, in various sectors which was a major cause of shortfall against the targeted revenue every year. Details are as follows:

(Rs. In million)

Sr. No.	Sector Name	Total Consumers	Metered Consumers	Unmetered Consumers
1	Assorted	137	52	85
2	Bin Qasim Industrial Area	258	161	97
3	Bulk Sector	393	82	311
4	Cattle Colony	1,208	16	1,192
5	CDGK/KMC	68	-	68
6	F.B Industrial Area	813	147	666
7	Government of Pakistan	594	112	482
8	Government of Sindh	626	22	604
9	High Rise Buildings/Projects	281	69	212
10	K-Electric	78	-	78
11	Korangi Industrial Area	949	255	694
12	Landhi Industrial Area	717	258	459
13	N.K Industrial Area	722	384	338
14	Private Societies	210	56	154
15	SITE Industrial Area	82	60	22
16	Small Industries	2,378	1	2,377
<b>Total</b>		<b>9,514</b>	<b>1,675</b>	<b>7,839</b>

*Source: Data furnished by KB&SB to Audit: “Meter & Unmetered Consumers – Bill Period Jan 2020”*

Audit was of the view that non-installation of meter resulted into less realization of revenue.

The matter was reported to the management in March 2020, but no reply was received. The PAO did not convene DAC meeting despite pursuance by Audit.

Audit recommends concrete efforts for installation of meters, besides fixing of responsibility on the person(s) at fault.

#### **5.1.4 Non-recovery of outstanding dues on Conservancy & Fire Rs8,649.415 million**

According to Section-3 of KW&SB Act 1996, the Board shall:- (ii) levy, collect or recover rates, charges of fees for water supply and sewerage service, including arrears thereof. (iv) have the power to impose surcharge, not exceeding double the amount due, if rates, charges or fees for water supply or sewerage service of the arrears thereof are not paid within the time fixed by the Board.

During special study on Review of Mechanism of Revenue Generation by Revenue Resource Generation Department, KW&SB, it was observed that management failed to recover the outstanding arrears amounting to Rs8,649.415 million on account of conservancy and fire as on January 31, 2020. Detail is as follows:

(Rs in million)

<b>Sr. No</b>	<b>Head</b>	<b>Sector</b>	<b>Outstanding Dues as on 31-01-2020</b>
1	Conservancy	Bulk	3,516.136
		Retail	1,490.511
2	Fire	Bulk	3,280.344
		Retail	362.423
<b>Total</b>			<b>8,649.415</b>

Audit was of the view that non-recovery of dues indicated weak financial management prevailing in the organization.

The matter was reported to the management in March 2020, but no reply was received. The PAO did not convene DAC meeting despite pursuance by Audit.

Audit recommends recovery of outstanding dues, besides fixing of responsibility on the person(s) at fault.

#### **5.1.5 Non-existence of mechanism to convert non-revenue water into revenue generating water**

According to Section-3 of KW&SB Act 1996, the Board shall: (ii) levy, collect or recover rates, charges of fees for water supply and sewerage service, including arrears thereof, (iv) have the power to impose surcharge, not exceeding double the amount due, if rates, charges or fees for water supply or sewerage service of the arrears thereof are not paid within the time fixed by the Board.

During special study on Mechanism of Revenue Generation by Revenue Resource Generation Department, KW&SB, it was observed that through a network of canals and conduits, 670 million gallons (MGD) of water per day was fed into the city's main pumping station at Dhabeji. Out of which 35 percent was non-revenue generating water due to theft and leakages in distribution system as per KW&SB website. Details are as follows:

S. No	Water Sources	MGD	Total (MGD)	Available Revenue generating water (MGD)	Non-revenue generating Water (MGD)	Non-revenue generating Water (%)
1	Greater Karachi	280	670	435.5	234.5	35
2	Gharo	28				
3	K-II	100				
4	Additional	40				
5	K-III	100				
6	Steel Mill	22				
7	PQA	8				
8	Hub Dam	90				
9	Dumlotee Wells	2				

Source: KW&SB website; <http://www.kwsb.gos.pk/View.aspx?Page=26>

Audit was of the view that management failed to convert non-revenue water into revenue generated water due to theft and leakages which indicated weak internal controls.

The matter was reported to the management in March 2020, but no reply was received. The PAO did not convene DAC meeting despite pursuance by Audit.

Audit recommends that effective steps be taken for converting non-revenue generating water into revenue generating, besides fixing of responsibility on the person(s) at fault.

### 5.1.6 Inaction against illegal Water Hydrants/Tanker Mafia

According to Section-3 of KW&SB Act, 1996, the Board shall: (ii) levy, collect or recover rates, charges of fees for water supply and sewerage service, including arrears thereof., (iv) have the power to impose surcharge, not exceeding double the amount due, if rates, charges or fees for water supply or sewerage service of the arrears thereof are not paid within the time fixed by the Board.

During special study on Mechanism of Revenue Generation by Revenue Resource Generation Department, KW&SB, it was observed that water tankers fetching water from Hydrants were major part of Karachi's water supply landscape for decades. Initially, the water tanker service was introduced as a stop-gap measure while the KWSB was expanding the city's water supply infrastructure. However, the Hydrant/Water tanker grew up to dominate the sector. In this regard, a research report titled, "Parched for a price: Karachi's water crisis" by Asad Hashmi of Al-Jazeera TV available at the website (<https://interactive.aljazeera.com/aje/2017/parched-for-price/index.html>), claim stated that asserted, "Residents of Karachi, one of the largest cities in the world, are being held hostage by a 'mafia' that makes millions of dollars out of their need for water." The report indicated existence of 19 illegal water hydrants in the city. The selected findings thereof are reproduced below to ascertain the menace of illegal hydrants:

*"Today, there are more than 10,000 tankers operating across the city, completing roughly 50,000 trips a day, according to Noman Ahmed, the head of the architecture and urban planning department at Karachi's NED University. They are meant to fill up at 10 KWSB-operated hydrants, but the business is so lucrative that more than 100 illegal hydrants operate across the city, tapping into the city's mains to steal water.*

*"There are more than a hundred of them [illegal hydrants], and those are just the ones that have been identified. Every day there's a new one being made somewhere," says Anwar Rashid, a director at the Orangi Pilot Project (OPP), which tracks the tankers' illegal activity." Due to these illegal hydrants not only, KW&SB is deprived of huge revenues but also the residents of Karachi have to face a lot of problems".*

It was noticed by the Audit while going through the record that the management did not formulate a mechanism to cope with menace of illegal hydrants and tanker mafia at the cost of public funds. Resultantly, despite existence of pipeline network to the consumers in the city, the considerable numbers of consumers were compelled to purchase water at exorbitant rates from the tanker mafia.

Audit was of the view that the inaction by the management against illegal hydrants and tanker mafia compelled the consumers to purchase water on high rates.

The matter was reported to the management in March 2020, but no reply was received. The PAO did not convene DAC meeting despite pursuance by Audit.

Audit recommends that legal action should be taken against illegal hydrants as well as tanker mafia, besides fixing of responsibility on the person(s) at fault.

#### **5.1.7 Non-recovery of outstanding dues against DC Quota - Rs694.081 million**

According to Section-3 of KW&SB Act, 1996, the Board shall: (ii) levy, collect or recover rates, charges of fees for water supply and sewerage service, including arrears thereof., (iv) have the power to impose surcharge, not exceeding double the amount due, if rates, charges or fees for water supply or sewerage service of the arrears thereof are not paid within the time fixed by the Board.

During special study on Mechanism of Revenue Generation by Revenue Resource Generation Department, KW&SB, it was observed that the management supplied water to various areas (Katchi Abadis) in the city under Deputy Commissioners' Quota on the directives of Government of Sindh. The scrutiny of record revealed that an amount of Rs694.081 million was outstanding as on 30<sup>th</sup> June 2019. The non-payment of dues resulted into revenue loss to the organization.

Audit was of the view that management failed to recover outstanding dues resulting into loss of revenue.

The matter was reported to the management in March 2020, but no reply was received. The PAO did not convene DAC meeting despite pursuance by Audit.

Audit recommends recovery of dues, besides fixing of responsibility on the person(s) at fault.

### **5.2 General findings**

- i. Non-recovery of outstanding dues accumulated to the tune of Rs79.000 billion, which was a major setback for the viability of the organization.
- ii. There was lack of coordination among all sections of the RRG department KW&SB, which seems a major reason of department's failure to implement its policies for desired results of revenue generation.

## **6 Recommendations**

### **6.1 Recommendations for organization**

- i. All out efforts should be made to develop a mechanism for recovery of outstanding dues as well as to achieve the annual targeted receipts.
- ii. Steps should be taken for immediate installation of meters on premises of bulk supply water consumers so that consumption of water may be tracked for equitable recovery of charges.
- iii. Efforts should be made to increase the consumer base for primary utility services.
- iv. Steps should be taken for the recovery of outstanding dues on Conservancy & Fire Charges.
- v. Efforts should be made to convert non-revenue water into revenue generating water.
- vi. Action should be taken against illegal Hydrants to minimize the revenue losses.

### **6.2 Recommendations for policy makers**

#### **a) Improvement in Revenue Collection Efficiency**

It has been observed that Water Service Providers (WSPs) consider revenue collection activities as a routine exercise; hence, they do not have a proactive attitude towards revenue collection. On the other hand, revenue collection efficiency is defined as the total amount collected by a WSP compared to the total amount billed in a given period, which is a critical performance indicator of a WSP on the effectiveness of the revenue management system in place.

Therefore, effective billing and collection systems are key tools for enhancing the revenue base of the utility, achieving financial viability, and sustainability and hence registering improvements in services delivered.

Audit recommends enforcement of strict revenue generation and recovery mechanism by improving service delivery, which in turn would increase customers' willingness to pay their bills.

**b) Increase in Metering Ratio for equitable Revenue Generation**

Metering is widely used as a tool to promote water conservation and utility revenues in developed countries. Impact of installation of meters yields positive results for the revenue generation. It was observed that out of 9,514 connections in bulk water sector, 7,839 (82%) are unmetered, resulting in huge revenue losses. Importance of improving metering ratio is evident from the fact that in September 2017, when the meters were installed at hydrants, the revenue increased by 158 percentage. It is recommended that the meters should be installed for all consumers in order to improve revenue generation.

## **Acknowledgement**

The department of Auditor General of Pakistan expresses appreciation to the management and staff of Revenue Resource Generation Department, KW&SB for the assistance and cooperation extended to the auditors during this assignment.