

Summary Report Year 2013

GIZ Water Sector Program

Area 1 Policies ,Strategies & Coordination

May 2014

Performance Monitoring of Urban Water Supply and Sanitation Utilities

Table of Contents

| | |
|--|-----------|
| 1 Background | 3 |
| 2 Reporting Process | 3 |
| 2.1 Utilities Using the PIIS | 4 |
| 2.2 Data Submission and Quality | 5 |
| 3 Analysis of Performance Indicators | 6 |
| 3.1 Domestic Collection Efficiency | 6 |
| 3.2 Governmental Collection Efficiency | 7 |
| 3.3 Commercial Collection Efficiency | 7 |
| 3.4 Non-Revenue Water | 8 |
| 3.5 Operational Actual Cost Coverage | 8 |
| 3.6 Continuity of Water Supply | 9 |
| 4 Conclusions & Recommendation | 10 |
| Annex 1 Analytic Chart of Performance Indicators | 11 |
| Annex 2 Details analysis per each indicator | 31 |
| Annex 3 Summary table of Indicators | 37 |
| Annex 4 Table of frequency of water supply | 38 |
| Annex 5 Lists of 60 PIIS Performance Indicators | 39 |

1 Background

This report is representing the final results of the performance indicators Jan - Dec 2013 of the Yemeni Urban Water Sector. The process was starting and leads as an emergency measures by the GIZ water sector program since 2011, when the political crisis started to throw its shadow on the water sector in Yemen.

The frequency of reporting took place in quarterly, semiannual and annual pattern to assist the Ministry of Water & Environment and other water sector stakeholder to address real and potential trends of performance on the level of operational, financial and managerial capacities of LCs/Utilities during and after the crises.

It is a fact that the urban water sector had passed severe conditions mainly in delivery of water services, a deficiency to cover the operational costs and emersion of various administrative disorders.

The outcomes of the sequential reports assisted the MWE to draw the attention of the sector stakeholders such as the traditional donors and essentially the Government of Yemen to be in the picture with regard to an important sector provides basic services for public, and consequently appealed for urgent interventions to support the urban water sector from extreme deterioration and breaking down.

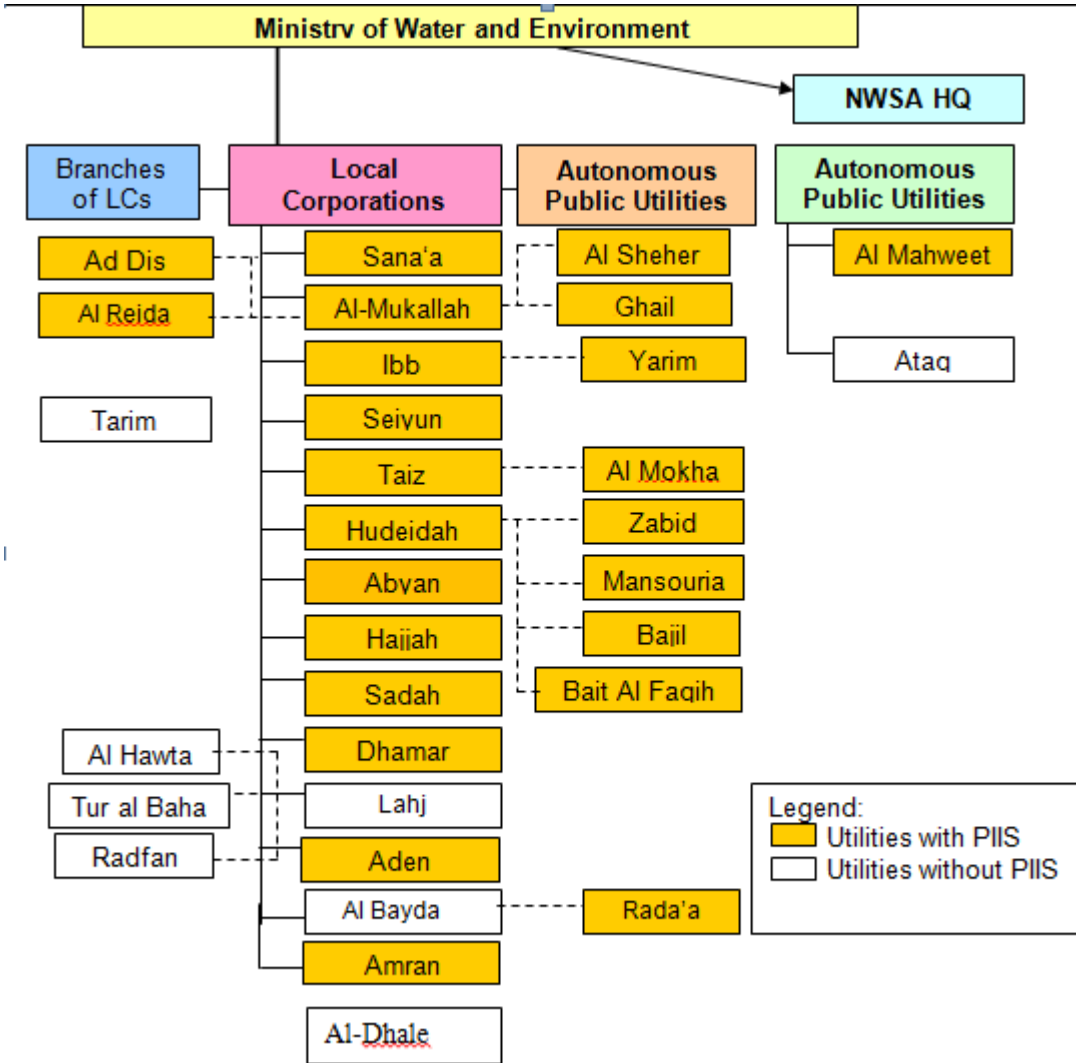
Primary and effective steps should be followed in order to avoid the extended falling down of urban sector that the stakeholders started to plan for rehabilitation or/and development phase. The Government should give high priority for the water sector, allocating sufficient funds for sector development. In addition, it's highly recommended that the MWE, LCs and Utilities undertake a program to enhance their project implementation capacity to embrace local and external funds and grants.

2 Reporting process

The monitoring process was steered through a systematic mechanism by using the PIIS system. PIIS proves that it is a management and monitoring tool that supports the decentralized utilities in the technical, financial and administrative management of their business and helps the MWE to achieve its monitoring and evaluation role for UWSS reform.

2.1 Utilities Using the PIIS

The graph below gives an overview of the urban water utilities. The utilities marked in orange have installed PIIS. A total of 11 local corporations, 12 autonomous water supply and sanitation utilities and branches (either supervised by LC's or NWSA) are now using the PIIS at the local level to monitor and evaluate their utility performance.



PIIS comprise in total up to 60 indicators (Annex 4), the key indicators (below) had been selected particularly to measure the performance in respect to financial, administrative and operational capacity of the utility, and we were able by the results of these indicators to some extent to determine the pattern of performance of the utilities and areas of success and weaknesses.

- Collection Efficiency for Domestic, Commercial & Government Connection
- Non-Revenue Water
- Operational Actual Cost Coverage
- Continuity of Water Supply

Unfortunately, we could not be able to report for some Utilities as they failed to submit their indicators on regular basis like Lahj, Abyan and Sa'dah which faced a difficult security conditions which lead to interruption of operations.

2.2 Data Submission and Quality

Initially, MWE had to emphasize the following institutional measures to improve shortcomings in monitoring and evaluation at the local and national level:

- It is of utmost importance to carry out a data quality check at the management level of the utilities before the data is submitted to MWE for sector monitoring purposes and also it is very important to carry out a data quality check at the national level.
- Utilities need to establish internal quality testing mechanisms for the provision of basic data. In particular, manually entered data needs to be checked to increase the reliability of the submitted data. This could be combined with the use of the PIIS as an internal monitoring tool by the utilities.
- Establishment of an official PIIS unit within the MWE/M&E organizational structure that reports directly to the Ministry decision makers.

Additional reasons for late and incomplete data submissions include the malfunctioning of systems due to inappropriate maintenance, the reallocation of trained personnel to fulfill other functions, manual data entry and the late closure of accounts that take time three months delay of submission. Poor data quality may also reflect an insufficient understanding of performance indicators at the local level.

3 Analysis of Performance Indicators of urban WSS utilities

In this part of the report, we analyze the results per each indicator. The idea is to address the best, medium and bad performers during 2013 in comparison with 2012. Detailed analysis of indicators per each utility can be checked in Annex 2.

3.1 Domestic Collection Efficiency

The domestic collections are considered one of the major resources for utility income. Trends of collection efficiency varied frequently and on different consequences. People are much more willing to pay their bills due the time they possess satisfaction and trust for receiving a regular service delivery by the utilities.

However; the utilities must embrace several methods to acquire its outstanding bills payments through:

1. Intensive collection and awareness campaigns.
2. Disconnection of illegal meter connections or those who refuse to pay their bills due the fact that utility staffs are faced with violence by the customers.
3. Attempts to install amounts of invoices on intermittent periods of time.

In figures; Utilities that ranked as best performers that exceed 80% annual average are:

| | | | | | | |
|--------|--------|--------|-------|---------------|--------|-----------|
| Sana'a | Mukala | Rada'a | Mocha | Bait Alfaqih | Hajjah | Al Sheher |
| Ibb | Zabid | Bajil | Amran | Al Mansouriah | Yareem | |

Other utilities that show uncomfortable trends of performance which really create concern to decline steadily such as

| | | | |
|--------|-----------|----------|--------|
| Aden | Taiz | Hodeidah | Dhamar |
| Seyuon | AlMahweet | Al Dalea | |

It's worthy to highlight the average annual value of collection efficiency for Aden that falls dramatically to 51% as consequences of consecutive administrative and operational regression.

Annual national average for domestic collection in 2013 was 82% and 85% for 2012.

3.2 Governmental Collection Efficiency

It has been a practice that the government institutions pay their account payable either in the first quarter or the last quarter of the year. Many government institutions accumulate the water bills to a point that became impossible to pay their debts.

The Ministry of Water & Environment assists the utilities to retrieve their bills dues through requesting the Ministry of Finance to deduct part of the annual budget allocations of those institutions that refrain to pay.

Apparently; the governmental institutions that showed commitment to disburse the water bills are

| | | | |
|--------------|--------|-------|--------|
| Sana'a | Dhamar | Ibb | Seyuon |
| Bait Alfaqih | Hajjah | Bajil | Mukala |

Whereas utilities that proves weakness in collection mostly are;

| | | |
|----------|---------------|-----------|
| Amran | Al Mansouriah | Zabid |
| Al Dalea | Yareem | AlMahweet |

Utilities must not be reluctant to undertake any measures to assure timely collection from government institutions.

Annual national average for government collection in 2013 was 67% and 185% for 2012.

3.3 Commercial Collection Efficiency

Not much different from the domestic collection as deficiency occurs due to calls for boycotting ,lack of regular service provisions and active collection campaign.

In general; utilities that perfectly achieve highly rates of collection are:

| | | | | |
|--------|--------|--------------|--------|---------------|
| Sana'a | Rada'a | Bajil | Hajjah | Mukala |
| Aden | Mocha | Bait Alfaqih | Amran | Al Mansouriah |

The remaining utilities assumed to be in the same direction.

Annual national average for domestic collection in 2013 was 90% and 98% for 2012.

3.4 Non-Revenue Water

NWR within its two components (Administrative & Technical) become the nightmare of every water utility. Financially; the utility is prohibited from revenue of selling water and technically water leakages need more investment for repair and replacement of old networks.

NWR in Yemen is mostly as a result of:

1. Leakage from Transmission and Distribution Mains
2. Meter reading error.
3. Water theft.

For 2013, Dhamar, Mukala, Aden and Hodeidah suffer from excessive loss of water, and direct reasons of NWR need to be inspected each case individually.

Annual national average for NWR in 2013 was 27% and 28% for 2012.

3.5 · Operational Actual Cost Coverage

The low and fluctuant revenue collections act as a challenge for the LCs/Utilities during the time of crises. The government considers the UWSS as a revenue own generator and only cover the investment plans during the annual budget allocations, and any running expenditures such as O&M and other expenses supposed to be covered by the revenues of the LCs/Utilities. These procedures induce the UWSS to provide the cash needed to fulfill its operational obligations.

To cover optimum cost coverage, the utilities need to earn revenues to achieve 100% of cost coverage. Utilities that worth mentioning as good performer are:

| | | | | | | |
|--------|--|-------|--|-------|--|---------------|
| Sana'a | | Ibb | | Bajil | | Al Mansouriah |
| Mukala | | Mocha | | Amran | | |

In 2011, many utilities used their depreciation accounts to cover its operational costs where Aden was the prominent example in this regards.

Annual national average for Operational Actual Cost Coverage in 2013 was 88% and 106% for 2012.

3.6 Continuity of Water Supply

Supplying potable water to people is the core objectives for existence of the UWSS. In Yemen, the feedback of people towards getting water in urban area always reported dissatisfaction. Two main factors for the negative feedback are

1- Scarce water resources in some areas for instance Taiz and Sana'a, and 2- the high rate of population growth that impedes the extension of networks. It is important to mention that water is supplied on different frequencies within the same boundary of the service area (zones).

The government tried its best to meet the MDGs of service coverage (Water & Sanitation) through various actions thus by supporting investing in network extensions and find alternative means of water resources. Saving water resources and alleviate further depletion are a shared responsibility between Ministry of Water & Environment and the Ministry of Agriculture & Irrigation.

Utilities that supply water on daily basis are Aden, Mukala, Hodeidah, and Dhamar, Al Sheher, Seyuon, Mocha, Zabid and Bait Alfaqih.

Utilities that supply water on weekly basis are Sana'a, Ibb, Bajil and Amran.

Utilities that supply water on monthly basis are Taiz, Rada'a, AlMahweet, Hajjah, Al-Dalea and Yareem.

4 Conclusions & Recommendations

The expanded analysis observed above was done for each key indicator, it is apparent that the general observations of the results covering the year 2013 (81%) are not promising in total when compared to the results of 2012 (119%). This creates questions about the reasons behind the shortcomings of performance in the water utilities for 2013, contrary to what was expected as a result of gradual improvement in the political context.

In general, Utilities which proves ability to persist its operational capability in 2013 were Ibb, Mocha, Bajil, Bait Al-Faqih and Hajjah. Whereas the vast majority of Utilities without surprises revealed a regression of performance as a result of accumulative impact of declined operational and management practices such as Aden, Taiz, Hodeidah, Al-Sheher and Al-Mahweet , including Al-Dalea LC which is encountering a severe security crises ,and last of all Al-Mansouriah which also suffers from proper management and financial elements.

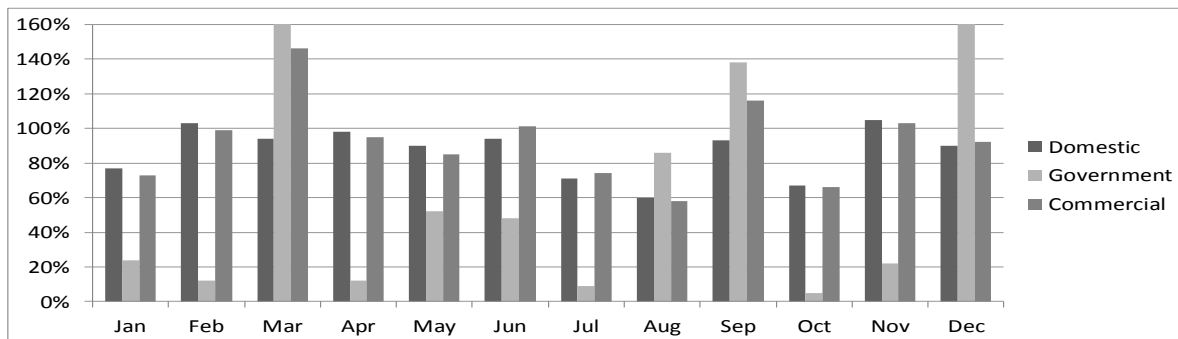
GIZ is committed to work with the Ministry of Water and Environment and other stakeholders to assess the performance of utilities in order to provide improved services. GIZ WSP is coordinating with MWE to provide the technical support for activating PIIS unit in MWE to resume its functions as soon as possible in preparing the full fledge Monthly/Quarterly/Annual PIIS report.

Finally, there are many challenges facing the water sector in Yemen, the difficulty to prioritize water issues in the Yemeni Constitution, and difficulty to streamline financial funds to support the sector .In addition to durable solution assuring efficient provision of potable water to people in parallel with strengthening the capacity of Utilities.

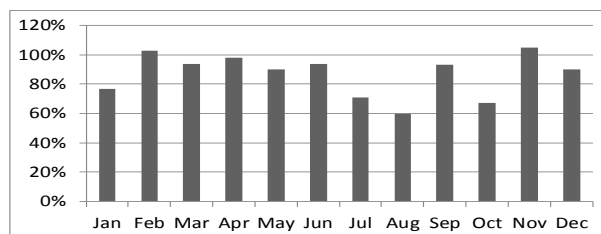
Annex 1 Analytic Chart of Performance Indicators

Sana'a LC Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

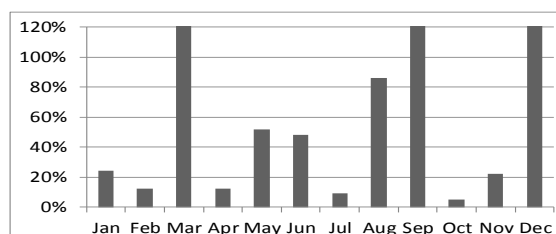


2 Collection Efficiency for Domestic



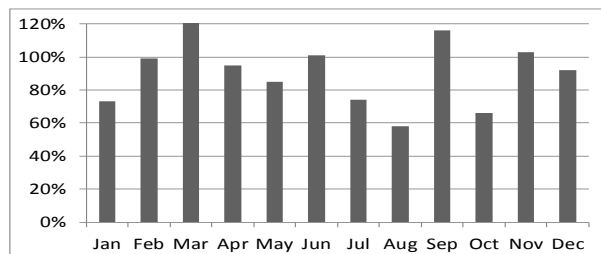
average 2012: 81%
average 2013: 87%

3 Collection Efficiency for Government



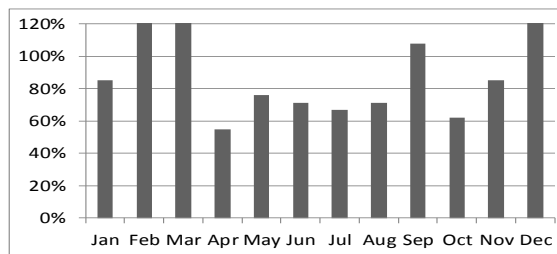
average 2012: 89%
average 2013: 81%

4 Collection Efficiency for Commercial



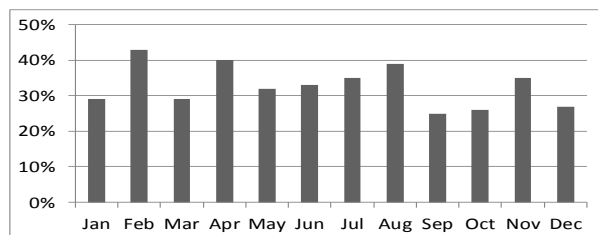
average 2012: 77%
average 2013: 93%

5 Operational Actual Cost Coverage



average 2012: 93%
average 2013: 90%

6 Non Revenue Water



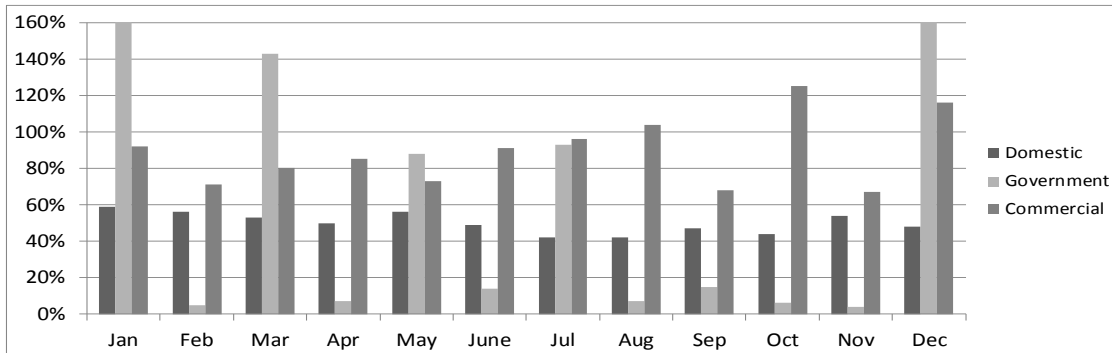
average 2012: 40%
average 2013: 33%

7 Continuity of Water Supply

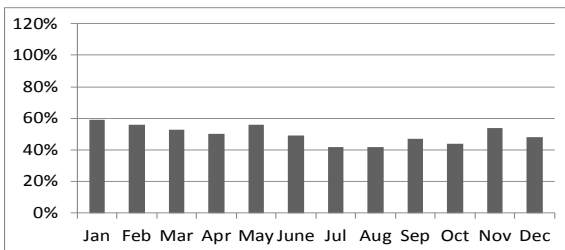
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | 8 | | | | |
| Feb | 8 | | | | |
| Mar | 8 | | | | |
| Apr | 8 | | | | |
| May | 8 | | | | |
| Jun | 8 | | | | |
| Jul | 8 | | | | |
| Aug | 8 | | | | |
| Sep | 8 | | | | |
| Oct | 8 | | | | |
| Nov | 8 | | | | |
| Dec | 8 | | | | |

Aden LC Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

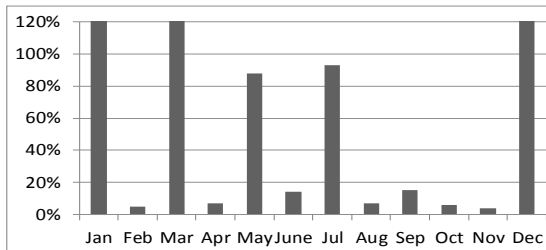


2 Collection Efficiency for Domestic



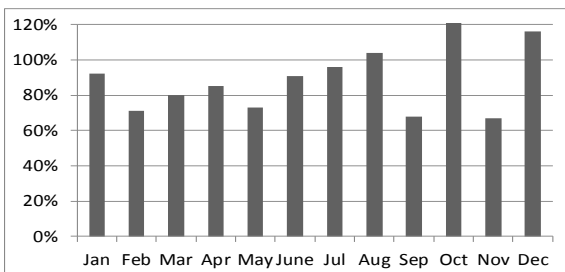
average 2012: 53%
average 2013: 51%

3 Collection Efficiency for Government



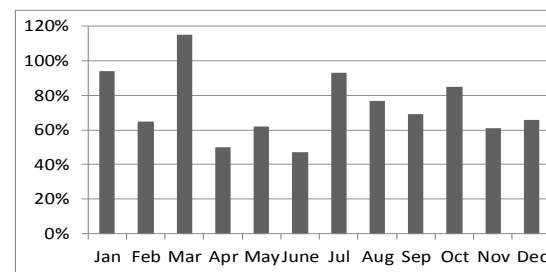
average 2012: 149%
average 2013: 59%

4 Collection Efficiency for Commercial



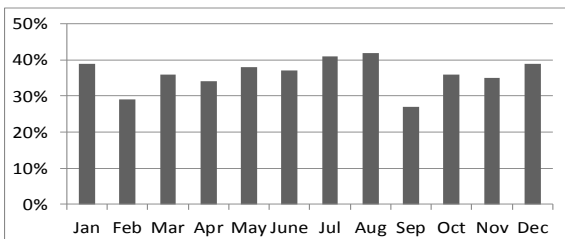
average 2012: 93%
average 2013: 89%

5 Operational Actual Cost Coverage



average 2012: 124%
average 2013: 71%

6 Non Revenue Water



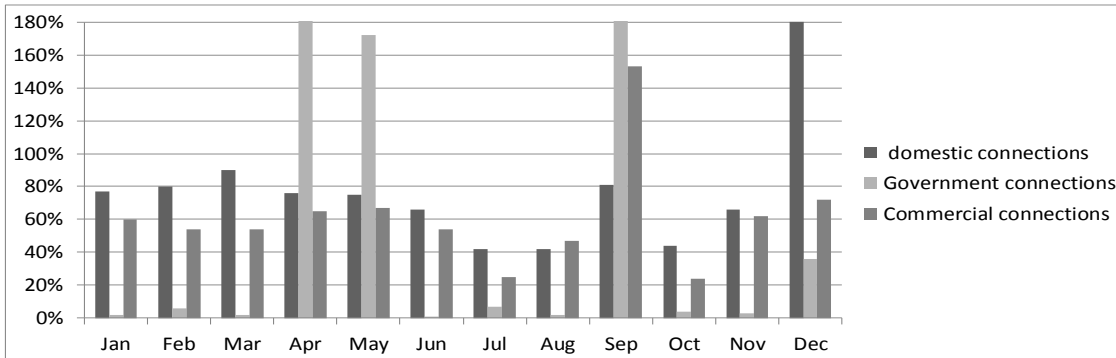
average 2012: 35%
average 2013: 37%

7 Continuity of Water Supply

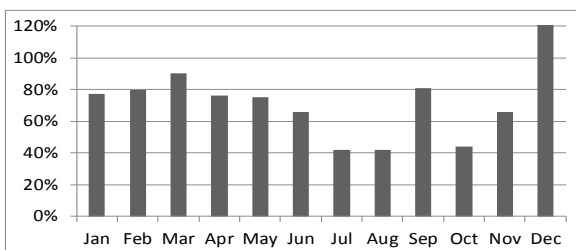
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | 17 | | | | |
| Feb | 17 | | | | |
| Mar | 17 | | | | |
| Apr | 17 | | | | |
| May | 17 | | | | |
| Jun | 17 | | | | |
| Jul | 17 | | | | |
| Aug | 17 | | | | |
| Sep | 17 | | | | |
| Oct | 17 | | | | |
| Nov | 17 | | | | |
| Dec | 17 | | | | |

Taiz LC Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

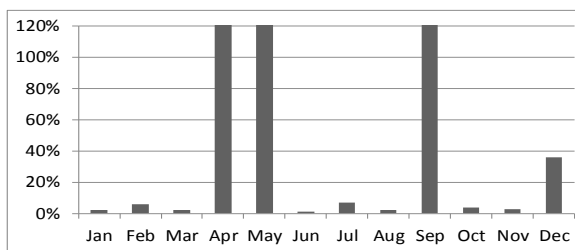


2 Collection Efficiency for Domestic



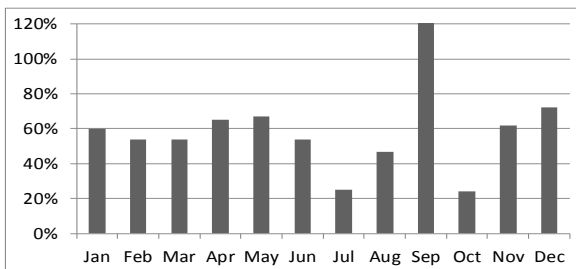
average 2012: 75%
average 2013: 78%

3 Collection Efficiency for Government



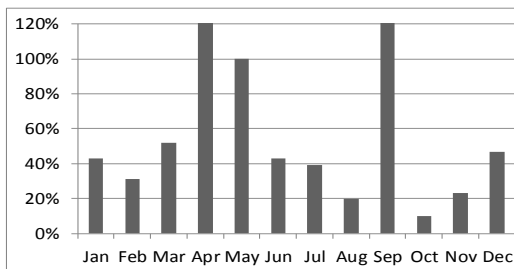
average 2012: 151%
average 2013: 54%

4 Collection Efficiency for Commercial



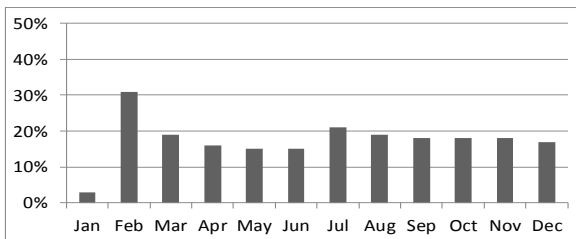
average 2012: 123%
average 2013: 63%

5 Operational Actual Cost Coverage



average 2012: 102%
average 2013: 57%

6 Non Revenue Water



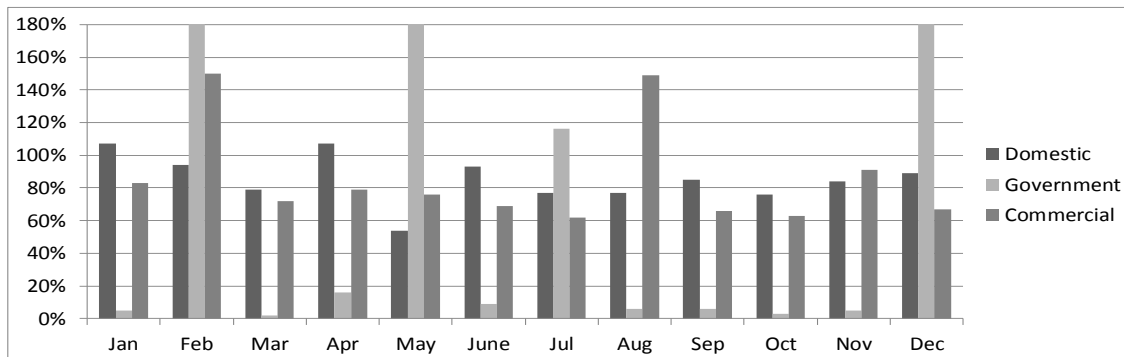
average 2012: 23%
average 2013: 19%

7 Continuity of Water Supply

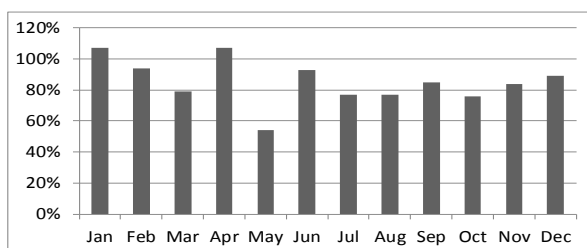
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | | | | | |
| Feb | | | | | |
| Mar | | | | | |
| Apr | | | | | |
| May | | | | | |
| Jun | | | | | |
| Jul | | | | | |
| Aug | | | | | |
| Sep | | | | | |
| Oct | | | | | |
| Nov | | | | | |
| Dec | | | | | |

Mukala LC Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

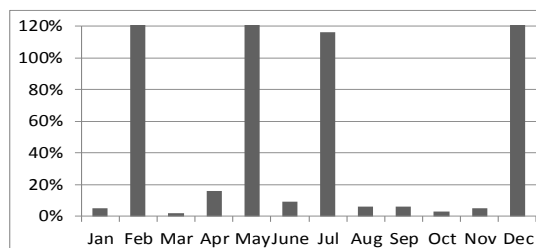


2 Collection Efficiency for Domestic



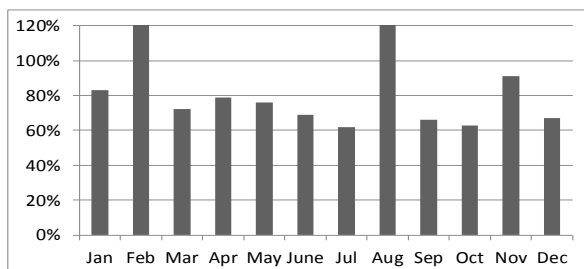
average 2012: 92%
average 2013: 84%

3 Collection Efficiency for Government



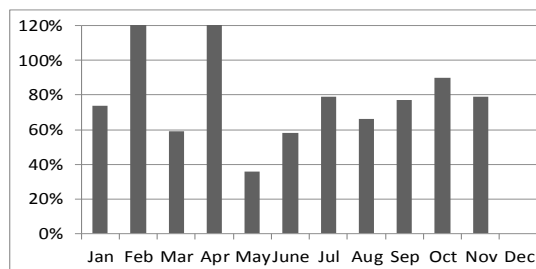
average 2012: 123%
average 2013: 100%

4 Collection Efficiency for Commercial



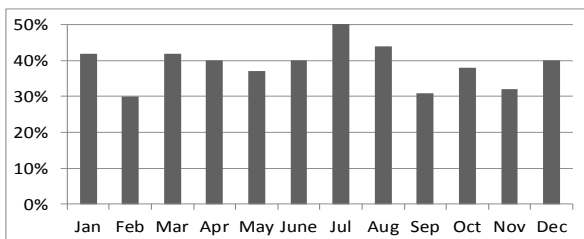
average 2012: 91%
average 2013: 85%

5 Operational Actual Cost Coverage



average 2012: 116%
average 2013: 81%

6 Non Revenue Water



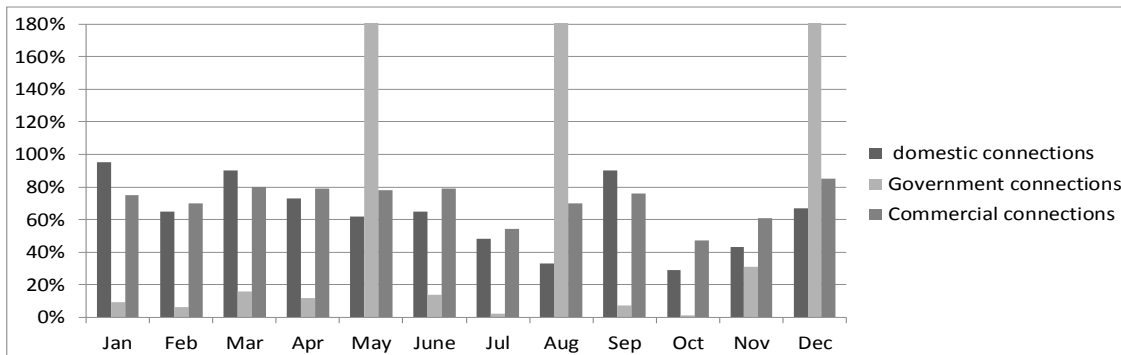
average 2012: 39%
average 2013: 40%

7 Continuity of Water Supply

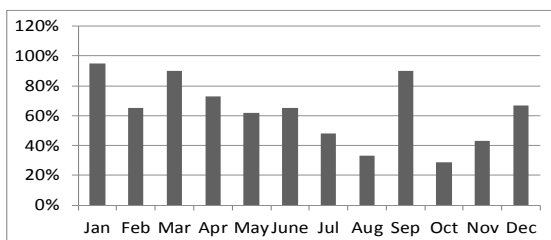
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | 12 | | | | |
| Feb | 12 | | | | |
| Mar | 12 | | | | |
| Apr | 8 | | | | |
| May | 8 | | | | |
| Jun | 8 | | | | |
| Jul | 8 | | | | |
| Aug | 8 | | | | |
| Sep | 8 | | | | |
| Oct | 12 | | | | |
| Nov | 12 | | | | |
| Dec | 12 | | | | |

Hodiedah LC Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

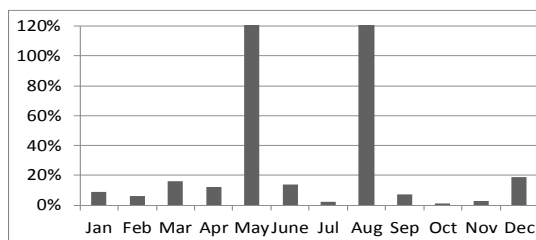


2 Collection Efficiency for Domestic



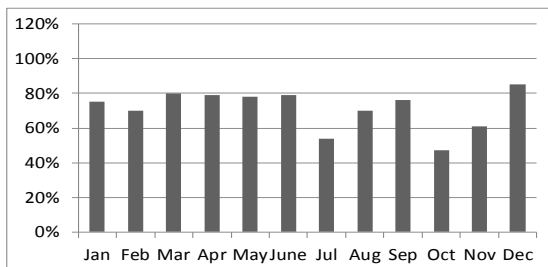
average 2012: 79%
average 2013: 62%

3 Collection Efficiency for Government



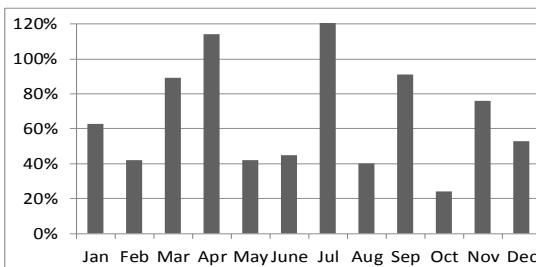
average 2012: 249%
average 2013: 52%

4 Collection Efficiency for Commercial



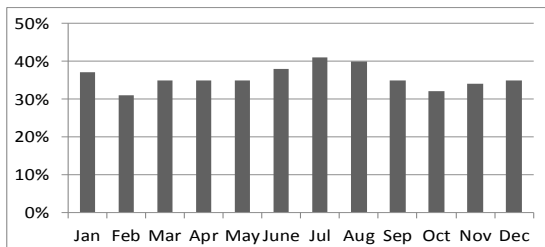
average 2012: 78%
average 2013: 72%

5 Operational Actual Cost Coverage



average 2012: 140%
average 2013: 66%

6 Non Revenue Water



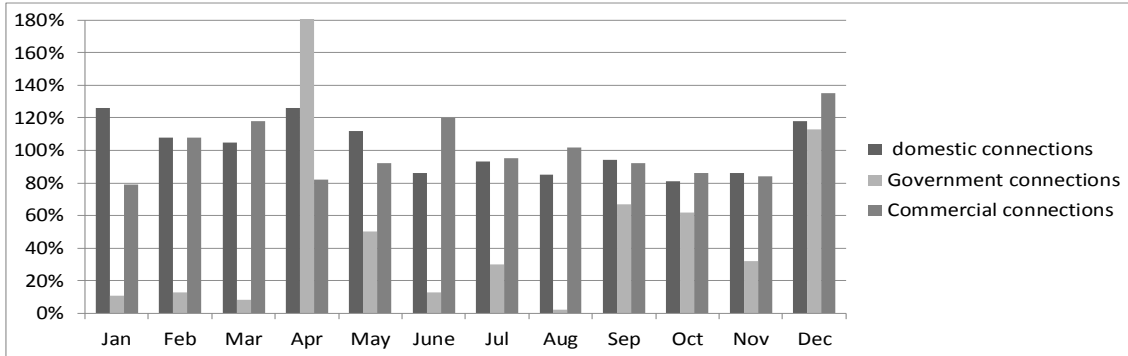
average 2012: 40%
average 2013: 36%

7 Continuity of Water Supply

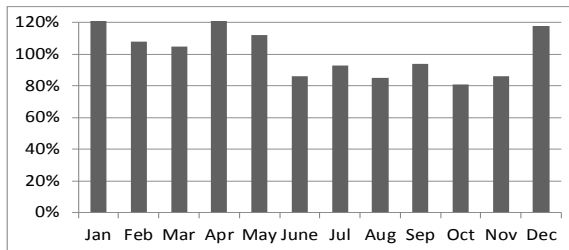
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | 24 | | | | |
| Feb | 24 | | | | |
| Mar | 24 | | | | |
| Apr | 24 | | | | |
| May | 24 | | | | |
| Jun | 24 | | | | |
| Jul | 24 | | | | |
| Aug | 24 | | | | |
| Sep | 24 | | | | |
| Oct | 24 | | | | |
| Nov | 24 | | | | |
| Dec | 24 | | | | |

Mocha LC Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

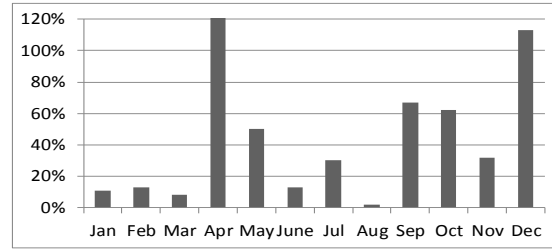


2 Collection Efficiency for Domestic



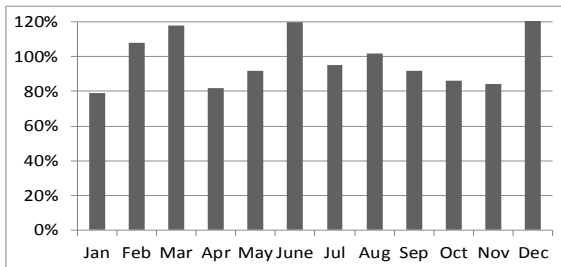
average 2012: 96%
average 2013: 100%

3 Collection Efficiency for Government



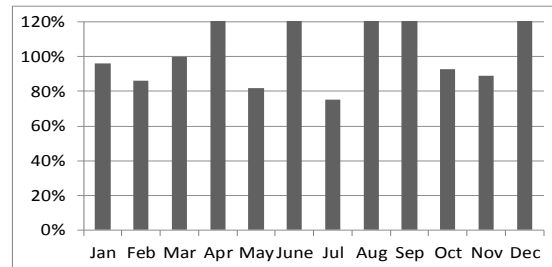
average 2012: 172%
average 2013: 49%

4 Collection Efficiency for Commercial



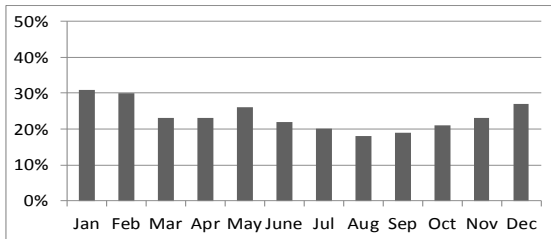
average 2012: 93%
average 2013: 100%

5 Operational Actual Cost Coverage



average 2012: 109%
average 2013: 183%

6 Non Revenue Water



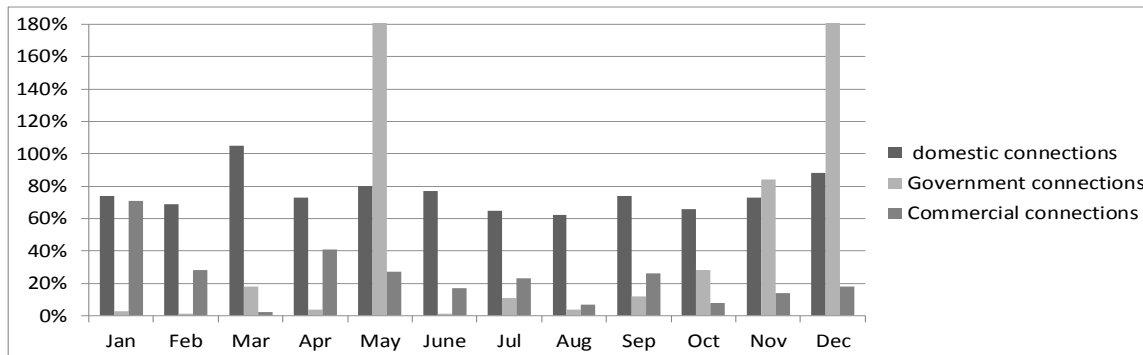
average 2012: 23%
average 2013: 24%

7 Continuity of Water Supply

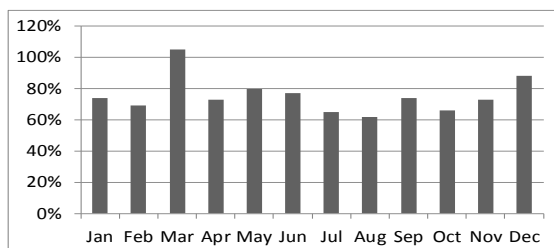
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | 24 | | | | |
| Feb | 24 | | | | |
| Mar | 24 | | | | |
| Apr | 24 | | | | |
| May | 24 | | | | |
| Jun | 24 | | | | |
| Jul | 24 | | | | |
| Aug | 24 | | | | |
| Sep | 24 | | | | |
| Oct | 24 | | | | |
| Nov | 24 | | | | |
| Dec | 24 | | | | |

Al-mahweet U Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

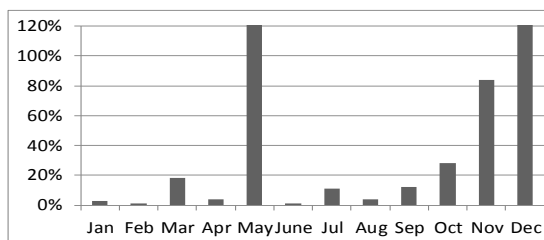


2 Collection Efficiency for Domestic



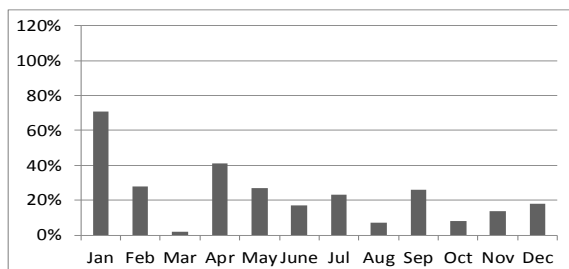
average 2012: 86%
average 2013: 76%

3 Collection Efficiency for Government



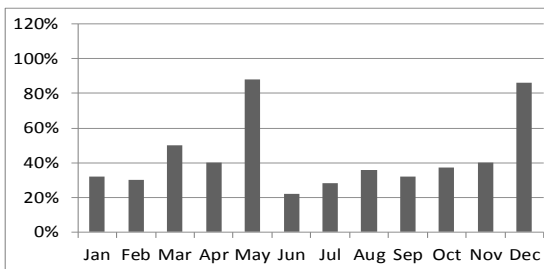
average 2012: 241%
average 2013: 42%

4 Collection Efficiency for Commercial



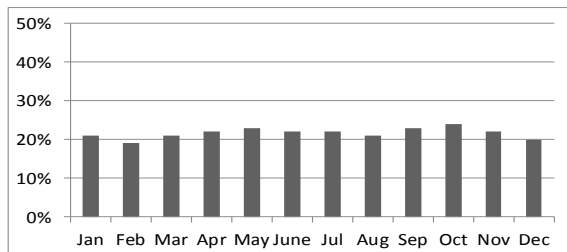
average 2012: 86%
average 2013: 23%

5 Operational Actual Cost Coverage



average 2012: 80%
average 2013: 46%

6 Non Revenue Water



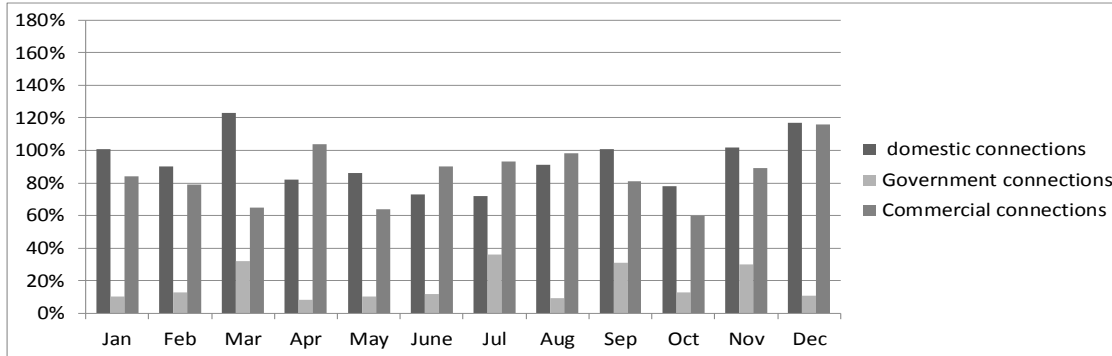
average 2012: 25%
average 2013: 22%

7 Continuity of Water Supply

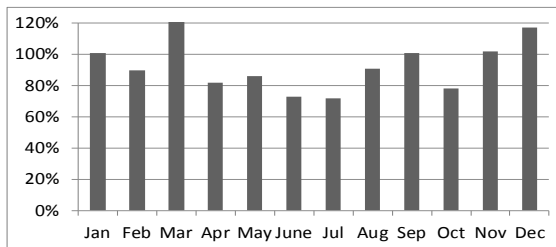
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | | | | | 1 |
| Feb | | | | | 1 |
| Mar | | | | | 1 |
| Apr | | | | | 1 |
| May | | | | | 1 |
| Jun | | | | | 1 |
| Jul | | | | | 1 |
| Aug | | | | | 1 |
| Sep | | | | | 1 |
| Oct | | | | | 1 |
| Nov | | | | | 1 |
| Dec | | | | | 1 |

Zabid U Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

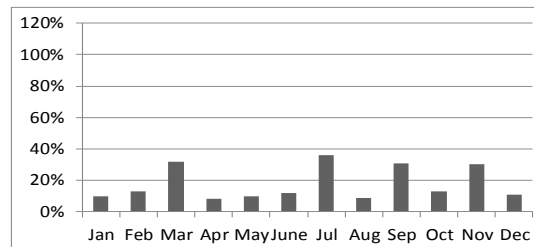


2 Collection Efficiency for Domestic



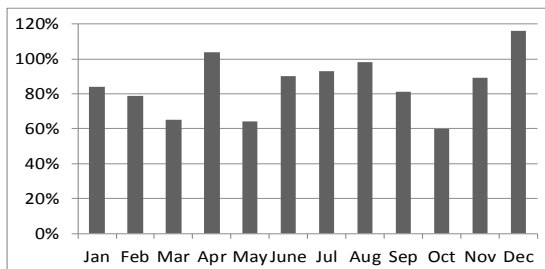
average 2012: 100%
average 2013: 92%

3 Collection Efficiency for Government



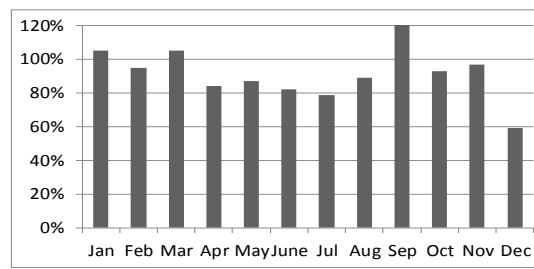
average 2012: 225%
average 2013: 19%

4 Collection Efficiency for Commercial



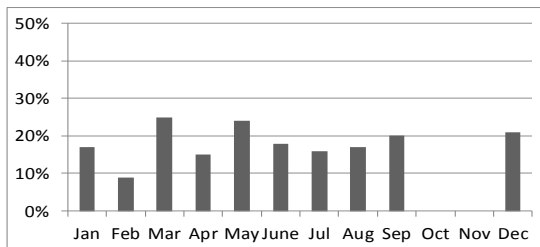
average 2012: 96%
average 2013: 85%

5 Operational Actual Cost Coverage



average 2012: 114%
average 2013: 93%

6 Non Revenue Water



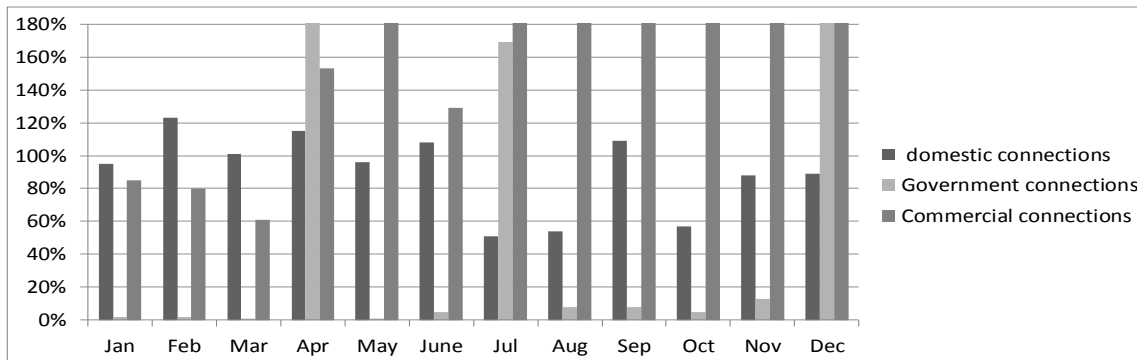
average 2012: 19%
average 2013: 19%

7 Continuity of Water Supply

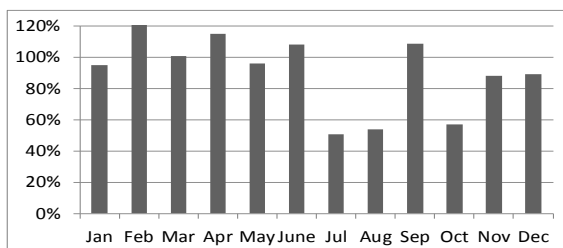
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | 6 | | | | |
| Feb | 6 | | | | |
| Mar | 6 | | | | |
| Apr | 6 | | | | |
| May | 6 | | | | |
| Jun | 6 | | | | |
| Jul | 6 | | | | |
| Aug | 6 | | | | |
| Sep | 6 | | | | |
| Oct | 6 | | | | |
| Nov | 6 | | | | |
| Dec | 6 | | | | |

Hajjah LC Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

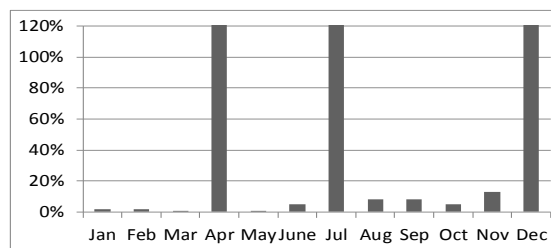


2 Collection Efficiency for Domestic



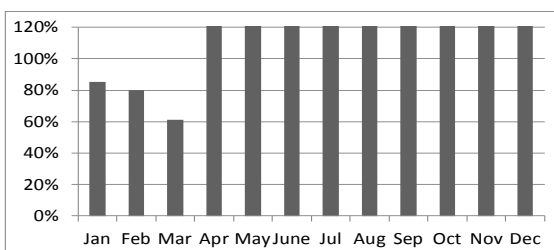
average 2012: 96%
average 2013: 90%

3 Collection Efficiency for Government



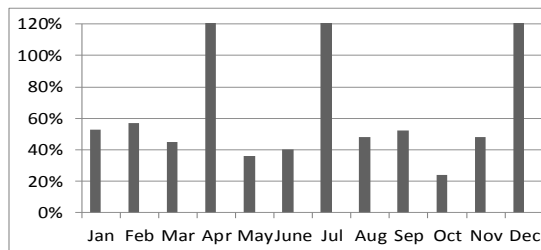
average 2012: 184%
average 2013: 95%

4 Collection Efficiency for Commercial



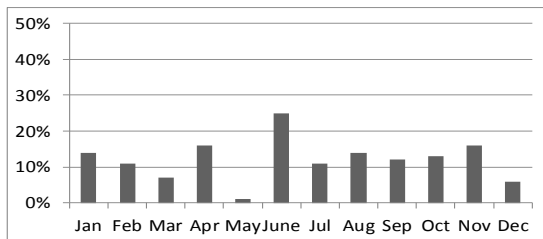
average 2012: 107%
average 2013: 215%

5 Operational Actual Cost Coverage



average 2012: 121%
average 2013: 98%

6 Non Revenue Water



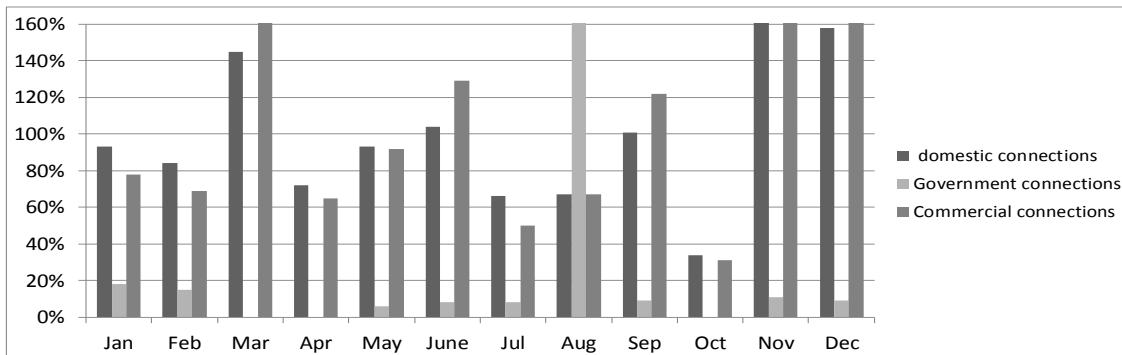
average 2012: 13%
average 2013: 13%

7 Continuity of Water Supply

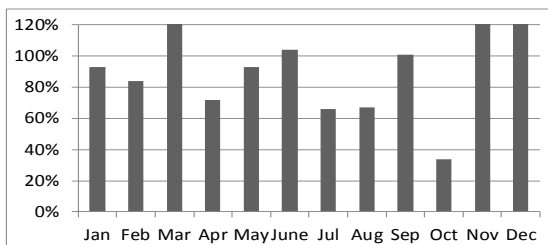
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | | | | | 4 |
| Feb | | | | | 4 |
| Mar | | | | | 4 |
| Apr | | | | | 4 |
| May | | | | | 4 |
| Jun | | | | | 4 |
| Jul | | | | | 4 |
| Aug | | | | | 4 |
| Sep | | | | | 4 |
| Oct | | | | | 4 |
| Nov | | | | | 4 |
| Dec | | | | | 4 |

Rada' LC Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

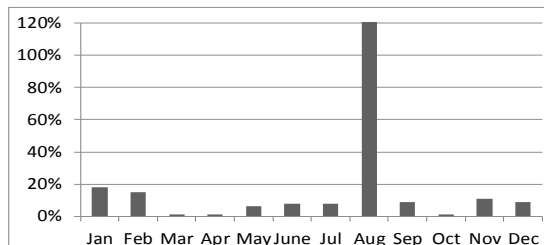


2 Collection Efficiency for Domestic



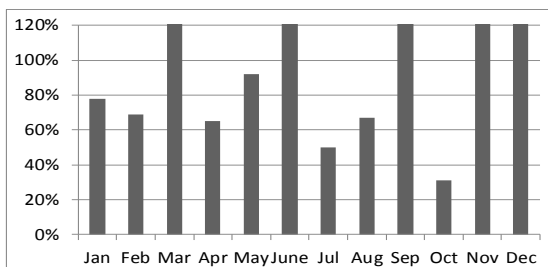
average 2012: 85%
average 2013: 95%

3 Collection Efficiency for Government



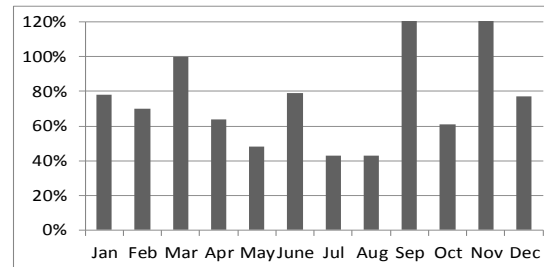
average 2012: 106%
average 2013: 53%

4 Collection Efficiency for Commercial



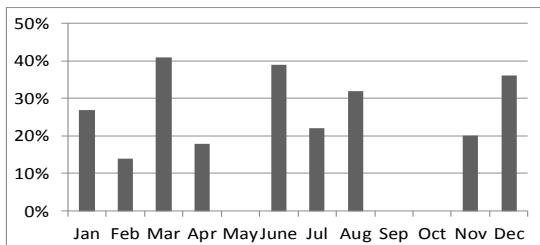
average 2012: 88%
average 2013: 108%

5 Operational Actual Cost Coverage



average 2012: 81%
average 2013: 79%

6 Non Revenue Water



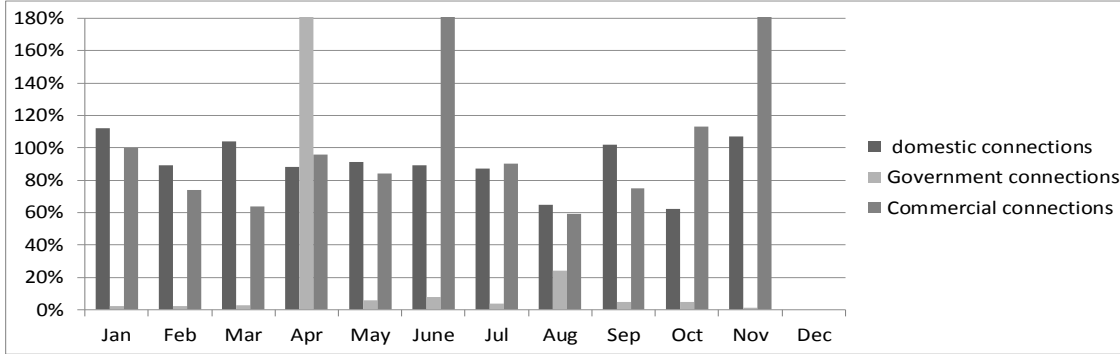
average 2012: 31%
average 2013: 21%

7 Continuity of Water Supply

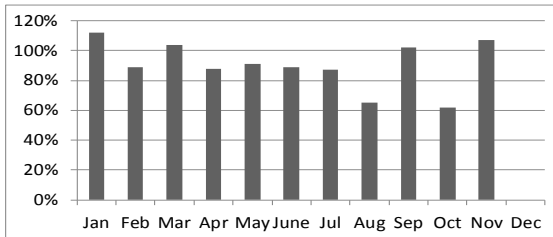
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | | | | | 2 |
| Feb | | | | | 2 |
| Mar | | | | | 2 |
| Apr | | | | | 2 |
| May | | | | | 2 |
| Jun | | | | | 2 |
| Jul | | | | | 2 |
| Aug | | | | | 2 |
| Sep | | | | | 2 |
| Oct | | | | | 2 |
| Nov | | | | | 2 |
| Dec | | | | | 2 |

Bajil U Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

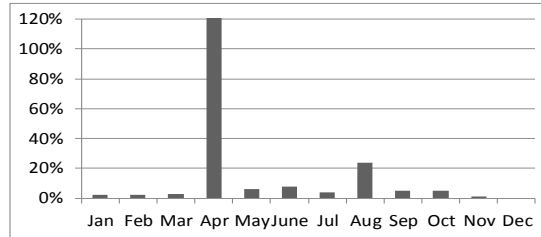


2 Collection Efficiency for Domestic



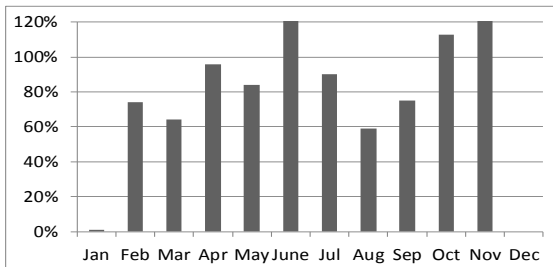
average 2012: 87%
average 2013: 90%

3 Collection Efficiency for Government



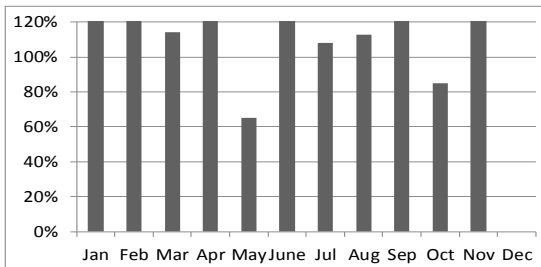
average 2012: 292%
average 2013: 175%

4 Collection Efficiency for Commercial



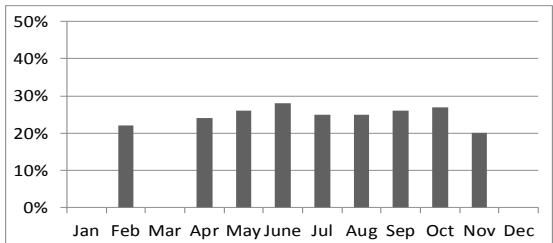
average 2012: 87%
average 2013: 93%

5 Operational Actual Cost Coverage



average 2012: 104%
average 2013: 130%

6 Non Revenue Water



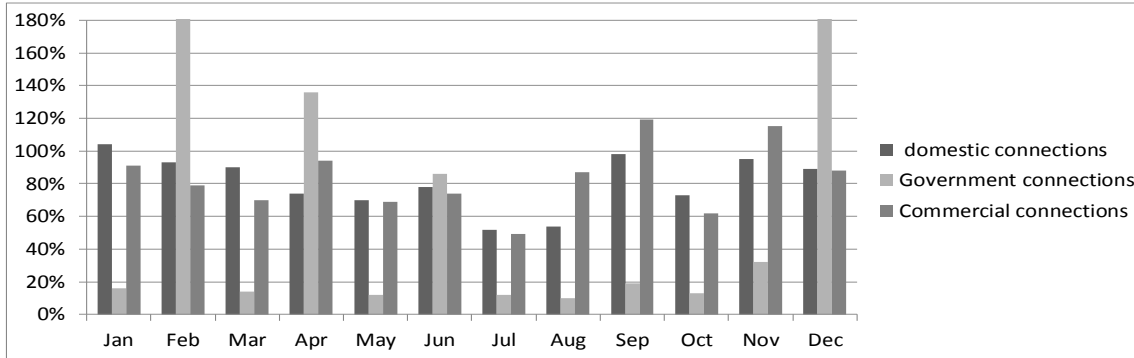
average 2012: 24%
average 2013: 28%

7 Continuity of Water Supply

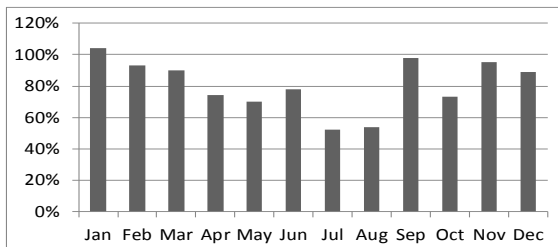
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | | 24 | 1 | | |
| Feb | | 24 | 1 | | |
| Mar | | 24 | 1 | | |
| Apr | | 24 | 1 | | |
| May | | 24 | 1 | | |
| Jun | | 24 | 1 | | |
| Jul | | 24 | 1 | | |
| Aug | | 24 | 1 | | |
| Sep | | 24 | 1 | | |
| Oct | | 24 | 1 | | |
| Nov | | 24 | 1 | | |
| Dec | | 24 | 1 | | |

Seyoun Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

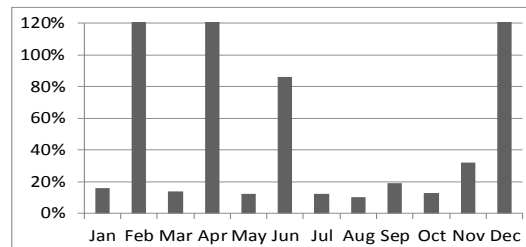


2 Collection Efficiency for Domestic



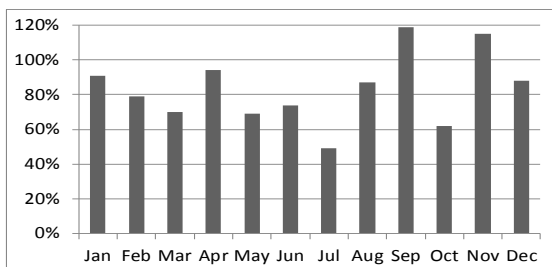
average 2012: 88%
average 2013: 97%

3 Collection Efficiency for Government



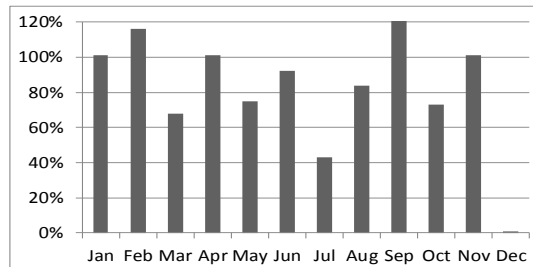
average 2012: 167%
average 2013: 84%

4 Collection Efficiency for Commercial



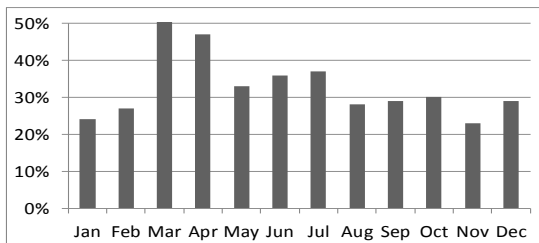
average 2012: 90%
average 2013: 82%

5 Operational Actual Cost Coverage



average 2012: 106%
average 2013: 87%

6 Non Revenue Water



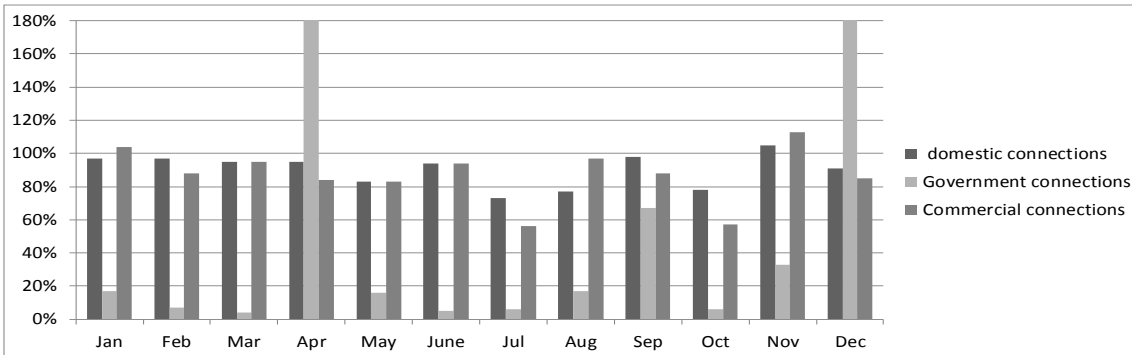
average 2012: 29%
average 2013: 33%

7 Continuity of Water Supply

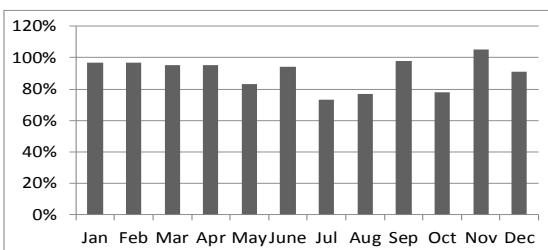
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | 24 | | | | |
| Feb | 24 | | | | |
| Mar | 24 | | | | |
| Apr | 24 | | | | |
| May | 24 | | | | |
| Jun | 24 | | | | |
| Jul | 24 | | | | |
| Aug | 24 | | | | |
| Sep | 24 | | | | |
| Oct | 24 | | | | |
| Nov | 24 | | | | |
| Dec | 24 | | | | |

Ibb Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

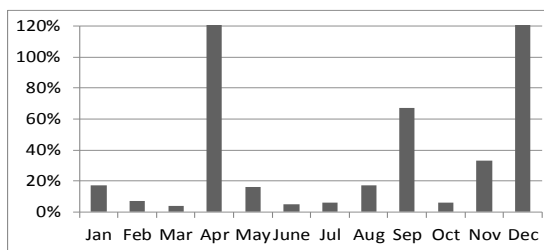


2 Collection Efficiency for Domestic



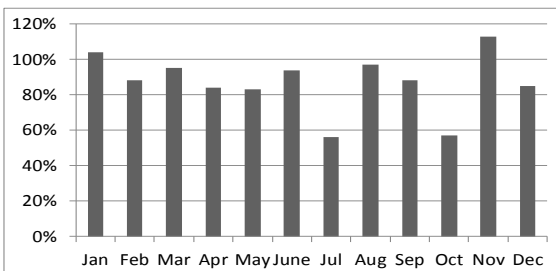
average 2012: 94%
average 2013: 91%

3 Collection Efficiency for Government



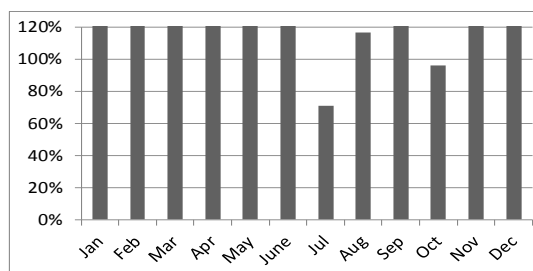
average 2012: 134%
average 2013: 85%

4 Collection Efficiency for Commercial



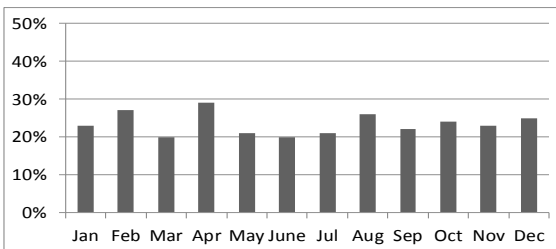
average 2012: 88%
average 2013: 87%

5 Operational Actual Cost Coverage



average 2012: 152%
average 2013: 136%

6 Non Revenue Water



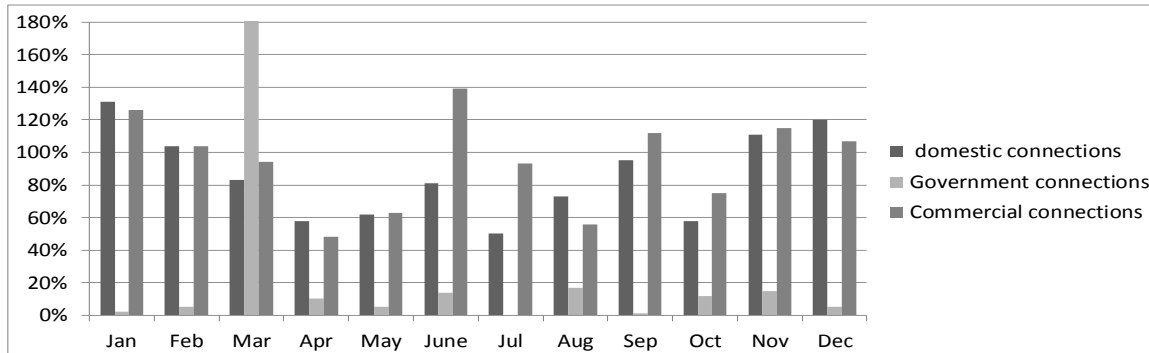
average 2012: 25%
average 2013: 26%

7 Continuity of Water Supply

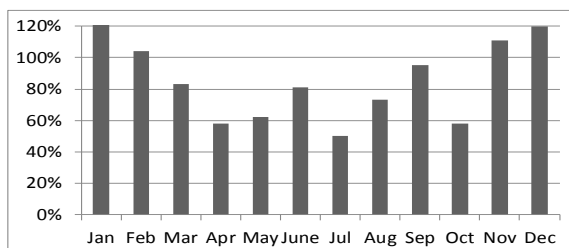
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | | 24 | 2 | | |
| Feb | | 24 | 2 | | |
| Mar | | 24 | 2 | | |
| Apr | | 24 | 2 | | |
| May | | 24 | 2 | | |
| Jun | | 24 | 2 | | |
| Jul | | 24 | 2 | | |
| Aug | | 24 | 2 | | |
| Sep | | 24 | 2 | | |
| Oct | | 24 | 2 | | |
| Nov | | 24 | 2 | | |
| Dec | | 24 | 2 | | |

Bait Alfaqih Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

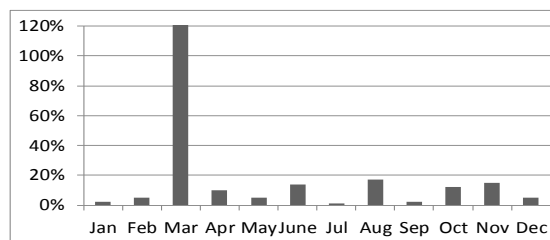


2 Collection Efficiency for Domestic



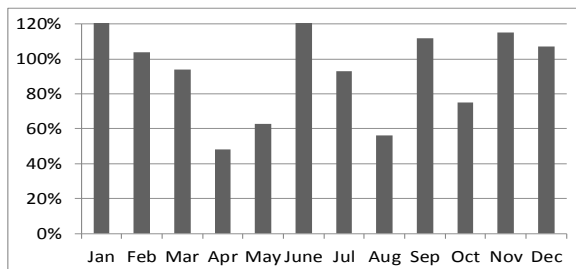
average 2012: 97%
average 2013: 85%

3 Collection Efficiency for Government



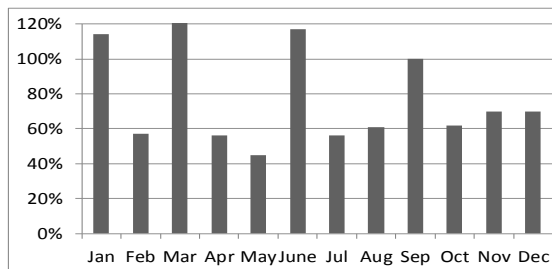
average 2012: 12%
average 2013: 212%

4 Collection Efficiency for Commercial



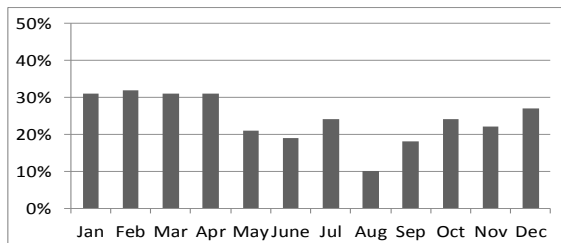
average 2012: 98%
average 2013: 94%

5 Operational Actual Cost Coverage



average 2012: 76%
average 2013: 85%

6 Non Revenue Water



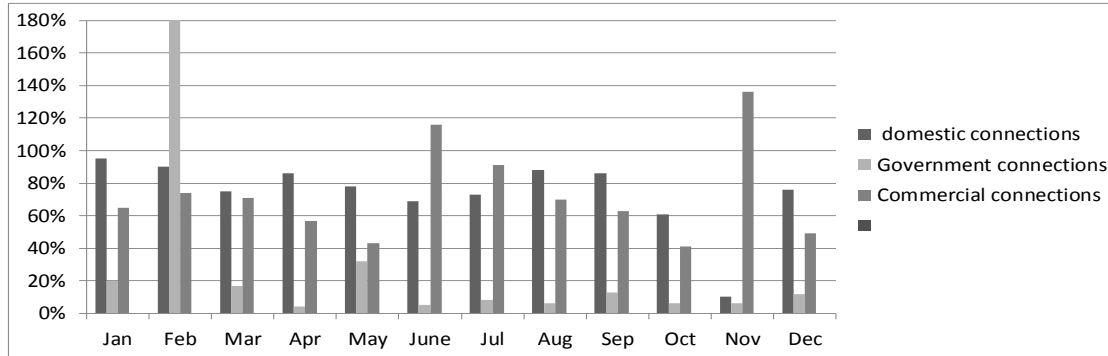
average 2012: 18%
average 2013: 25%

7 Continuity of Water Supply

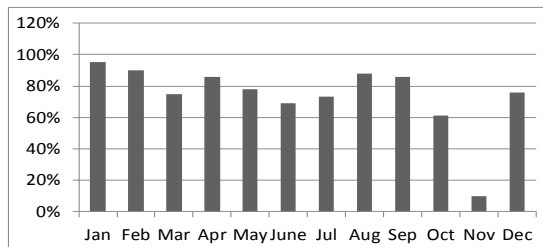
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | 16 | | | | |
| Feb | 16 | | | | |
| Mar | 16 | | | | |
| Apr | 16 | | | | |
| May | 16 | | | | |
| Jun | 16 | | | | |
| Jul | 16 | | | | |
| Aug | 16 | | | | |
| Sep | 16 | | | | |
| Oct | 16 | | | | |
| Nov | 16 | | | | |
| Dec | 16 | | | | |

Al-Sheher Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

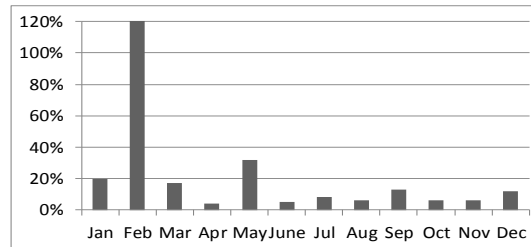


2 Collection Efficiency for Domestic



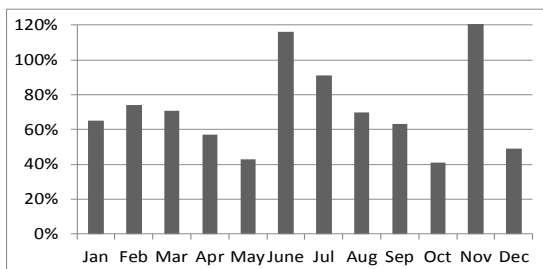
average 2012: 89%
average 2013: 82%

3 Collection Efficiency for Government



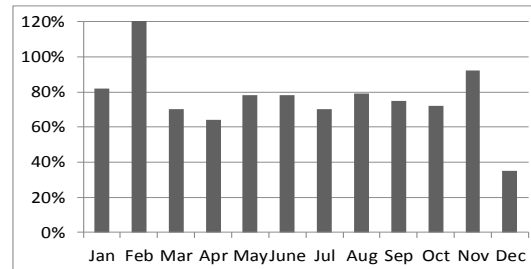
average 2012: 131%
average 2013: 27%

4 Collection Efficiency for Commercial



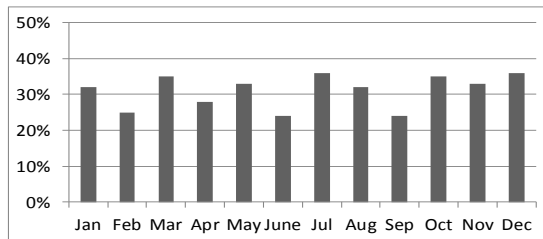
average 2012: 82%
average 2013: 74%

5 Operational Actual Cost Coverage



average 2012: 98%
average 2013: 74%

6 Non Revenue Water



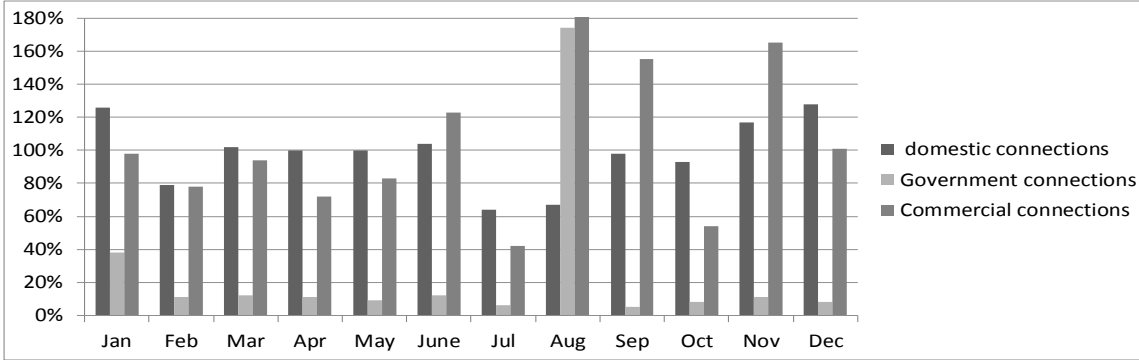
average 2012: 30%
average 2013: 32%

7 Continuity of Water Supply

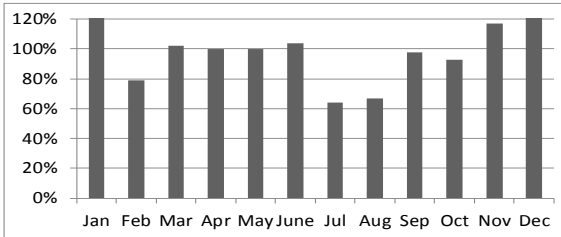
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | 24 | | | | |
| Feb | 24 | | | | |
| Mar | 24 | | | | |
| Apr | 18 | | | | |
| May | 18 | | | | |
| Jun | 18 | | | | |
| Jul | 18 | | | | |
| Aug | 18 | | | | |
| Sep | 18 | | | | |
| Oct | 24 | | | | |
| Nov | 24 | | | | |
| Dec | 24 | | | | |

Amran Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

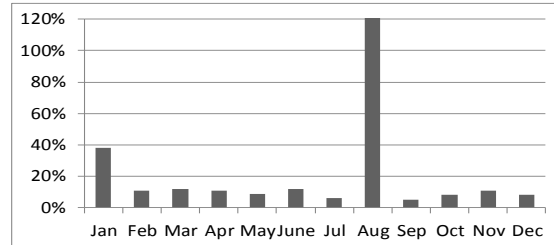


2 Collection Efficiency for Domestic



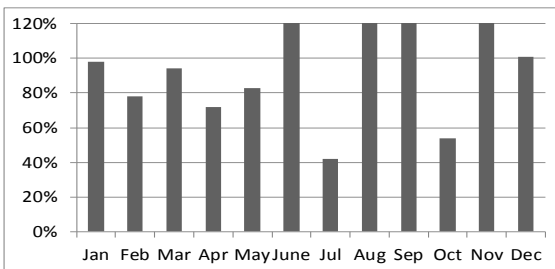
average 2012: 101%
average 2013: 98%

3 Collection Efficiency for Government



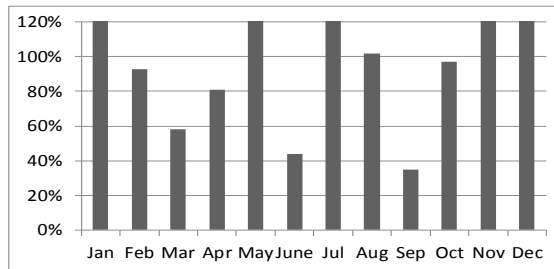
average 2012: 285%
average 2013: 22%

4 Collection Efficiency for Commercial



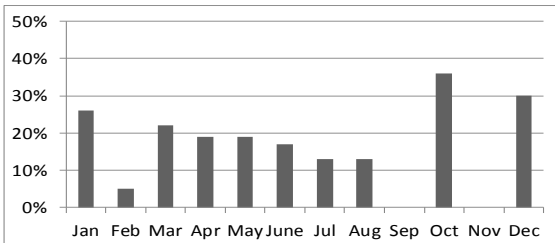
average 2012: 103%
average 2013: 102%

5 Operational Actual Cost Coverage



average 2012: 136%
average 2013: 103%

6 Non Revenue Water



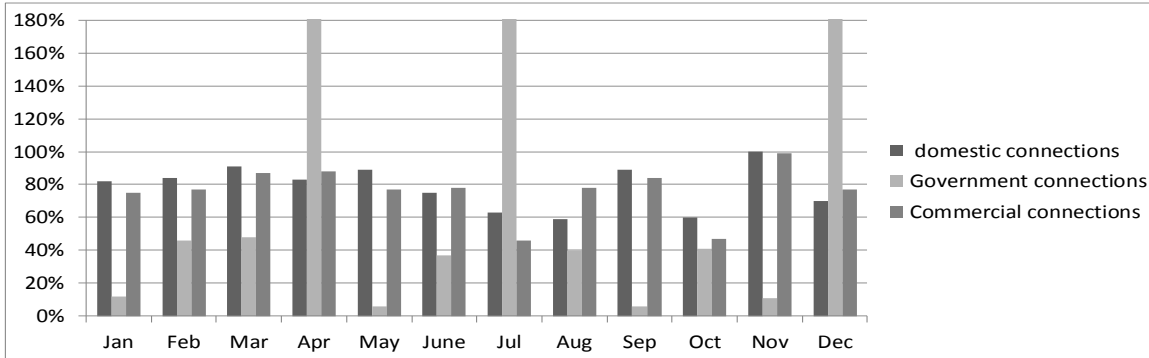
average 2012: 16%
average 2013: 15%

7 Continuity of Water Supply

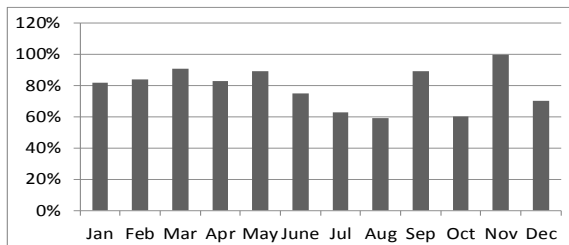
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | | 24 | 1 | | |
| Feb | | 24 | 1 | | |
| Mar | | 24 | 1 | | |
| Apr | | 24 | 1 | | |
| May | | 24 | 1 | | |
| Jun | | 24 | 1 | | |
| Jul | | 24 | 1 | | |
| Aug | | 24 | 1 | | |
| Sep | | 24 | 1 | | |
| Oct | | 24 | 1 | | |
| Nov | | 24 | 1 | | |
| Dec | | 24 | 1 | | |

Dhamar Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

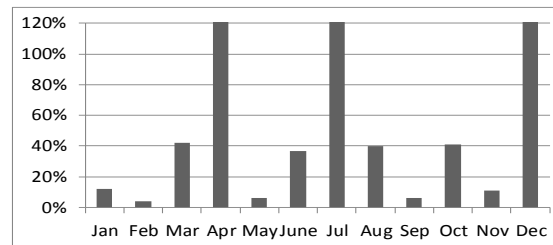


2 Collection Efficiency for Domestic



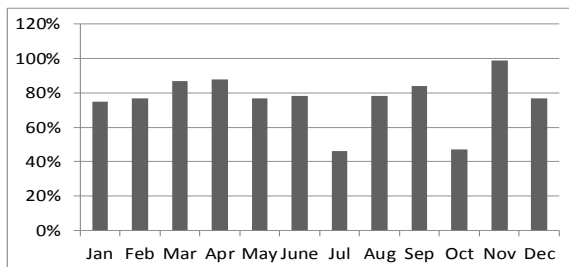
average 2012: 84%
average 2013: 97%

3 Collection Efficiency for Government



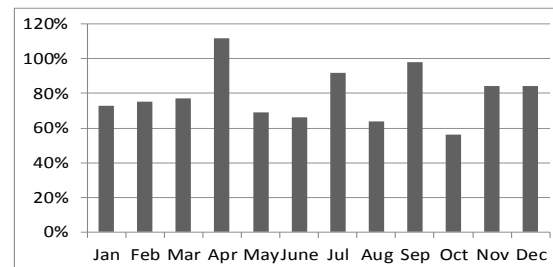
average 2012: 214%
average 2013: 93%

4 Collection Efficiency for Commercial



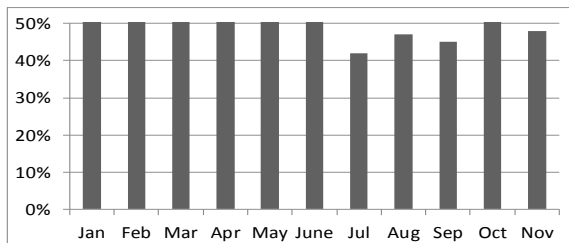
average 2012: 80%
average 2013: 76%

5 Operational Actual Cost Coverage



average 2012: 101%
average 2013: 80%

6 Non Revenue Water



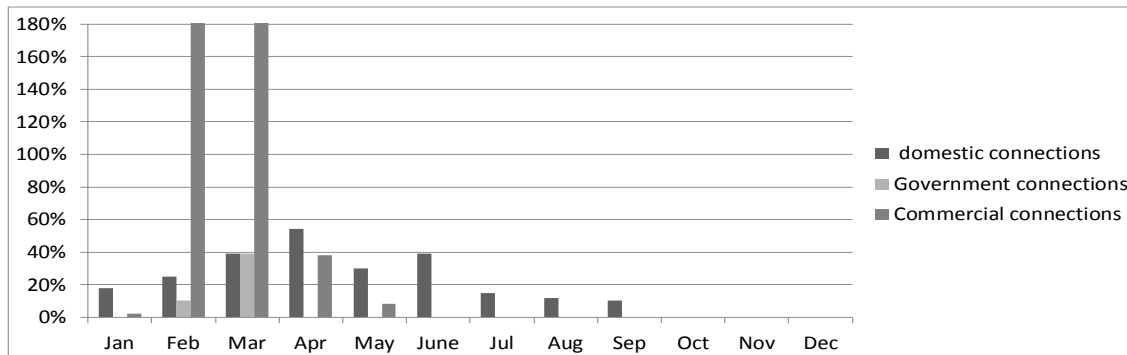
average 2012: 46%
average 2013: 45%

7 Continuity of Water Supply

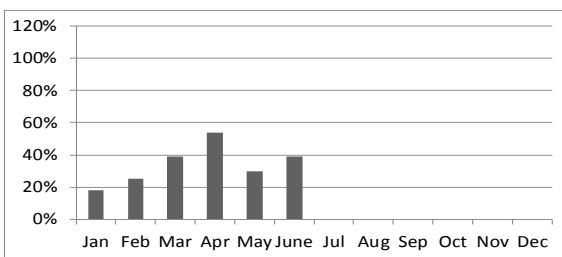
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | 24 | | | | |
| Feb | 24 | | | | |
| Mar | 24 | | | | |
| Apr | 24 | | | | |
| May | 24 | | | | |
| Jun | 24 | | | | |
| Jul | 24 | | | | |
| Aug | 24 | | | | |
| Sep | 24 | | | | |
| Oct | 24 | | | | |
| Nov | 24 | | | | |
| Dec | 24 | | | | |

AIDhalea Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

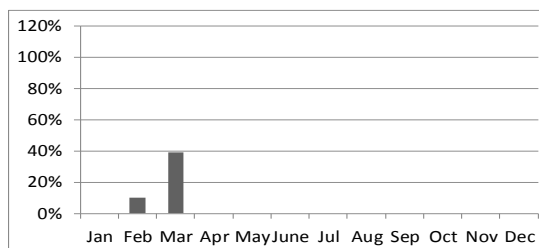


2 Collection Efficiency for Domestic



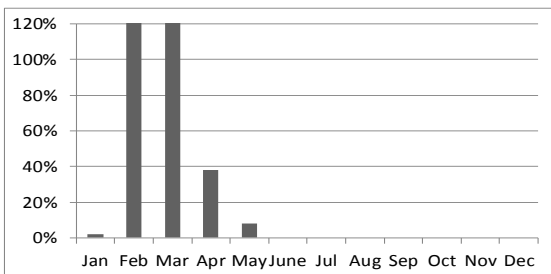
average 2012: 34%
average 2013: 34%

3 Collection Efficiency for Government



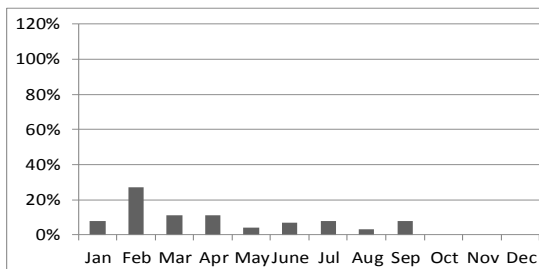
average 2012: 55%
average 2013: 25%

4 Collection Efficiency for Commercial



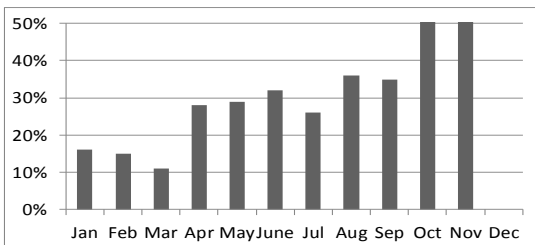
average 2012: 233%
average 2013: 96%

5 Operational Actual Cost Coverage



average 2012: 20%
average 2013: 10%

6 Non Revenue Water



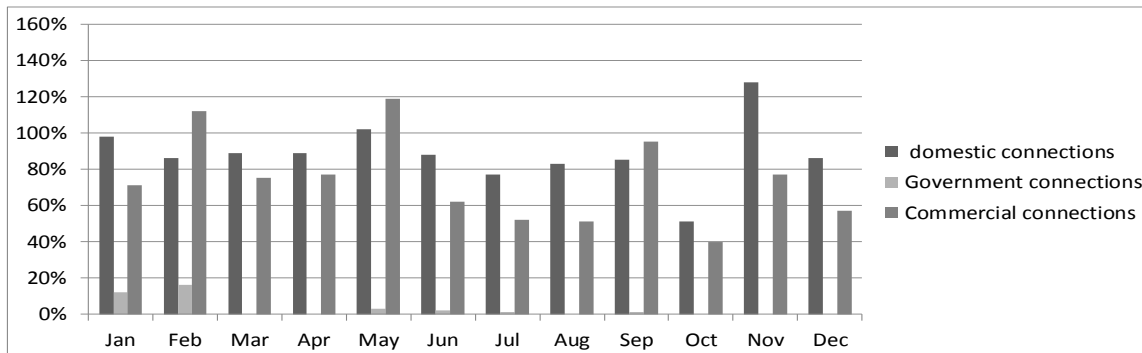
average 2012: 44%
average 2013: 34%

7 Continuity of Water Supply

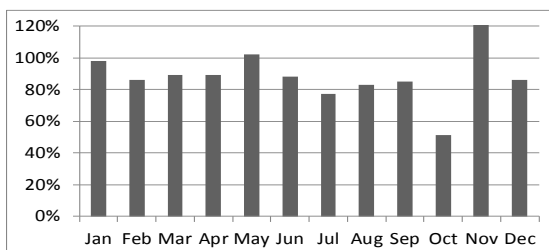
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | | | | | 1 |
| Feb | | | | | 1 |
| Mar | | | | | 1 |
| Apr | | | | | 1 |
| May | | | | | 1 |
| Jun | | | | | 1 |
| Jul | | | | | 1 |
| Aug | | | | | 1 |
| Sep | | | | | 1 |
| Oct | | | | | 1 |
| Nov | | | | | 1 |
| Dec | | | | | 1 |

Yareem Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

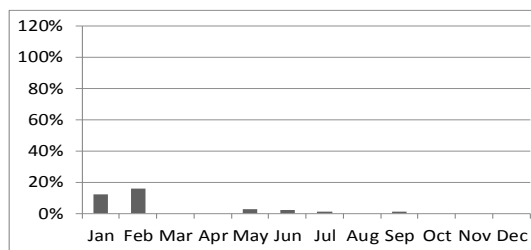


2 Collection Efficiency for Domestic



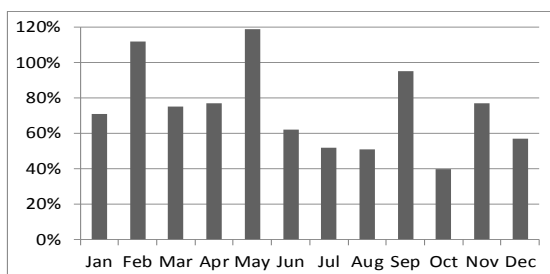
average 2012: 98%
average 2013: 88%

3 Collection Efficiency for Government



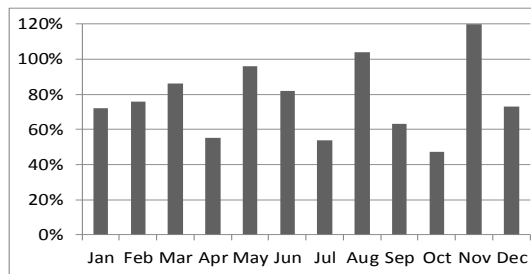
average 2012: 26%
average 2013: 3%

4 Collection Efficiency for Commercial



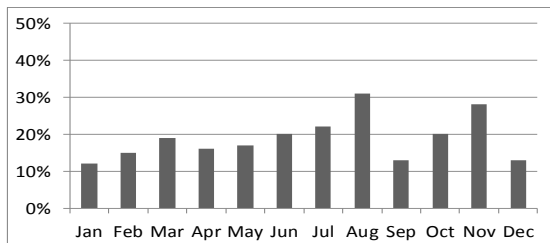
average 2012: 81%
average 2013: 74%

5 Operational Actual Cost Coverage



average 2012: 87%
average 2013: 74%

6 Non Revenue Water



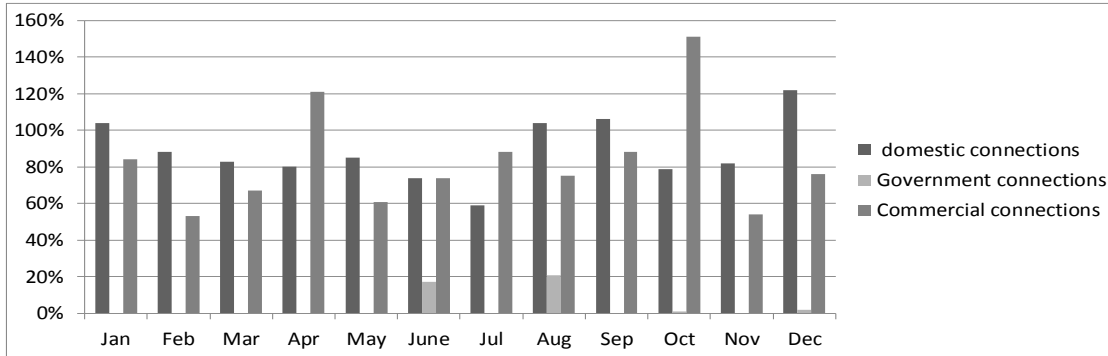
average 2012: 19%
average 2013: 19%

7 Continuity of Water Supply

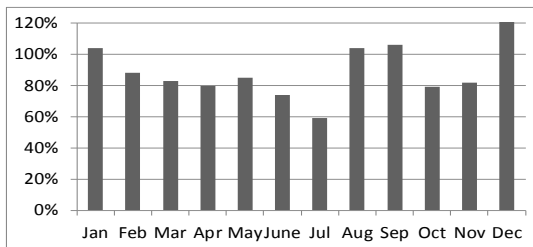
| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | | | | | 2 |
| Feb | | | | | 2 |
| Mar | | | | | 2 |
| Apr | | | | | 2 |
| May | | | | | 2 |
| Jun | | | | | 2 |
| Jul | | | | | 2 |
| Aug | | | | | 2 |
| Sep | | | | | 2 |
| Oct | | | | | 2 |
| Nov | | | | | 2 |
| Dec | | | | | 2 |

Al-Mansouria U Jan-Dec 2013

1 Collection Efficiency for Domestic, Government & Commercial

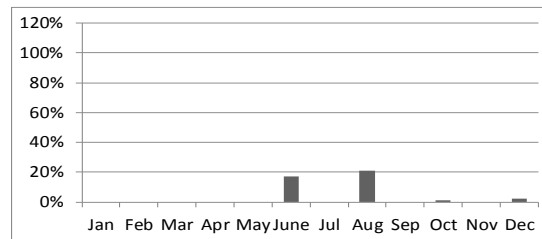


2 Collection Efficiency for Domestic



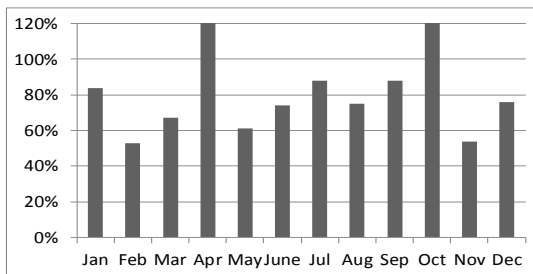
average 2012: 90%
average 2013: 90%

3 Collection Efficiency for Government



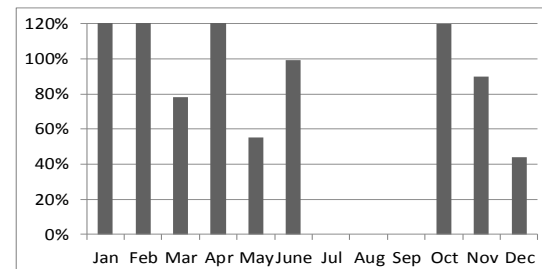
average 2012: 652%
average 2013: 3%

4 Collection Efficiency for Commercial



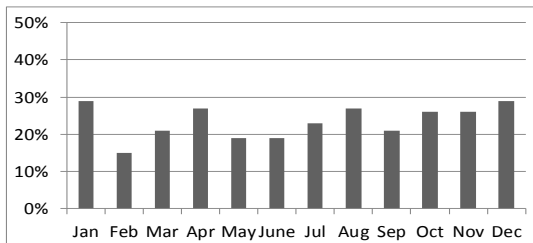
average 2012: 78%
average 2013: 83%

5 Operational Actual Cost Coverage



average 2012: 162%
average 2013: 97%

6 Non Revenue Water



average 2012: 20%
average 2013: 21%

7 Continuity of Water Supply

| Month | Daily | Weekly | | Monthly | |
|-------|-----------|-----------|----------|-----------|-----------|
| | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| Jan | 9 | | | | |
| Feb | 8 | | | | |
| Mar | 8 | | | | |
| Apr | 9 | | | | |
| May | 8 | | | | |
| Jun | 9 | | | | |
| Jul | 9 | | | | |
| Aug | 7 | | | | |
| Sep | 8 | | | | |
| Oct | 7 | | | | |
| Nov | 8 | | | | |
| Dec | 7 | | | | |

Annex 2 Details analysis per each indicator

Sana'a

- Collection Efficiency
 1. Domestic collection: shows improvement from 81% in 2012 to 87% in 2013. The improvement in collection revenues is a result of improved water supply services.
 2. Governmental collection: drops from 89% in 2012 to 81% in 2013.
 3. Commercial: increased steadily from 77% in 2012 to 93% in 2013 due to improved service provision.
- Operational actual cost coverage: decreased slightly from 93% in 2012 to 90% in 2013.
- Non-Revenue Water: improved significantly to 33% in 2013 compared to 40% in 2012.
- Continuity of water supply: Provide water once time a week.

Aden

- Collection Efficiency
 1. Domestic collection: shows no significant improvement in the domestic collection from the previous year. The domestic collection efficiency is 53% in 2012 and 51% in 2013.
 2. Governmental collection: dropped considerably from 194% in 2012 to 59% in 2013.
 3. Commercial: decreased from an average of 93% in 2012 to 89% in 2013.
- Operational actual cost coverage: also decreased significantly from an average of 124% in 2012 to 71% in 2013.
- Non-Revenue Water: increased slightly from 35% to 37% in 2013.
- Continuity of water supply: increase 2 hours to be 17 hours a day.

Taiz

- Collection Efficiency
 1. Domestic collection: A slight increase of 3% from 2012 to reach 78% in 2012 compared to 75% in 2012.
 2. Governmental collection: decreases dramatically from 151% in 2012 to 54% in 2013.
 3. Commercial: declined over the last year to become 63% in 2013 compared to 123% in 2012.
- Operational actual cost coverage: decreases from 124% in 2012 to 71% in 2013.
- Non-Revenue Water: slightly increased from 35% to 37% in 2013.
- Continuity of water supply:

Mukala

- Collection Efficiency
 1. Domestic collection: decrease slightly from 92% in 2012 to 84% in 2013.
 2. Governmental collection: decreases from 123% in 2012 to 100% in 2013.
 3. Commercial: drops slightly to 85% in 2013 compared to 91% in 2012.
- Operational actual cost coverage: decreased significantly by 35% from 2012 to be 81% in 2013.
- Non-Revenue Water: increased 1% in average from 39% 2012 to 40% in 2013.
- Continuity of water supply: is constantly supplied at a rate of 12 hours daily.

Hodeidah

- Collection Efficiency
 1. Domestic collection: decreased from 79% in 2012 to 62% in 2013.
 2. Governmental collection: declined significantly to 52% in 2013 from 249% in 2012.
 3. Commercial: decreased 6% in average from 78% in 2012 to 72% in 2013.
- Operational actual cost coverage: was significantly decreased from 140% in 2012 to 66% in 2013.
- Non-Revenue Water: decreased in average from 40% 2012 to 36% in 2013.
- Continuity of water supply: 24 hours a day.

Dhamar

- Collection Efficiency
 1. Domestic collection: decreased to 79% in 2013 compared to 84% in 2012.
 2. Governmental collection: reduced remarkably to 93% in 2013 compared to 214% in 2012.
 3. Commercial: decreased slightly by 4% to be 76% in 2013.
- Operational actual cost coverage: dropped from 101% in 2012 to 80% in 2013.
- Non-Revenue Water: decreased by 1% in average from 46% in 2012 to 45% in 2013.
- Continuity of water supply: 24 hours a day.

Rada'a

- Collection Efficiency
 1. Domestic collection: increased from 85% in 2012 to 95% in 2013..
 2. Governmental collection: declined from 106% in 2012 to 53% in 2013.
 3. Commercial: increased from 88% in 2012 to 108% in 2013.
- Operational actual cost coverage: dropped slightly to reach 79% in 2013 compared to 81% in 2012.
- Non-Revenue Water: decreased significantly by 10% which was 21% in 2013 compared to 31% in 2012.
- Continuity of water supply: supplied to the customer one/two times a month.

Al Mansouriah

- Collection Efficiency
 1. Domestic collection: showed stability 90% in 2013 compared to the average of 90% in 2012.
 2. Governmental collection: It is 3% compared to the average of 652% in 2012(need further investigation from the utility).
 3. Commercial: increased 5% to be 83% in 2013 compared to 78% in 2012.
- Operational actual cost coverage: decreased significantly by 65% in average in 2013 to reach 97% compared to 162% in 2012.
- Non-Revenue Water: increased slightly 1% to reach 21% in 2013.
- Continuity of water supply: average of 12 h per day.

Ibb

- Collection Efficiency
 1. Domestic collection: decreased 3% in 2013 to reach 91%
 2. Governmental collection: decreased dramatically from 134% in 2012 to 85% in 2013.
 3. Commercial: decreased to 87% in 2013 compared to 88% in 2012.
- Operational actual cost coverage: stayed above 100% in both years with 16% decrease in 2013 compared to 2012.
- Non-Revenue Water: decreased 1% in average from 25% in 2012 to 24% in 2013.
- Continuity of water supply: two days in a week.

Al-Sheher

- Collection Efficiency
 1. Domestic collection: decreased by 7% from 89% in 2012 to 82% in 2013.
 2. Governmental collection: showed incredible decrement from 131% in 2012 to 27% in 2013.
 3. Commercial: dropped by 8% from 82% in 2012 compared to 74% in 2013.
- Operational actual cost coverage: decreased to 74% in 2013 compared to 82% in 2012.
- Non-Revenue Water: increased by 2% in 2013 to reach 32%.
- Continuity of water supply: supplied 18-24 hours a day.

Seyuon

- Collection Efficiency
 1. Domestic collection: decreased 9% in average to reach 79% in 2013.
 2. Governmental collection: dropped to half from 167% in 2012 to 84% in 2013.
 3. Commercial: decreased slightly from 90% 2012 to 82% 2013.

- Operational actual cost coverage: dropped from 106% in 2012 to 87% in 2013.
- Non-Revenue Water: increased by 4% to reach 33% in 2013.
- Continuity of water supply: in average supplied 24 hours a day.

Mocha

- Collection Efficiency
 1. Domestic collection: increased from 96% 2012 to 100% in 2013.
 2. Governmental collection: dropped from 172% in 2012 to 49% in 2013.
 3. Commercial: rose from 93% in 2012 to 100% in 2013.
- Operational actual cost coverage: showed a revival from 109% in 2012 to 183% in 2013 as a result of improved collection efficiency.
- Non-Revenue Water: minor changes by 1% from 23% in 2012 to 24% 2014.
- Continuity of water supply: 24 hours a day.

Zabid

- Collection Efficiency
 1. Domestic collection: decreased slightly by 8% in average of 92% in 2013 compared to 100% 2012.
 2. Governmental collection: dropped hugely from 225% 2012 to 19 % in 2013.
 3. Commercial: falls from 96% in 2012 and to 85% in 2013.
- Operational actual cost coverage: dropped from 114% in 2012 to 93% in 2013.
- Non-Revenue Water: no changes 19% in 2012 & 2013.
- Continuity of water supply: 6 hours a day.

Bajil

- Collection Efficiency
 1. Domestic collection: improved to reach 90% in 2013 compared to 87% in 2012.
 2. Governmental collection: decreased safely from 292% in 2012 to 175% in 2013.
 3. Commercial: increased from 87% in 2012 to 93% in 2013.
- Operational actual cost coverage: increased by 26% in average to reach 130% in 2013 compared to 104% in 2012.
- Non-Revenue Water: increased by 4% in 2013 to reach 28 %.
- Continuity of water supply: water provided once a week.

Bait Alfaqih

- Collection Efficiency
 1. Domestic collection: decreased slightly from 97% in 2012 to 85% in 2013.
 2. Governmental collection: increased significantly from 12% 2012 to 212% in 2013.
 3. Commercial: decreased by 4% from 98% in 2012 to 94% in 2013.

- Operational actual cost coverage: increased to 85% in 2012 and was 76% in 2012 due to the intensive collection.
- Non-Revenue Water: receded by 7% in 2013 from 18% in 2012 compared to 25% in 2013.
- Continuity of water supply: stayed at the same level of 16 hours per day

AlMahweet

- Collection Efficiency
 1. Domestic collection: fall back by 10% in average and reached to 76% in 2013 compared to 86% 2012.
 2. Governmental collection: decreased dramatically to 42% in 2013 compared to 241% in 2012.
 3. Commercial: regressed to 23% in 2013 compared to 86% in 2012.
- Operational actual cost coverage: decreased sharply from an annual average of 80% 2012 to 46% in 2013 as a result of low collection efficiency.
- Non-Revenue Water: improved by 3% in average to reach 22% in 2013 compared to 25% in 2012
- Continuity of water supply: one day per month.

Hajjah

- Collection Efficiency
 1. Domestic collection: decreased by 6% in average to reach 90% in 2013.
 2. Governmental collection: dropped remarkably to 95% in 2013 compared to 184% in 2012 of collection efficiency.
 3. Commercial: increased significantly from 107% in 2012 to 215% in 2013.
- Operational actual cost coverage: decreased to 98% in 2013 compared to 121% in 2013.
- Non-Revenue Water: no changes 13% in 2012 & 2013.
- Continuity of water supply: Once a week.

Amran

- Collection Efficiency
 1. Domestic collection: stayed in a good level at 98% in 2013.
 2. Governmental collection: dropped significantly from 285% in 2012 to 22% in 2013.
 3. Commercial: almost the same as 102% in 2013 compared to 103% in 2012.
- Operational actual cost coverage: decreased considerably in 2013 to reach 103% compared to 136% in 2012.
- Non-Revenue Water: dropped by 1% to 15 % in 2013 compared to 16% in 2012.
- Continuity of water supply: Once a week.

Al-Dalea

- Collection Efficiency
 1. Domestic collection: weak collection about 34% for 2012 and 2013.
 2. Governmental collection: approximately reached to 25% in 2013 (Feb & Mar) compared to 55% in 2012.
 3. Commercial collection: collection reached to 96% in 2013.
- Operational actual cost coverage: disastrous average of collection 12% in 2013 for cost coverage.
- Non-Revenue Water: low rate of water loss about 22% in 2013.
- Continuity of water supply: 1 time in a month.

Yareem

- Collection Efficiency
 1. Domestic collection: no improvement to be 88% in 2013 compare to 98% in 2012.
 2. Governmental collection: low collection reached to 6% in 2013.
 3. Commercial: increased to 85% in 2013.
- Operational actual cost coverage: collection covers about 104% of cost in 2013.
- Non-Revenue Water: showed good rate of water losses 22%.
- Continuity of water supply: twice per month.

Annex 3 Summary table of Indicators

PIIS 2012-2013

| No. | LC/Utility | Collection Efficiency Domestic (Average) | | Collection Efficiency Government (Average) | | Collection Efficiency Commercial (Average) | | Operational actual cost coverage (Average) | | Non-revenue water (Average) | |
|-----|---------------|--|------|--|------|--|------|--|------|-----------------------------|------|
| | | 2012 | 2013 | 2012 | 2013 | 2012 | 2013 | 2012 | 2013 | 2012 | 2013 |
| 1 | Aden | 53% | 51% | 194% | 59% | 93% | 89% | 124% | 71% | 35% | 37% |
| 2 | Sana'a | 81% | 87% | 89% | 81% | 77% | 93% | 93% | 90% | 40% | 33% |
| 3 | Taiz | 75% | 78% | 151% | 54% | 123% | 63% | 102% | 57% | 23% | 19% |
| 4 | Mukala | 92% | 84% | 123% | 100% | 91% | 85% | 116% | 81% | 39% | 40% |
| 5 | Hodeidah | 79% | 62% | 249% | 52% | 78% | 72% | 140% | 66% | 40% | 36% |
| 6 | Dhamar | 84% | 79% | 214% | 93% | 80% | 76% | 101% | 80% | 46% | 45% |
| 7 | Rada'a | 85% | 95% | 106% | 53% | 88% | 108% | 81% | 79% | 31% | 21% |
| 8 | Ibb | 94% | 91% | 134% | 85% | 88% | 87% | 152% | 136% | 25% | 24% |
| 9 | Alsheher | 89% | 82% | 131% | 27% | 82% | 74% | 98% | 74% | 30% | 32% |
| 10 | Seyuon | 88% | 79% | 167% | 84% | 90% | 82% | 106% | 87% | 29% | 33% |
| 11 | Mocha | 96% | 100% | 172% | 49% | 93% | 100% | 109% | 183% | 23% | 24% |
| 12 | Zabid | 100% | 92% | 225% | 19% | 96% | 85% | 114% | 93% | 19% | 19% |
| 13 | Bajil | 87% | 90% | 292% | 175% | 87% | 93% | 104% | 130% | 24% | 28% |
| 14 | Bait Alfaqih | 97% | 85% | 12% | 212% | 98% | 94% | 76% | 85% | 18% | 25% |
| 15 | AlMahweet | 86% | 76% | 241% | 42% | 86% | 23% | 80% | 46% | 25% | 22% |
| 16 | Hajjah | 96% | 90% | 184% | 95% | 107% | 215% | 121% | 98% | 13% | 13% |
| 17 | Amran | 101% | 98% | 285% | 22% | 103% | 102% | 136% | 103% | 16% | 15% |
| 18 | AlDalea | 34% | 34% | 55% | 25% | 233% | 96% | 20% | 10% | 44% | 34% |
| 19 | Yareem | 98% | 88% | 26% | 3% | 81% | 74% | 87% | 74% | 19% | 19% |
| 20 | Al Mansouriah | 90% | 90% | 652% | 3% | 78% | 83% | 162% | 97% | 20% | 21% |

Annex 4 Table of frequency of water supply

| No. | LC/Utility | 2012 | | | | | 2013 | | | | |
|-----|---------------|-----------|-----------|----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|
| | | Daily | Weekly | | Monthly | | Daily | Weekly | | Monthly | |
| | | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month | Hours/Day | Hours/Day | Day/Week | Hours/Day | Day/Month |
| 1 | Aden | 15 | | | | | 17 | | | | |
| 2 | Sana'a | | | | 5.25 | 3.5 | | 8 | 1 | | |
| 3 | Taiz | | | | | 2d/2month | | | | | 1/ 2month |
| 4 | Mukala | 10 | | | | | 10 | | | | |
| 5 | Hodeidah | 24 | | | | | 24 | | | | |
| 6 | Dhamar | 21 | | | | | 24 | | | | |
| 7 | Rada'a | | 24 | 2 | | | | | | | 1_2 |
| 8 | Al Mansouriah | 21 | | | | | 12 | | | | |
| 9 | Ibb | | 24 | 2 | | | | 24 | 2 | | |
| 10 | Alsheher | 21 | | | | | 20 | | | | |
| 11 | Seyuon | 24 | | | | | 24 | | | | |
| 12 | Mocha | 24 | | | | | 24 | | | | |
| 13 | Zabid | 15 | | | | | 6 | | | | |
| 14 | Bajil | | 24 | 1 | | | | 24 | 1 | | |
| 15 | Bait Alfaqih | 14 | | | | | 16 | | | | |
| 16 | AlMahweet | | | | 24 | 1 | | | | | 1 |
| 17 | Hajjah | | 17 | 1 | | | | | | | 4_5 |
| 18 | Amran | | | | | | | 24 | 1 | | |
| 19 | AlDalea | | | | 2 | 1.5 | | | | 1.5 | 1 |
| 20 | Yareem | | | | | 2 | | | | 12 | 2 |

Annex 5 Lists of 60 PIIS Performance Indicators

| No. | Performance Indicator | Unit | Calculation | Local | National |
|-------|--|------|---|-------|----------|
| A.1.1 | Total number of staff per 1000 water connections | # | $(PAY1+PAY51) / (BIL2 / 1000)$ | ✓ | ✓ |
| A.1.2 | Total number of staff per 1000 water and sanitation connections | # | $(PAY1+PAY51) / ((BIL2 + BIL3) / 1000)$ | ✓ | ✓ |
| A.2.1 | Training plan implementation progress ratio | % | $(TR4 / TR41) * 100$ | ✓ | X |
| A.2.2 | Training expenses per total personnel costs | % | $(ACC5 / ACC25) * 100$ | ✓ | ✓ |
| A.2.3 | Total number of implemented training days per 100 number of staff | days | $(TR4 / PAY1) * 100$ | ✓ | X |
| A.2.4 | Number of staff that received training per total number of staff | % | $(TR42 / PAY1) * 100$ | ✓ | X |
| B.1 | Non-revenue water | % | $((BIL6-BIL7) / BIL6) * 100$ | ✓ | ✓ |
| B.2.1 | Number of average monthly reported overflows in sewerage network per 1000 sewerage connections | # | $OM8 / (BIL3 / 1000)$ | ✓ | X |
| B.2.2 | Number of repaired overflows per number of reported overflows in sewerage network | % | $(OM8 / OM9) * 100$ | ✓ | X |
| B.3.1 | Number of average monthly reported leakages in water supply network per 1000 water connections | # | $OM10 / (BIL2 / 1000)$ | ✓ | X |
| B.3.2 | Number of repaired leakages per number of reported leakages in water supply network | % | $(OM10 / OM11) * 100$ | ✓ | X |
| B.4.1 | Total hours of operating wells | Hr | OM52 | ✓ | X |
| B.4.2 | Total number of operating wells | no | OM72 | ✓ | X |

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|-------|---|----------------|-----------------------------------|---|---|
| C.1 | Bacteriological quality of water distributed: Number of residual chlorine samples according to standards per total number of samples taken | % | $(M13 / M12) * 100$ | ✓ | ✓ |
| C.2 | Effluent quality of wastewater treatment plants: Number of BOD-samples according to standards per total number of samples taken | % | $(M15/ M14) * 100$ | ✓ | ✓ |
| C.2.1 | Effluent quality of wastewater treatment plant 1 | % | $(M53/ M54) * 100$ | ✓ | X |
| C.2.2 | Effluent quality of wastewater treatment plant 2 | % | $(M55/ M56) * 100$ | ✓ | X |
| C.2.3 | Effluent quality of wastewater treatment plant 3 | % | $(M57/ M58) * 100$ | ✓ | X |
| D.1.1 | Number of average monthly billing complaints per 1000 water connections | # | OM16 / (BIL2/1000) | ✓ | X |
| D.1.2 | Number of average monthly non-billing complaints per 1000 water connections | # | OM17 / (BIL2/1000) | ✓ | X |
| D.2 | Continuity of water supply services: A: 12-24 hr/d; B:6-12 hr/d; C: 1-6 hr/d; D: at least once a week; E: less than once a week | Cat. A to E | OM18 | ✓ | ✓ |
| D.3 | Total water produced | m ³ | BIL6 | ✓ | ✓ |
| D.4 | Total effluent produced | m ³ | BIL45 | ✓ | ✓ |
| D.5 | Effluent treatment ratio | % | $(BIL45/BIL6) * 100$ | ✓ | ✓ |
| E.1.1 | Total actual cost coverage | % | $(ACC19 / (ACC20 + ACC23)) * 100$ | ✓ | ✓ |
| E.1.2 | Total billed cost coverage | % | $(ACC21 / (ACC20 + ACC23)) * 100$ | ✓ | ✓ |
| E.2.1 | Operational actual cost coverage | % | $(ACC22 / ACC23) * 100$ | ✓ | ✓ |
| E.2.2 | Operational billed cost coverage | % | $(ACC24 / ACC23) * 100$ | ✓ | ✓ |

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|-------|--|------|---------------------------------|---|---|
| E.2.3 | Actual cost coverage of O&M and electro-mechanical equipment | % | $(ACC19 / (ACC23+ACC78)) * 100$ | ✓ | ✓ |
| E.2.4 | Billed cost coverage of O&M and electro-mechanical equipment | % | $(ACC21/(ACC23+ACC78)) * 100$ | ✓ | ✓ |
| E.3 | Personnel cost per total operational cost | % | $(ACC25 / ACC23) * 100$ | ✓ | ✓ |
| E.4 | Energy cost per total operational cost | % | $(ACC26 / ACC23) * 100$ | ✓ | ✓ |
| E.5 | Investment disbursement progress ratio | % | $(ACC27 / ACC28) * 100$ | ✓ | ✓ |
| E.6.1 | Energy costs per m3 water produced | YR | ACC43 / BIL6 | ✓ | X |
| E.6.2 | Energy costs per m3 water treated | YR | ACC44 / BIL45 | ✓ | X |
| E.7.1 | Amount on current account (revenue + expenditure) | YR | ACC47+ACC48 | ✓ | ✓ |
| E.7.2 | Amount on connection account | YR | ACC49 | ✓ | ✓ |
| E.7.3 | Amount on depreciation account | YR | ACC50 | ✓ | ✓ |
| F.1 | Collection efficiency | % | $(ACC22 / ACC24) * 100$ | ✓ | ✓ |
| F.1.1 | Collection efficiency domestic | % | $(BIL64/BIL61) * 100$ | ✓ | X |
| F.1.2 | Collection efficiency government | % | $(BIL65/BIL62) * 100$ | ✓ | X |
| F.1.3 | Collection efficiency commercial | % | $(BIL66/BIL63) * 100$ | ✓ | X |
| F.2 | Amounts receivable expressed as debt period | days | $BIL29 / (ACC24 / NOPD)$ | ✓ | ✓ |
| F.2.1 | Debt period for domestic | days | $BIL67/(BIL61/NOPD)$ | ✓ | X |
| F.2.2 | Debt period for government | days | $BIL68/(BIL62/NOPD)$ | ✓ | X |
| F.2.3 | Debt period for commercial | days | $BIL69/(BIL63/NOPD)$ | ✓ | X |
| F.3 | Water expenses for first 5 m3 per household income for the poor | % | $(BIL32 / M31) * 100$ | ✓ | ✓ |
| F.4 | Sewerage expenses for first 5 m3 per household income for the poor | % | $(BIL40 / M31) * 100$ | ✓ | ✓ |

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|-------|--|-----------------------|---|---|---|
| F.5 | Average applied tariff per m3 for total water billed | YR/ m ³ | ACC24/BIL7 | ✓ | ✓ |
| F.5.1 | Average applied tariff per m3 for water billed domestic | YR/ m ³ | BIL61/BIL33 | ✓ | X |
| F.5.2 | Average applied tariff per m3 for water billed government | YR/ m ³ | BIL62/BIL59 | ✓ | X |
| F.5.3 | Average applied tariff per m3 for water billed commercial | yr/m ³ | BIL63/BIL60 | ✓ | X |
| G.1 | Average total water consumption | lpcd | $(BIL7 / (BIL2 * M34 * NOPD)) * 1000$ | ✓ | ✓ |
| G.2 | Average domestic water consumption | lpcd | $(BIL33 / (BIL30 * M34 * NOPD)) * 1000$ | ✓ | ✓ |
| H.1 | Combined services (water and sanitation) ratio | % | $(BIL35 / BIL2) * 100$ | ✓ | X |
| H.2 | Water supply services coverage | % | $((BIL30 * M34) / M37) * 100$ | ✓ | ✓ |
| H.3 | Sewerage services coverage | % | $((BIL36 * M34) / M37) * 100$ | ✓ | ✓ |
| H.4 | Population served with water supply services | # | BIL30 * M34 | ✓ | ✓ |
| H.5 | Population served with sewerage services | # | BIL36 * M34 | ✓ | ✓ |
| H.6 | Length of water supply network | Km | FIX38 | ✓ | ✓ |
| H.7 | Length of sewerage network | Km | FIX39 | ✓ | ✓ |
| H.8 | Number of total water connections | # | BIL2 | ✓ | ✓ |
| H.9 | Number of total sewerage connections | # | BIL3 | ✓ | ✓ |
| I.1 | Implementation progress ratio for approved investments (local and foreign) | % | $(INV83/ACC28) * 100$ | ✓ | ✓ |
| I.2 | Implementation progress ratio for approved investments local-financed | % | $(INV80/INV79) * 100$ | ✓ | ✓ |

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|-------|---|---|------------------------|---|---|
| I.3 | Implementation progress ratio for approved investments foreign-financed | % | (INV82/INV81) * 100 | ✓ | ✓ |
| I.4.1 | Implementation progress ratio for approved investments for project A | % | (INV85/INV84) * 100 | ✓ | X |
| I.4.2 | Implementation progress ratio for approved investments for project B | % | (INV87/INV86) * 100 | ✓ | X |
| I.4.3 | Implementation progress ratio for approved investments for project C | % | (INV89/INV88) * 100 | ✓ | X |