

Summary Report Performance Monitoring of Urban Water Supply and Sanitation Utilities

during crisis situation
January-December 2011



giz



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1. Background

The unrest in Yemen started in February 2011 and resulted in negative impact on the Water and Sanitation Supply (WSS) sector. The urban water sector service provision provided by the local corporations and autonomous utilities showed significant decline through interruption of power supply, lack of diesel fuel, insufficient generating capacity to run the operations properly in the absence of public power supply and decline in revenues due to reluctance of consumers to pay their bills. The deteriorated service delivery in addition to civil disobedience had a huge impact on the willingness of the consumers to pay the bills. These factors led to reduced revenues due to low collection efficiency which disabled the utilities covering their operation & maintenance cost of the networks appropriately.

GIZ on behalf of Federal Ministry for Economic Cooperation and Development (BMZ) supports the Yemeni urban water sector in monitoring performance system of the public water supply and sanitation utilities during the crisis. The aim is to identify utilities that suffer most in maintaining service delivery and operational cost coverage and to show the development tendencies during the crisis. The following step should be an in-depth analysis of the situation and identification of appropriate interventions in the utilities. The performance indicators shall be provided to utilities, relief organizations and development partners to target the priority utilities for emergency support measures. Selection criteria are kept simple and providing a snap shot of the utility. The monthly indicators for the year 2011 give a clear picture of the trend of performance of the utilities included in this paper.

The limited set of indicators below indicate the deteriorating or lack of capacity and willingness to monitor within the utilities during the crisis

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

The data base of 2010 is purely from performance indicator information system (PIIS). The data of 2011 was collected with support of the PIIS and manual data collection where PIIS was not available or operational. The average date of 2011 in this report comprises a period from January to December 2011. LCs/Utilities included in the monitoring are in table 1.

Table 1: LCs and Utilities –PIIS reports

LCs	Utilities
Sana'a LC	Mocha U
Aden LC	Zabid U
Taiz LC	Al-Mansouriah U
Rada' LC	Bajil U
Seyuon (LC)	Bait Al-Faqih U
Mukalla (LC)	Al-Sheher U
IBB (LC)	Al-Mahweet U
Hodeida LC	
Hajjah (LC)	
Amran (LC)	
Dhamar (LC)	
Sa'dah (LC)	

2. Analysis of Performance Indicators of urban WSS utilities

Sana'a

The domestic collection efficiency started dropping significantly in March 2011 and reached its lowest point in June with barely more than 40%. It increased again in July assumingly after conducting customer awareness campaigns. The collection efficiency dropped again during Ramadan to about 40% and raise up to a 60% in October and December. The average collection efficiency in LC Sana'a has been 91% in the year 2010 whereas the average 2011 was 68%. The same tendency can be seen for the commercial customers which were 85% in 2010 and 54% in 2011. The governmental collection efficiency was 71% in 2010 and 56% in 2011. The average operational actual cost coverage of 83% in 2011 is low compared with the figure of 109% in the year 2010. Non-Revenue Water (NRW) in 2011 is 32% compared to 31% in 2010. The continuity of water supply dropped steadily since April 2011 to be 2-3 days in a month and this trend continued to the end of the year.

Aden

The domestic collection efficiency dropped steadily since February 2011 to an average of 52% in comparison to the collection efficiency over 77% in 2010. The commercial collection efficiency dropped from an average of 98% in 2010 to 83% in 2011. The governmental collection efficiency was 49% in 2010 and 28% in 2011. The operational actual cost coverage was usually above 80% in 2010 and dropped now to 72% in 2011. NRW increased from 29% in 2010 to 33% 2011. The continuity of water supply in 2011 is between 15.-18 hours daily compared to 20 hours daily in 2010

Taiz

The domestic collection efficiency dropped to 72% for 2011 in comparison to 88% for 2010. Governmental collection takes place in three period of the year in Taiz. The second and third payment decreased significantly in comparison with the first quarter payment. The commercial collection efficiency also dropped to 66% during the year 2011 in compare to the monitoring phase of 2010 which was 90%. The average operational actual cost coverage increased by 8% to be 86% 2011 in relation to 2010 which reaches to 78%. NRW decreased in the average from 23% in 2010 to 21% 2011. The continuity of water supply shows the desperate situation in the supply of service compared with other LCs where the supply frequency dropped to once or twice every 2 months. .

Mukalla

The domestic collection efficiency fell down to an average of 87% in 2011 compared with 93% in 2010. The collection efficiency of governmental customer increased towards the averages of 2010 to be 70% in 2011. Commercial efficiency decreased slightly by 2% to be 87% in 2011. NRW remains on average of 35%. Operational actual cost coverage fluctuated quite a lot during the year but finally slightly increased to 103% 2011 in comparison with 101% in 2010. The continuity of water supply is 12 hours/day in winter and 8 hours in summer.

Hodeida

The domestic collection efficiency declined significantly during the year from an average of 92% in 2010 to 69% in 2011. While governmental collection efficiency dropped from 34% in 2010 to 15% in 2011, the commercial collection efficiency dropped from 84% in 2010 to 76% in 2011. The operation actual cost coverage dropped from 82% in 2010 to 51% in 2011. NRW remains with slightly same with 2% increment in 2011. Water supply continuity is 13 hours/day.

Mocha

The domestic and commercial collection efficiency dropped during the crisis, nevertheless the average are still above 100%. The governmental collection efficiency declined from 79% 2010 to 40% in 2011. The commercial collection efficiency dropped from 105% in 2010 to 101% in 2011. The operational actual cost coverage dropped from 110% in 2010 to 86% in 2011. NRW decreased from 25% in 2010 to 23% 2011. The continuity of water supply is 12 hours/day during Jan-Oct. and increased to 24 hours/day during Nov and December 2011.

Al Mahweet

The domestic collection efficiency fell down to an average of 77% 2011 in comparison with 80% 2010. The governmental collection efficiency increased from 33% 2010 to 51 % in 2011. The commercial collection efficiency increased to 69% in 2011. The operational actual cost coverage increased slightly from an annual average of 59% 2010 to 61% in 2011 NRW increased from 20% in 2010 to 23% in 2011. The continuity of water dropped sharply from 10 hours 2 days/month to 5 hours 1 day /month in Nov. and Dec. 2011.

Zabid

The domestic collection efficiency fell down to an average of 101% 2011 in comparison with 106% 2010. The governmental collection efficiency dropped from 38% 2010 to 33 % in 2011. The commercial collection efficiency remains in the same average 96% for 2010 and 2011. The operational actual cost coverage decreases from 100% in 2010 to 89% in 2011. NRW increased slightly and the frequency supply remains on a good level between 12-24 hours per day.

Hajjah

The domestic collection efficiency dropped during the year but increased again in the last quarter of 2011. Nevertheless in average, the domestic collection efficiency in 2010 was 91% and the average in 2011 was 78%. Commercial collection efficiency altered during the year and decreased slightly with difference about 2% to be 97% in 2011. The governmental collection efficiency decreased hugely from 103% 2010 to 62% 2011. The average operation actual cost coverage increased from 71% in 2010 significantly to 83% 2011. NWR dropped from 22% 2010 to 15% 2011. The water supply declined from 12-24 hours daily to once a week and finally twice a month.

Almansouria

Domestic collection efficiency increased slightly from an average of 95% 2010 to 96% in 2011. The governmental collection efficiency was already low and declined further from 14% 2010 to 5% in 2011. The commercial collection efficiency nearly remained in the same average 93% - 94% for 2010 and 2011. Operational actual cost coverage dropped from 106% in 2010 to 86% in 2011. NRW increased in average from 16% 2010 to 17% in 2011. Continuity of water changed from 12-24 hours per day until June to 6-12 hours per day from July until October. November and December show a tangible improvement in the service.

Rada'a

Domestic collection efficiency remained broadly the same. The governmental collection efficiency dropped down in average from 13% in 2010 to 10% in 2011. Commercial efficiency increases from 82% in 2010 to 93% in 2011. The operational actual cost coverage dropped from a high level of 144% to 89%. NRW increased in average from 19% 2010 to 22% in 2011. The continuity of water fluctuates throughout the year between once to twice a week.

Bajil

Domestic collection efficiency dropped from an average of 106% in 2010 to 82% in 2011. The commercial collection efficiency also declined from 107% in 2010 to 84% in 2011. The governmental collection efficiency increased hugely due to a high collection rate in April. On average the governmental collection increased from 30% in 2010 to 80% in 2011. This strangely showed decreased operational actual cost coverage of 88% in 2010 and 78% in 2011. NRW is decreasing from 25-23 % as compared between 2010 and 2011. The continuity of water was 6 hours per day until April and declined to once a week and deteriorated to three times a month.

Seyuon

Domestic collection efficiency dropped from an annual average 2010 of 98% to 82% in 2011. The commercial collection also declined from 96% 2010 to 78% 2011 on average. The governmental collection efficiency increased due to collection campaign in March from 57% in 2010 to 68% in 2011. The operational actual cost coverage dropped by 2% from 93% in 2010 to 91% in 2011. NRW increased also by 1%. The continuity of water approximately reaches to 24 hours per day.

Ibb

The domestic collection efficiency declined from 95% in 2010 to 86% in 2011. The governmental collection efficiency decrease from 34% in 2010 to 46%. Commercial collection efficiency also dropped from 94% in 2010 to 80% in 2011. The operational actual cost coverage remains still above 100% but dropped nevertheless from 133% in 2010 to 123% in 2011. NRW increased on average from 18% in 2010 to 23% in 2011. The continuity of water remains at once a week.

Bait al Faqih

The domestic collection efficiency dropped from 94% in 2010 to 82% in 2011. Also the commercial collection efficiency dropped slightly from 96% in 2010 to 94% in 2011. However, the governmental

collection efficiency increased from 7% 2010 to 84% in 2011. This led to operational actual cost coverage of 93% in 2011 and 87% in 2010. NRW increase significantly from 15% in 2010 to 22% in 2011. The continuity of water remained at 12-17 hours per week.

Al Sheher

The domestic collection efficiency dropped from 98% in 2010 to 90% in 2011. Governmental collection efficiency declined from 83% 2010 to 52% in 2011. Commercial collection efficiency dropped from 87% in 2010 to 75% in 2011. The operational actual cost coverage declined from 96% in 2010 to 87% in 2011. NRW increased from 23% in 2010 to 26% in 2011. The continuity of water remains at 12 hours per day.

Amran

Domestic collection efficiency remained on a level of around 100%. The governmental collection dropped from 47% in 2010 to 24% in 2011 and the commercial collection declined from 116% 2010 to 82% in 2011. The operational actual cost coverage decline slightly from 99% in 2010 to 90% in 2011. The NRW decreased from 26% in 2010 to 20 % in 2011. The continuity of water stays at 6 hours per day and reaches to once a week in November.

Dhamar

Domestic collection efficiency dropped from 90% in 2010 to 82% in 2011. Commercial collection efficiency dropped from 84% in 2010 to 81% in 2011. The governmental collection efficiency dropped from 55% in 2010 to 41 % in 2011. The operation actual cost coverage declined from 85% in 2010 to 67% in 2011. NRW increased by 1% to 48% in 2011. The continuity of water remains at 12-24 hours per day.

Sa'dah

The domestic collection efficiency fall down to an average of 71% in 2011 compared with 81% in 2010. The collection efficiency of governmental customer decreased hugely to 23% in 2011 in compare with 179% in 2010 .Commercial efficiency increases significantly to 108% in 2011. NRW decreases by 2% and became 33% in 2011. Operational actual cost coverage increases hugely during October and the overall average is 94% 2011 in comparison with 79% in 2010.

3. Conclusion

The LCs and autonomous utilities rely primarily on collected revenues to cover its operational cost in the absence of government subsidy to operational cost. Once this income is deteriorating the wellbeing of the utility is at serious risk. The income of most utilities went down during the crisis.

The collection efficiency declined throughout the customer groups. However, nearly all domestic collection increased in June who may be related to the awareness campaigns run in cooperation between the LCs, utilities and GIZ to encourage the population to pay outstanding bills. In most towns the

collection efficiency declined again in the holy month of Ramadan which is a phenomenon due to the fact that disconnections are stopped during Ramadan, but started rising to a somehow higher level in October and December.

The utilities which suffered most from the crisis with regard to decline in operational cost coverage have been identified by focusing on reduction by more than 10% and actual coverage below 90%. This is based on the assumption that the reduction is mainly based on the crisis and not on already existing shortcoming. The aim was to target the utilities suffering most under the crisis situation. Nevertheless, it needs to be stated that utilities coping with operational actual cost coverage below 100% are permanently in a difficult situation with regard to service delivery, maintenance and payment of salaries.

The utilities suffering most under the crisis situation are Sana'a, Aden, Hodeidah, Al Mansouriah, Rada' and Al Mahweet.

NRW increased by 5% in Taiz, Ibb and Bait Al Faqih. This implies that the utilities face either more illegal connections, increased losses in the network and administrative shortcomings. The utilities need financial and technical support resolving those deficiencies to develop a healthy status.

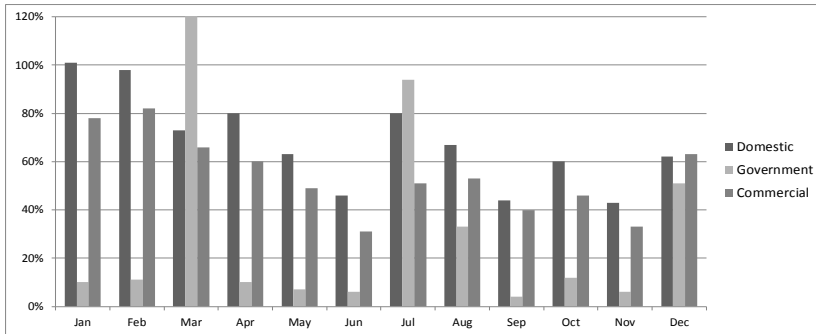
Continuity of water supply shows also a clear tendency of deterioration. And it can be assumed that the reality is even worse in some areas as this indicator is not fully reliable due to manual data entry. According to the available data, Sana'a, Hajjah and Al-Mahweet achieve the highest reduction to only once to twice a week. Taiz also provide water supply only once or twice in two months.

These conclusions are drawn from the available data provided from the utilities via PIIS or manually. The quality might be questionable in some areas, so a survey was sent to the utilities to be filled on the continuity of water supply by the competent department to ensure the reliability of data, the aim is to show the tendency and support the identification of utilities suffering a lot from the crisis.

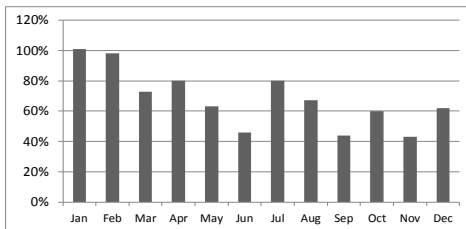
Annex 1

Sana'a LC Jan-Dec 2011

1 Collection Efficiency for Domestic, Government & Commercial

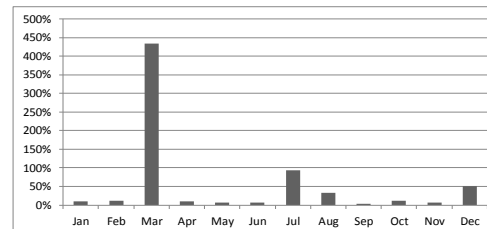


2 Collection Efficiency for Domestic



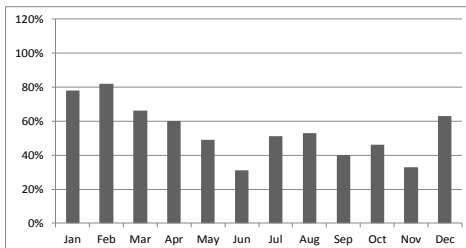
average 2010: 91%
average 2011: 68%

3 Collection Efficiency for Government



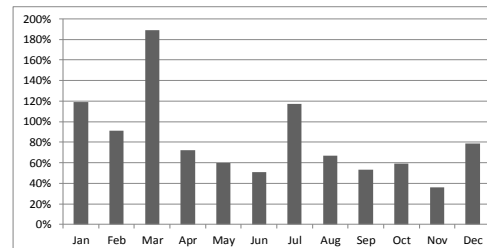
average 2010: 71%
average 2011: 56%

4 Collection Efficiency for Commercial



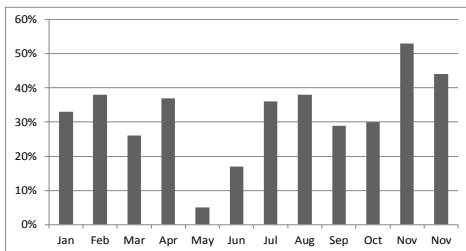
average 2010: 85%
average 2011: 54%

5 Operational Actual Cost Coverage



average 2010: 115%
average 2011: 83%

6 Non Revenue Water



average 2010: 31%
average 2011: 32%

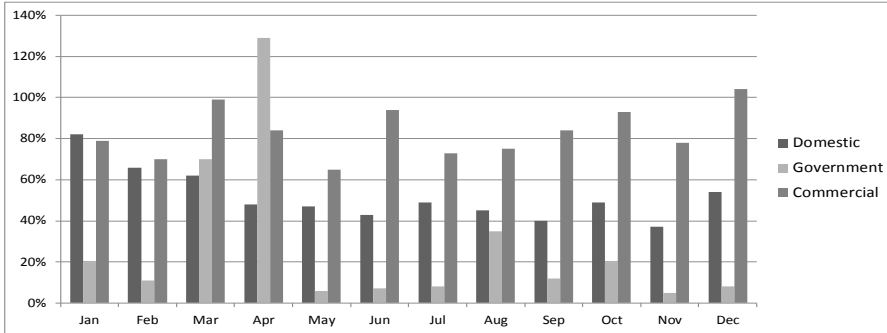
7 Continuity of Water Supply

Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan		12	1		
Feb		12	1		
Mar		12	1		
April				24	2
May				24	2
June				24	2
July				24	2
Aug				24	2
Sept				24	2
Oct				24	2
Nov		24	1	24	4
Dec		24	1	24	4

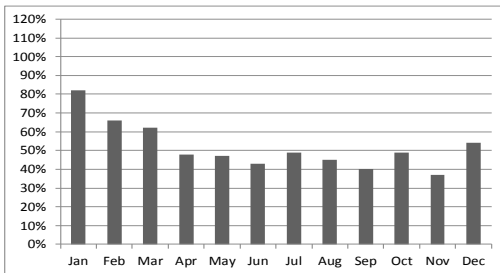
Comment : Frequency of supply comprise 6 areas in Sana'a capital. Lack of power impeded the water supply in April -Oct , each area gets 48 hour of supply per month Avg , service seems to be revived in Nov 7 Dec where service is provided four times per month.

Aden Jan-Dec 2011

1 Collection Efficiency for Domestic, Government & Commercial

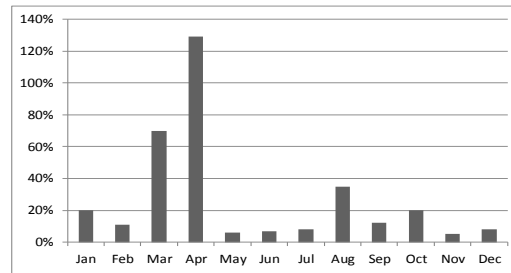


2 Collection Efficiency for Domestic



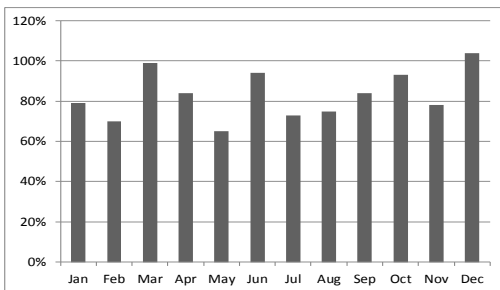
average 2010 77%
average 2011 52%

3 Collection Efficiency for Government



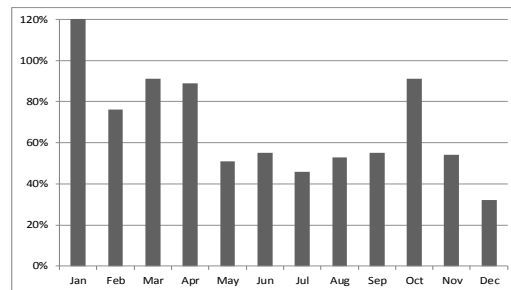
average 2010: 49%
average 2011: 28%

4 Collection Efficiency for Commercial



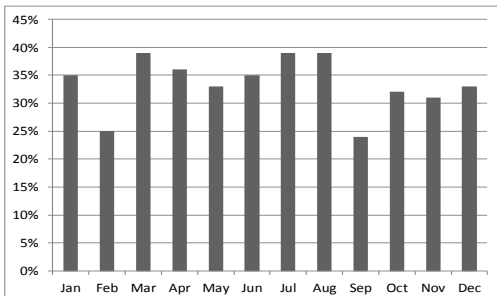
average 2010 98%
average 2011 83%

5 Operational Actual Cost Coverage



average 2010: 82%
average 2011: 71%

6 Non Revenue Water



average 2010 29%
average 2011 33%

7 Continuity of Water Supply

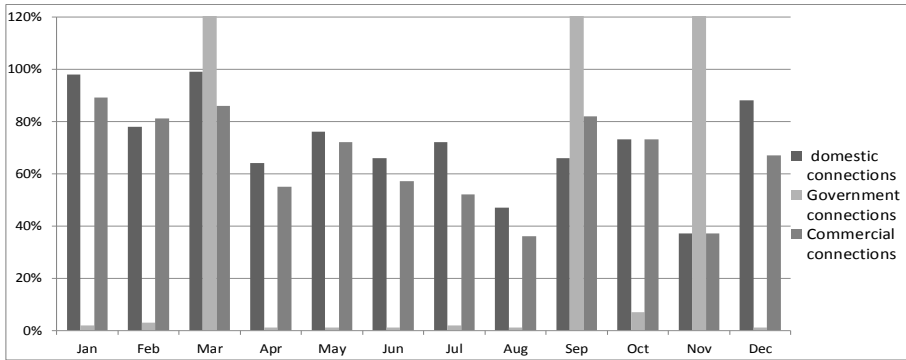
Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan	15 - 18				
Feb	15 - 18				
Mar	15 - 18				
April	15 - 18				
May	15				
June	15				
July	15				
Aug	15				
Sept	16				
Oct	16				
Nov	15-18				
Dec	15-18				

Comment

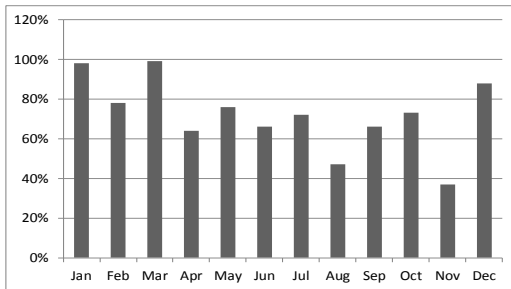
there is disparity in the water frequency in the districts, but it is on daily basis. Daily average were taken for all districts

Taiz Jan-Dec 2011

1 Collection Efficiency for Domestic, Government & Commercial

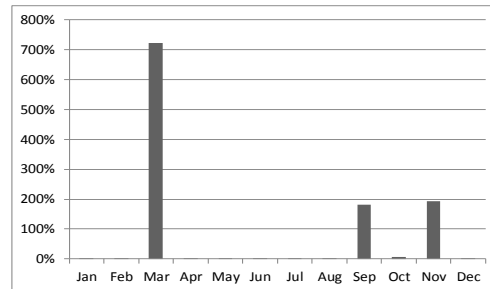


2 Collection Efficiency for Domestic



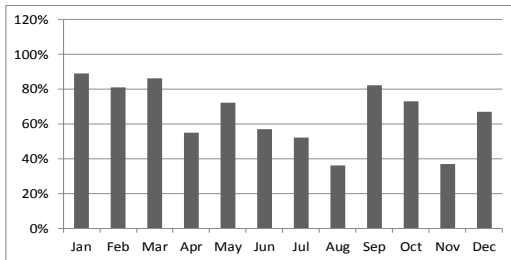
average 2010: 88%
average 2011: 72%

3 Collection Efficiency for Government



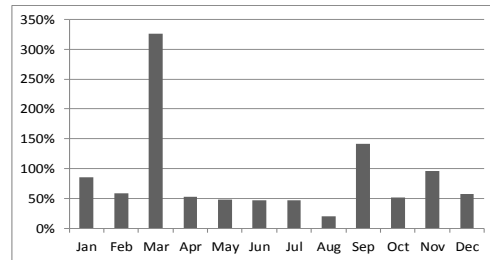
average 2010: 40%
average 2011: 93%

4 Collection Efficiency for Commercial



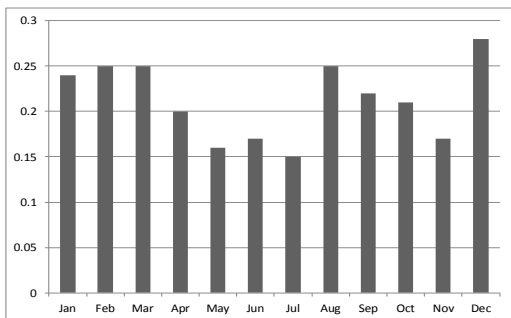
average 2010: 90%
average 2011: 66%

5 Operational Actual Cost Coverage



average 2010: 78%
average 2011: 86%

6 Non Revenue Water



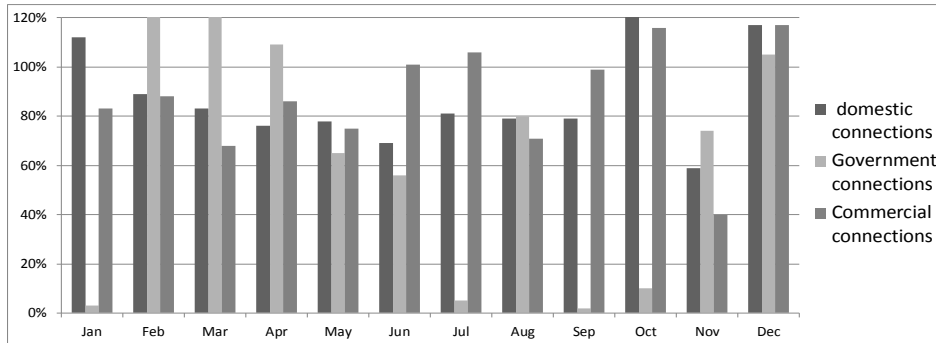
average 2010: 23%
average 2011: 21%

7 Continuity of Water Supply

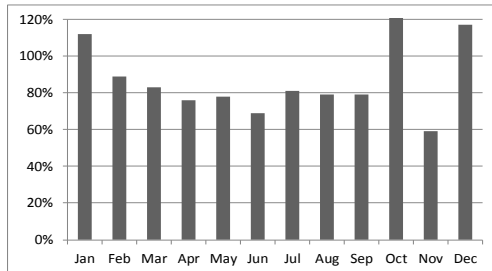
Month	Monthly		Two Months	
	Hours/Day	Day/Month	Hours/Time	Time/Two months
Jan			72	2
Feb			84	2
Mar			48	1
April			96	1
May			96	1
June			72	1
July			120	1
Aug			144	1
Sept			72	2
Oct			96	2
Nov			40	1
Dec			40	1

Comment : it is estimated that water is supplied on forty to fifty days in 2011

1 Collection Efficiency for Domestic, Government & Commercial

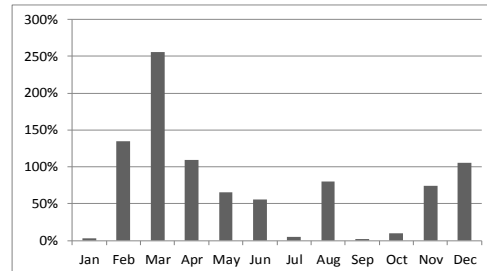


2 Collection Efficiency for Domestic



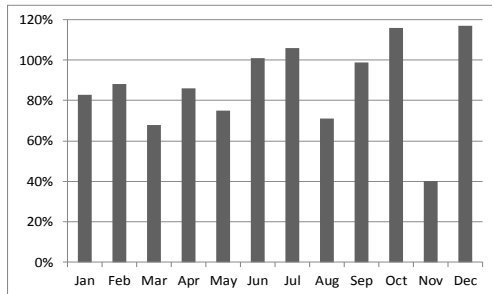
average 2010: 91%
average 2011: 87%

3 Collection Efficiency for Government



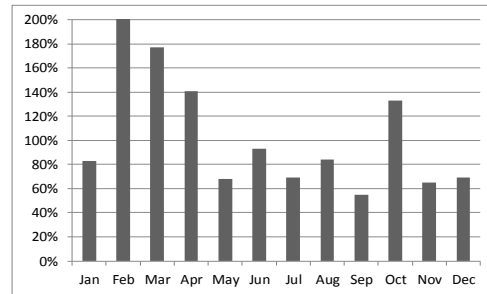
average 2010: 68%
average 2011: 70%

4 Collection Efficiency for Commercial



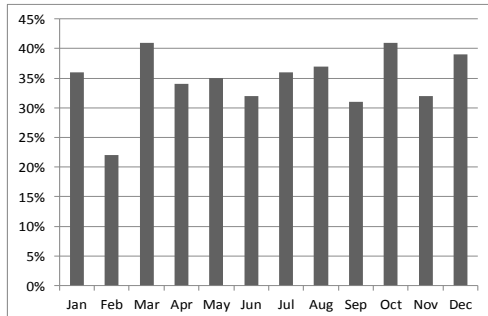
average 2010: 89%
average 2011: 87%

5 Operational Actual Cost Coverage



average 2010: 106%
average 2011: 103%

6 Non Revenue Water



average 2010: 35%
average 2011: 34%

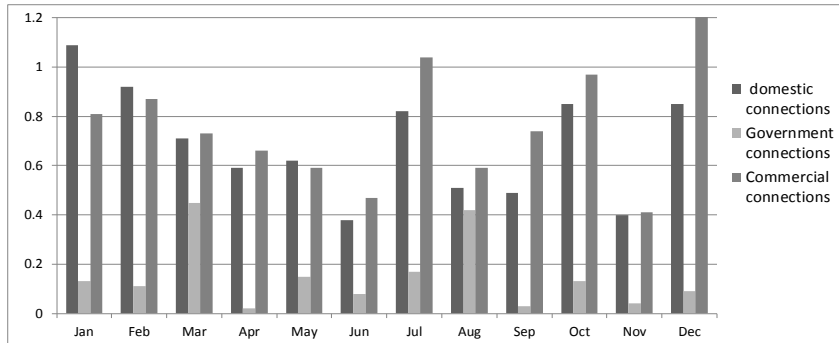
7 Continuity of Water Supply

Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan	12				
Feb	12				
Mar	12				
April	8				
May	8				
June	8				
July	8				
Aug	8				
Sept	12				
Oct	12				
Nov	12				
Dec	12				

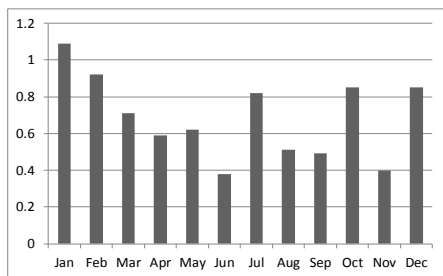
Comment

in summer ,the LC pumps 8 hours/Day to minimize consumption while in winter, The LC pumps 12 h per day .

1 Collection Efficiency for Domestic, Government & Commercial

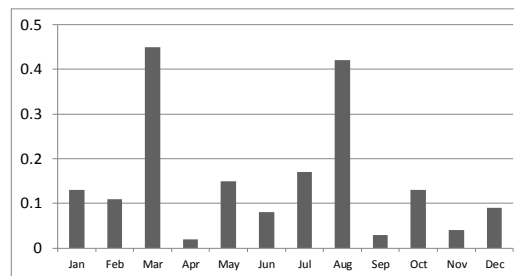


2 Collection Efficiency for Domestic



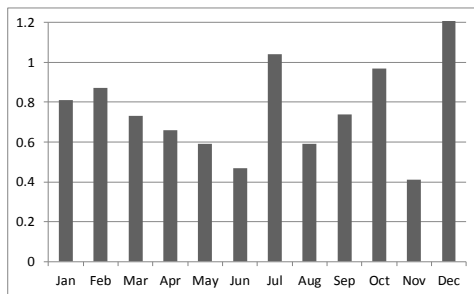
average 2010: 92%
average 2011: 69%

3 Collection Efficiency for Government



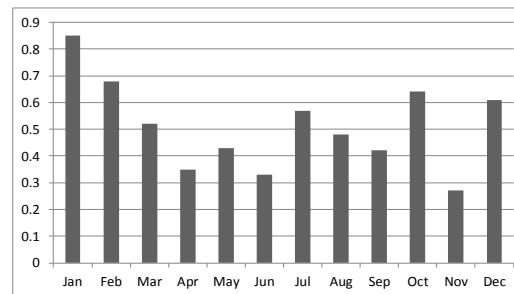
average 2010: 149%
average 2011: 15%

4 Collection Efficiency for Commercial



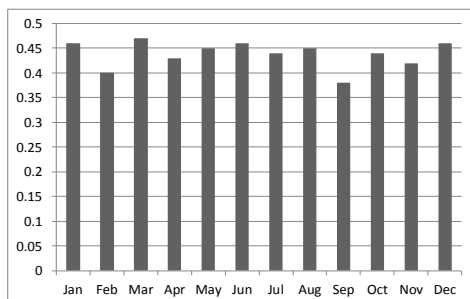
average 2010: 55%
average 2011: 76%

5 Operational Actual Cost Coverage



average 2010: 89%
average 2011: 51%

6 Non Revenue Water



average 2010: 43%
average 2011: 44%

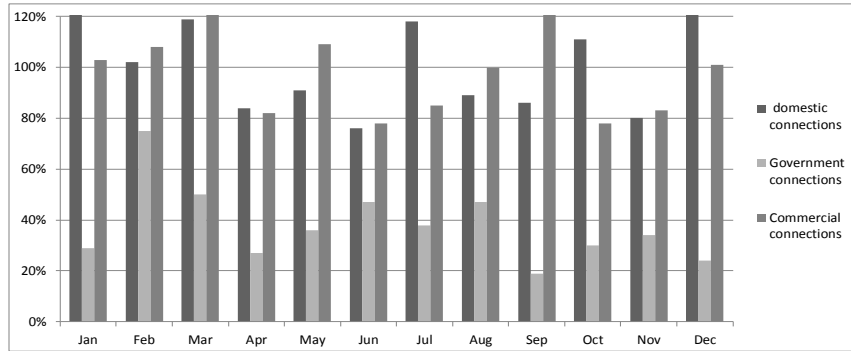
7 Continuity of Water Supply

Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan	13				
Feb	13				
Mar	13				
April	13				
May	13				
June	13				
July	13				
Aug	13				
Sept	13				
Oct	13				
Nov	13				
Dec	13				

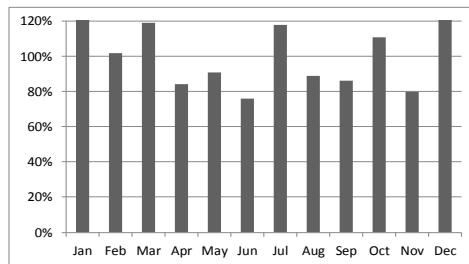
Comment :

Mocha Jan-Dec 2011

1 Collection Efficiency for Domestic, Government & Commercial

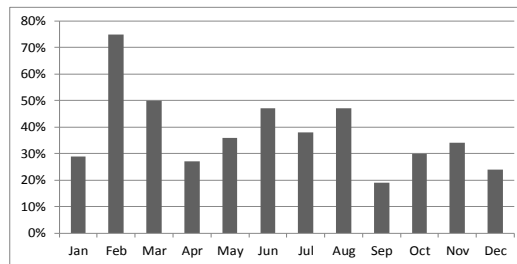


2 Collection Efficiency for Domestic



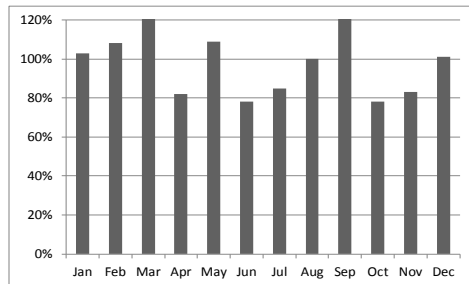
average 2010: 116%
average 2011: 115%

3 Collection Efficiency for Government



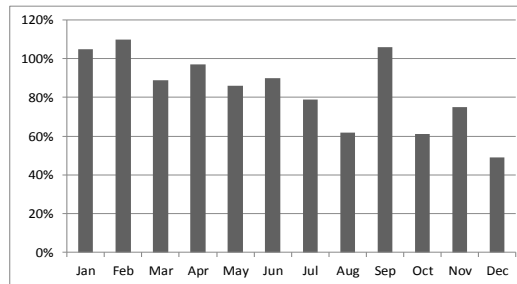
average 2010: 79%
average 2011: 38%

4 Collection Efficiency for Commercial



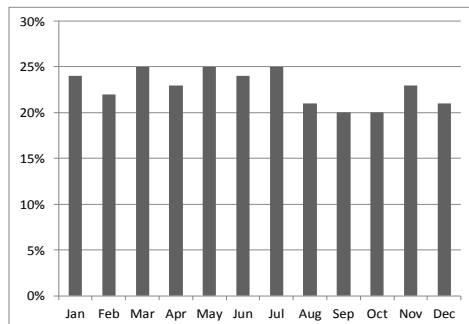
average 2010: 105%
average 2011: 100%

5 Operational Actual Cost Coverage



average 2010: 106%
average 2011: 84%

6 Non Revenue Water



average 2010: 26%
average 2011: 23%

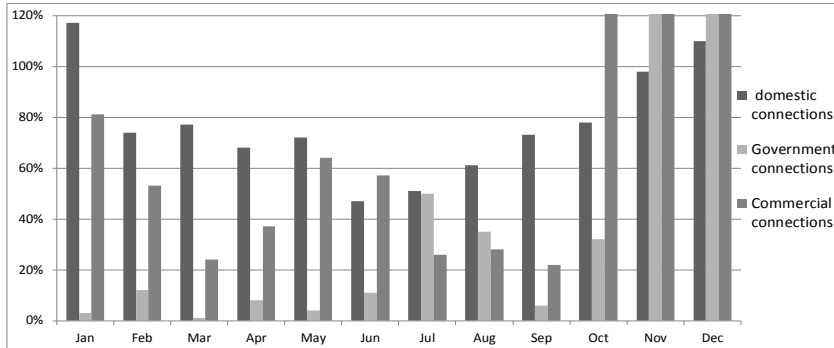
7 Continuity of Water Supply

Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan	12				
Feb	12				
Mar	12				
April	12				
May	12				
June	12				
July	12				
Aug	12				
Sept	12				
Oct	12				
Nov	24				
Dec	24				

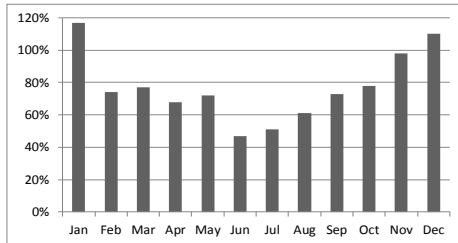
Comment : No of hours of water frequency (Avg)

Al-Mahweet Jan-Dec 2011

1 Collection Efficiency for Domestic, Government & Commercial

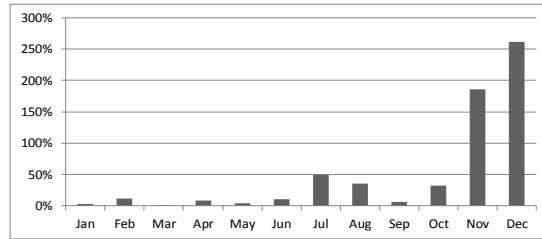


2 Collection Efficiency for Domestic



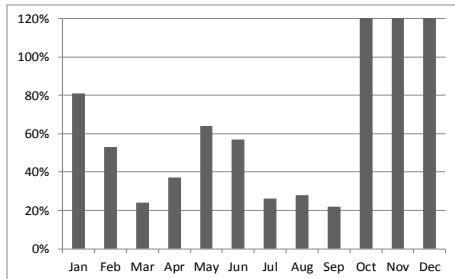
average 2010: 80%
average 2011: 77%

3 Collection Efficiency for Government



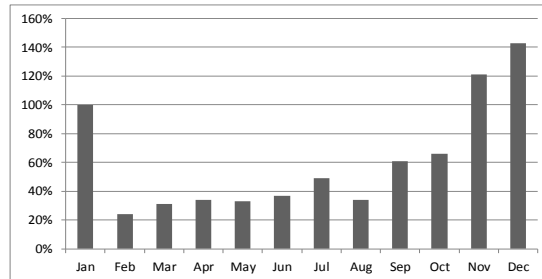
average 2010: 33%
average 2011: 51%

4 Collection Efficiency for Commercial



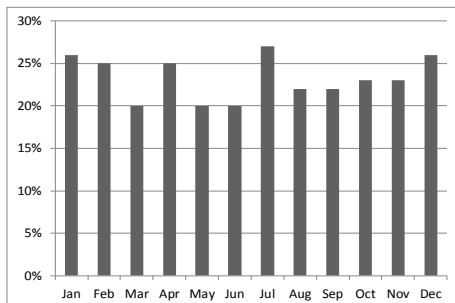
average 2010: 57%
average 2011: 69%

5 Operational Actual Cost Coverage



average 2010: 59%
average 2011: 61%

6 Non Revenue Water



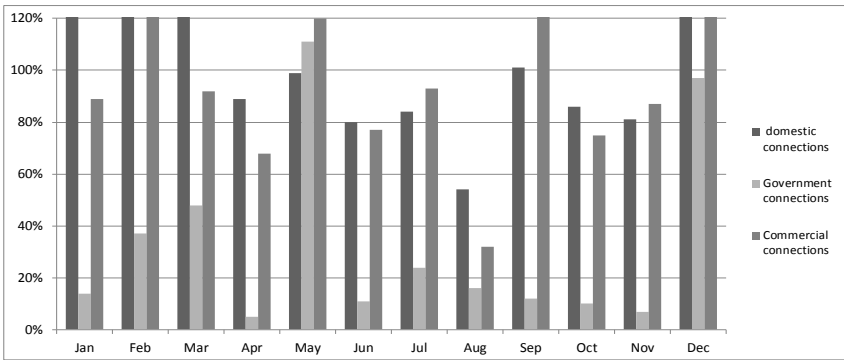
average 2010: 20%
average 2011: 23%

7 Continuity of Water Supply

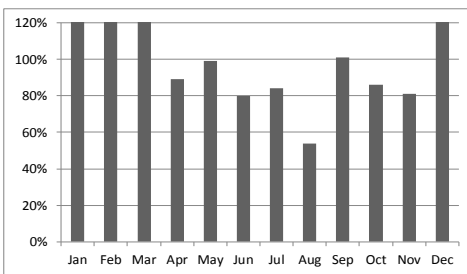
Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan				10	2
Feb				10	2
Mar				10	2
April				10	2
May				10	2
June				10	2
July				10	2
Aug				10	2
Sept				10	2
Oct				10	2
Nov				5	1
Dec				5	1

Comment : No of hours of water frequency (Avg)

1 Collection Efficiency for Domestic, Government & Commercial

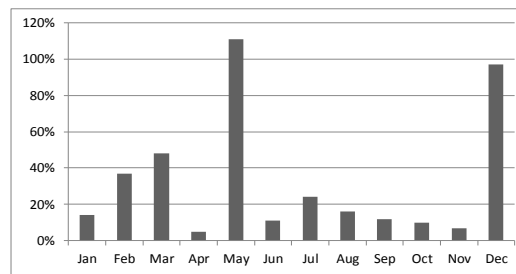


2 Collection Efficiency for Domestic



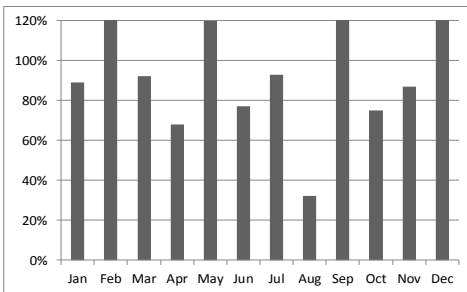
average 2010: 106%
average 2011: 101%

3 Collection Efficiency for Government



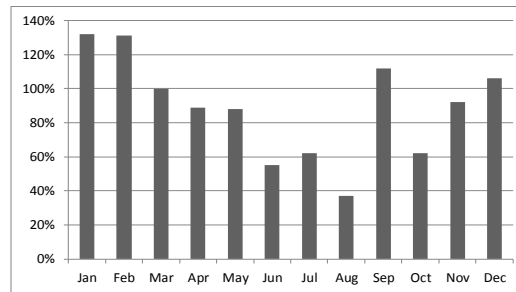
average 2010: 38%
average 2011: 33%

4 Collection Efficiency for Commercial



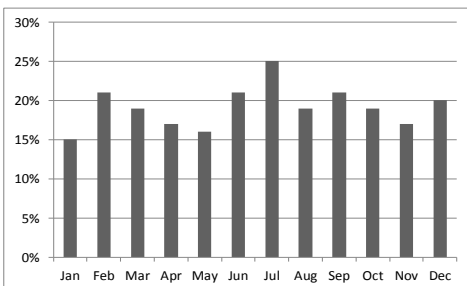
average 2010: 96%
average 2011: 96%

5 Operational Actual Cost Coverage



average 2010: 103%
average 2011: 89%

6 Non Revenue Water



average 2010: 18%
average 2011: 19%

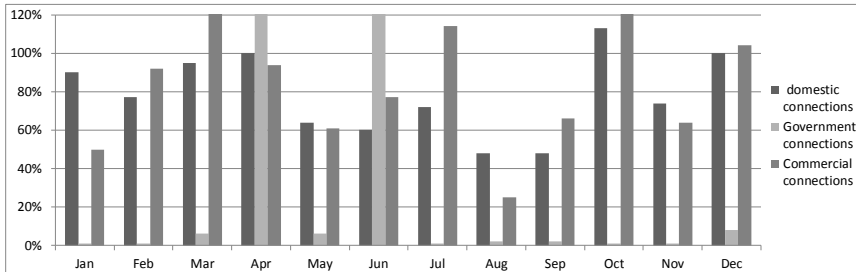
7 Continuity of Water Supply

Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan	12				
Feb	12				
Mar	12				
April	12				
May	12				
June	12				
July	12				
Aug	12				
Sept	12				
Oct	12				
Nov	12				
Dec	12				

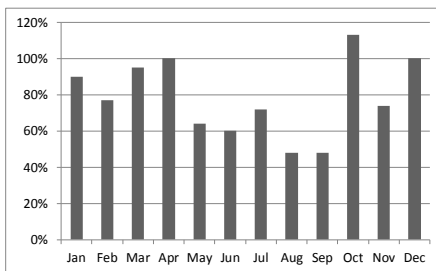
Comment : No of hours of water frequency (Avg)

Hajjah Jan-Dec 2011

1 Collection Efficiency for Domestic, Government & Commercial

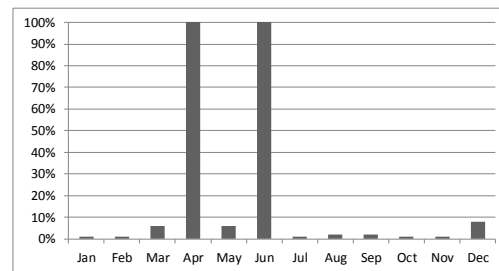


2 Collection Efficiency for Domestic



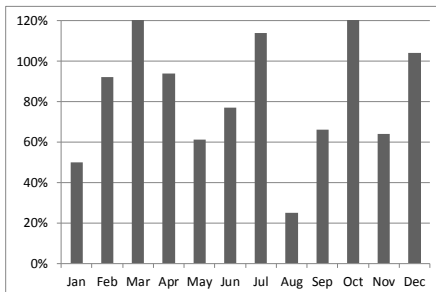
average 2010: 91%
average 2011: 78%

3 Collection Efficiency for Government



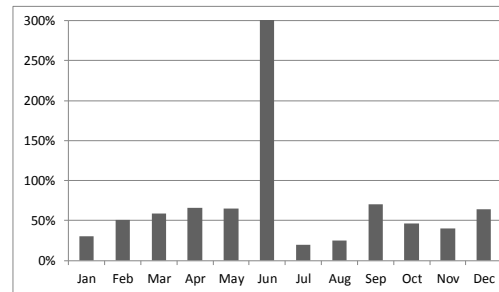
average 2010: 103%
average 2011: 62%

4 Collection Efficiency for Commercial



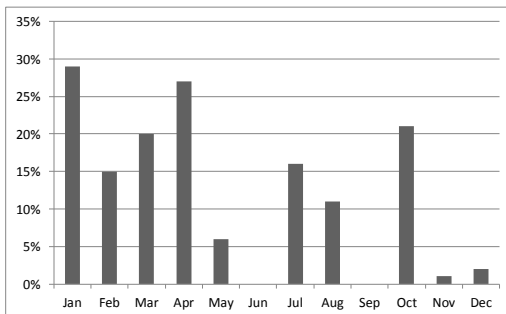
average 2010: 99%
average 2011: 97%

5 Operational Actual Cost Coverage



average 2010: 71%
average 2011: 83%

6 Non Revenue Water



average 2010: 22%
average 2011: 15%

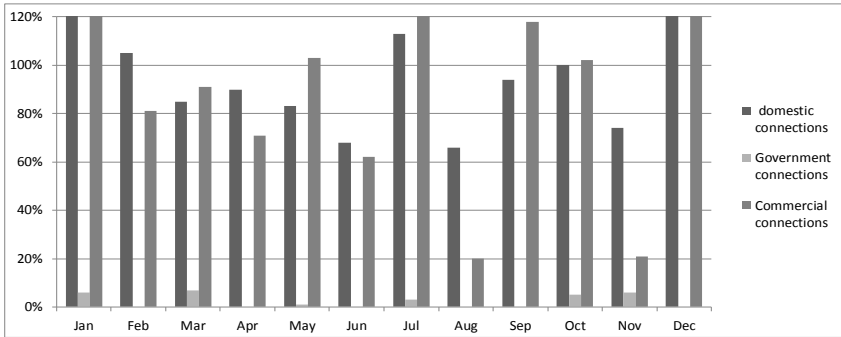
7 Continuity of Water Supply

Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan	12				
Feb	12				
Mar	12				
April	12				
May	10				
June		12	1		
July	10				
Aug	6				
Sept		12	1		
Oct				12	2
Nov		12	1		
Dec				16	3

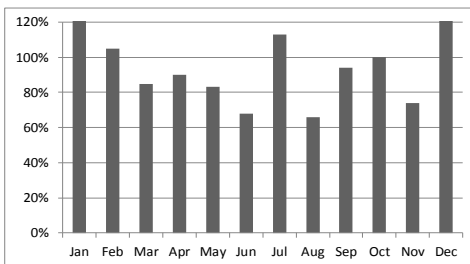
Comment : No of hours of water frequency (Avg)

Almansouriah Jan-Dec 2011

1 Collection Efficiency for Domestic, Government & Commercial

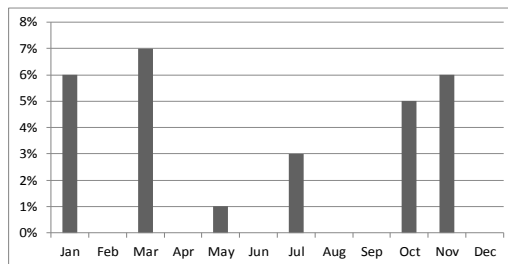


2 Collection Efficiency for Domestic



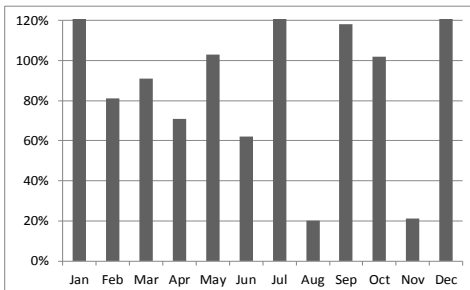
average 2010: 95%
average 2011: 96%

3 Collection Efficiency for Government



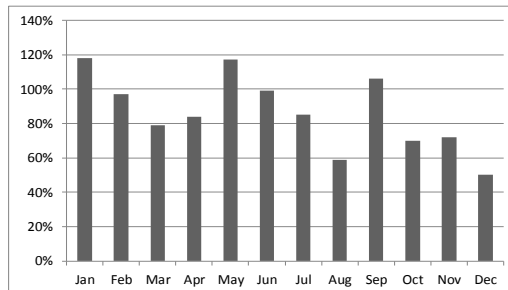
average 2010: 14%
average 2011: 5%

4 Collection Efficiency for Commercial



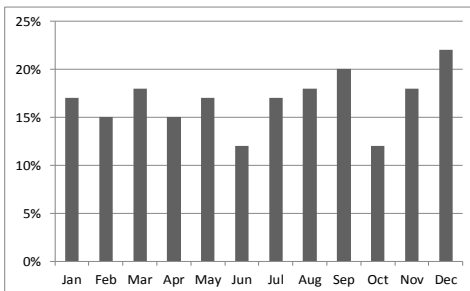
average 2010: 93%
average 2011: 94%

5 Operational Actual Cost Coverage



average 2010: 93%
average 2011: 86%

6 Non Revenue Water



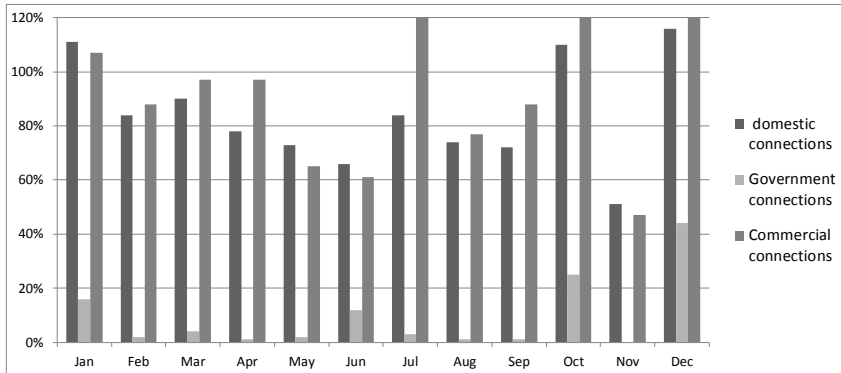
average 2010: 15%
average 2011: 17%

7 Continuity of Water Supply

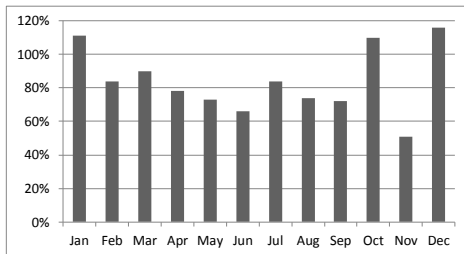
Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan	12				
Feb	12				
Mar	12				
April	12				
May	12				
June	12				
July	10				
Aug	10				
Sept	10				
Oct	10				
Nov	19				
Dec	20				

Comment : No of hours of water frequency (Avg)

1 Collection Efficiency for Domestic, Government & Commercial

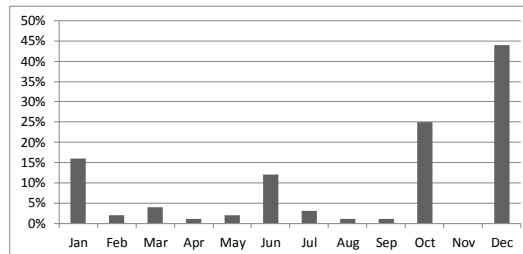


2 Collection Efficiency for Domestic



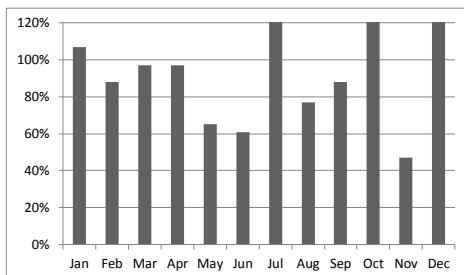
average 2010: 83%
average 2011: 84%

3 Collection Efficiency for Government



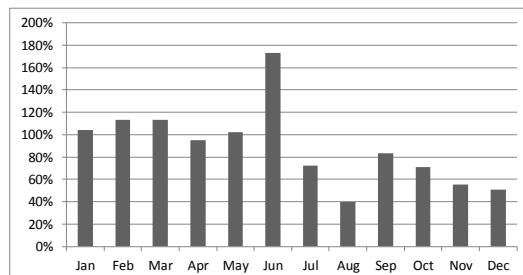
average 2010: 13%
average 2011: 10%

4 Collection Efficiency for Commercial



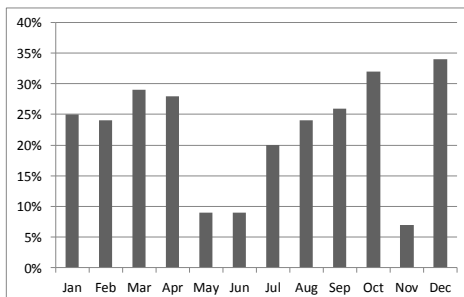
average 2010: 82%
average 2011: 93%

5 Operational Actual Cost Coverage



average 2010: 144%
average 2011: 89%

6 Non Revenue Water



average 2010: 19%
average 2011: 22%

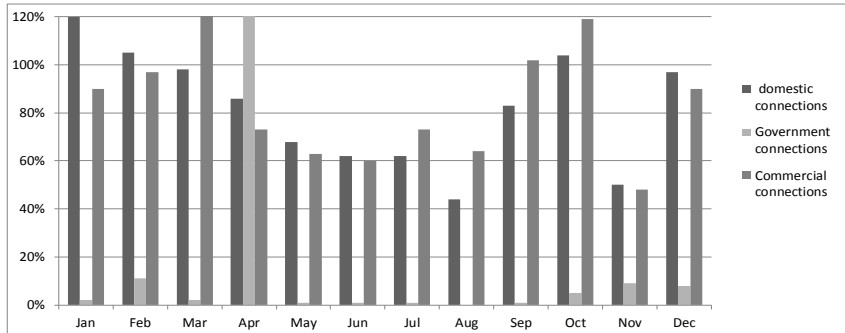
7 Continuity of Water Supply

Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan		18	2		
Feb		18	2		
Mar		18	2		
April		24	1		
May		24	1		
June		24	1		
July		24	1		
Aug		24	1		
Sept		24	1		
Oct		18	2		
Nov		24	2		
Dec		24	2		

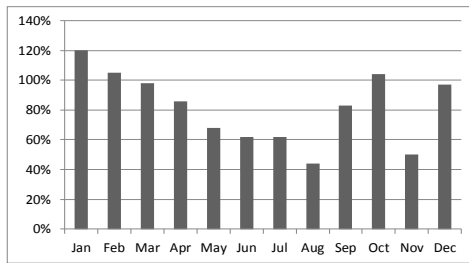
Comment : 1- No Diesel
2- Power interruption

Bajil Jan-Dec 2011

1 Collection Efficiency for Domestic, Government & Commercial

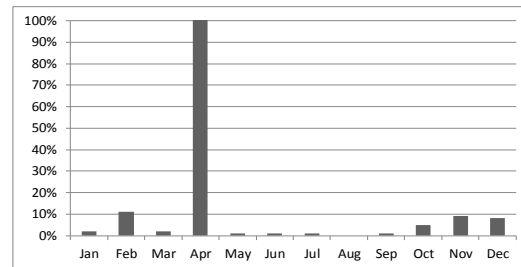


2 Collection Efficiency for Domestic



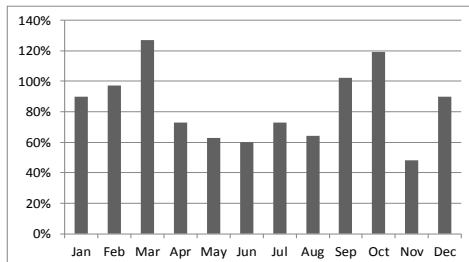
average 2010: 100%
average 2011: 82%

3 Collection Efficiency for Government



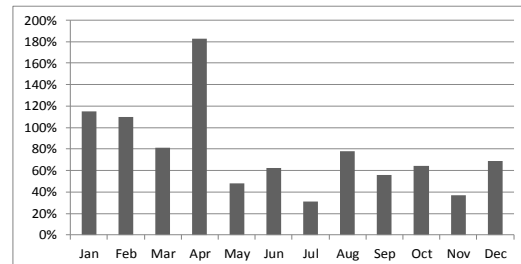
average 2010: 30%
average 2011: 80%

4 Collection Efficiency for Commercial



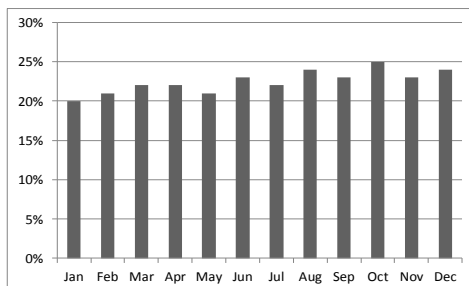
average 2010: 105%
average 2011: 84%

5 Operational Actual Cost Coverage



average 2010: 80%
average 2011: 78%

6 Non Revenue Water



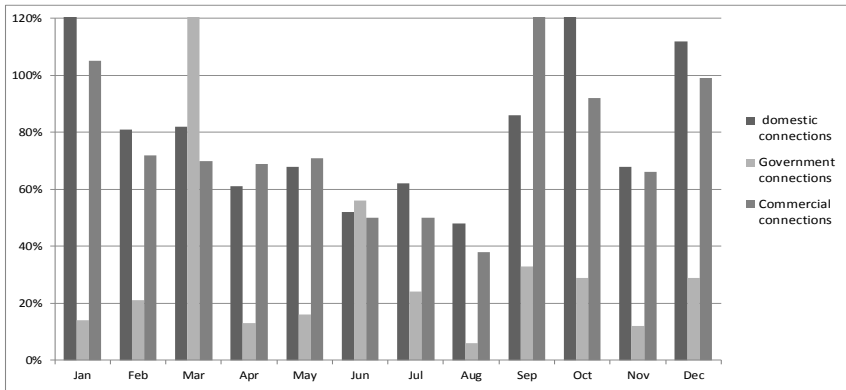
average 2010: 25%
average 2011: 23%

7 Continuity of Water Supply

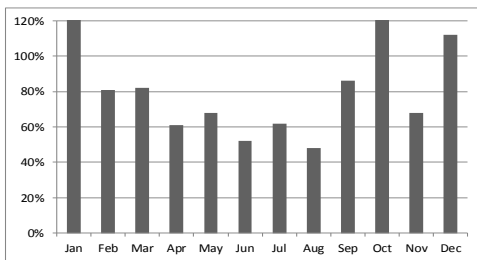
Month	Daily		Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Da	Day/Month	
Jan	5					
Feb	6					
Mar	6					
April	6					
May		12	1			
June		12	1			
July		12	1			
Aug		12	1			
Sept		12	1			
Oct		12	1			
Nov					16	3
Dec					16	3

Comment : No of hours of water frequency (Avg)

1 Collection Efficiency for Domestic, Government & Commercial

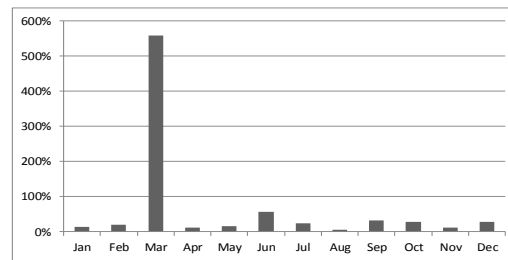


2 Collection Efficiency for Domestic



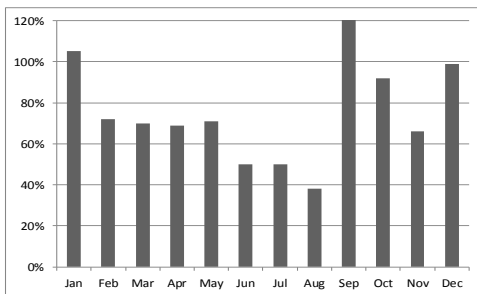
average 2010: 98%
average 2011: 82%

3 Collection Efficiency for Government



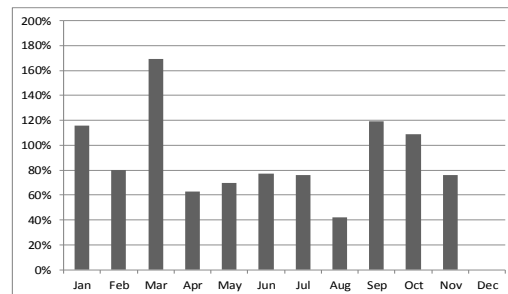
average 2010: 57%
average 2011: 68%

4 Collection Efficiency for Commercial



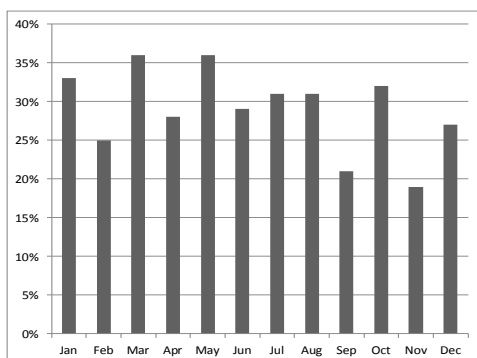
average 2010: 96%
average 2011: 78%

5 Operational Actual Cost Coverage



average 2010: 93%
average 2011: 91%

6 Non Revenue Water



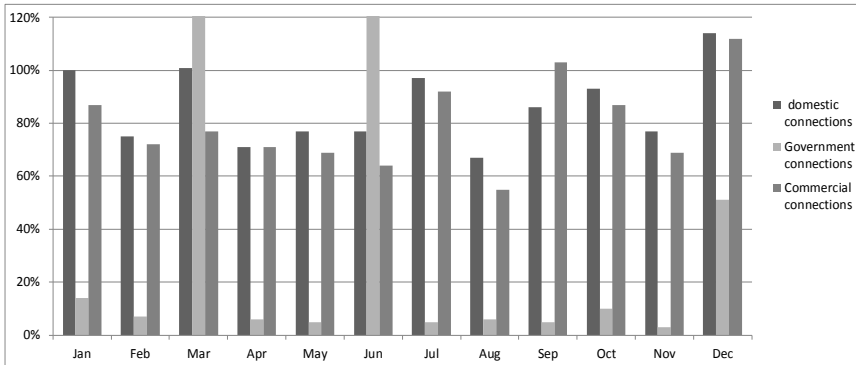
average 2010: 28%
average 2011: 29%

7 Continuity of Water Supply

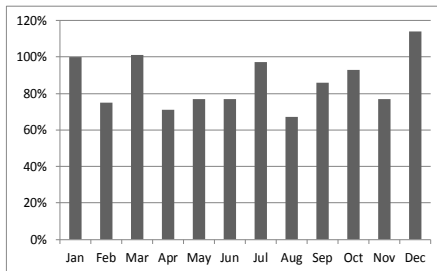
Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan	24				
Feb	24				
Mar	24				
April	24				
May	24				
June	24				
July	24				
Aug	24				
Sept	24				
Oct	24				
Nov	24				
Dec	24				

Low collections, especially governmental may cause the interruption of service in the future and inability to cover staff salaries and expenses of fuel, so an intervention by the competent authorities for the payment of indebtedness of the government authorities

1 Collection Efficiency for Domestic, Government & Commercial

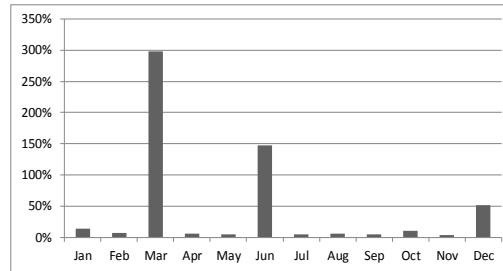


2 Collection Efficiency for Domestic



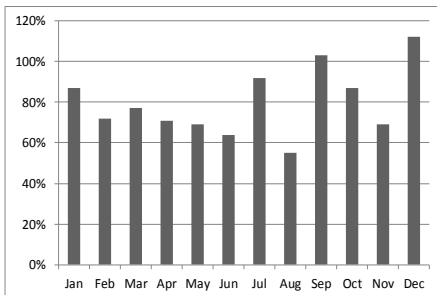
average 2010: 95%
average 2011: 86%

3 Collection Efficiency for Government



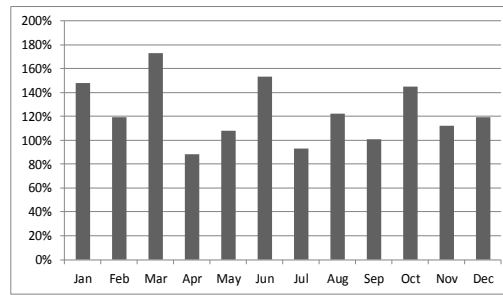
average 2010: 34%
average 2011: 46%

4 Collection Efficiency for Commercial



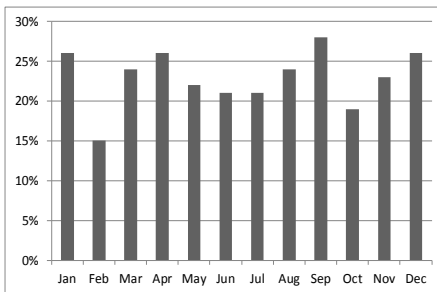
average 2010: 94%
average 2011: 80%

5 Operational Actual Cost Coverage



average 2010: 134%
average 2011: 123%

6 Non Revenue Water



average 2010: 18%
average 2011: 23%

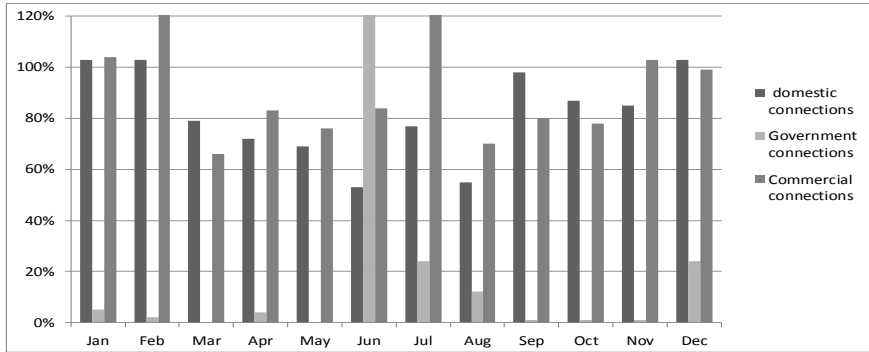
7 Continuity of Water Supply

Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan		12	1		
Feb		12	1		
Mar		12	1		
Apr		12	1		
May		12	1		
Jun		12	1		
Jul		12	1		
Aug		12	1		
Sep		12	1		
Oct		12	1		
Nov				12	4
Dec				12	4

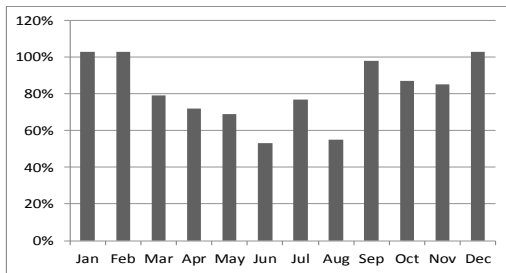
Comment : No of hours of water frequency (Avg)

Bait Alfaqih Jan-Oct 2011

1 Collection Efficiency for Domestic, Government & Commercial

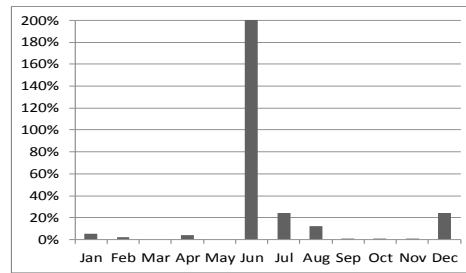


2 Collection Efficiency for Domestic



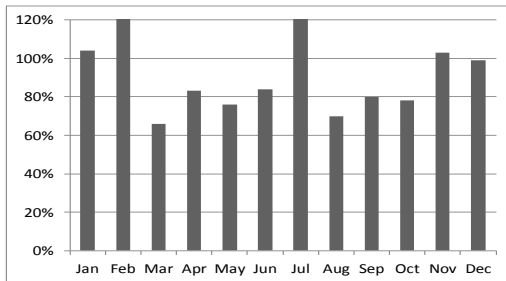
average 2010: 94%
average 2011: 82%

3 Collection Efficiency for Government



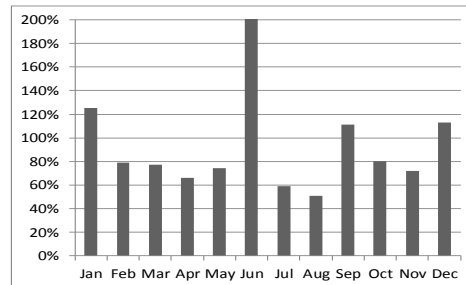
average 2010 7%
average 2011:84%

4 Collection Efficiency for Commercial



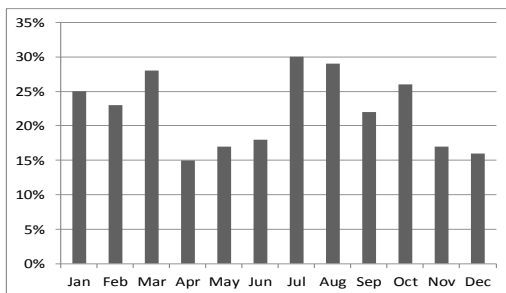
average 2010: 96%
average 2011: 94%

5 Operational Actual Cost Coverage



average 2010 87%
average 2011:93%

6 Non Revenue Water



average 2010: 15%
average 2011: 22%

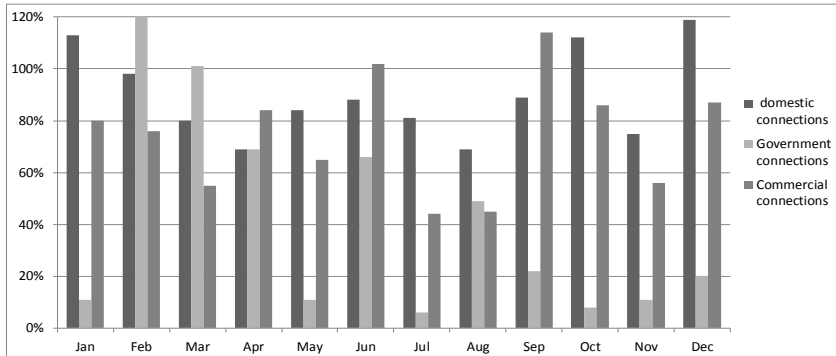
7 Continuity of Water Supply

Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan	14				
Feb	14				
Mar	14				
Apr	14				
May	12				
Jun	12				
Jul	14				
Aug	14				
Sep	14				
Oct	14				
Nov	17				
Dec	16				

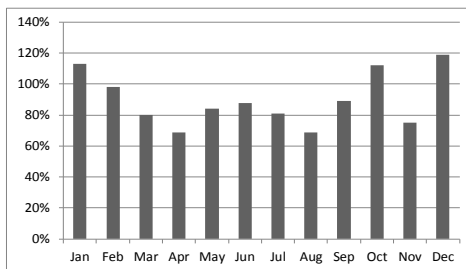
Comment : No of hours of water frequency (Avg)

AlSheher Jan-Dec 2011

1 Collection Efficiency for Domestic, Government & Commercial

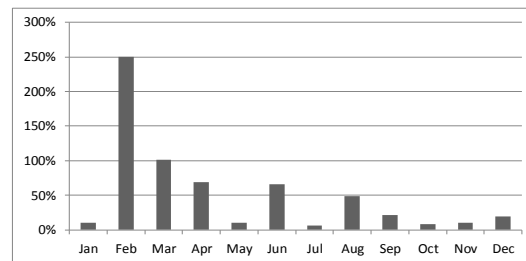


2 Collection Efficiency for Domestic



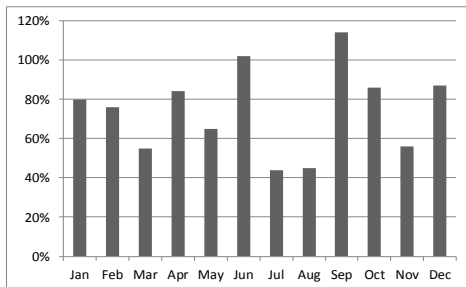
average 2010: 98%
average 2011: 90%

3 Collection Efficiency for Government



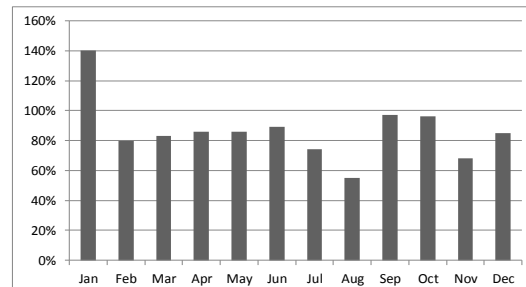
average 2010: 83%
average 2011: 52%

4 Collection Efficiency for Commercial



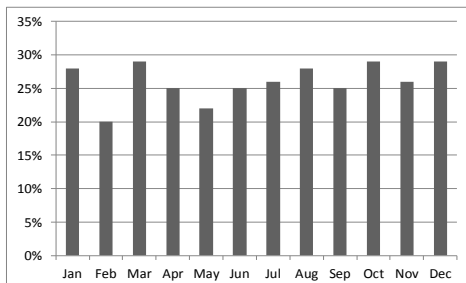
average 2010: 88%
average 2011: 75%

5 Operational Actual Cost Coverage



average 2010: 96%
average 2011: 87%

6 Non Revenue Water



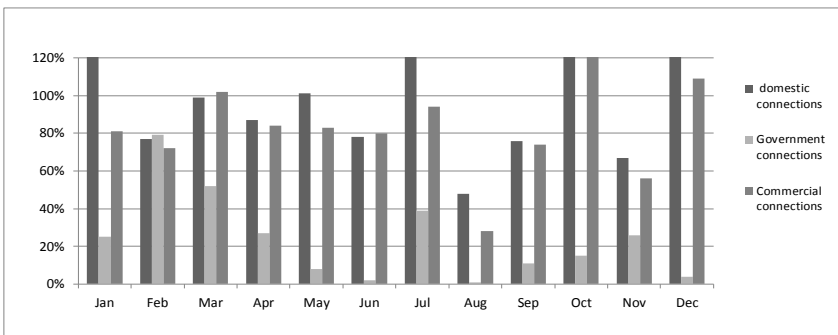
average 2010: 23%
average 2011: 26%

7 Continuity of Water Supply

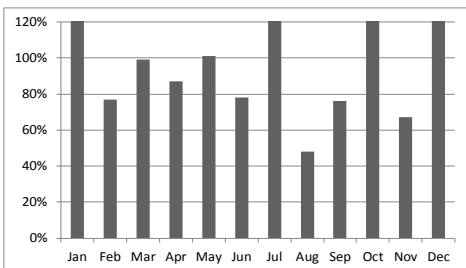
Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan	12				
Feb	12				
Mar	12				
April	12				
May	12				
June	12				
July	12				
Aug	12				
Sept	12				
Oct	12				
Nov	24				
Dec	24				

Comment : No of hours of water frequency (Avg)

1 Collection Efficiency for Domestic, Government & Commercial

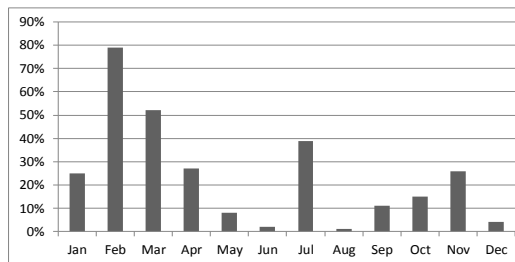


2 Collection Efficiency for Domestic



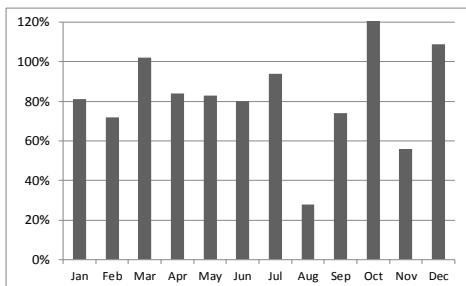
average 2010: 105%
average 2011: 105%

3 Collection Efficiency for Government



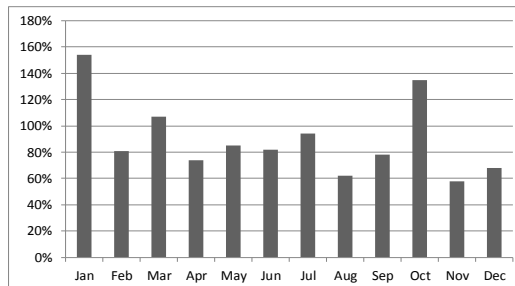
average 2010: 47%
average 2011: 24%

4 Collection Efficiency for Commercial



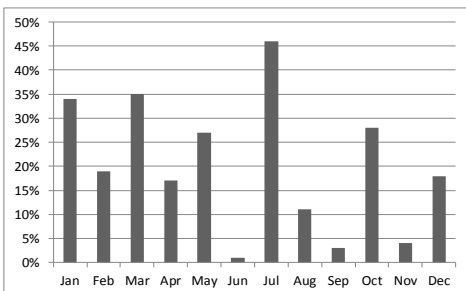
average 2010: 116%
average 2011: 82%

5 Operational Actual Cost Coverage



average 2010: 99%
average 2011: 90%

6 Non Revenue Water



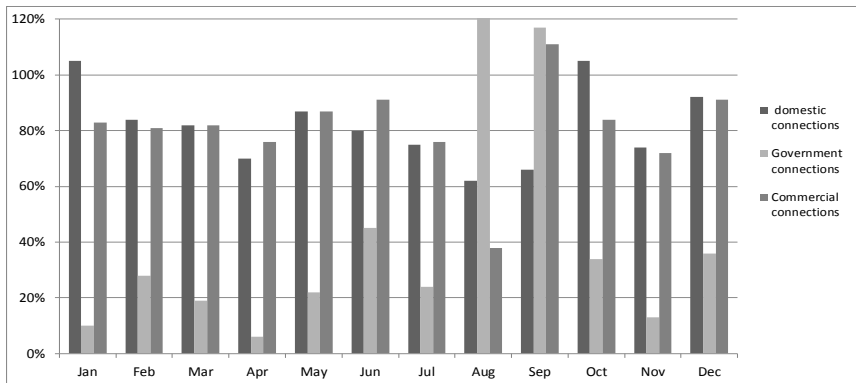
average 2010: 26%
average 2011: 20%

7 Continuity of Water Supply

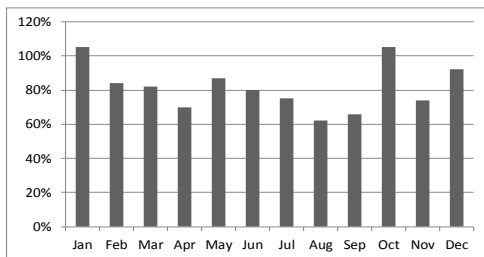
Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan	6				
Feb	6				
Mar	6				
April	6				
May	6				
June	6				
July	6				
Aug	6				
Sept	6				
Oct	6				
Nov		6	1		
Dec		6	1		

Comment : No of hours of water frequency (Avg)

1 Collection Efficiency for Domestic, Government & Commercial

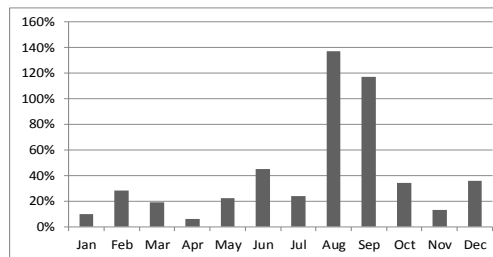


2 Collection Efficiency for Domestic



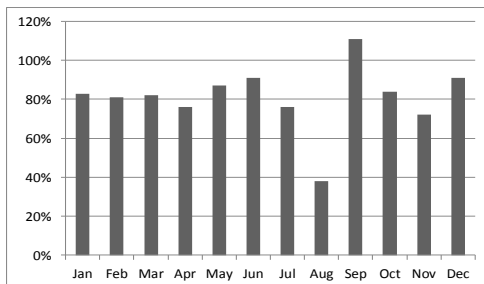
average 2010: 90%
average 2011: 82%

3 Collection Efficiency for Government



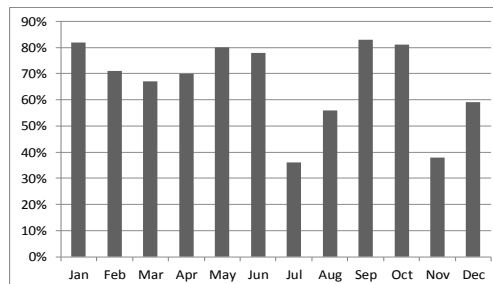
average 2010: 134%
average 2011: 41%

4 Collection Efficiency for Commercial



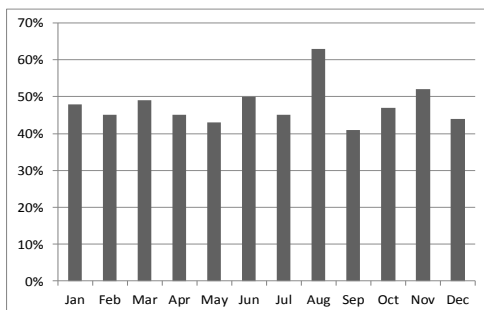
average 2010: 85%
average 2011: 81%

5 Operational Actual Cost Coverage



average 2010: 85%
average 2011: 67%

6 Non Revenue Water



average 2010: 47%
average 2011: 48%

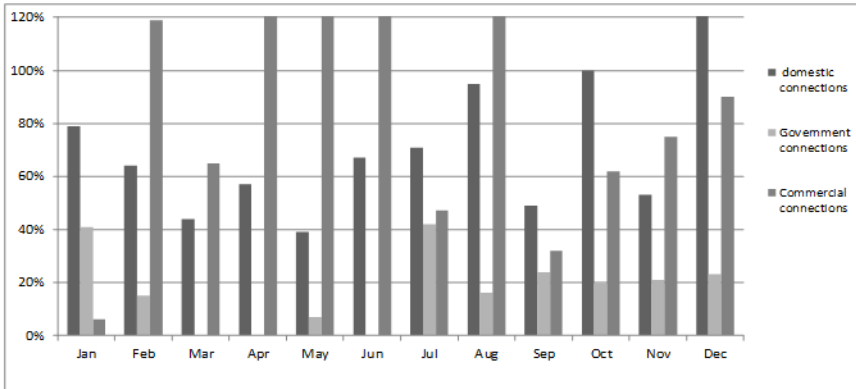
7 Continuity of Water Supply

Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan	12				
Feb	12				
Mar	12				
April	12				
May	12				
June	12				
July	12				
Aug	12				
Sept	12				
Oct	12				
Nov	20				
Dec	20				

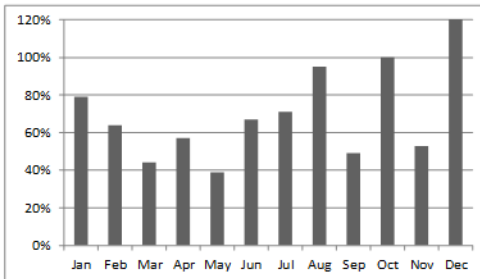
Comment : No of hours of water frequency (Avg)

Sa'adah Jan-Dec 2011

1 Collection Efficiency for Domestic, Government & Commercial

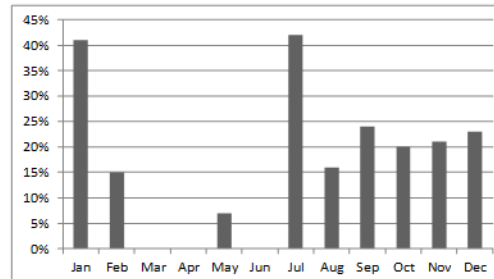


2 Collection Efficiency for Domestic



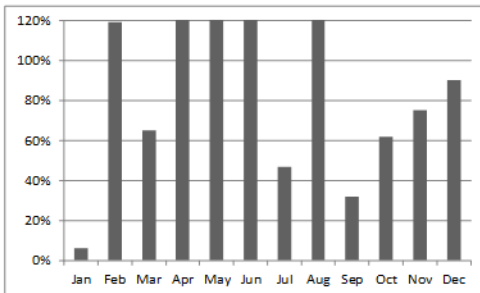
average 2010: 81%
average 2011: 71%

3 Collection Efficiency for Government



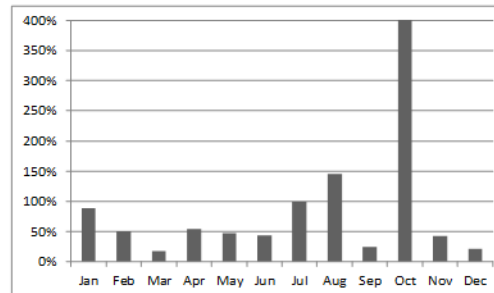
average 2010: 179%
average 2011: 23%

4 Collection Efficiency for Commercial



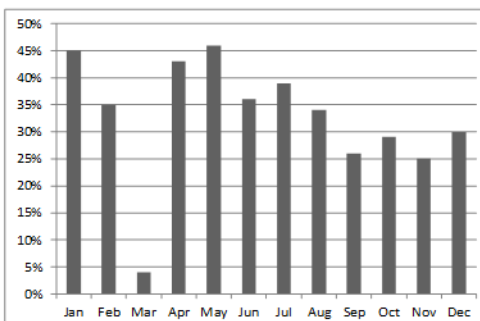
average 2010: 87%
average 2011: 108%

5 Operational Actual Cost Coverage



average 2010: 79%
average 2011: 94%

6 Non Revenue Water



average 2010: 35%
average 2011: 33%

7 Continuity of Water Supply

Month	Daily	Weekly		Monthly	
	Hours/Day	Hours/Day	Day/Week	Hours/Day	Day/Month
Jan					
Feb					
Mar					
April					
May					
June					
July					
Aug					
Sept					
Oct					
Nov					
Dec					

Comment: No of hours of water frequency (Avg)

Annex 2

PIIS 2010-2011

No.	LC/Utility	Collection Efficiency Domestic (Average)		Collection Efficiency Government (Average)		Collection Efficiency Commercial (Average)		Operational actual cost coverage (Average)		Non-revenue water (Average)	
		2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
1	Aden	77%	52%	49%	28%	98%	83%	82%	71%	29%	33%
2	Sana'a	91%	68%	71%	56%	85%	54%	109%	83%	31%	32%
3	Taiz	88%	72%	40%	93%	90%	66%	78%	86%	23%	21%
4	Mukala	93%	87%	68%	70%	89%	87%	101%	103%	35%	35%
5	Hodeidah	92%	69%	34%	15%	84%	76%	82%	51%	42%	44%
6	Dhamar	90%	82%	55%	41%	84%	81%	85%	67%	47%	48%
7	Rada'a	83%	84%	13%	10%	82%	93%	144%	89%	19%	22%
8	Al Mansouriah	95%	96%	14%	5%	93%	94%	106%	86%	16%	17%
9	Ibb	95%	86%	34%	46%	94%	80%	133%	123%	18%	23%
10	Alsheher	98%	90%	83%	52%	87%	75%	96%	87%	23%	26%
11	Seyuon	98%	82%	57%	68%	96%	78%	93%	91%	28%	29%
12	Mocha	116%	102%	79%	40%	105%	101%	110%	86%	25%	23%
13	Zabid	106%	101%	38%	33%	96%	96%	100%	89%	18%	19%
14	Bajil	106%	82%	30%	80%	107%	84%	88%	78%	25%	23%
15	Bait Alfaqih	94%	82%	7%	84%	96%	94%	87%	93%	15%	22%
16	AlMahweet	80%	77%	33%	51%	57%	69%	59%	61%	20%	23%
17	Hajjah	91%	78%	103%	62%	99%	97%	71%	83%	22%	15%
18	Amran	104%	105%	47%	24%	116%	82%	99%	90%	26%	20%
19	Sa'adah	81%	71%	179%	23%	87%	108%	79%	94%	35%	33%