



Yemen Water Sector Performance Indicators

of Water Local Corporations in
Aden, Sana'a, Ibb, Taiz and Hodeidah

Resilience-Oriented Indicators Overview

January – March 2017

Prepared by:
Eng. Arwa Humadi, GIZ-Technical officer



1. Introduction

Yemen is suffering an acute water crisis exacerbated by conflict. The drinking-water supply and sanitation services are inadequate, as is the management of water resources. National sector institutions, regional and local water suppliers, and water basin committees are only able to carry out their responsibilities to a limited extent. Agricultural irrigation, especially in the cultivation of Qat, consumes more than 90% of already scarce water resources.

Water Corporations (LCs) are passing through serious changes and challenges. The continued army conflict created a big challenge for management of LCs and utilities and also in customer's behavior especially the reluctance of customers to pay the water services charges. During last year and the first quarter of 2017, there were a number of variables affecting the water sector leading to deteriorate the water and sanitation services in some LCs plus the operation cost shortage. The factors can be summarized as follow:

1. Lack of source of energy (National Electrical grid) which is one of the major factors contributed to water and sanitation dilemma in the country are still an issue for water business in the LCs and affecting it's sustainability. The situation of last quarter of 2016 is still persisting in this quarter and the deterioration of water services continue especially in Sana'a. The absence of electrical power supply by the grid made LCs completely depended on oil derivatives to operate decentralized generators for running wellfields, pumps, treatment plants and office equipment's.

Some LCs, 100 % of their revenue are spent on fuels. Therefore, the LCs are NOT able to pay the basic salary for this quarter and also the operating or/and pumping water or carry out any operation and maintenance works.

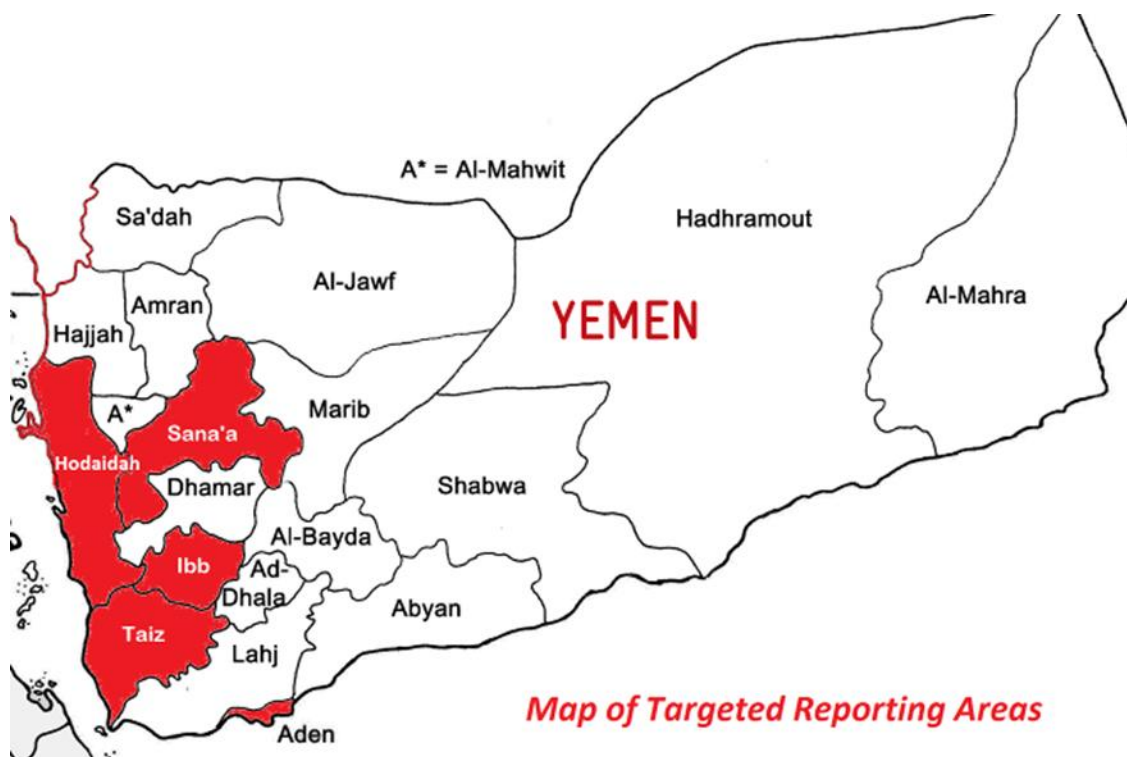
2. Increase in fuel price and suspension of UNICEF support to supply LCs with oil derivative depleted the LCs financial revenues and put extra burden on the shoulders of LCs and affected the performance and O&M of those LCs.
3. The economic situation is another factor affecting the stability of the LCs. The government disability to pay the employees' salaries for more than ten months was the main factor of sharp decline in the operational revenue, which created a critical financial situation and affected the level of services provision.
4. Stoppage of investment programs and lack of spare parts are other factors affecting the LCs performance. The rehabilitation of water and sanitation networks' components as well as other operational equipment of some LCs are appealing for urgent funds from the local and international relief agencies (Lack of water pumps, motors and heavy trucks, sewage problem and sewage flood in the street).

In spite of the harsh conditions and challenges, the determination and dedication of LC staff enable the LCs to continue water delivery to its customers, the Internally Displaced Peoples (IDPs) and the marginalized people in light of available possibilities. In addition, effective interventions and measures embarked by the Relief and Donor organizations contributed to strengthen the role of the LCs from all aspects.

2. Reporting process

Since the conflict erupted in Yemen in March 2015, the Ministry of Water and Environment with assistance provided by the GIZ Water Sector Program initiated a process to monitor key performance indicators of selected main LCs such as Sana'a, Aden, Taiz, Hodeidah and Ibb. The frequency of reporting is taking place on a monthly basis for twenty-three emergency performance indicators to assist the Ministry of Water and Environment and other Water Sector Stakeholders to address real and potential trends of performance with respect to

operational, financial and managerial capacities of the LCs during the crises and its consequences. Finally, this report covers the period between January to March 2017 for these twenty-three emergency performance indicators accompanied with technical analysis according to the special conditions passed by each LC except Taiz LC which can't provide any information due to the exceptional situation and the continuity of conflict in the city and the LC has no access to their building or data.



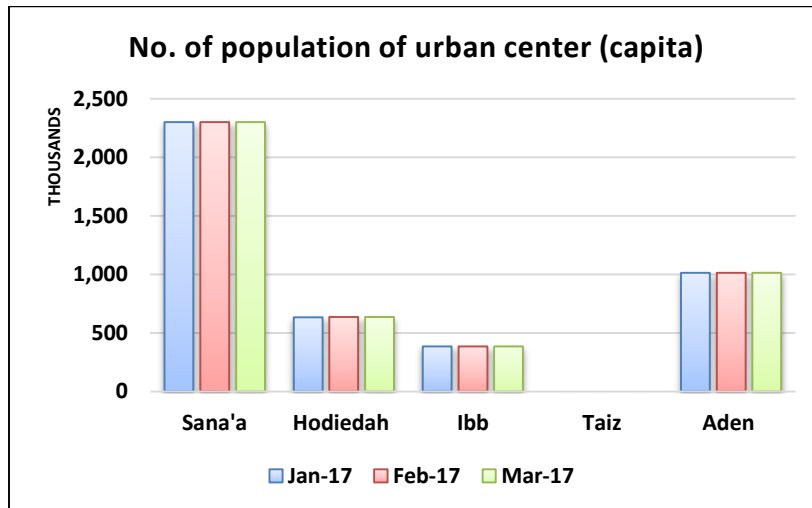
a. Service coverage of piped water supply	
1. No. of population of urban centers (cap)	2. Number of IDPs in served area (cap)
3. Number of population served through water supply network (cap)	4. Water supply service coverage = population served through water supply network vs total population (%).
b. Service days	
5. Number of service days of piped water supply per month.	
c. Water quantity	
6. Total quantity of water pumped in the network (m ³ /month).	7. Per capita quantity of water pumped in the network (l/cap/day)
d. Energy cost	
8. Energy Cost per m3 of water produced (YR/m ³).	
e. Storage capacity	
9. Storage capacity (m ³)	10. Storage capacity (l/cap)
f. Performance of pumps and generators	
11. Number of main pumps for the water supply system.	12. Number of functional water pumps in service
13. Number of working hours of all operating pumps that pump water (h/month)	14. Number of main functional pump failures due to technical reasons (-/month)
15. Number of working generators in the operation of pumps.	16. Number of working hours of all operating generators used to run the functional pumps that pump water (h/month).
g. Cost and Revenues	
17. Collected revenues	18. Billed amount (YR/month)
19. Total operational costs (YR/month)	20. Collected revenues vs billed amount (%)
21. Actual operational cost coverage (%)	22. Monthly governmental subsidies
23. Percentage of basic monthly salaries paid (%)	

Emergency Water Sector performance indicators

3. Technical Analysis:

a. Service coverage of piped water supply

1. Number of population of urban centers (capita)



Sana'a: The total number of population is still fix and no change regarding to the population **BUT** the number of IDPs in the last month of first quarter are increased and more IDPs fled to Sana'a from neighborhood

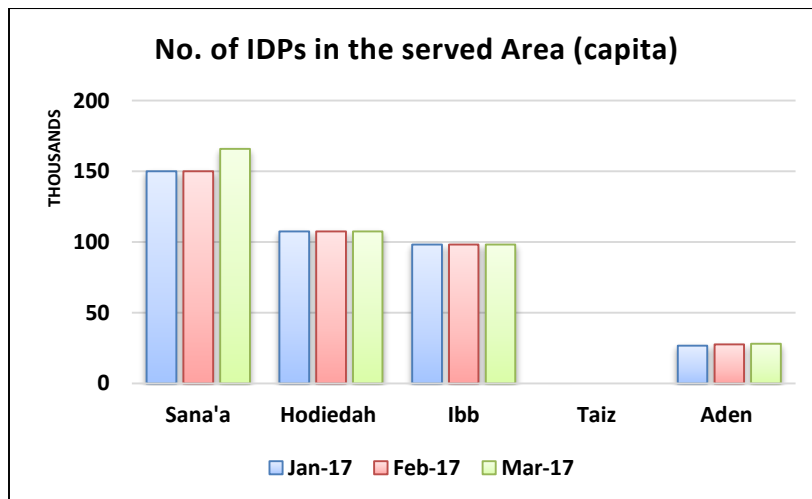
Hodeidah: No significant change in the number of population and IDPs in the city.

Ibb: No significant growth rate of the population, in Jan.- March 2017. The number of and IDPs are still the highest compared to other city.

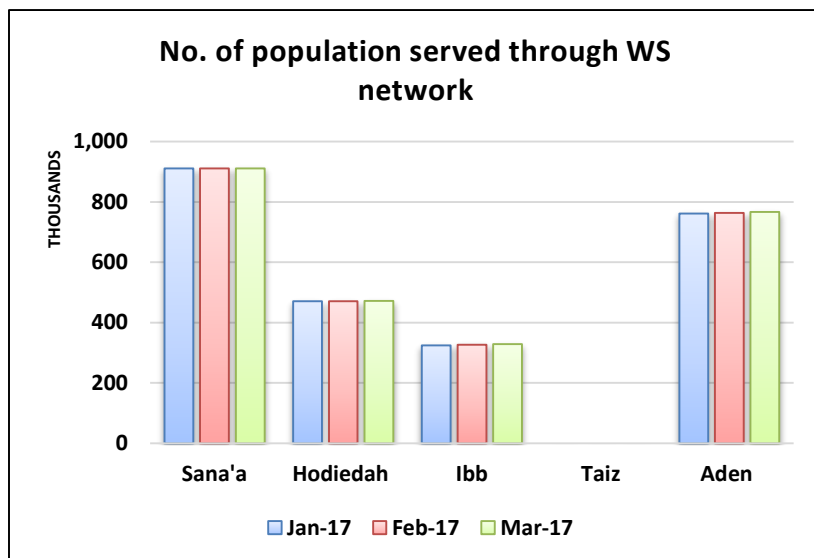
Taiz: Not Reported.

Aden: No significant growth rate of the population, in Jan.- March 2017. There is a slight increment in IDPs number fled to the city in this quarter.

2. Number of IDPs in served area (capita)



3. Number of population served through water supply network (cap)



Sana'a: Water service coverage is still low with 40 % only in spite of increasing of IDPs in the city and **No** improvement.

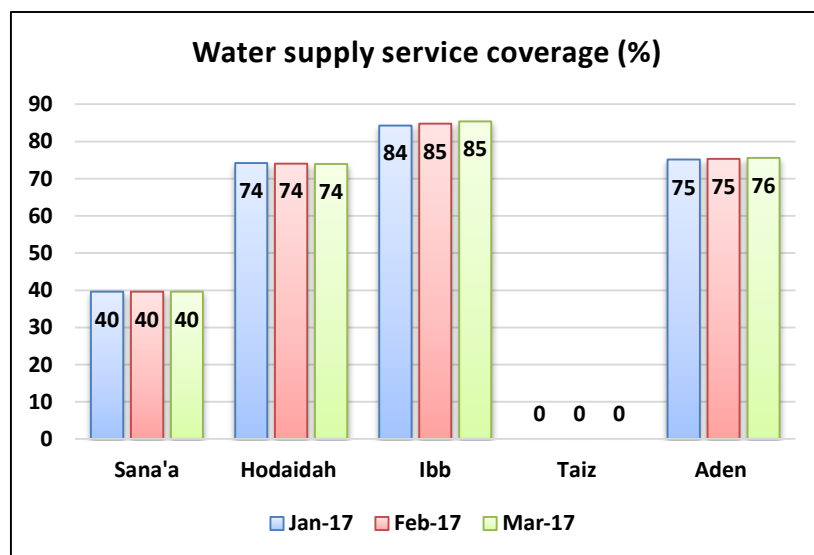
Hodeidah: Water service coverage is still acceptable around 75 %. The LC has the capacity to survive and cope with fuel crisis.

Ibb: Water service coverage is still one of the best LCs where the LC could cover around 85 % even with the huge number of IDPs fled to the city where the IDPs integrated in the city and became part of the inhabitants. The bulk group of IDPs in camps or in IDPs centers, the LC are not responsible for, but the humanitarian agencies provide the water for them.

Taiz: Not Reported.

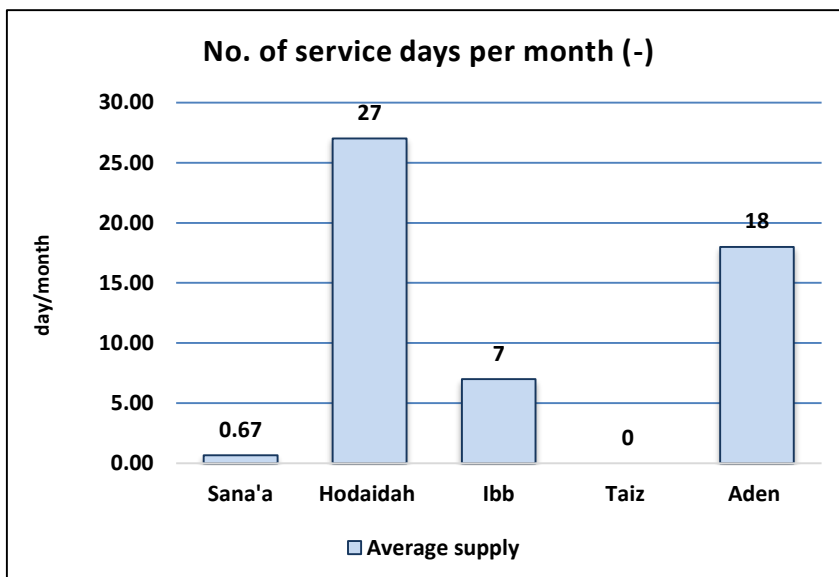
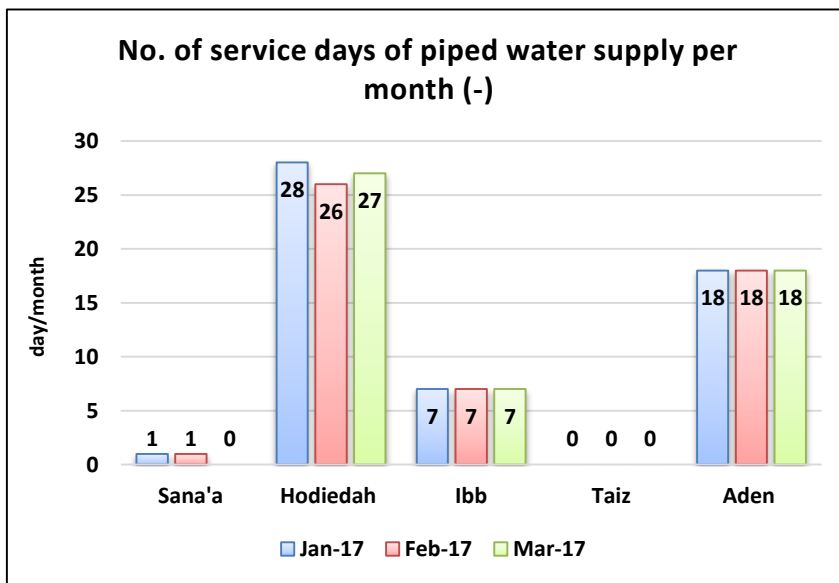
Aden: Water service coverage is still acceptable and increased slightly.

4. Water supply service coverage = population served through water supply network vs total population (%)



b. Service days

5. Number of service days of piped water supply per month



Sana'a: There is an urgent need to improve the water supply frequency. Sana'a is facing a real problem where the number of supply days per month is very low only 1 day in Jan. & 1 for Feb. and March. LC pumped water **ONLY** from 9th of Feb. to 19th of March. The average number of service days is less than 1 day per month during this quarter, the fuel crises affected all W&WW facilities and also the ability of the LC to operate and pump the water to the customers. LC could not guarantee enough fuel to operate the facilities.

Hodeidah: Services are in very good level where 70% of people are served daily by water around 18 hours/day, and 30% of them get water once every two to three days. The LC resilience to cope with fuel problem and other issue like salary and O&M issue is good.

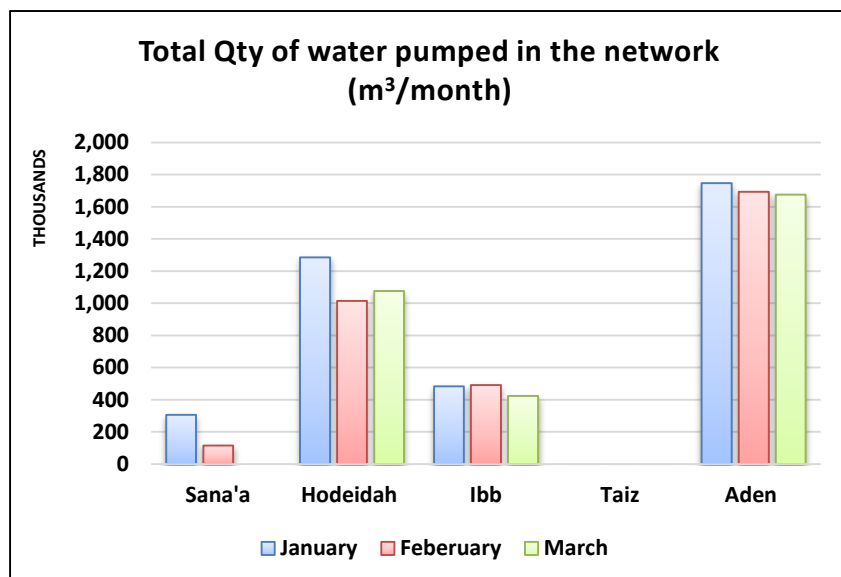
Ibb: Services were provided every three days to cover the basic needs during the crisis time.

Taiz: Not Reported.

Aden: Service is stable through this quarter. Water delivered 12 hours per day in some areas and in some other areas once every 2 to 3 days for 12 hours. The average supply per month

c. **Water quantity**¹

6. Total quantity of water pumped in the network (m³ /month)



Sana'a: The water quantity produced and pumped during this quarter is the lowest among LCs and comparing to the last year. The LC had no enough fuel to operate the wellfield pumps or the re-pumping station. The water service situation is deteriorating dramatically. The water share per capita is very low.

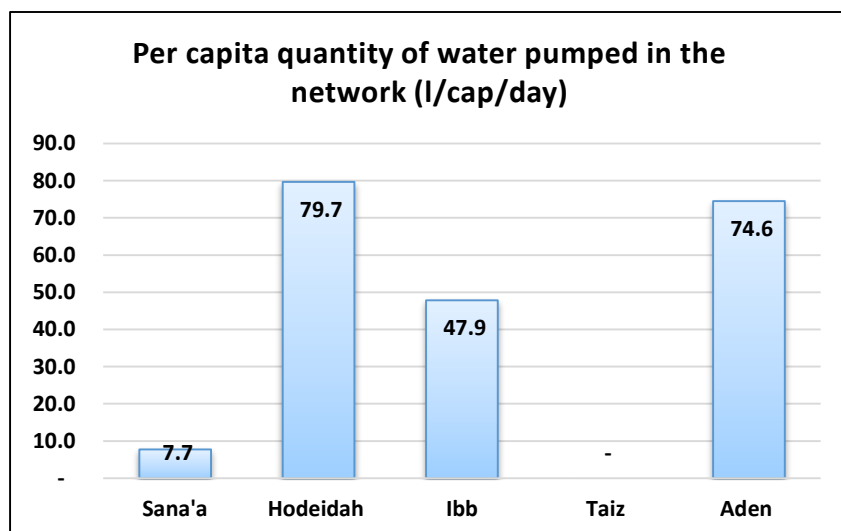
Hodeidah: The water production in Al Hodeidah is varied depend on ability of LC to provide enough quantity of fuel or getting support from humanitarian agencies or other source.

Ibb: There is no change in quantity of water pumped to network.

Taiz: Not reported

Aden: The quantity of water produced is the highest but half of this quantities are losses. The UFW/NRW is more than 48 %.

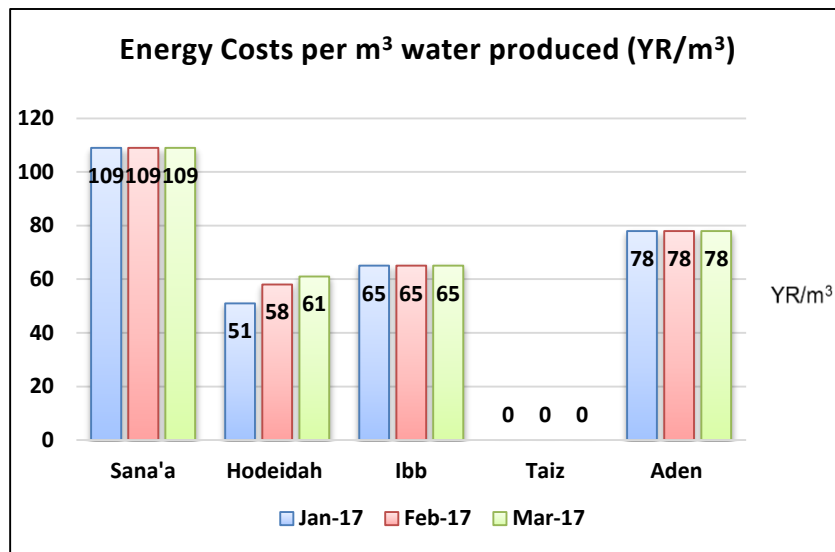
7. Per capita quantity of water pumped in the network (l/cap/day)



¹ The calculation of the water quantities per capita and day is based on LCs figures, as water production/population served. The water quantities provided by the private sector and/or humanitarian agencies are not monitored by the LCs and hence not considered in the calculation of this report.

d. Energy cost

8. Energy cost per m³ of water produced (YR/m³)



Sana'a: The energy cost per m³ of water produced is 109 YR. The rising costs of energy for the water produced are due to the deep depths of wells in Sana'a and fuel cost increment.

Hodeidah: The energy cost per m³ of water produced is an average 60 YR. the cost is not stable because of fuel increment and electricity absent.

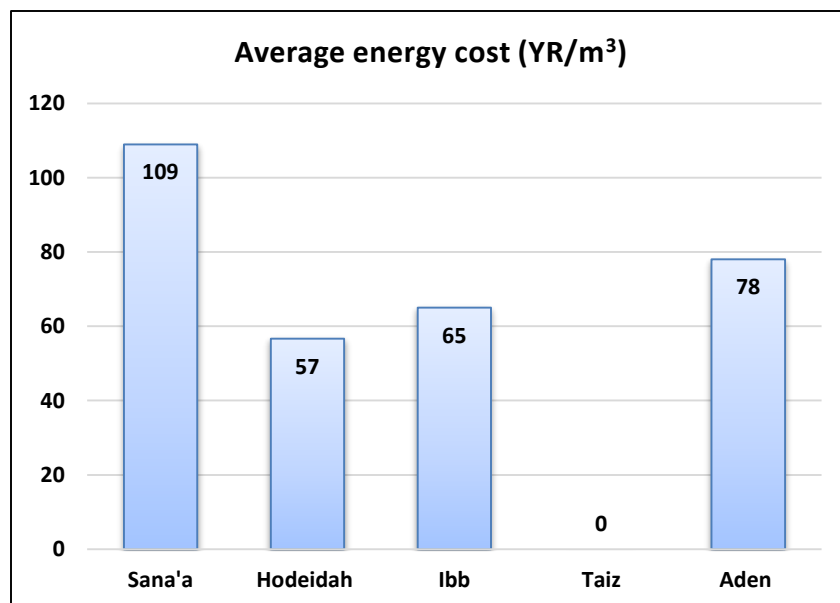
Ibb: The energy cost per m³ of water produced is nearly acceptable around 65 YR .

Taiz: Not Reported.

Aden: The energy cost per m³ of water produced is nearly acceptable around 78 YR and it's the same as in the last year.

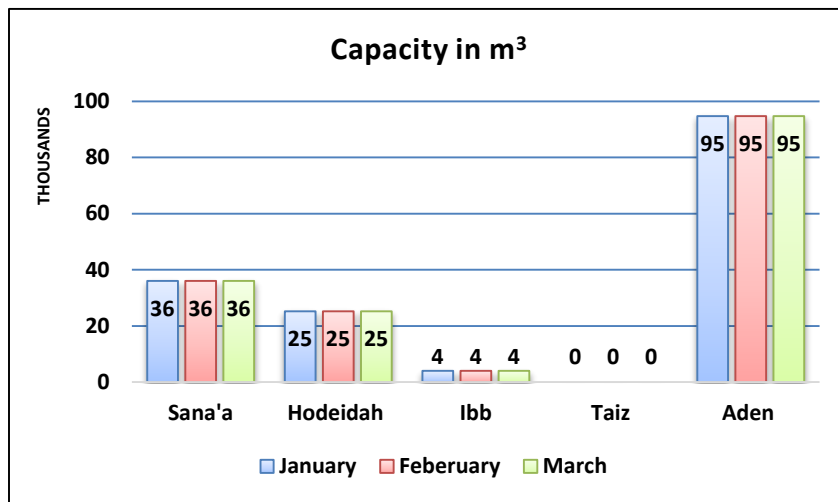
Energy shortage is an issue for all LCs and all are facing the same fuel and electricity instability and during this quarter, the situation became worse.

100YR ≈ 2.33 cent US \$

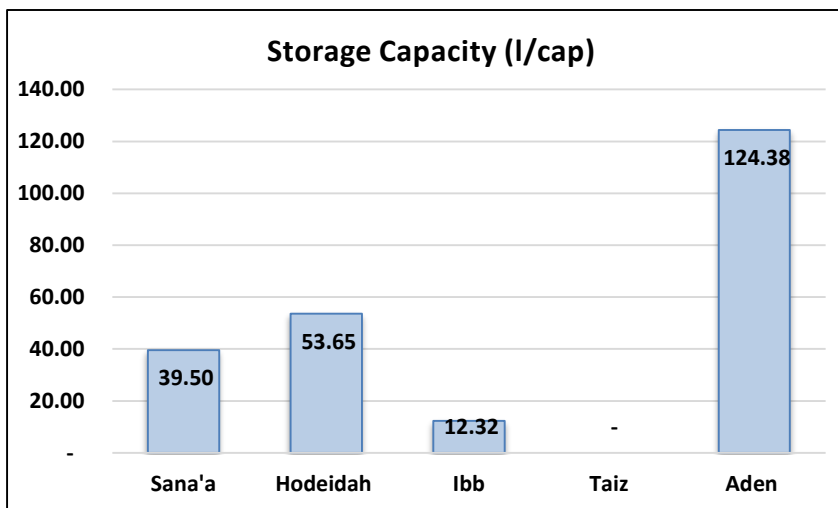


e. Storage capacity

9. Storage capacity (m³)



10. Storage capacity (l/cap)



The inclusive average storage capacity in **Aden** served before the crisis was 175 l/cap BUT now it reduced to around **95,000 m³** with **124 l/cap**.

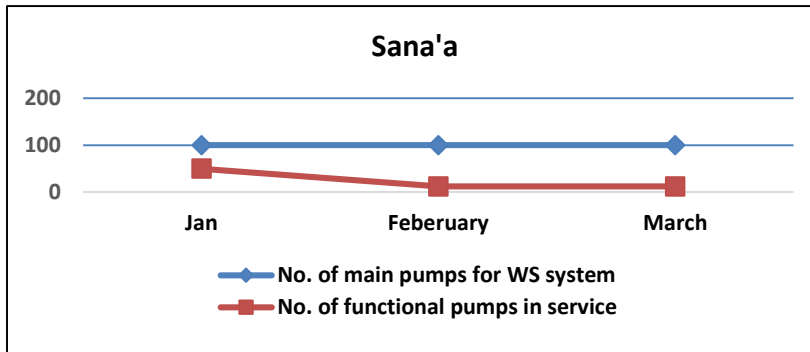
Storage capacity in **Hodeidah** is **25,250 m³** which represent **54 l/cap**, **Sana'a** is 36,000 m³ as storage capacity which represent **40 l/cap**, and the lowest share is in **Ibb** around **12 l/c** with **4,000 m³** storage capacity. This emphasizes the urgent need to extend the storage capacity by priority in **Ibb**, **Hodeidah**, **Sana'a** and lastly in Aden.

l/cap. = Liter per Capita

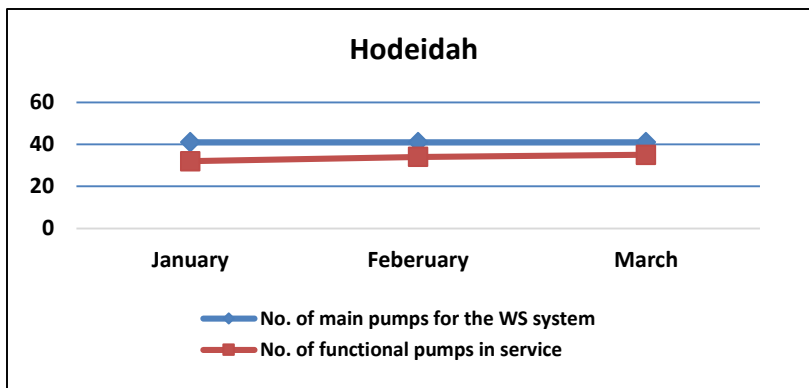
f. Performance of pumps and generators

11. Number of main pumps for the water supply system

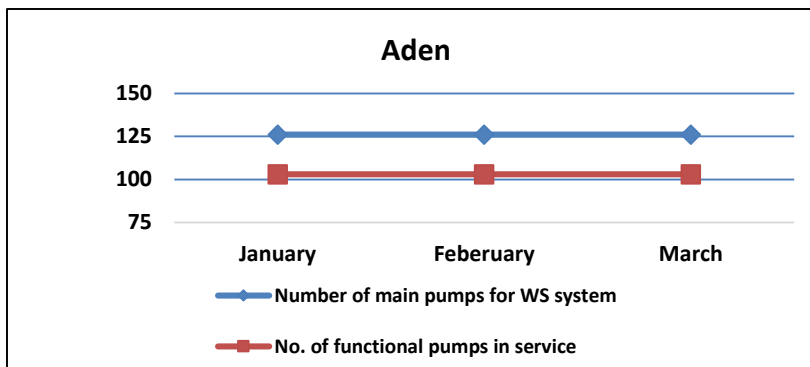
12. Number of functional water pumps in service



Sana'a: The percentage of functioning pumps decreased from **50% to 9%** during the three months; it is considered very low and LC needs more support to override and solve the fuel problem.

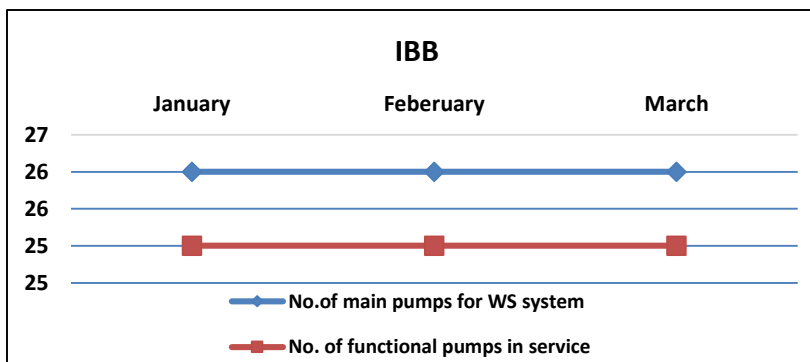


Hodeidah: The percentage of functioning pumps is **82%**, some efforts are needed.



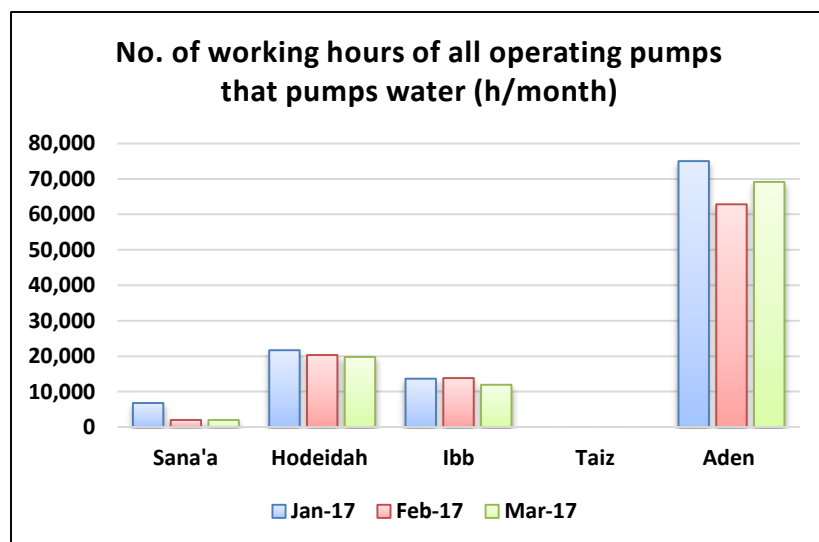
Ibb: The percentage of functioning pumps is **96%**

Taiz: Not Reported.



Aden: The percentage of functioning pumps is around **82%**, some efforts are needed. The number of pumps represent the pumps in wellfields and re-pumping station in network.

13. Number of working hours of all operating pumps that pump water (h/month)



Sana'a: The number of working hours decreased rapidly during this quarter. The average working hours of pumps around 5 hours/day

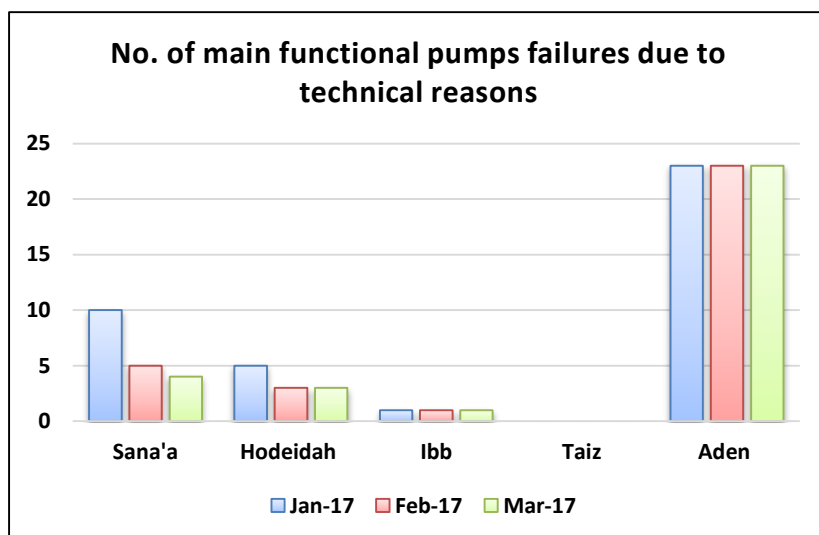
Hodeidah: The number of working hours decreased rapidly during this quarter. The average working hours of pumps around 20 hours/day

Ibb: The number of working hours decreased rapidly during this quarter. The average working hours of pumps around 18 hours/day

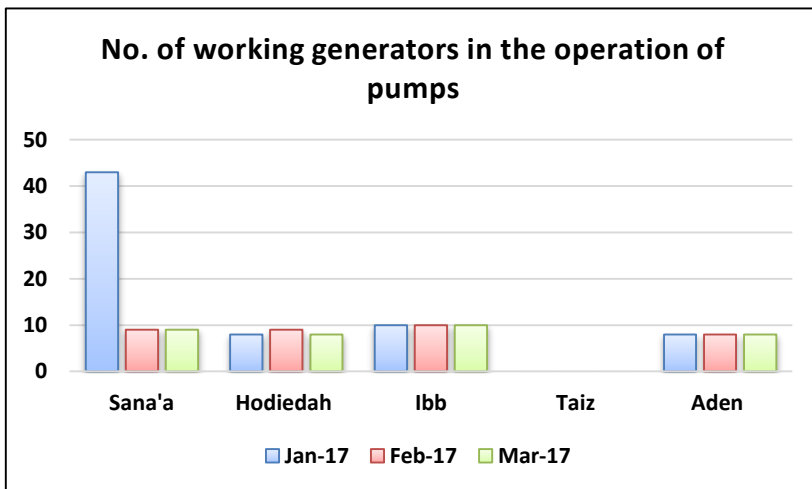
Taiz: Not Reported.

Aden: The number of working hours decreased rapidly during this quarter. The average working hours of pumps around 22 hours/day

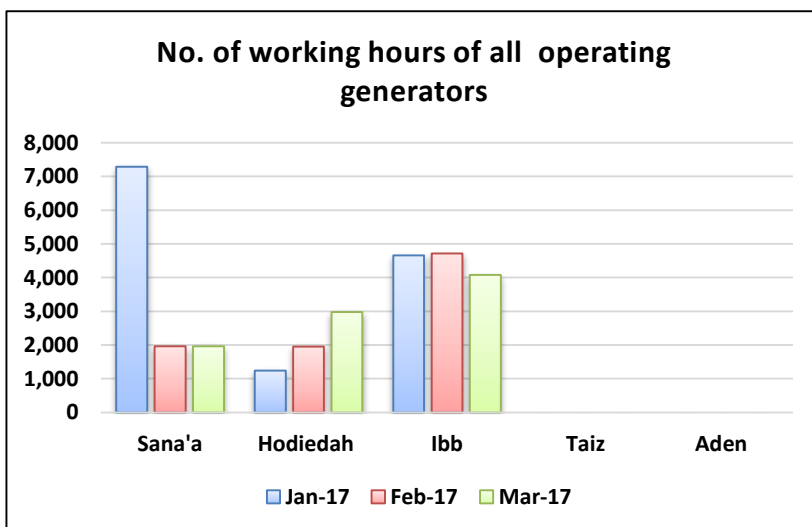
14. Number of main functional pump failures due to technical reasons (-/month)



15. Number of working generators in the operation of pumps.



16. Number of working hours of all operating generators used to run the functional pumps that pump water (h/month).



Sana'a: The LC is depending totally on generators to operate the pumps in the absence of the public electricity network. In this quarter, there is no electricity nor fuel. The result that the LC operate only 9 Genset. to provide the minimum quantity of e water to the city. The average working hours are 7 hours/day

Hodeidah: The LC is depending totally on generators to operate the pumps after the national grid cut-off since 2016 and the fuel crisis put extra burden on the shoulder of LC to keep the service continue. The average working hours are 8 hours/day

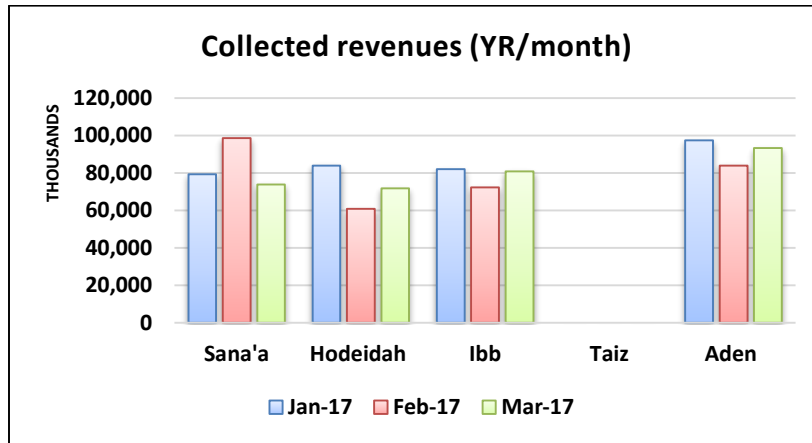
Ibb: The number of generators is low. LC rely on public electricity network, during power-off, they use the standby generators. The average working hours are 15 hours/day

Taiz: Not Reported.

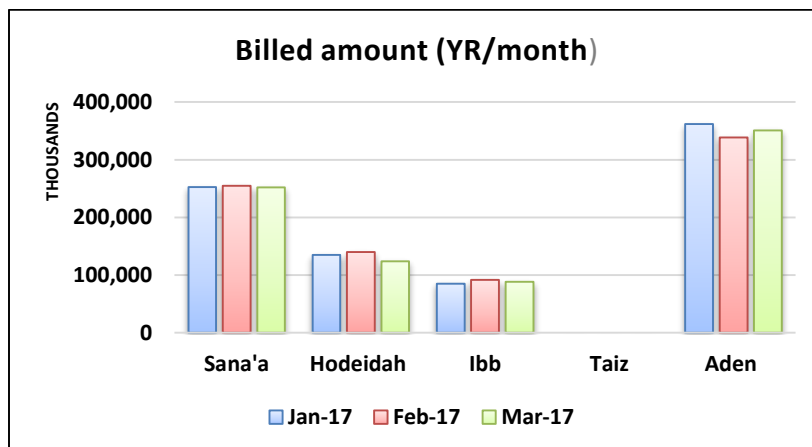
Aden: The number of generators is low. The LCs rely on different sources like public electricity network and generators. During power-off, they use the standby or Prime generators. There is no record for number of working hours of generators.

g. Cost and Revenues

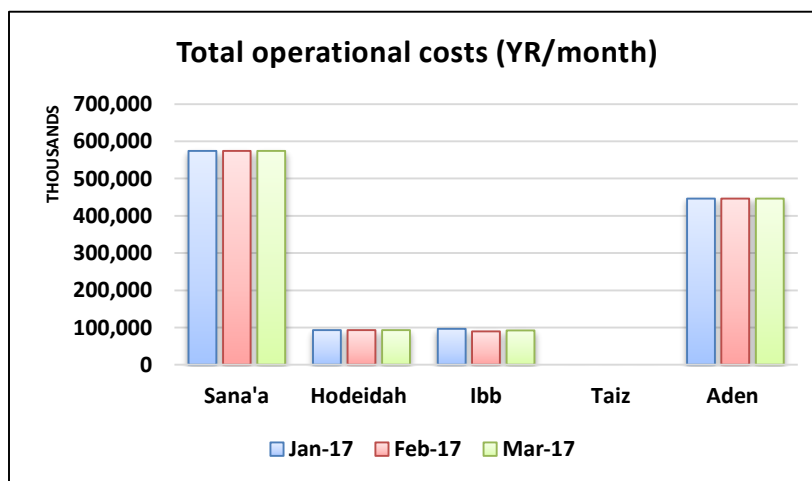
17. Collected revenues



18. Billed amount (YR/month)



19. Total operational costs (YR/month)



Sana'a: Comparing to the quantity of water pumped to water network, the LC still collected some revenues. Total operation cost is very high comparing to the billed amount.

Hodeidah: The revenues are varying during this quarter and still low. The billed amount could cover total operation cost if the collection rate is efficient.

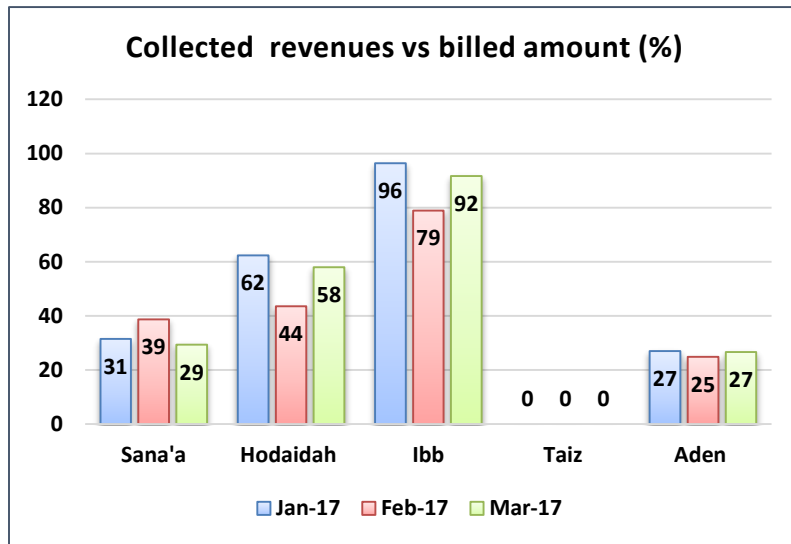
Ibb: The revenues are good during this quarter and the billed amount and total operation cost are close.

Taiz: Not Reported.

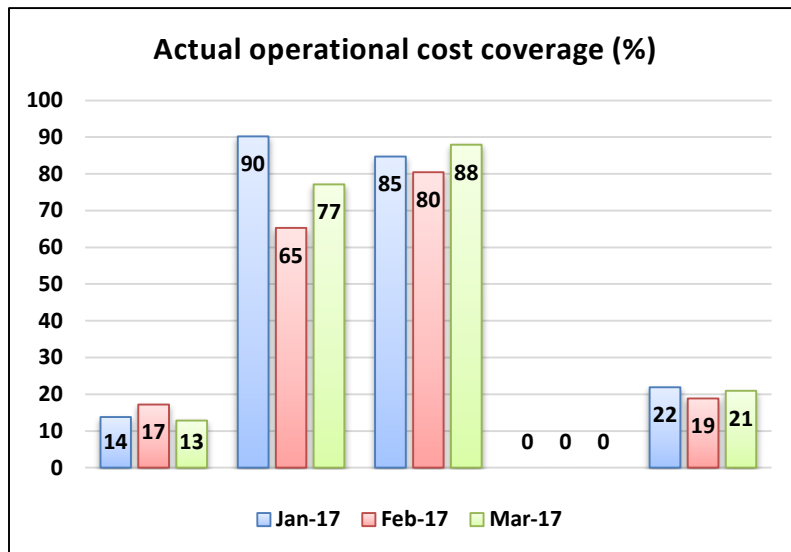
Aden: Comparing to the quantity of water pumped to water network, the collected revenues are still very low and the LC face a problem with collection efficiency. The total operation cost is high and the accumulative debts increasing respectively due to low collection rate.

****Revenue including the commercial & government collection**

20. Collected revenues vs billed amount (%)



21. Actual operational cost coverage (%)



Sana'a: The average percentage of collected revenues is lowest in this quarter compare to the last two years where the average revenue is 33%. The fuel crisis put a dark shadow on the operation & maintenance work. The operation cost affected by revenue.

Hodeidah: The average percentage of collected revenues is also very low during this quarter where the average is 55%. The operation cost is higher than the revenue

Ibb: The average percentage of collected revenues is still the same as last year 89 %. LC Ibb is stable and their revenue reflect this stability and the well preparedness of the LC.

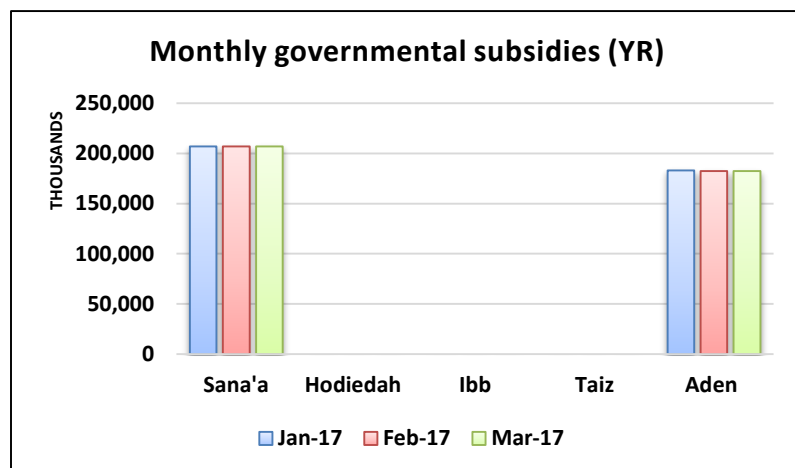
Taiz: Not Reported.

Aden: The average percentage of collected revenues is 26%. It's very low. An awareness campaign is urgently needed and LC also have to do some effort to improve the collection efficiency and find some innovative way to improve this situation.

The affordability to pay in some cities is not available and in some others the willingness to pay is an issue.

****Revenue including the commercial & government collection**

22. Monthly governmental subsidies



Sana'a: Basic salaries were not paid for the first quarter. The only salary paid was January and it's paid in installment on June 2017.

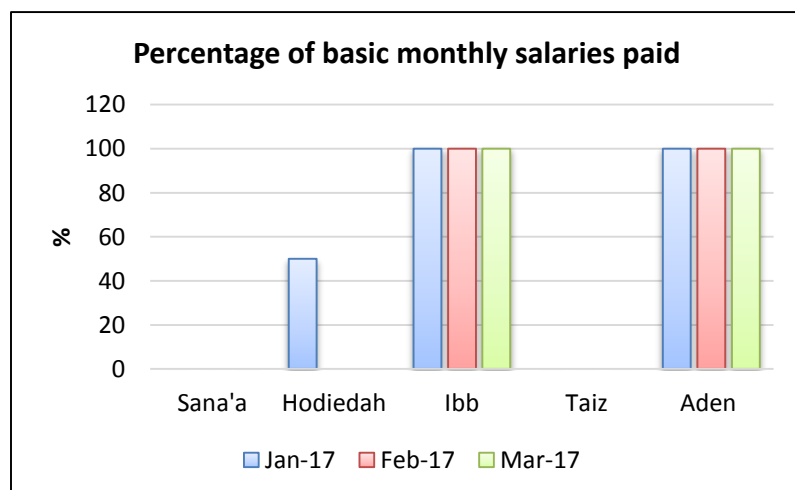
Hodaidah: Basic salary is **second priority after fuel**. All revenue is paid for fuel, for that reason the salaries of 1st quarter were **delayed and paid** between June to Nov. 2017 i.e. **6 to 8 months later**. LC could not cover the basic salary and also did not receive any subsidies from local government.

Ibb and Aden: Basic salaries were paid either from the generated revenues or from local government support.

Taiz: Not Reported.

Sana'a and Al-Hodeidah situation are very critical related to fuel vs basic salary and service provision.

23. Percentage of basic monthly salaries paid (%)



Resilience Performance Indicators Jan-March 2017

Urban Water Sector - Sana'a LC, Aden LC, Hodeidah LC, Ibb LC & Taiz LC

Emergency Indicators with high priority				1st Q			Comments
No.	Data / Indicator	City	Unit	Jan-17	Feb-17	Mar-17	
1	عدد السكان في المراكز الحضرية المخدومة من قبل مزود الخدمة (شهري في نهاية الشهر) Number of Population of urban centers	Sana'a	Cap	2,300,000	2,300,000	2,300,000	
		Hodeidah		634,597	636,354	638,111	
		Ibb		385,230	385,230	385,230	
		Taiz		NR	NR	NR	
		Aden		1,014,534	1,014,535	1,014,536	
2	عدد النازحين الى مناطق امتياز مزود الخدمة (شهري في نهاية الشهر) Number of IDPs in the served Area	Sana'a	Cap	149,994	149,994	165,774	
		Hodeidah		107,540	107,540	107,540	
		Ibb		98,214	98,214	98,214	
		Taiz		NR			
		Aden		26,658	27,568	27,957	
3	عدد السكان المخدومين بالمياه من قبل مزود الخدمة (شهري في نهاية الشهر) Number of population served through water supply network	Sana'a	Cap	911,370	911,370	911,370	
		Hodeidah		470,638	471,310	471,849	
		Ibb		324,786	326,667	328,999	
		Taiz		NR	NR	NR	
		Aden		762,090	763,776	766,416	

4	نسبة عدد السكان المخدومين بالمياه من قبل مزود الخدمة من اجمالي السكان (شهري في نهاية الشهر) Water supply service coverage = population served through water supply network vs total population	Sana'a	%	40	40	40	
		Hodeidah		74	74	74	
		Ibb		84	85	85	
		Taiz		#VALUE!	#VALUE!	#VALUE!	
		Aden		75	75	76	
5	عدد ايام تزويد الخدمة خلال الشهر (تزويد المياه من خلال شبكة التوزيع) Number of service days of piped water supply per month	Sana'a	days/month	1	1	0	
		Hodeidah		28	26	27	
		Ibb		7	7	7	
		Taiz		NR	NR	NR	
		Aden		18	18	18	
6	إجمالي كمية المياه المضخة من خلال شبكة التوزيع Total Quantity of water pumped in the network	Sana'a	m ³ /month	305,930	115,381		9 فبراير - 18 مارس 2017
		Hodeidah		1,285,737	1,014,670	1,075,790	
		Ibb		484,155	490,615	424,360	
		Taiz		NR	NR	NR	
		Aden		1,746,812	1,692,184	1,674,439	
7	نصيب الفرد من المياه المضخة في الشبكة Per capita quantity of water pumped in the network	Sana'a	l/cap/day	11	4		
		Hodeidah		91	72	76	
		Ibb		50	50	43	
		Taiz		#VALUE!	#VALUE!	#VALUE!	
		Aden		76	74	73	
8	تكلفة الطاقة لكل متر مكعب منتج من المياه خلال الشهر Energy Costs per m ³ water produced	Sana'a	YR/m ³	109	109	109	
		Hodeidah		51	58	61	
		Ibb		65	65	65	
		Taiz		NR	NR	NR	
		Aden		78	78	78	

9	الطاقة التخزينية الشهرية المتاحة Storage capacity	Sana'a	m ³	36,000	36,000	36,000	
		Hodeidah		25,250	25,250	25,250	
		Ibb		4,000	4,000	4,000	
		Taiz		NR	NR	NR	
		Aden		96,000	96,000	96,000	
10	نصيب الفرد من الطاقة التخزينية المتاحة Storage capacity share per capita	Sana'a	l/cap	40	40	40	
		Hodeidah		54	54	54	
		Ibb		12	12	12	
		Taiz		#VALUE!			
		Aden		126	126	125	
11	إجمالي عدد المضخات الرئيسية Total number of main pumps for the water supply system	Sana'a	No.	100	100	100	
		Hodeidah		41	41	41	
		Ibb		26	26	26	
		Taiz		NR	NR	NR	
		Aden		126	126	126	
12	عدد المضخات الرئيسية العاملة والتي تضخ المياه خلال الشهر Number of functional pumps in service	Sana'a	No.	50	8+4	8+4	
		Hodeidah		32	34	35	
		Ibb		25	25	25	
		Taiz		NR	NR	NR	
		Aden		103	103	103	
13	عدد ساعات عمل (تشغيل) المضخات (كل المضخات العاملة والتي تضخ المياه في الشهر) Number of working hours of all operating pumps that pumps water	Sana'a	h/month	6,814	1,962	1,962	
		Hodeidah		21,648	20,320	19,789	
		Ibb		13,638	13,820	11,953	
		Taiz		NR	NR	NR	
		Aden		75,051	62,850	69,130	
14	عدد الاعطال الناتجة عن اسباب فنية خلال الشهر للمضخات الرئيسية العاملة في ضخ /months	Sana'a	/months	10	5	4	
		Hodeidah		5	3	3	

	المياه Number of main functional pumps failures due to technical reasons	Ibb		1	1	1	
		Taiz		NR	NR	NR	
		Aden		23	23	23	
15	عدد المولدات العاملة في تشغيل المضخات Number of working generators in the operation of pumps	Sana'a	No.	43	9	9	
		Hodeidah		8	9	8	
		Ibb		10	10	10	
		Taiz		NR	NR	NR	
		Aden		8	8	8	
16	عدد ساعات عمل (تشغيل) المولدات (كل المولدات العاملة المستخدمة في تشغيل المضخات لضخ المياه) خلال الشهر Number of working hours of all operating generators used to run the functional pumps that pumps water	Sana'a	h/month	7,288	1,960	1,960	
		Hodiedah		1,237	1,949	2,974	
		Ibb		4,655	4,717	4,080	
		Taiz		NR	NR	NR	
		Aden		NR	NR	NR	
17	قيمة الايرادات الشهرية المحصلة Collected revenues	Sana'a	YR/month	79,414,924	98,688,464	73,922,940	
		Hodeidah		83,981,563	60,887,222	71,883,024	
		Ibb		82,124,465	72,399,938	80,980,715	
		Taiz		NR	NR	NR	
		Aden		97,509,767	84,016,645	93,327,168	
18	قيمة الايرادات الشهرية المفوترة (قيمة مبيعات المياه الشهرية المفوترة) Billed amount	Sana'a	YR/month	252,324,413	254,894,294	251,959,377	
		Hodeidah		134,822,961	139,925,954	124,118,634	
		Ibb		85,203,627	91,775,473	88,293,497	
		Taiz		NR	NR	NR	
		Aden		361,821,166	338,493,136	351,015,650	
19	إجمالي التكاليف التشغيلية	Sana'a	YR/month	574,591,513	574,591,513	574,591,513	
		Hodeidah		93,125,589	93,201,040	93,201,040	
		Ibb		96,909,080	89,961,509	92,072,057	

	Total operational costs	Taiz		NR	NR	NR	
		Aden		445,901,356	445,901,355	445,901,355	
20	نسبة التحصيل Collected revenues vs billed amount	Sana'a	%	31	39	29	
		Hodeidah		62	44	58	
		Ibb		96	79	92	
		Taiz		#VALUE!	#VALUE!	#VALUE!	
		Aden		27	25	27	
21	التغطية التشغيلية المحصلة للكلفة Actual operational cost coverage	Sana'a	%	14	17	13	
		Hodeidah		90	65	77	
		Ibb		85	80	88	
		Taiz		#VALUE!	#VALUE!	#VALUE!	
		Aden		22	19	21	
22	قيمة الاعانات (المعونات) الحكومية الشهرية لمزود الخدمة Monthly governmental subsidies	Sana'a	YR	207,000,000	207,000,000	207,000,000	قيمة 900 ألف لتر ديزل لم يصل منها سوى 210 ألف لتر والباقي مازال لدى شركة النفط
		Hodeidah		0	0	0	
		Ibb		0	0	0	
		Taiz		NR	NR	NR	
		Aden		183,165,190	182,487,880	182,487,880	
23	نسبة الرواتب الاساسية الشهرية المدفوعة للموظفين Percentage of basic monthly salaries paid	Sana'a	%	0	0	0	
		Hodeidah		50.00	0.00	0.00	
		Ibb		100.00	100.00	100.00	
		Taiz		NR	NR	NR	
		Aden		100.00	100.00	100.00	

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Published by

- Sana'a Water Local Corporation
T +967 1 250162
E swslc@y.net.ye
- Aden Water Local Corporation
T +967 2 254272-260171,2,3
E water-aden@y.net.ye
- Ibb Water Local Corporation
T +967 4 412034,
E ibbwslc@gmail.com
- Hodeidah Water Local Corporation
T +967 3 204546,5-220494
E hwslc@y.net.ye
- Taiz Water Local Corporation
T +967 777209300
E twslc@yemen.net.ye

In cooperation with

Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH
Institutional Development of the Water Sector
GIZ Office
Hadda area, Str. 21
Sana'a, Yemen
T +967 1 434 429 - Ext. 404
F +967 1 412 387
E christine.werner@giz.de
W www.giz.de/yemen

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Text

Aden LC, Hodeidah LC, Ibb Lc, Sanaa LC, Taiz LC are responsible for the content of this publication.