



Yemen Water Sector Performance Indicators

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

Resilience-Oriented Performance Indicators Overview

January – December 2016

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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 customer to pay the water services charges. In the last years, there were a number of variables affecting the water sector leading to deteriorate the water and sanitation services plus the operation cost shortage. The factors can be summarized as follow:

1. A new challenge came up to the surface recently and consider a new threat to the water business in the LCs sustainability. This challenge is the lack of source of energy (National Electrical grid) which is one of the major factors that contributed to the water and sanitation dilemma in the country. 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. Some LCs spent 100 % of their revenue on fuels. Therefore, the LCs are NOT able to pay the basic salary or carry out adequate 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 impacted the performance and O&M of those utilities.
3. The economic situation is another factor affecting the stability of the LCs. The government disability to pay the employees' salaries for more than six 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 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).

In spite of the harsh conditions and challenges, the determination and dedication enable the LCs to continue water delivery to its customers, the internal 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.

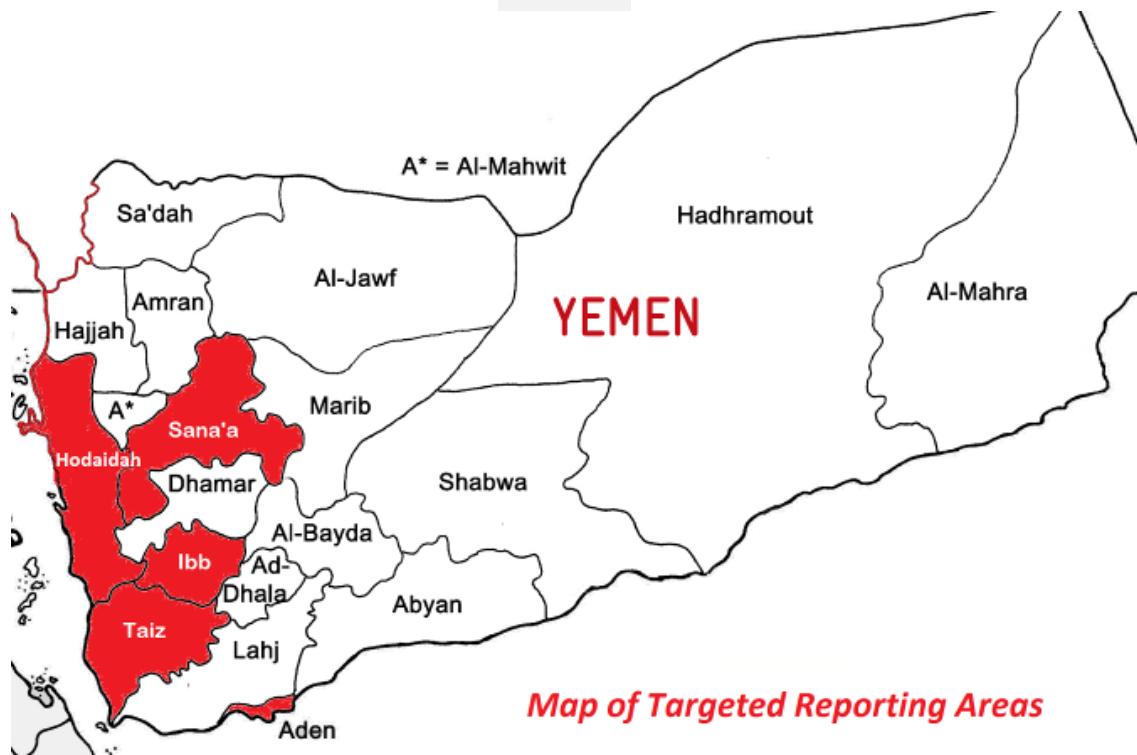
2. Reporting Process

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, Hodaidah and Ibb. The frequency of reporting is taking place on a monthly basis for eleven 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.

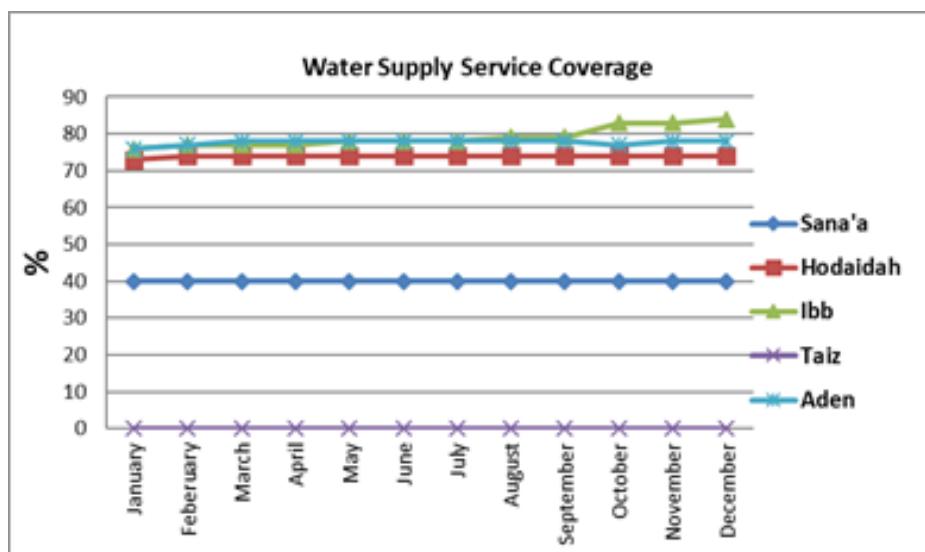
Finally, this report covers the period between January to December 2016 for eleven emergency performance indicators accompanied with technical analysis according to the special conditions passed by each LC.

Emergency Water Sector performance indicators	
1. Water supply service coverage = population served through water supply network vs total population(%)	2. Number of service days of piped water supply per month.
3. Total quantity of water pumped in the network (m ³ / month)	4. Energy cost per m ³ water produced (YR/ m ³)
5. Storage capacity (m ³)	6. Number of main pumps for the water supply system.
7. Number of functional water pumps in service.	8. Number of working generators in the operation of pumps.
9. Collected revenues vs billed amount(%)	10. Actual operational cost coverage (%)
11. Percentage of basic monthly salaries paid (%)	



3. Technical analysis

a. Service Coverage of piped water supply



Sana'a: Water service coverage is still low and not improved.

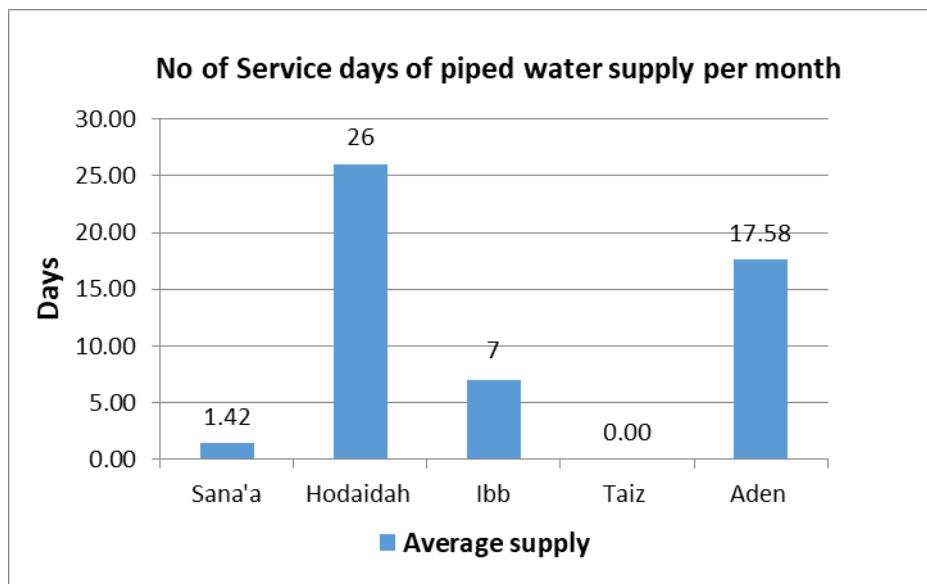
Hodaidah: Water service coverage is still acceptable and slightly increased compared to the year 2015

Ibb: Due to the huge number of IDPs that fled to the city since 2015, The water demand increased rapidly especially in 4th quarter of Year.

Taiz: Not Reported.

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

b. Service days



Sana'a: There is an urgent need to improve the water supply frequency. The number of supply days per month is very low bet. 1 to 2 days a month.

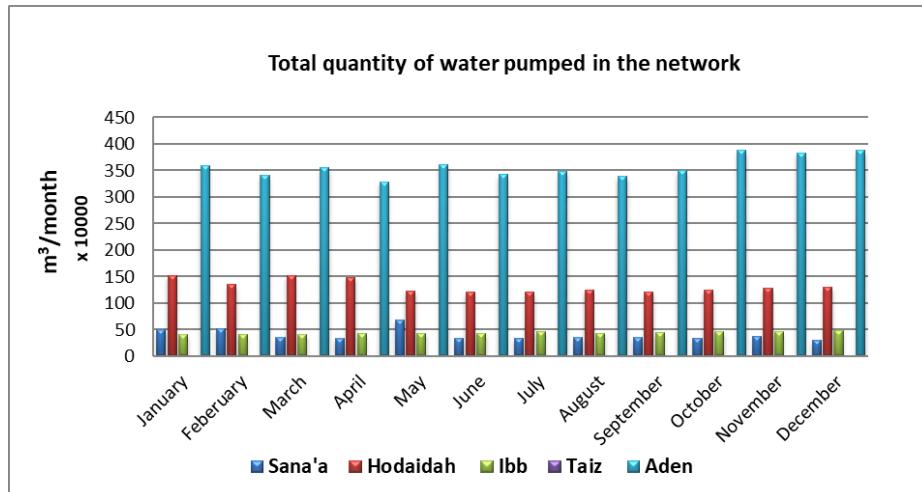
Hodaidah: Services are in optimal level where 70% of people are served daily by water, and 30% of them get water once every two days.

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

Taiz: Not Reported.

Aden: Services are stable through the whole year and water delivered every 2 days.

c. Water quantity¹



Sana'a: The average use is ca. **15** l/c/d.

Hodaidah: The average use is ca. **94** l/c/d.

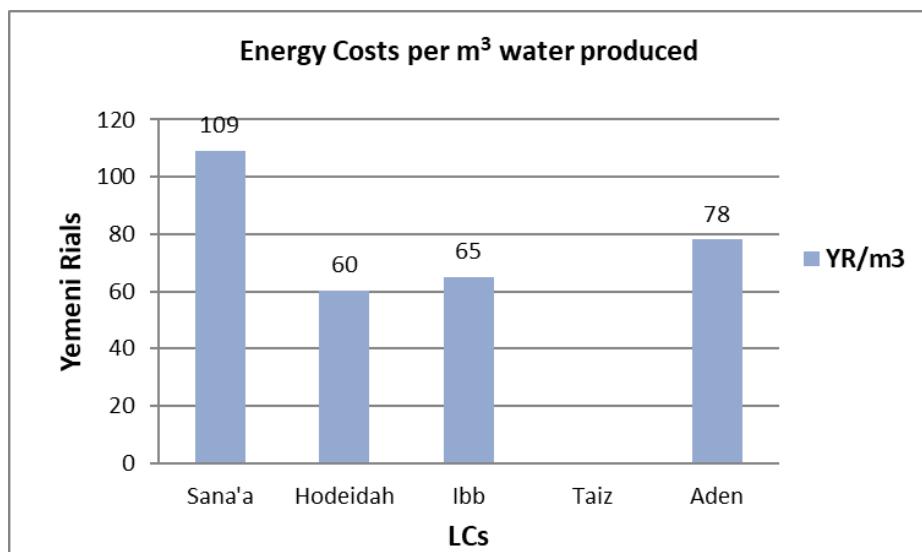
Ibb: The average use is ca. **48** l/c/d.

Taiz: Not Reported.

Aden: The average use is ca. **158** l/c/d

l/c/d = liter/capita/day

d. Energy costs



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.

Hodaidah: The energy cost per m³ of water produced is an average **60** YR. the cost are not stable because of fuel cost increment and electricity shortage.

Ibb: The cost of energy per m³ of water produced is nearly acceptable around **65** YR and it's the same as in the year 2015.

Taiz: Not Reported.

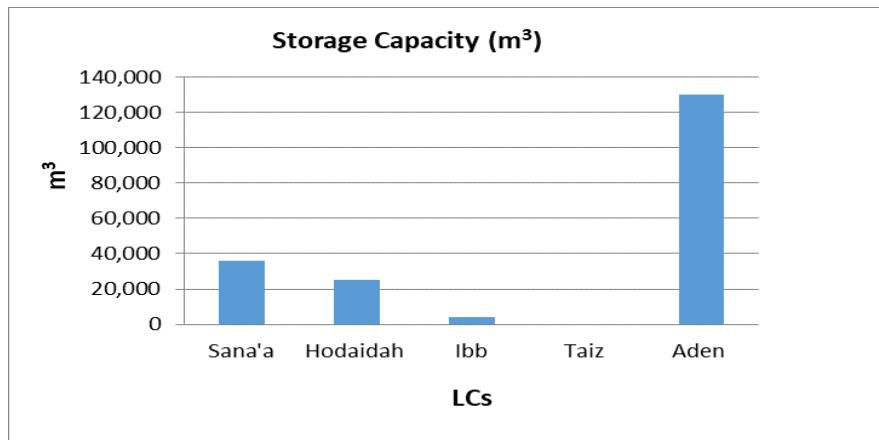
Aden: The cost of energy per m³ of water produced is nearly acceptable around **78** YR and it's the same as in the year 2015

Energy shortage is an issue for all LCs and all are facing the same fuel and electricity instability

YR = Yemeni Rial

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.

e. Storage capacity

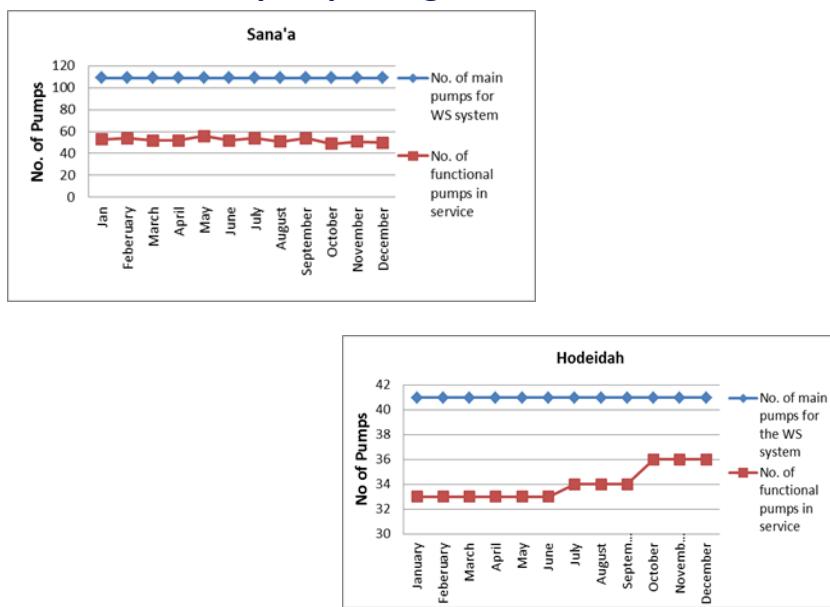


The inclusive average storage capacity in **Aden** served before the crisis was **175 l/c** and still the same also after crisis.

Storage capacity in **Hodaidah** is **54 l/c**, **Sana'a 40 l/c**, and the lowest share is in **Ibb 14 l/c**. It emphasizes the urgent need to extend the storage capacity by priority in Ibb, Sana'a, Hodaidah and lastly in Aden.

l/c = Liter per Capita

f. Performance of pump and generators



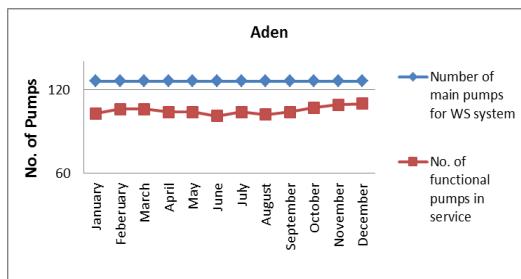
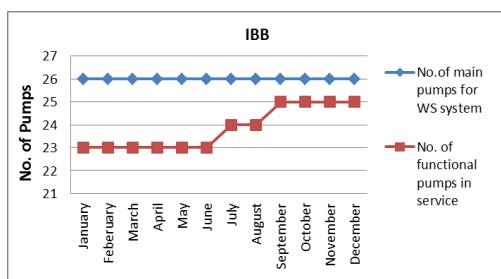
Sana'a: The percentage of functioning pumps is 48%; it is considered low and LC need more support to override and solve the pump problem.

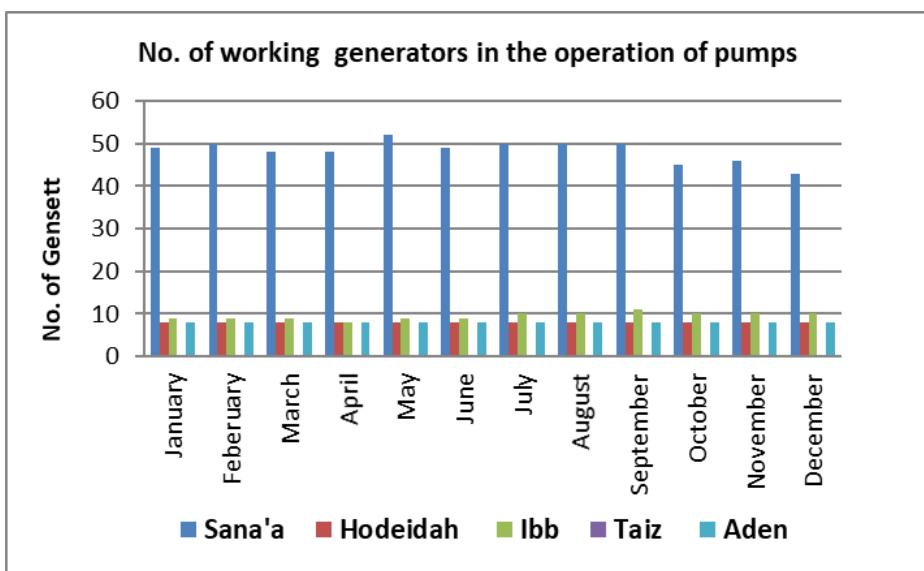
Hodeidah: The percentage of functioning pumps is 83%, some efforts are needed.

Ibb: The percentage of functioning pumps is 92%

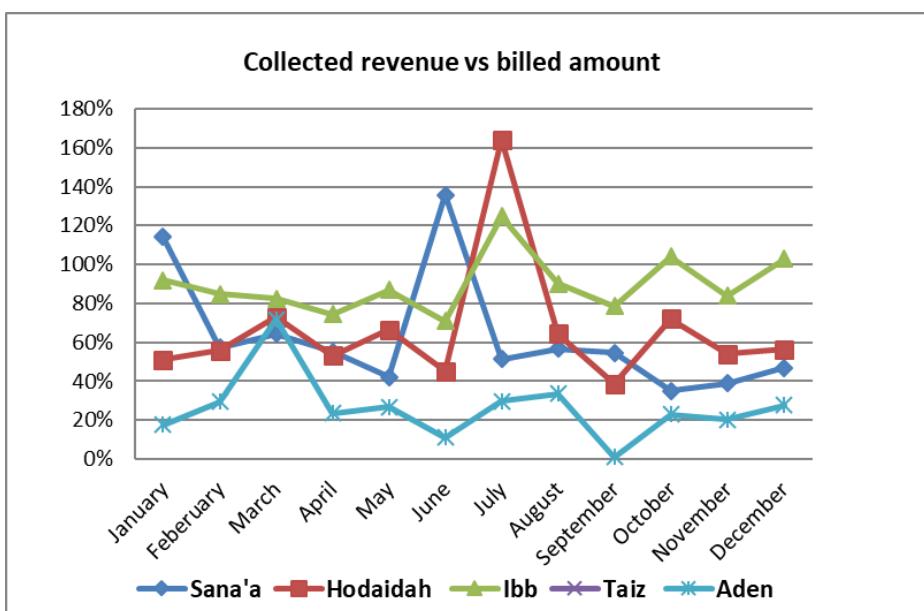
Taiz: Not Reported.

Aden: The percentage of functioning pumps is 83%, some efforts are needed.





g. Costs and Revenues



Sana'a: The LC is depending totally on generators to operate the pumps in the absence of the public electricity network.

Hodaidah & Ibb: The number of generators is low. Both LCs rely on public electricity network, during power-off, they use the standby generators.

Taiz: Not Reported.

Aden: The number of generators is low. The LCs rely on both different sources like public electricity network and generators. During power-off, they use the standby or Prime generators.

Sana'a: The average percentage of collected revenues is 63%; it was 37% in 2015.

Hodaidah: The average percentage of collected revenues is 66%. It was 63% in 2015.

Ibb: The average percentage of collected revenues is 90 %. It was 88% in 2015

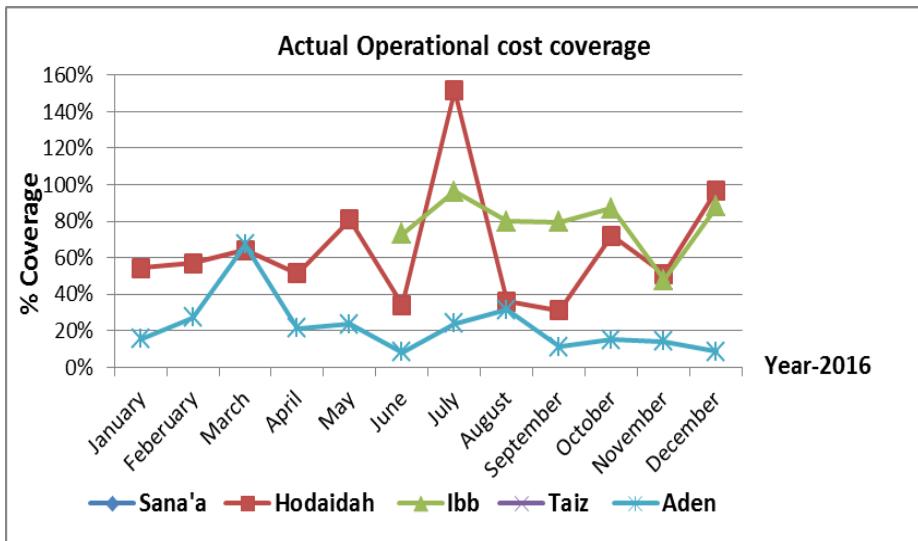
Taiz: Not Reported.

Aden: The average percentage of collected revenues is 26%. It's very low. An awareness campaign is urgently needed.

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

The collection rate is vary from months to months and from LC to other. The increment in the revenue on some months due to central Governmental payment but the domestic still low.

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



Sana'a: Not Reported.

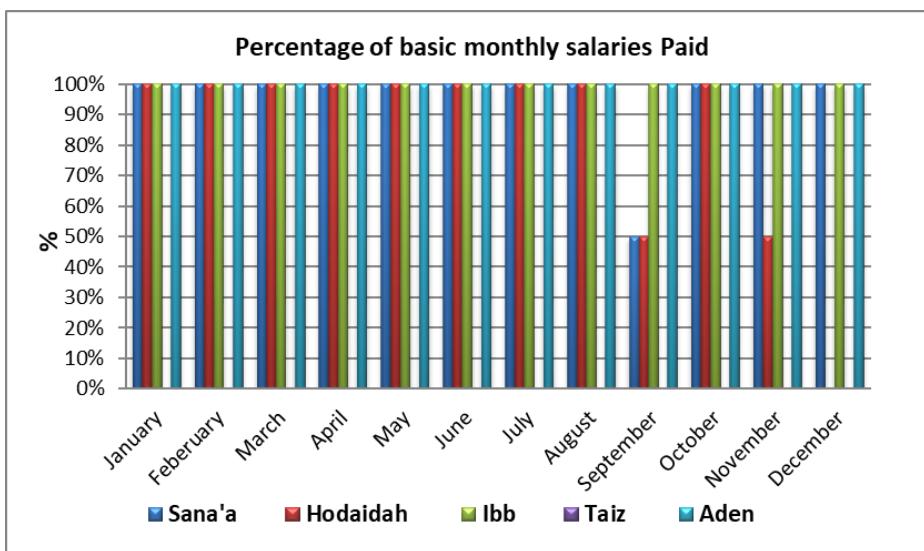
Hodaidah: The average percentage of collected revenues is 65%.

Ibb: The operation cost average is 79 %.

Taiz: Not Reported.

Aden: The average operation cost coverage is 22%. This is an indicator for quality of services provided and the deterioration of services in the city.

LCs struggle to provide the services and keep the minimum of water supply provision and sanitation services



Sana'a: Basic salaries were paid either from the generated revenues or from local government support.

Basic salaries payment is a priority. The LC only paid 50 % of Sep. salary. and Local government were paid for the rest of year fuel.

Hodaidah: **Basic salary is second priority after fuel.** All revenue paid for fuel, for that reason the salary of 4th quarter were delay and paid 2 months later and in an average of 5 installments. For Nov. and Dec. salaries were paid in bet. Jan. to April 2017. LCs could not cover the basic salary during last quarter of 2016. LC is not receiving 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.

Data / Indicator	City	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
عدد السكان في المراكز الحضرية المخدومة من قبل مزود الخدمة (شهر في نهاية الشهر)	Sana'a	2,300,000	2,300,000	2,300,000	2,300,000	2,300,000	2,300,000	2,300,000	2,300,000	2,300,000	2,300,000	2,300,000	2,300,000
	Hodiedah	632,840	632,840	632,840	632,840	632,840	632,840	632,840	632,840	632,840	632,840	632,840	632,840
	Ibb	385,230	385,230	385,230	385,230	385,230	385,230	385,230	385,230	385,230	385,230	385,230	385,230
	Taiz	NR											
	Aden	977,676	977,676	977,676	977,676	977,676	977,676	977,676	977,676	977,676	977,676	977,676	977,676
عدد النازحين إلى مناطق انتشار مزود الخدمة (شهر في نهاية الشهر)	Sana'a	103,924	103,924	103,924	211,965	137,302	137,302	149,994	149,994	149,994	157,782	157,782	166,188
	Hodiedah	59,992	59,992	59,992	113,488	113,862	113,862	107,538	107,538	107,538	104,268	104,268	101,970
	Ibb	104,304	104,304	104,304	111,384	110,340	110,340	98,214	98,214	98,214	112,188	112,188	128,508
	Taiz	555,048	555,048	555,048	620,934	518,448	518,448	532,992	532,992	532,992	426,672	426,672	273,780
	Aden	25,836	25,836	25,836	25,566	31,068	26,658	26,658	26,658	26,658	30,522	30,522	33,822
عدد السكان المخدومين بالمياه من قبل مزود الخدمة (شهر في نهاية الشهر)	Sana'a	911,370	911,370	911,370	911,370	911,370	911,370	911,370	911,370	911,370	911,370	911,370	911,370
	Hodiedah	465,059	465,759	466,256	466,816	467,229	467,607	467,733	467,915	468,685	469,007	469,420	470,043
	Ibb	293,238	295,020	296,604	298,056	298,881	300,487	301,158	302,632	303,413	318,747	321,013	322,971
	Taiz	NR											
	Aden	746,646	753,990	755,412	758,550	759,840	759,990	759,996	761,190	762,324	756,996	758,868	760,668
عدد أيام تزويد الخدمة خلال الشهر (توزيع المياه من خلال شبكة التوزيع)	Sana'a	2	2	2	2	1	1	1	1	1	1	1	1
	Hodiedah	26	26	26	26	26	26	26	26	26	26	26	26
	Ibb	7	7	7	7	7	7	7	7	7	7	7	7
	Taiz	NR											
	Aden	18	18	18	17	17	17	18	18	17	18	17	18
اجمالي كمية المياه المضخة من خلال شبكة التوزيع	Sana'a	493,317	524,186	348,154	331,178	684,610	339,286	335,207	345,020	345,923	337,042	374,310	305,939
	Hodiedah	1,520,005	1,350,632	1,519,189	1,488,654	1,228,588	1,210,974	1,215,393	1,252,666	1,214,066	1,251,308	1,275,589	1,301,523
	Ibb	401,765	405,407	399,676	423,658	430,977	434,934	456,954	427,845	443,183	454,136	455,407	485,300
	Taiz	NR											
	Aden	3,586,848	3,405,181	3,544,392	3,284,712	3,601,378	3,423,783	3,475,272	3,388,712	3,491,015	3,878,700	3,832,800	3,875,30
تكلفة الطاقة لكل متر مكعب منخرج من المياه خلال الشهر	Sana'a	109	109	109	109	109	109	109	109	109	109	109	109
	Hodiedah	22	29	26	48	9	10	40	99	46	82	98	213
	Ibb	65	65	65	65	65	65	65	65	65	65	65	65
	Taiz	NR											
	Aden	78	78	78	78	78	78	78	78	78	78	78	78
الطاقة التخزينية الشهورية المتاحة	Sana'a	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000
	Hodiedah	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
	Ibb	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
	Taiz	NR											
	Aden	130,000	130,000	130,000	130,000	130,000	130,000	130,000	130,000	130,000	130,000	130,000	130,000
اجمالي عدد المضخات الرئيسية	Sana'a	99	99	99	99	99	99	99	99	99	100	100	100
	Hodiedah	41	41	41	41	41	41	41	41	41	41	41	41
	Ibb	26	26	26	26	26	26	26	26	26	26	26	26
	Taiz	NR											
	Aden	126	126	126	126	126	126	126	126	126	126	126	126
عدد المضخات الرئيسية العاملة والتي تضخ المياه خلال الشهر	Sana'a	53	54	52	52	56	52	54	51	54	49	51	50
	Hodiedah	33	33	33	33	33	33	34	34	34	36	36	36
	Ibb	23	23	23	23	23	23	24	24	25	25	25	25
	Taiz	NR											
	Aden	103	106	106	104	104	101	104	102	104	107	109	110
عدد ساعات عمل (تشغيل) للمضخات (كل المضخات العاملة والتي تضخ المياه) في الشهر	Sana'a	10,048	10,575	7,190	6,733	14,100	7,079	6,875	7,208	7,202	6,888	7,699	6,814
	Hodiedah	23,584	21,138	22,944	21,667	21,450	21,196	21,355	22,097	22,236	21,841	22,498	22,882
	Ibb	11,024	11,584	11,290	11,560	13,150	13,360	13,384	13,373	13,378	13,392	13,384	13,386

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Aden LC, Hodaidah LC, Ibb LC, Sanaa LC, Taizz LC are responsible for the content of this publication.