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INTRODUCTION OF CONSUMPTION BASED WATER-WASTEWATER TARIFFS IN LEBANON

SURVEY REPORT

PREPARED FOR
OXFAM IN LEBANON

EDESSA
ECA

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LIST OF ABBREVIATIONS

BMLWE	Beirut and Mount Lebanon Water Establishment
BWE	Bekaa Water Establishment
ECA	Economic Consulting Associates Limited
GVC	Gruppo di Volontario Civile
INGO	International Non-Government Organization
LBP	Lebanese Pound
MoEW	Ministry of Energy and Water
N/A	Not applicable
NLWE	North Lebanon Water Establishment
NRC	Norwegian Refugee Council
SLWE	South Lebanon Water Establishment
WASH	Water, Sanitation and Hygiene
WVI	World Vision International

DISCLAIMER

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INTRODUCTION OF CONSUMPTION BASED WATER-WASTEWATER TARIFFS IN LEBANON SURVEY REPORT

PREPARED FOR OXFAM IN LEBANON

1 INTRODUCTION

EDESSA, in association with Economic Consulting Associates Limited (ECA) of the United Kingdom, was contracted by Oxfam in Lebanon (Oxfam) to prepare a research study on the foundations for restructuring water and wastewater tariffs in Lebanon and contributing to effective water governance and stakeholder engagement around the introduction of consumption-based tariffs.

A limited field survey was conducted by EDESSA in December 2020 as the fifth deliverable of the research study. The survey consisted of a survey of 40 households in each water establishment geographic area in addition to filling a separate questionnaire with the municipality of the largest city within each of the water establishment geographic areas and five interviews with moukhtars in preselected towns in each of the water establishment geographic areas. The questionnaires were thoroughly discussed with Oxfam.

The Terms of References called for interviews/surveys of key community members and stakeholders outside of direct consumers to understand their perceptions around restructuring of a water-wastewater tariff/introduction of a consumption-based tariff, enforcement around bill payment and disconnection of non-subscribers, how to gain trust and confidence in Water Establishments (WEs), and their recommendations of how best to ensure a smooth and efficient transition.

In our inception report, the proposed approach was to conduct FGDs with moukhtars or head of municipalities if low subscription and payment rates were found to be widespread across the geographical area of the WEs or to conduct population surveys if low subscription and payment rates were limited to a small number of towns.

Information about the subscription and payment rate in various towns and regions was discussed with each WE as part of the case studies. Furthermore, specific lists of localities with the subscription and payment rate were subsequently officially requested from each WE. With the exception of the Bekaa Water Establishment who provided a list of localities with the subscription and payment rates, the information we obtained from the other WEs on the areas of low subscription and payment rates was only qualitative

or verbal. No official document was made available to provide specific names of towns and subscription and payment percentages despite numerous calls and official correspondences sent to the WEs.

Furthermore, as part of conducting the meta-analyses and case studies, it appeared that it would be interesting to focus the surveys on areas where pilot projects on water meters or consumption based tariffs were conducted as the population would be more aware of water meters and consumption-based tariffs. Based on the above, the following survey approach was agreed with Oxfam:

Water Establishment	Interviews with Municipalities	Interviews with Moukhtars	Household surveys
BMLWE	One interview with a Beirut Municipality representative	2 interviews in the Metn 3 interviews in Kesrouan	40 surveys in the southern suburb
BWE	One interview with a Zahleh Municipality representative	5 interviews in the Baalbeck area	40 surveys in Anjar area
NLWE	One interview with a Tripoli Municipality v	5 interviews in the Batroun area	40 surveys in Koura
SLWE	One interview with a Saida Municipality representative	5 interviews in the Nabatieh area	20 surveys in Jezzine area 20 surveys in Bint Jbeil area

- In the BMLWE area, pilot projects were implemented in Kesrouan and the Metn Regions. As such, it was agreed to assess the feedback of the population through interviews with random key community members in these two regions.

- In the BWE area, pilot projects were conducted in Zahleh (considered a town with a high subscription and payment rate) and in Anjar (considered a town with a low subscription and payment rate). As such, it was agreed to conduct a survey with the population in the Anjar area, meetings with moukhtars in the Baalbeck area and a meeting with a representative from the Zahleh municipality.

- In the NLWE area, pilot projects were conducted in Tripoli (considered a town with a high subscription and payment rate) and in the Koura and Akkar regions considered a town with a low subscription and payment rate). It was agreed to conduct a survey with the population in the Koura Region, meetings with moukhtars in the Batroun area and a meeting with

a representative from the Tripoli municipality. In addition, CONCERN shared a copy of their survey results in Mashta Hammoud in Akkar.

- In the SLWE area, pilot projects were conducted in Saida, Bint Jbeil and Jezzine. According to information obtained from the SLWE General Manager, low subscription and payment rates in the SLWE do not cover a particular pattern. As such, population surveys were done in Bint Jbeil and Jezzine, meetings with moukhtars were done in the Nabatieh area and a meeting with a representative of the Saida municipality was conducted.

The number of surveys conducted by EDESSA does not allow statistical interpretation of the data. As such, the result of the surveys are presented qualitatively. Nevertheless, the results are useful to fill data gaps in understanding the community perception (population, municipal staff and moukhtars) around water-wastewater tariff restructuring and the introduction of a consumption-based tariff.

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HOUSEHOLD SURVEY RESULTS

The results of the household surveys are presented hereafter. For each relevant question asked, a qualitative interpretation of the results was presented for each water establishment area and for all of Lebanon.

Number of persons in the households

The number of persons per interviewed household varied between 1 and 9 with the majority of the answers being 5 in all regions.

Number of children within the households

The number of children per household varied from 0 to 6 with zero children being the most frequent answer in Beirut's southern suburb and the Bekaa area (surprising answer) and 3 children being the most frequent answer in North and South Lebanon as well as for all of Lebanon.

Household income

When reported, the monthly household income was given as ranging between 750,000 to 4 Million Lebanese pounds (LBP) with the most frequent answer being between 1.5 to 2 Million LBP. The majority of the households refused to answer this question. Some reported that the source of their income was help from children not living with them, other reported no income whatsoever and some reported variable income based on the nature of their work.

Person interviewed

The person interviewed was most of the time the father of the household with the exception of the interviews conducted in the Koura region. This could be explained by the fact that the EDESSA person conducting the interviews in the Koura region was a woman, as such, women probably felt more comfortable answering questions rather than calling their husbands to do so.

Connected to the network

The majority of the respondents in all regions reported being connected to the water network managed by the water establishments. Some reported having a municipal network (Anjar, Hadeth, and Jezzine). Several indicated that there was no water network in their area for them to be connected. Others claimed that there was a water network but no water. A minority indicated not being connected for economic reason (in the southern suburbs of Beirut and in South Lebanon). Some indicated that they had a well and were therefore not connected to the water establishment network.

Subscription Payment

The vast majority of the respondents connected to the water establishment network indicated paying their water subscription. This is not in line with the information provided by the WEs clearly indicating a discrepancy between the population answers and the information provided by the WEs.

Unpaid bills

The vast majority of the respondents connected to the water establishment network indicated not having unpaid bills. Once again, this is not in line with the information provided by the WEs clearly indicating a discrepancy between the population answers and the information provided by the WEs. One possible reason for such discrepancy could be related to the fact that the WE databases are not up-to-date and still include a number of no longer existing subscribers.

Motivation to subscribe to the network

Although a number of households did not have a specific answer regarding the reason that motivates them to subscribe, the most common answer was the necessity of having access to water and in some cases the fact that this was an obligation.

Fixed or consumption-based tariff

As expected, the vast majority of the respondents indicated paying a fixed rate.

Willingness to get connected

The answer to the question "would you get connected to the water network" was in general positive and in the case of the Bekaa region conditional on water availability. Some respondents indicated that they are connected to the network but would rather get disconnected because of the poor service or high price.

Knowledge of subscription price

Most of the respondents knew the price of their water subscription (within 10% of the actual price).

Evaluation of subscription price

Most of the respondents found the price of the yearly water subscription acceptable or high.

Water subscription impact on way of life

Most of the respondents in Beirut's southern suburb and South Lebanon considered that the water subscription price affects their way of life despite the fact that the price was considered acceptable by most in these areas. The majority of the respondents in the Bekaa and North Lebanon did not consider that the price of the water subscription affected their way of life.

Sufficiency of the subscription to the WE

The vast majority of the respondents considered that the price of the water subscription is sufficient for the water establishment especially based on the level of service provided.

Willingness to pay more for a better service

Except for North Lebanon, most of the respondents indicated their willingness to pay more for a better service. However the spread between the positive and the negative answers is not very wide. Some qualified their answers to be linked to an improvement of the service. Others considered that the service was good enough as is and did not warrant improvements linked with an increase in price.

Fairness not to pay

Most of the respondents who answered this question considered that not paying their water bills is either illegal or at least unfair.

In some cases, the respondents were almost understanding of the incapacity of some not to pay their bills or even put the blame on the water establishment.

Amount of water to be provided by the WE

The majority of the respondents of Beirut's southern suburb and the Bekaa gave answers lower than 1 m^3 per day for the amount of water they are supposed to get from the water establishments, not realizing that they are entitled to 1 m^3 of water per day.

Amount of water needed

The majority of the respondents of Beirut's southern suburb and the Bekaa indicated that the 0.4 m^3 they are getting daily corresponds to their need. The majority of the respondents in South Lebanon indicated that they need 1 m^3 per day

Use of water for cooking

With the exception of the Bekaa region, the majority of the respondents in the other regions indicated not using the supplied water for cooking.

Purchase of additional water

The vast majority of the respondents indicated having to buy additional water especially from water trucks for general use or in gallons for drinking/cooking.

Drinking of supplied water

With the exception of the Bekaa region, the majority of the respondents indicated not using the supplied water for drinking. Everybody indicated having to either purchase water in gallons or bottles or fill gallons at nearby sources for drinking.

Perception of the water quality

The majority of the respondents from Beirut's southern suburb, North and South Lebanon considered the supplied water of poor quality. The answers of the respondents from the Bekaa region were biased by the excellent quality of the water provided separately by the Municipality in Anjar, when Anjar is listed on the BWE databases as one of the worst towns because of its low subscription and payment rates (to the BWE supplied water).

Favour of fixed or metered system

The vast majority of the respondents indicated preferring a fixed yearly subscription to a metered subscription. Significant awareness campaigns should be conducted in order to change the mind-set of the population. Obviously, such awareness campaigns should be accompanied by improvement in the quantity and quality of the supplied water.

This answer is different from a number of other surveys conducted by GVC and CISP in the last years (See Section 6). One of the reasons for such discrepancy could be linked to the lack of understanding of the consumption-based tariff. Other possible reasons could be linked to the current economic and social crisis reinforcing the lack of trust with all government institutions.

Perception of meter system

The perception of the metered subscription is still not fully clear to the population. Although in Beirut's southern suburb and South Lebanon the most frequently provided answer is that it would result in water saving, the answers in the Bekaa indicated that the population is not clear about the perception of metered system with most of the respondents either not answering this question or indicating they don't know. The most frequently provided answer in North Lebanon is that metered system will result in higher bills.

Who manages the water

Unlike in South Lebanon and the Bekaa, most of the respondents in Beirut's southern suburb and North Lebanon, indicated not knowing who manages the water in their region. A focused communication campaign will help improve this situation.

It should be noted that the confusion in the southern suburb of Beirut could be linked to the presence of a parallel water network in Hadeth managed by the Municipality. In North Lebanon, most of the interviews were conducted with women (as the EDESSA interviewer was a woman) who probably do not manage the payment of the water bills,

Level of trust in the WE

Except for South Lebanon, most of the respondents indicated that they have no trust in the Water Establishments because of the poor level of service and the high prices. The image of the water establishments has to be drastically improved. In South Lebanon, the level of trust was considered average.

How to contact the WE

Except for North Lebanon, most of the respondents indicated knowing how to contact their water establishments. Some answers are worth assessing further as some respondents in Beirut's southern suburb were not interested to contact the Water Establishment altogether. Others in Beirut's southern suburb and the Bekaa consider that contacting the Water Establishment is through the Municipality.

Last contact with the WE

Except when no answer was provided, most of the respondents indicated having been in contact with their water establishment in the last year as a result of paying their bill.

Best way to communicate with WE

The majority of the respondents from Beirut's southern suburb considered that the best way to communicate with the water establishment was to go in person. The majority of the respondents from the other regions considered that communication through the phone was the best way. SMS, e-mails and social media are still not widespread answers.

Best way for WE to communicate with you

For the majority of the respondents, the best way for the water establishment to contact subscribers is through the phone. SMS, e-mails and social media are still not widespread answers.

Interest to attend town hall meetings on water

Although the majority of the respondents did not commit an answer to whether they would attend a town hall meeting organized by the water establishments, those who replied were split with the majority not willing to attend such meetings in Beirut's southern suburb and North Lebanon and willing to attend in the Bekaa and South Lebanon.

Role of the municipality

The majority of the respondents from the Bekaa region considers that the municipalities have a role to play in the supply of water. This answer could be biased based on the good service provided by the Municipality in Anjar (even if the water network and the water well belong to the BWE). In the other regions, the role of the municipality was often quoted as being either one of monitoring or an intermediary between the population and the WE.

Role of the moukhtars

The majority of the respondents did not answer the question regarding the role of the moukhtars in water management issues. When they did answer, the most frequent answer was the role of an intermediary or no role at all.

Fate of wastewater

With the exception of South Lebanon, the majority of the respondents indicated that they are connected to the sewer network.

Suitability of wastewater

The majority of the respondents from Beirut's southern suburb and South Lebanon considered the management of their wastewater unsatisfactory. The majority of the respondents from the Bekaa and North Lebanon considered the management of their wastewater satisfactory.

Willingness to pay for a better wastewater management

The vast majority of all respondents would be willing to pay for their wastewater to be treated in a suitable manner.

Amount to pay for better wastewater management

Amongst those willing to pay in Beirut's southern suburb and North Lebanon, the most frequently quoted price range is relatively low (between 50,000 to 100,000 LBP per year). The most frequently provided price in Southern Lebanon was between 200,000 to 400,000 LBP per year. The most frequent answer in the Bekaa region was whatever is required.

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INTERVIEWS WITH MUNICIPALITIES

The results of the interviews with the municipality representatives of Beirut, Tripoli, Zahleh and Saida are presented hereafter.

Fixed or metered system installed

The respondents of Beirut and Saida municipalities indicated that both systems were installed but billing was based on a fixed yearly subscription. The respondents in Zahleh and Tripoli indicated that water is provided on the basis of a flat fee yearly fee.

Is subscription price acceptable

The yearly subscription fee was considered high by the Zahleh and Saida municipal respondents and acceptable by the Beirut and Tripoli ones.

Price sufficiency to the WE

Except for the Zahleh Municipality, all other municipal respondents considered the yearly subscription rate insufficient for the water establishment.

Water sufficiency to the population

The Beirut and Zahleh municipal respondents indicated that the amount of water provided to the population is not sufficient. In Saida, the water sufficiency was linked to the electricity. The Tripoli Municipality respondent considered that the water provided was sufficient for the population.

Is the water drank by the population

The Beirut and Saida municipality respondents indicated that the supplied water is not drank by the population. The Zahleh Municipality respondent indicated that the water was drank by the population. The Tripoli Municipality respondent indicated that the water was drank by most of the population.

Purchase of additional water

The Beirut and Tripoli municipality respondents indicated that water is purchased in water trucks and gallons. The Saida Municipality respondent indicated that water is purchased in water trucks while the Zahleh Municipality respondent indicated that water was obtained from water trucks or from wells.

Monthly purchase of additional water

The Beirut and Saida municipal representatives indicated that the population spends about 50,000 LBP on water from the parallel water market. The Tripoli Municipal representative indicated a figure of 56,000 LBP while the respondent of the Zahleh Municipality indicated a figure of 10,000 LBP.

Percentage of the population connected to the network

The Beirut and Tripoli municipal representatives indicated that 90% of the population is connected to the network in their areas. The Saida Municipal respondent indicated that 100% of the population was connected to the

network while the respondent of the Zahleh Municipality indicated that 70% of the population is connected to the network. All except the respondent of Zahleh indicated that the connection rate in their area was acceptable.

Means to increase connection rate

The respondents of the Zahleh and Tripoli municipalities indicated that expansion of the network is required in order to increase the connection rate. The respondent of the Beirut Municipality indicated that providing more water would result in an increase in connection rate. The respondent of the Saida Municipality did not reply to this question.

Percentage paying subscription

The Beirut Municipality respondent indicated that 90% of the population is pays its water bill. The reported percentage was 80% for Zahleh, 60% for Saida and 50 to 90% for Tripoli. The percentages were considered acceptable by the respondents of the Beirut and Zahleh municipalities and inacceptable by the others.

Means to increase payment rate

The respondent of the Beirut Municipality indicated that more water is required to increase the payment rate. The respondent of the Saida Municipality indicated that the provision of meters and the monitoring of losses would result in an increase in payment rate. The Tripoli Municipality representative indicated that better collection and a better economic situation are required to increase the payment rate. The respondent of the Zahleh Municipality did not reply to this question.

Would population pay more for better service

Unlike the Saida and Tripoli municipal respondents, the Beirut Municipal representative indicated that the population would pay more for a better service. The Zahleh municipal representative indicated maybe as an answer to this question.

Would the population favour a fixed or meter system

Except for the Tripoli Municipal respondent, all other municipal respondents indicated that the population would favour a consumption-based tariff.

Perception of meter system

The respondents of the Zahleh and Saida municipalities indicated that a metered system would reduce consumption. The Beirut Municipality representative indicated that a metered system would reduce consumption and result in lower bills. The respondent of the Tripoli Municipality indicated that a metered system would result in lower bills if properly applied,

Level of trust with the WE

The level of trust with the Water Establishment ranged from "no trust" (Zahleh) to "good" (Tripoli) with intermediate answers of "low" (Beirut) and "acceptable" (Saida). The reason for the lack of trust was the poor service and high price. The reason for the good or acceptable level of trust was the provision of the required service despite the difficulties.

Best way to communicate with the WE
The best way to communicate with the WE was given as follows:

- **Beirut:** in person
- **Zahleh:** through the WE employees
- **Saida:** hotline
- **Tripoli:** by phone or in person

Best way for the WE to communicate with the population
The best way for the WE to communicate with the population was given as follows:

- **Beirut:** through the WE employees
- **Zahleh:** through the WE employees
- **Saida:** social media
- **Tripoli:** by phone

Role of the Municipality
The role that the municipality should play was given as follows:

- **Beirut:** intermediary in communicating with the BMLWE
- **Zahleh:** the municipality is better positioned to manage the water
- **Saida:** no role
- **Tripoli:** intermediary in communicating and coordinating with the NLWE

Role of the Moukhtars
The moukhtars were considered as intermediaries by the Beirut and Tripoli municipalities' respondents. The respondents of the Zahleh and Saida municipalities found no role for the Moukhtars in water management.

Fate of Wastewater
Wastewater was reported to be disposed of in the sewer system by all municipal respondents.

Suitability of wastewater management system
The wastewater management system was considered acceptable by the Zahleh and Tripoli municipal respondents and unacceptable by the others.

Would the population pay for a better wastewater management
Except for the Saida municipal respondent, all other municipal respondents indicated that the population would pay for a better management of their wastewater.

Amount the population is willing to pay for better wastewater management per year
The amount that the population is willing to pay per year for a better wastewater management was given as follows:

- **Beirut:** 60,000 LBP
- **Zahleh:** depends on treatment
- **Saida:** population would not pay
- **Tripoli:** Same amount as the water bill

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INTERVIEWS WITH MOKHTARS

The results of the interviews with the moukhtars are presented hereafter.

Fixed or metered system installed

Most of the moukhtars indicated that fixed systems are installed in their municipal areas. Some moukhtars in the Bekaa indicated that both systems are in-place but that the meters are not working.

Is subscription price acceptable

Most moukhtars indicated that the yearly subscription rate was acceptable. Some found it high, except for South Lebanon. One moukhtar in North Lebanon found it low.

Price sufficiency to the WE

Except for North Lebanon, the majority of the moukhtars indicated that the yearly subscription rate was sufficient for the water establishments.

Water sufficiency to the population

Expect in North Lebanon, most of the moukhtars indicated that the amount of water provided to the population is not sufficient.

Is the water drank by the population

Most of the moukhtars in the Bekaa and North Lebanon indicated that the water is drank by some or all of the population. The majority of the moukhtars in the other regions indicated that the water was not drank.

Purchase of additional water

All expect one moukhtar indicated that the population purchaser water in water trucks. Some moukhtars in Mount Lebanon and North Lebanon also indicted the purchase of gallons by the population. One moukhtar in Mount Lebanon indicated the reliance on water wells.

Purchase of additional water

Except for Mount Lebanon, the vast majority of the moukhtars indicated that the population spends less than 50,000 LBP per month on additional water. The moukhtars in Mount Lebanon included prices reaching 200,000 LBP per month in the summer.

Percentage of the population connected to the network

Most of the moukhtars indicated that 80 to 100% of the population is connected to the network in their areas. The lowest percentages were given by moukhtars in the Bekaa and South Lebanon.

Means to increase connection rate

The most frequent answer regarding the way to increase the connection rate was to provide more water.

All the answers provided by the moukhtars are actually the responsibility of the WE. No one indicated that actions have to be done by the population to increase the connection rate.

Sufficiency of connection percentage
Unlike the in South Lebanon and the Bekaa, the moukhtars interviewed in Mount Lebanon and in North Lebanon considered that the percentage of the population connected to the network in their areas is typically acceptable.

Percentage paying subscription
The highest payment rate was reported by moukhtars in North Lebanon, followed by Mount Lebanon and South Lebanon. The moukhtar of Jeita indicated that the population of Jeita is exempt from paying for its water.

Means to increase payment rate
Once again, the most frequently provided answers regarding the way to increase collection is in the hands of the WE with actions such as provide more water or even improve collection quoted by most moukhtars.

Is payment rate acceptable
Unlike Mount Lebanon and North Lebanon, the payment rate is considered more often low by the moukhtars in the Bekaa and South Lebanon.

Would population pay more for better service
The most frequent answer provided by the moukhtars of the Bekaa, North and South Lebanon was that the population would pay more for a better service.

Would the population favour a fixed or meter system
Except for South Lebanon, most moukhtars considered that the population would favour a consumption-based tariff.

Perception of meter system
The perception of the consumption-based tariff was most of the time positive with a reduction in consumption in all WE regions except North Lebanon where the moukhtars were more sceptical indicating more often valid technical issues (air entrapment, need for more water) and that the population would pay more.

Level of trust with the WE
According to the moukhtars, the level of trust in the WE was found to be mainly good in Mount Lebanon, relatively bad in South Lebanon and quite variable in the other two regions. Lower trust was often attributable to poor service and high price.

Best way to communicate with the WE
The most frequent answers provided by the moukhtars regarding the best way to communicate with the WE was "In Person". In the case of the Bekaa, the use of a hotline was considered the most useful way.

Best way for the WE to communicate with the population
The most frequent answers provided by the moukhtars regarding the best way for the WEs to communicate with the population was through the WEs'

employees (North and South Lebanon) or by phone (Bekaa). The answers provided in North Lebanon were more widespread.

Role of the Municipality

The most frequently provided answer regarding the role of the municipality was one of intermediary.

Role of the Moukhtar

The most frequently provided answer regarding the role of the Moukhtars in the Bekaa was also one of intermediary. In Mount Lebanon and South Lebanon the most frequent answer was "No role". The answers provided in North Lebanon were more widespread.

Fate of Wastewater

Sewer was the most frequent answer provided regarding the fate of the wastewater. The use of septic tanks was indicated by some of the moukhtars.

Suitability of wastewater management system

Except for North and South Lebanon, the moukhtars indicated most of the time that wastewater management was not satisfactory.

Would the population pay for a better wastewater management

Except for South Lebanon, the most frequent answer provided by the moukhtars was that the population would be willing to pay for a better management of their wastewater.

Amount the population is willing to pay for better wastewater management

The most frequent answer provided by the moukhtars was that the population would not pay for better wastewater management especially in North and South Lebanon. In Mount Lebanon the answer was more widespread ranging from the current municipal tax being paid to 300,000 LBP yearly.

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CONCERN SURVEY RESULTS

The INGO Concern conducted a detailed survey of 238 households in Mashta Hammoud during the month of December 2020. At the request of the MoEW, Concern added a number of questions that were included in EDESSA's survey and shared their data with EDESSA in order to allow us to analyse them as part of this study. Only the relevant questions common to our survey are analysed herein.

- The Concern survey indicated that the average number of persons in the households was 5.61.
- 37% of the reported household monthly income was lower than 577,000 LBP with 72% under 1.22 Million LBP.
- The percentage connected to the network was 44%.
- 63% of the connected households reported being satisfied with the water service.
- The most frequent reason of dissatisfied households was reported to be water discontinuity, limited water quantities and low water pressure.
- The amount of the yearly subscription was found to be primarily reasonable (49%) or high (47%),
- 79% of the connected households reported being willing to pay more for a better service. Those unwilling to pay more indicated financial reason as the primary reason.
- The quality of the water supplied to connected respondents was considered good (36%), acceptable (35%), poor (24%) and excellent (5%),
- The most frequent reason given by the households not connected to the network was that they buy their water from private sources or get their water through a local well. Financial considerations were the third reason for not being connected. The most frequent reasons were the quantity and the quality of the water, issues that are the responsibility of the Water Establishment.
- All households (connected and not connected) reported purchasing water from water trucks and in bottles or gallons.
- The most quoted frequency of water truck purchases was monthly (31% of connected households and 74% of non-connected households).
- The most quoted frequency of bottles/gallon purchases was weekly for connected households (67%), but monthly for non-connected

households (59%) indicating that the reliance on wells or other sources of water was more regular.

- 74% of connected households prefer a fixed fee billing. 67% of them considered that they would pay more in the case of a consumption-based tariff.

- The level of trust with the NLWE was considered primarily low by the connected households (37%) and very low by non-connected households (57%).

- Most connected households indicating knowing how to contact the NLWE (90%) as compared to the non-connected households (25%).

- 52% of the connected households consider that the best way to contact the NLWE is by phone as compared to 47% of the non-connected households. On the other hand, 50% of non-connected households considered that the best way to contact the NLWE is to visit them in person.

- The best way for the NLWE to contact customers was reported to be through door to door visits by NLWE staff (23% for connected customers and 22% for non-connected customers) or through the municipality (20% for connected customers or 21% for non-connected customers).

- 80% of all households indicated being connected to septic tanks for their wastewater and 16% to the sewer. The others reported relying on open discharge of their sewer in surface streams.

- 67% reported that they would consider paying to have their wastewater treated. The average yearly fee they are willing to pay was in the order of 60,000 to 65,000 LBP. Financial difficulties was given as the most common reason for not wanting to pay for the treatment of their wastewater.

6 OTHER SURVEYS

A number of very detailed surveys have been done in past years addressing directly or indirectly the issue of consumption-based tariff and the perception of the population regarding such tariff. Below is a summary of some of these studies.

6.1 COST RECOVERY AND DEMAND MANAGEMENT IN LEBANESE WATER SECTOR

This EU Funded study conducted by GVC is one of the most thorough study conducted on the topic in 2016. This study indicated that 75% of the surveyed population connected to the network declared not being satisfied at all with the quality and reliability of the water service. The study indicated at the time that 91% of the surveyed population was in favour of introducing water meters and 85% declared that such meters could be useful for improving water management.

Low subscription and payment rates were attributed to low quality of service provided, lack of trust in the public sector, the incapacity to enforce the law and the wide spread of illegal connection. Customers' expectations were found to be minimal with 65% of the surveyed population expecting only two hours per day of water supply. The population is aware of the advantage of not having to rely on the parallel water market for the additional and drinking water that is costing them two to three times their water subscription.

The large majority of the main actors indicated that wastewater tariff should be calculated as a proportion of consumed water.

6.2 CITIZENS' PERCEPTION RESEARCH STUDY OF ALI EL NAHRI AND RIYAK-HAOUCH HALA

This EU funded study conducted by GVC and Triangle was conducted in 2019. The study focused on two villages in the Bekaa that suffered from water shortages related to weak public water supply, low subscription rates in public water network, and an over-reliance on boreholes and private trucking.

Ali El Nahri managed through a series of locally led initiatives during 2004 to increase its water supply through constructing additional boreholes and water networks to provide water to residents. The municipality eventually handed the networks to the BWE to manage, resulting in an increase in subscription and payment rates confirming that expanding water infrastructure would encourage residents to adopt the WE water as their primary source.

On the other hand, in Riyak-Haouch Hala, residents still relied heavily on private wells for water due to the unavailability of BWE water, which leads to high additional costs.

The population of both towns have negative perceptions of the WE, both in terms of customer service and water quality. This study confirmed that residents in both municipalities would be willing to pay (and, often, pay more) for an improved BWE service.

6.3 MEJDLAYA CITIZEN SURVEY REPORT

This study funded by the EU and conducted by CISP in 2018 in the town of Mejdlaya indicated that storing water is a common practice by the population. The public network represents the main source of water (62% of the population although only 40% declared paying for the public water services). 37% use private wells and 27% use water trucks to compensate water needs. Bottled water is used for drinking by 89% of the population. Despite the above, the perception of the surveyed population towards the water network remains largely positive and most of the surveyed population indicated being willing and able to pay for the public water service.

The perception of water meters was relatively positive with 68% considering that water meters are good and useful, however, only 49% indicated that such meters would make the pay rate fairer.

The study concluded on the need to raise awareness amongst the population on most water services.

6.4 BINT JBEIL CITIZEN SURVEY REPORT

This study funded by the EU and conducted by CISP in 2019 in the town of Bint Jbeil indicated that storing water is a very common practice by the population. 76% of the population indicated relying on the public water while only 16% were satisfied with the quantity of water provided and 69% satisfied with the quality of the water.

67% of the population indicated relying on water trucks with on average two deliveries per month. 90% indicated relying on bottled water for drinking. 79% of the surveyed population indicated being in favour of consumption-based tariffs. Most of the surveyed population indicated being willing to pay more for a better service.

As for Mejdlaya, the study concluded on the need to raise awareness amongst the population on most water services.

6.5 CHTAURA SURVEY

This study funded by the EU and conducted by OXFAM-EDESSA in 2015 in the town of Chtaura indicated water to be supplied irregularly to daily with an average of 2.7 hours per day when supplied. 48% of the surveyed households reported that the water and electricity supply hours coincided. 65% of the surveyed population reported subscribing to the network; almost the same percentage indicated paying their annual fee. These numbers are quite far from the BWE statistics indicating that only 40% of the subscribers in Chtaura actually pay their annual water bill. 50% of the surveyed households reported not being connected because of the absence of a network. The survey also indicated that non-subscription to the water network was not linked to income.

The survey indicated that 51% of the surveyed households relied on the public network, 60% relied on trucked water for domestic non-drinking use. About 60% of the surveyed households reported drinking public water. 78% of the surveyed households reported relying on water gallons and 15% on water bottles for drinking.

The parallel market includes drinking and non-drinking water. Drinking water represents 46% of the budget and includes bottled water (8% of the budget) and gallon water (37% of the budget). Domestic water includes trucked water representing 37% of the budget. The cost of the parallel market is almost 5 times the cost of the public water supply fee. This additional cost would not be required if the public supplied water was clean, reliable and supplied in sufficient quantities. Instead of paying 237,000 LP per year for water, a household in Chtaura currently spends on average an additional 1.2 M LP for their water needs.

The majority of the surveyed households (52%) would favour a metered system while 8% considered that they will pay more with a metered system.

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CONCLUSIONS

A limited field survey was conducted by EDESSA. It consisted of a survey of 40 households in specific localities within each water establishment geographic area in addition to filling a separate questionnaire with the municipality of the largest city within each of the water establishment geographic areas and five interviews with moukhtars in preselected towns in each of the water establishment geographic areas.

Based on the limited size of the EDESSA survey, the results were presented qualitatively. Nevertheless, the results are useful to fill data gaps in understanding the community perception (population, municipal staff and moukhtars) around water-wastewater tariff restructuring and the introduction of a consumption-based tariff. In addition, EDESSA was given access to a survey conducted by the INGO Concern in Mashta Hammoud, a small town in the Akkar region where the subscription rate was reported to be 25%.

The financial situation of the interviewed population sample was found to be precarious with relatively low income compounded by a major devaluation of the Lebanese pound. The Majority of the respondents indicated subscribing to the water network and paying their bills on-time in contradiction with the assessment of the WEs. Such discrepancy is often linked to the fact that interviewees would not always admit not subscribing and paying their bills. It could also reflect a discrepancy between the WEs databases and the actual situation on the ground.

According to the preliminary survey results, most of the respondents that are not connected to the network would get connected. Some gave conditions to such connection (financial situation or availability of water). In general, respondents considered the yearly subscription rate acceptable even though some consider that it affects their way of life. The vast majority of the respondents considered that the price of the water subscription is sufficient for the water establishment especially based on the level of service provided. It would therefore be difficult to the WEs to justify an increase in price without an improvement in the level of the service and the quality and quantity of the water provided. Usually, the respondents indicated that they would pay more for a better service.

The vast majority of the interviewed population indicated preferring a fixed yearly subscription to a metered subscription although the interviews with the municipality representatives and moukhtars indicated that the population would favour a consumption-based tariff. Significant awareness campaigns should be conducted with the population in order to facilitate the acceptance of water-based tariffs. Obviously, such awareness campaigns should be accompanied by improvement in the quantity and quality of the supplied water.

The level of trust in the WEs was more often considered low by the population, the municipal representative and the moukhtars. Improving this level of trust can only be achieved through an improvement in the level of service and the improvement of the quantity and quality of the water provided in order for the population to reduce its spending on the parallel water market.

The best way for the population to contact the WE was considered to be through in-person visits to the WE or by phone. Some indicated the need for a hotline, phone messages or even through social media. The best way for the WEs to contact the population was considered to be by phone. Some indicated that the best way was through the WE's employees.

The respondents consider that the municipalities do have a role to play in the water sector at least an intermediary or a monitoring role.

Wastewater was found to be discharged to septic tanks in rural areas and in sewer in more urban areas. The majority of the respondents from Beirut/Mount Lebanon and South Lebanon considered the management of their wastewater unsatisfactory. The vast majority of all respondents would be willing to pay for their wastewater to be treated in a suitable manner.

The most frequently quoted yearly price for proper wastewater management in Beirut/Mount Lebanon and North Lebanon was between 50,000 to 100,000 LBP. The most frequently provided yearly price in Southern Lebanon was between 200,000 to 400,000 LBP. The most frequent answer in the Bekaa region was whatever is required.

Please contact Oxfam for more information. E-mail: Jbabassian@oxfam.org.uk.

The information in this publication is correct at the time of going to press.

Oxfam has been working in Lebanon since 1993. We provide humanitarian assistance to vulnerable people affected by conflict, and we promote economic development, promotion of good governance at a local and national level, and women's rights through our work with our partners. Oxfam also works with local partners to contribute to the protection and empowerment of marginalized women and men.

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HEAD OFFICE - BEIRUT:
145 HABIB BACHA EL SAAD STREET – LYAN BUILDING – BEIRUT 2064 2506 – LEBANON
PHONE: (+961-1) 615140 – FAX: (+961-1) 615142 – E-MAIL: BEIRUT@EDESSAGROUP.COM

WEB: WWW.EDESSAGROUP.COM