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KAP HOUSEHOLD – BASELINE SURVEY

Public Action for Water, Energy and Environment Project

Prosperity, Livelihoods and Conserving Ecosystems (PLACE) IQC Task Order #5

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PREFACE

The Public Action for Water, Energy and Environment Project (PAP) is a public education and behavior change communication program developed to support USAID's technical and policy investments in the Jordanian water and energy sectors, and to support specific initiatives in the environment, in particular with regard to solid waste. The project has been awarded to ECODIT, a US small business holding the Prosperity, Livelihoods and Conserving Ecosystems, or PLACE, Indefinite Quantity Contract with USAID.

PAP is a five years program that has been designed in three phases:

1. Data collection and assessment phase of 9 months ending July 31, 2010;
2. Participatory strategic planning phase of 3 months that will include dialogue with the relevant stakeholders; and
3. Implementation phase lasting about 4 years.

The first phase of the project (Assessment and Baseline Phase) is to be completed by the summer of 2010. As part of this phase, ECODIT is conducting numerous surveys, including 12 or more research efforts, and it is from the totality of these efforts that the project will determine its direction and focus for behavioral change. ECODIT has divided this phase into the several rapid assessments.

This report presents the findings of the KAP household baseline survey. This survey marks the first stage of data gathering to serve as a prelude to education and changing public behavior in the water and energy sectors in Jordan, and to supply specific initiatives in the environment, in particular in regard to the management of solid household waste. This survey is presenting the knowledge of Jordan's water and energy resources, determining the problem reasons and how to be overcome. Measuring the current awareness of methods of water and energy conservations, determining how the Jordanians currently dispose of their household waste and what would encourage people to start separating their household waste for recycling purpose, establishing the most trusted sources of information on the management of household waste, and finally, determining how serious Jordanians believe the threat of global warming to be in Jordan.

In general, the purpose of the all the surveys that the project is undertaking in Phase I is to bring a behavioral perspective to the technical knowledge that already exists. It will do this in three ways:

1. Examine past and recent educational and social marketing efforts by USAID and other donors to see what worked, what remains of earlier initiatives and tease out the determinants for success
2. Review current needs and expectations in the three thematic areas (water, energy and environment in particular solid waste) that will help guide the project in changing behaviors durably in the future
3. Examine the implementation process itself to ensure that knowledge gained about the process of behavior change is institutionalized into the Jordanian agenda.

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EXECUTIVE SUMMARY

Jordan certainly faces a perilous future in trying to keep its population adequately supplied with water and energy. In response to this, the USAID funded the Jordan Public Action in Water, Energy, and Environment Project (PAP) under the Prosperity, Livelihoods, and Conserving Ecosystems (PLACE) IQC. The implementing contractor is ECODIT with AED as core Subcontractor. The PAP is a five year program aiming at Initiating and establishing clear and identifiable behavioural changes amongst the Jordanian public and decision-makers, to lead to increased efficiency in the use of water and energy, and to improved solid waste handling practices.

The household baseline survey on the use of water, energy and the management of solid household waste have been designed based on the Knowledge, attitude and practice (KAP) model. This survey marks the first stage of data gathering to serve as a prelude to education and changing public behavior in the water and energy sectors in Jordan, and to supply specific initiatives in the environment, in particular in regard to the management of solid household waste. All three areas are of great strategic importance in fashioning the economic future of Jordan and its people.

This survey has the major purpose of presenting the knowledge of Jordan's water and energy resources, determining the problem reasons and how to be overcome. Measuring the current awareness of methods of water and energy conservations, determining how the Jordanians currently dispose of their household waste and what would encourage people to start separating their household waste for recycling purpose, establishing the most trusted sources of information on the management of household waste, and finally, determining how serious Jordanians believe the threat of global warming to be in Jordan.

The research methodology designed to be qualitative research, a questionnaire was designed for the research purpose and semi-structured interviewed have been conducted out amongst a representative sample of 1000 people, representing the 12 governorates in the kingdom, males and females who take the decisions in their homes, either individually or jointly, about the use of water, the fuels used for heating and cooking in the home, and the disposal of household waste.

The main findings of the research in terms of water uses in the household level stated concluded that the most trusted sources of information on water conservation were the Ministry of Water and Irrigation, endorsed by 48%, and the Jordan Water Company – Miyahuna, endorsed by 21%. Additionally, 84% of all respondents recognized that there was a water shortage problem in Jordan, with 79% of all respondents rating the problem either 'very critical' or 'somewhat critical'. However, they displayed a fairly sound understanding of the reasons for Jordan's water shortage problem.

According to the respondents' opinion, the water shortage can be overcome in Jordan if the water authorities take the leads and begin the fight to overcome the water shortage problem, including the elimination of the very public waste of water, through broken pipes in the street. Respondents believed that the water authorities should be engaged in grand projects, like building more dams, and actually utilising the untapped reserves of water at Disi.

90% of all respondents agreed that the government should enforce penalties on people who misuse water in order to reduce water consumption, undoubtedly believing that their modest water consumption would be in no danger of attracting a fine. On the other hand, 71% of all respondents disagreed that the government must increase water tariffs to reduce water consumption. In their defence it can be argued that they had not been educated in the severity of the water shortage problem to begin any process of change to their attitudes, there was no mention of balancing action by the water authorities to correct what were believed to failures in their

operations, and they may have been conscious of the apparent injustice that a general rise in tariffs would punish frugal users of water as well as mis-users of water.
Part of assessing the previous national campaigns conducted for the purpose of changing the Jordanian behavior toward more positive behavior related to water conservation, the Abu Tawfir cartoon campaign had achieved some small success in confirming awareness of some of those methods of saving water that people were already engaged in.

On the other hand, the suggested changing-behavior strategies for reducing water consumption received high levels of endorsement from all sections of the population. So that, the encouragement to voluntary water saving could be done through informing Jordanians of the reality of the water supply situation. This was certainly the first step in any program to bring about behavioral change and introduce an even greater intensity of water conservation in Jordan. In the face of a problem even greater than they had been used to all their lives, 26% took an almost fatalistic view that the only way to bring about the necessary change would require water prices to be raised. The more severe strategies were acknowledged to be the more effective in actually changing behavior in such a basic area as the use of water in the home.

In conclusion, the threatened increase in the price of water could be avoided if the water saving methods, already being practiced, really worked. Reducing the water bill for reduced consumption also offered an incentive rather than an inevitable punishment. Moreover, Jordan's relatively low standard of living imposed limitations on the possible saving of water, and the potential for an inspector's fines, in certain areas that may be targeted. For example, in the case of watering the garden 75% of respondents had no garden. With car washing, 49% of respondents had no car. With flushing toilets, 42% of respondents had a flush toilet, 6% had a pour-flush toilet, and 52% of all respondents only had a pit latrine in their home. Similarly, 73% of all respondents did not have an automatic washing machine.

Even though, understanding the bill and how it was calculated seemed essential given the importance of the increasing block system and its ability to deliver increased access and equity in water supply provision, 28% of all respondents did not know how their water bills were calculated.
In relation to the energy uses at the household level, the main findings concluded that the trusted sources of information about energy conservation were the Jordan Electric Company and the Ministry of Energy, despite the fact that 69% had learned about energy conservation from the media, the most trusted source of only 7% of respondents.

Respondents demonstrated a reasonable understanding of Jordan's energy resources, with spontaneous mention by 77% of electricity, by 49% of oil, by 47% of solar energy, and by 17% of wind power. The respondents stated that the energy saving devises that are applied in Jordan are the Fluorescent lighting, Turning off light when leaving room, Unplugging electrical appliances, and the Energy saving compact fluorescent bulbs.

Just 14% of households had a solar water heating system, while Gas and kerosene were by far the most popular fuels for heating the home. The use of electricity for heating was limited to 13% of homes, but usage of electricity was highest, at 17%, amongst younger respondents aged between 18 and 34 years, supporting the contention that there might have been a move to electrical heating in recent years.

Average electricity costs were 24JD per month, average gas costs 21JD a month, and average kerosene costs 18JD per month. So that, encourage respondents to save energy voluntarily were could be through raising the energy price, and increasing awareness about the nature of the energy problem, tell people about its severity, and tell them what needed to be done by producers and consumers to bring about a mutually satisfactory outcome.

The analysis of the main findings on the energy conservation confirm the impression that energy saving was a fairly casual life style choice, picked up from the media, rather than a serious undertaking urged on people by trusted ministries and utility companies. Moreover, 80% of the respondents disagree with the fact that the government must increase tariffs on electricity to reduce energy consumption; despite the fact that 70% had just conceded that action on prices was the only way to induce real change and encourage Jordanians to save energy. Moreover, 75% disagreed that the government must increase the tariffs on fuels other than electricity to reduce energy consumption.

Finally, the main findings of the household waste disposal analysis concluded that at present, 80% of respondents took their household waste to the neighborhood collection point while 16% placed it on the street for collection, 91% of respondents did not separate out any materials from their household waste, 11% found their neighborhood collection point inconveniently located, and 13% complained that their household waste was not collected regularly. 96% of all respondents demonstrated adequately that they understood what was meant by the term, 'recycling'. A further 33% believed household waste was dumped at landfill disposal sites. There were also, however, 26% who believed their household waste was already being separated out for recycling, 8% who believed that some, at least, was being composted.

When assessing how would encourage people to separate out items from their household waste, The majority of respondents, it seemed, were prepared to be guided voluntarily into serious separating out of their household waste for recycling, first by being educated in why it was required and how it should best be done, and by being given the tools to do the job. Moreover, 84% of respondents believed that global warming posed a serious threat in Jordan. Though belief in global warming was high, there had been no mention of it in relation to electricity generation or the conservation of energy.

1.0 INTRODUCTION

This survey marks the first stage of data gathering to serve as a prelude to education and changing public behavior in the water and energy sectors in Jordan, and to supply specific initiatives in the environment, in particular in regard to the management of solid household waste. All three areas are of great strategic importance in fashioning the economic future of Jordan and its people.

Jordan certainly faces a perilous future in trying to keep its population adequately supplied with water. Population growth is just one factor putting water resources under increasing strain, with Amman City alone having a projected growth in population from 2.9 million in 2010 to 6.5 million in 2025. Yet, even now, Jordan is rated among the last five countries in the world in terms of water resources, there has been a downward trend in annual rainfall over much of the country between 1922 and 2003, surface water from the Yarmouk and Jordan rivers has become undependable because of upstream diversion and over-pumping by neighboring countries, and groundwater is very scarce, with not all of it being renewable.
Jordan's plight has been graphically described by its Washington Embassy.

> "*Jordan today stands face to face with the reality of potentially frightening water shortages. In a largely arid region, even the slightest change in water levels or water quality has a significant impact on agriculture, industry, nutrition and personal health standards. The hard reality is that Jordan is consuming more water than it has available from secure, annually renewable sources. A water catastrophe is imminent, as groundwater resources will slowly dry up.*"

The water section of the research was designed and carried out against that compelling background.
The pressures of a growing population also have great impact on demand for energy, and in this area, too, Jordan faces severe problems, with 96% of its gas and oil requirements having to be imported. There is an urgent need, therefore, for the general public to be educated and persuaded to limit their use of energy as far as possible, without undermining standards of living, under the general heading of demand-side energy efficiency.

The disposal of household waste also has growing costs and environmental impacts that have to be made sustainable, so here, too, there is a need to educate the public and change their behavior to promote the reduction, re-use and recycling of household waste.

This research survey, therefore, was designed to examine current attitudes and behaviors in the three key areas of water, energy and household waste disposal, with a view to establishing how best to bring about decisive change for the good of the country and all of its people.

2.0 DETAILED OBJECTIVES

Focusing on the three thematic areas of water, energy and environment, the survey focused on the following specific objectives:

2.1 Water

1. To gauge present knowledge of Jordan's water resources.
2. To establish whether people understand that Jordan faces a water shortage problem, and to measure how severe they believe that problem to be.
3. To explore understanding of the causes of Jordan's water shortage problem.
4. To explore people understands of how the problem can be overcome.
5. To examine current practices in garden irrigation, car washing, and cleaning around the outside of their homes.
6. To assess to what extent people carry out regular maintenance of their water pipes, tanks and toilet tanks.
7. To establish awareness of methods of water saving, and determine the extent to which these methods are currently being practiced.
8. To determine how people have learned about water conservation.
9. To establish the types of toilet people have in their homes.
10. To establish the level of usage of automatic washing machines and dish washers, and to establish whether or not they are water efficient.
11. To determine how much, on average, people pay for their water every three months, the type of bill they have, and whether they understand how it is calculated.
12. To measure awareness of the Abu Tawfir water saving campaign, and to gauge its effectiveness in educating the public and persuading them to change their behavior in relation to the use of water.
13. To explore what would encourage people to start using methods of water saving on a voluntary basis.
14. To explore what attributes people value most in new technologies for saving water.
15. To measure levels of agreement and disagreement with proposals for the government to increase water tariffs, and enforce penalties on people who misuse water.
16. To determine people's most trusted sources of information about water conservation.

2.2 Energy

1. To gauge people's knowledge of Jordan's resources of energy.
2. To measure current awareness of methods of saving energy.
3. To establish what people are already doing to save energy.
4. To examine usage of automatic washing machines and dish washers, and to establish the usage of energy efficient appliances.
5. To establish the types of heating people have in their homes.
6. To measure current usage of solar space heating and solar water heating.
7. To establish what fuels are used for cooking in the home.
8. To gauge how much is being paid for the fuels used in the home each month.
9. To explore what would encourage people to start saving energy on a voluntary basis.

10. To measure levels of agreement and disagreement with proposals for the government to increase electricity and other fuel tariffs in order to reduce energy consumption.
11. To establish people's most trusted sources of information about energy conservation.
12. To gauge awareness of the government's interest in nuclear energy.

2.3 Environment- mainly the household waste disposal

1. To determine how people currently dispose of their household waste.
2. To check if any people already separate out recyclable materials in their household waste.
3. To identify any problems currently encountered in disposing of household waste.
4. To explore what people currently believe becomes of their household waste after it has been collected.
5. To measure levels of usage of disposable bags when shopping.
6. To gauge understanding of the term, 'recycling'.
7. To explore what would encourage people to start separating out recyclable materials from their household waste on a voluntary basis.
8. To determine how serious people believe the threat of global warming to be in Jordan and to identify what impacts they believe global warming to be having on Jordan.
9. To establish the most trusted sources of information on the management of household waste.

3.0 RESEARCH METHODOLOGY

The research was carried out amongst a representative sample of 1000 people, men or women, who take the decisions in their homes, either individually or jointly, about the use of water, the fuels used for heating and cooking in the home, and the disposal of household waste.

A nationally representative sample of households was identified and contacted using the classical random route method used in Jordan for all research surveys. Interviewers were allocated neighbourhoods selected randomly in every governorate in the country, and, using a random route procedure, selected each random household. At each household, the person responsible for taking decisions about water, fuel and household waste was identified, and he or she was carefully conducted through the questionnaire by the interviewer. Call backs by supervisors were carried out on a selection of respondents to ensure that all interviewing procedures and protocols were followed. The sample had the characteristics described in tables I and table II bellow.

TABLE 1: RESPONDENTS CHARACTERISTIC BREAK DOWN BY AGE

Demographics	Total	Male	Female	Urban	Rural	North	Amman	Central	South
Base	1000	634	366	835	165	269	390	251	90
AGE	%	%	%	%	%	%	%	%	%
18-24	16	16	15	15	18	16	14	17	17
25-34	27	28	27	27	31	25	29	27	29
35-44	24	22	28	24	23	21	28	23	20
45-54	20	20	19	20	18	25	16	21	19
55-64	7	7	5	7	4	6	5	8	9
65+	6	7	6	7	6	7	8	4	6
TOTAL	100	100	100	100	100	100	100	100	100

TABLE 2 RESPONDENTS CHARACTERISTICS BREAKDOWN BY GOVERNORATE

Demographics	Total	Men	Women	18-24	25-34	35-44	45-54	55+
Base	1000	634	366	157	273	240	198	132
Governorate	%	%	%	%	%	%	%	%
Irbid	17	21	11	17	17	15	21	16
Ajloon	3	3	1	3	1	1	5	2
Jarash	3	4	1	2	2	3	3	3
Amman	39	36	44	36	41	45	31	39
Zarqa	15	11	22	18	13	14	19	14
Balqa	7	10	1	7	8	7	7	5
Madaba	3	3	3	2	4	3	1	5
Mafraq	5	3	9	5	5	5	4	6
Karak	4	5	1	7	3	2	4	5
Tafeeleh	1	1	1	1	1	1	1	2
Maán	2	2	2	1	2	3	2	1
Aqaba	2	1	4	1	3	1	2	2
Total	100	100	100	100	100	100	100	100

The sample can be seen to have a truly national coverage and to be broadly in line with the latest population statistics.

4.0 SUMMARY OF THE MAIN FINDINGS

4.1 Water

4.1.1 The Water Shortage Problem in Jordan

Fully 84% of all respondents recognised that there was a water shortage problem in Jordan, with 79% of all respondents rating the problem either 'very critical' or 'somewhat critical'. Men and women and the different age groups were broadly agreed, with the same levels for the existence of the problem, and the same high rating of its severity, but urban respondents were more aware of the problem than rural respondents, by 86% to 75%, and respondents in Amman were more aware than the remainder of the country, by 91% to 79%.

4.1.2 The Reasons for Jordan's Water Shortage Problem

Respondents displayed a fairly sound understanding of the reasons for Jordan's water shortage problem.

TABLE 3: REASONS FOR WATER SHORTAGE

Reasons for Water Shortage	Total
Base	1000
Reasons	%
Geography – Climate	
Little rainfall	50
Scarce water resources	21
s.t.	71

Faults of Water Authorities	
Worn out networks	26
Mismanagement	14
Lack of dams	5
Poor supply agreements with other countries	3
s.t.	48
Faults of The People	
Misuse of water by individuals	36
Household leaks	10
s.t.	46
Population	
Fast growing population	26
Immigrants in Jordan	9
s.t.	35

After the realities of geography and climate, mentioned by 71%, respondents saw Jordan's water problems to be equally the fault of the water authorities (48%) and of the people themselves (46%), with the tacit implication that remedial action by one should be matched by remedial action by the other.

4.1.3 Overcoming the Water Shortage

Respondents generated a comprehensive list of actions to be taken to help overcome Jordan's shortage of water.

TABLE 4: OVERCOMING WATER SHORTAGE

Overcoming Water Shortage	Total
Base	1000
	%
Water Authority Actions	
Build more dams	40
Fix worn out networks	24
Fix broken pipes in street	20
Better water management	19
Quicker response to leaks	12
Improve foreign water agreements	2
Desalination of sea water	2
Accelerate Disi Project	2
s.t.	121
.	
Public Awareness	
Increase awareness of problem	29
Advertise water saving devices	7
s.t.	36
Individual Actions	
Better water management by individuals	21
Re-use grey water	2
s.t.	23
Irrigation	
More efficient irrigation by farmers	1

Respondents saw much to be done by the water authorities to begin the fight to overcome the water shortage problem, including the elimination of the very public waste of water, through broken pipes in the street. Respondents believed that the water authorities should be engaged in grand projects, like building more dams, and actually utilizing the untapped reserves of water at Disi.

Despite the fact that respondents had lived their entire lives under the threat of water shortage and intermittent supply, they nevertheless believed that public awareness needed to be increased about the realities of any new and even more terrible threat that may lie in the future.

Respondents were conscious that action would be required of them to help overcome the shortage of water, although saving scarce water was already deeply ingrained in the pattern of their everyday lives.

4.1.4 Saving Water by Individuals

Respondents were already engaged in a number of water saving activities, more the habits of a lifetime rather than a retreat from any profligate use of abundant water.

TABLE 5: CURRENT WATER SAVING ACTIVITIES

Current Water Saving Activities	Total
Base	1000
Currently Doing to Save Water	%
Using a bucket instead of a hose	66
Using water-saving devices	33
Fixing leaks immediately	33
Turning off faucet brushing teeth / washing dishes	28
Re-using grey water	21
Washing vegetables in bucket/bowl, not under faucet	18
Taking shorter showers	15
Filling washing machine, fewer washes	14
Other	22
Not doing anything to save water	4

These actions demonstrated a proper understanding of what had to be done by individuals, and the fact that these levels of participation extended across all age groups and all regions of the country confirmed that they were a natural part of everyday life rather than a recently learned response to a new and surprising problem. That is, there was no single group of dedicated savers of water, but young and old across all regions claimed to be engaged in the natural process of saving water, leaving those doing nothing limited to a tiny minority of only 4% of all respondents.

4.1.5 The Abu Tawfir Water Saving Campaign

The Abu Tawfir cartoon campaign had achieved some small success in confirming awareness of some of those methods of saving water that people were already engaged in. Some 18% of all respondents had heard of Abu Tawfeer and could recall some of the main messages of the water saving campaign, such as using a bucket instead of a hose, and 15% of all respondents felt that their water saving behavior had been improved by exposure to the campaign.

4.1.6 Encouragement to Voluntary Water Saving

Respondents were seemingly realistic when asked what would encourage them start using even more methods of saving water on a voluntary basis, giving quite heavy weight to the authoritarian methods of increasing the price of water, and even reducing the water supply, say from twice a week to once.

TABLE 6: ENCOURAGEMENT TO VOLUNTARY WATER SAVING

Encouragement to Voluntary Water Saving	Total
Base	1000
Encouragement	%
Inform us of water scarcity	36
Increase the price of water	26
Advertise water saving devices	7
Personal conviction	7
Reduce the water supply	6
Distribute free water saving devices	5
Religious motivation	5
Make water saving money saving	4

The most popular of these replies – all made spontaneously, without any form of prompt – was to inform the people of the reality of the water supply situation. This was certainly the first step in any program to bring about behavioral change and introduce an even greater intensity of water conservation in Jordan. In the face of a problem even greater than they had been used to all their lives, 26% took an almost fatalistic view that the only way to bring about the necessary change would require water prices to be raised. A further 4% preferred to see savings in water bills through reduced use.

Calling on religious motivation, although only mentioned by 5%, was an interesting idea that was to recur.
A notable absence from the list was any reference to the legacy being left to Jordan's children, a consideration that should arouse strong motivation.

4.1.7 Behavior-Changing Strategies

The suggested strategies for reducing water consumption received high levels of endorsement from all sections of the population.

TABLE 7: BEHAVIOR CHANGING STRATEGIES

Behavior Changing Strategies	Total
Base	1000
	%
Neighborhood Water Inspector Fines	88
Increase Cost of Water if No Reduction	78
Reduce Water Bill for Reduced Consumption	70
Educate on Real Cost of Water to the Government	57

The more severe strategies were acknowledged to be the more effective in actually changing behavior in such a basic area as the use of water in the home. In addition, the proposal of a neighborhood water inspector to impose fines for the misuse of water had the attraction that the fines were envisaged being imposed on others, not on the respondent himself or herself. Similarly, the threatened increase in the price of water could be avoided if the water saving methods, already being practiced, really worked. Reducing the water bill for reduced consumption also offered an incentive rather than an inevitable punishment.

4.1.8 Limitations on Fines for Misuse of Water

Jordan's relatively low standard of living imposed limitations on the possible saving of water, and the potential for an inspector's fines, in certain areas that may be targeted. For example, in the case of watering the garden 75% of respondents had no garden. With car washing, 49% of respondents had no car. With flushing toilets, 42% of respondents had a flush toilet, 6% had a pour-flush toilet, and 52% of all respondents only had a pit latrine in their home. Similarly, 73% of all respondents did not have an automatic washing machine. Formulating fines for the misuse of water in these areas would exclude large sections of the population and risk marginalizing the water shortage problem, instead of mobilizing the entire population in a common purpose.

4.1.9 Complex Water Bills

Fully 28% of all respondents did not know how their water bills were calculated, including 33% of younger people aged between 18 and 24 years of age. It seemed that the technical nature of the nomenclature – 'Increasing Block – m3' and 'Linear Increase' – may have been an obstacle to understanding. Understanding the bill and how it was calculated seemed essential given the importance of the increasing block system and its ability to deliver increased access and equity in water supply provision. Everyone should understand that in an increasing block tariff system, the first 5 to 10 m3 have a low, subsidized tariff and the following blocks have an increasingly higher tariff. They should understand that the rationale for the system is to promote water saving practices with all households and to ensure that low-income households can afford to use an amount of water that is necessary to keep themselves and their environment healthy, typically 50 liters/per capita/day.

4.1.10 Proposed Government Action

The first proposal put to respondents was that the government should enforce penalties on people who misuse water in order to reduce water consumption. Fully 90% of all respondents agreed with this proposal, undoubtedly believing that their own modest water consumption would be in no danger of attracting a fine.

The second proposal was that the government must increase water tariffs to reduce water consumption. 71% of all respondents disagreed with this proposal, seemingly contradicting their own belief that pricing measures would be the only way to engineer any real change of behavior. In their defence it can be argued that they had not been educated in the severity of the water shortage problem to begin any process of change to their attitudes, there was no mention of balancing action by the water authorities to correct what were believed to failures in their operations, and they may have been conscious of the apparent injustice that a general rise in tariffs would punish frugal users of water as well as mis-users of water.

4.1.11 Trusted Sources

The most trusted sources of information on water conservation were the Ministry of Water and Irrigation, endorsed by 48%, and the Jordan Water Company – Miyahuna, endorsed by 21%.

4.2 Energy

4.2.1 Energy Resources in Jordan

Respondents demonstrated a reasonable understanding of Jordan's energy resources, with spontaneous mention by 77% of electricity, by 49% of oil, by 47% of solar energy, and by 17% of wind power. When asked specifically, 51% were aware of the government's interest in nuclear energy. No distinctions were made between resources that were native to Jordan and resources that had to be imported, or, in the case of electricity, resources that had to be generated using other imported resources. In contrast with water, however, there seemed little awareness of any exceptional crisis in Jordan's energy resources, with only 6% spontaneously mentioning that Jordan had scarce resources of energy.

4.2.2 Current Energy Saving

Although any exceptional need for energy saving remained unspoken, there was nevertheless almost universal adoption of some energy saving practices.

TABLE 8: CURRENT ENERGY SAVING

Current Energy Saving	Total
Base	1000
	%
Fluorescent lighting	75
Turning off light when leaving room	67
Unplugging electrical appliances	44
Energy saving compact fluorescent bulbs	42
Solar water heating	13
Using air conditioner only when needed	5

These energy saving practices were carried out by these levels amongst all ages and in all regions of the country, indicating that all sections of the population were engaged in the practice - if only to save money – rather than their being limited to a special minority.

4.2.3 Where Learned About Energy Conservation

The trusted sources of information about energy conservation were the Jordan Electric Company and the Ministry of Energy, but they had played no part in teaching people about the methods of energy conservation that had already been adopted. 69% had learned about energy conservation from the media, the most trusted source of only 7% of respondents.

4.2.4 Energy Efficient Appliances

As we have seen, 73% had no automatic washing machine, and 99% had no dishwasher.

4.2.5 Heating in the Home

Respondents had the following forms of heating in their homes.

TABLE 9: HEATING IN THE HOME

Heating in the Home	Total
Base	1000
	%
Gas Heaters	68
Kerosene Heaters	54
Electric Heaters	13
Central Heating – Boiler & Radiators	7
Solid Fuel/Fire Place	3
No Heating	1

Gas and kerosene were by far the most popular fuels for heating the home. The use of electricity for heating was limited to 13% of homes, but usage of electricity was highest, at 17%, amongst younger respondents aged between 18 and 34 years, supporting the contention that there might have been a move to electrical heating in recent years.

4.2.6 Energy Used For Cooking

Gas was used for cooking by 96% of respondents, leaving only 4% cooking with electricity.

4.2.7 Solar Heating

As many as 14% of households had a solar water heating system, surprisingly, perhaps, these owners were spread evenly across all age groups and all regions of the country. Solar space heating systems connected to the boiler, however, were owned by less than 0.5% of households.

4.2.8 How Much Paid For Household Energy

Average electricity costs were 24JD per month, average gas costs 21JD a month, and average kerosene costs 18JD per month.

4.2.9 Encouragement to Voluntary Energy Saving

Spontaneous suggestions as to what would encourage respondents to save energy voluntarily were as follows.

TABLE 10: ENCOURAGE ENERGY SAVING

Encourage Energy Saving	Total
Base	1000
	%
Price	
Higher fuel bills	33
High cost of living	25
Fines for high use	6
Save energy, save money	6
s.t.	70

Raise Awareness	
Raise awareness of energy saving	13
Raise awareness of scarce energy resources in Jordan	6
s.t.	19
Energy Saving Devices	
Promote energy saving devices	5
Other/Don't Know	6
Total	100

While 26% at this stage suggested raising the price of water to reduce consumption, in the case of energy 70% made some reference to the price mechanism to reduce energy consumption. The comparatively low levels suggesting raising awareness tended to confirm the impression that energy saving was a fairly casual life style choice, picked up from the media, rather than a serious undertaking urged on people by trusted ministries and utility companies.

4.2.10 Proposed Government Action

The first proposal was that the government must increase tariffs on electricity to reduce energy consumption. Fully 80% of respondents disagreed with this proposal; despite the fact that 70% had just conceded that action on prices was the only way to induce real change. This apparent contradiction can be explained by the fact that this stern government proposal must have come like a bolt from the blue to people for whom energy saving had been always been an essential part of a frugal existence. There had been no explanation and no attempt at persuasion from the government to soften up opinion on the subject of exceptional energy saving, and apparently no balancing action on the part of the government and the utilities to make individual sacrifices seem worthwhile.

The second proposal was the government must increase the tariffs on fuels other than electricity to reduce energy consumption, and this had 75% disagreeing with it.

There were some 20% and 22% to some extent agreeing with the proposals, but they were spread evenly across ages and regions, so they did not seem to form any sort of recognizable vanguard for the cause of energy saving.

4.2.11 What Could Be Done To Encourage Energy Saving

Respondents who had disagreed with either of the two government proposals were asked, other than increases in tariffs, what could be done to encourage people to reduce their energy consumption. The most important reply, made by 54% of all respondents, was a call to increase awareness about the nature of the energy problem, tell people about its severity, and tell them what needed to be done by producers and consumers to bring about a mutually satisfactory outcome.

The Jordan Electric Company and the Ministry of Energy were the most trusted sources of information about energy conservation, trusted by 32% and 31% respectively, so they should be the moving forces behind the required program of energy education.

4.3 Environment – Mainly the Household Waste Disposal

4.3.1 The Disposal of Household Waste

At present, 80% of respondents took their household waste to the neighborhood collection point, 16% placed it on the street for collection, 6% put at least some of it in refuse pits, 3% burned some, and less than 0.5% answered spontaneously that they separated out their household waste.

4.3.2 Separating Household Waste

When asked specifically about separating out items from household waste such as glass, metal, plastic and paper, the less than 0.5% grew to 9% saying that they already did so. They claimed to arrange this separated waste for municipal collection, but they had not learned about the practice from any official source, but rather from members of their family. This separation of waste was claimed to be carried out by small levels of 10% or less of each region of the country, so there was no special group concentrated in an experimental area.
The main finding here, however, was that 91% of respondents did not separate out any materials from their household waste.

4.3.3 Problems with Waste Disposal

Only 19% of respondents faced any problems in disposing of their household waste. 11% found their neighborhood collection point inconveniently located, and 13% complained that their household waste was not collected regularly.

4.3.4 Beliefs about the Disposal of Household Waste

39% believed their household waste was burned after collection, and since 6% later complained that the local incinerators were too close to their homes, some of them, at least, were correct in this belief. A further 33% believed household waste was dumped at landfill disposal sites. There were also, however, 26% who believed their household waste was already being separated out for recycling, 8% who believed that some, at least, was being composted, and 1% who believed it was being incinerated for power generation.

4.3.5 Understanding the term, 'Recycling'

96% of all respondents demonstrated adequately that they understood what was meant by the term, 'recycling.

4.3.6 Encouragement to Voluntary Household Waste Separation

Spontaneous replies to the question as to what would encourage people to separate out items from their household waste were as follows.

TABLE 11: ENCOURAGE TO SEPARATE HOUSEHOLD WASTE

Encourage to Separate Household Waste	Total
Base	1000
	%
Provide the Means	
Provide special containers at collection points	33
Provide special bags	9
s.t.	42

Education	
Increase awareness of the problem	10
Increase awareness of the environmental risks	20
If knew of the existence of specialized parties that recycle	8
s.t.	38
Government Decree	
Government to compel separation of waste	6
s.t.	86
Opposition	
Nothing could encourage me to separate household waste	11
Don't Know/Other Answers	3
Total	100

The majority of respondents, it seemed, were prepared to be guided voluntarily into serious separating out of their household waste for recycling, first by being educated in why it was required and how it should best be done, and by being given the tools to do the job.
Only 6% felt that government compulsion would be needed, but 11% seemed adamant that nothing could encourage them to sort through their household waste, but perhaps they were envisaging a far more unpleasant task than it, in fact, need be.

4.3.7 Global Warming

Fully 84% of respondents believed that global warming posed a serious threat in Jordan. The effects of extreme warming were everywhere to see, and 36% pointed to Jordan's acute lack of rain as its most highly visible impact on the country. Other impacts were very high summer temperatures (9%), the erratic fluctuations of climate change (19%), environmental pollution (28%), negative effect on agriculture (19%), and even, possibly, floods (4%).
Though belief in global warming was high, there had been no mention of it in relation to electricity generation or the conservation of energy.

4.3.8 Environmental Problems

48% of respondents faced problems in their own neighborhoods. 23% complained that their household waste was not collected regularly, 5% complained that there were not enough containers for household waste at their neighborhood collection points, 4% complained of flies and insects in summer around uncollected household waste, and 6% complained that a waste incinerator was located too close to their homes, polluting the air they had to breathe.
Other environmental problems faced included broken sewage pipes in the streets (4%), flooding cesspits (4%), and poor sewage systems (3%), but the incidence of these problems was low, and, in fact, 52% of all respondents faced no environmental problems in their neighborhoods.

5.0 CONCLUSION AND RECOMMENDATION

5.1 Water

The survey has demonstrated in dramatic form that the people of Jordan recognize that they face a water shortage problem. 79% described the water problem as 'critical or somewhat critical', and this view was shared by every section of society in every corner of the country. Furthermore, the reasons for the problem were well understood, with 71% pointing to the reality of Jordan's geography and climate, 35% to the fast-growing population, 48% to faults on the part of the water authorities, and 46% to faults on the part of the people themselves. Nevertheless, it could be mistaken to believe that people distinguish clearly between Jordan's perennial water shortages problems to be expected in a desert kingdom, and the possible catastrophe facing a country 'consuming more water than it has available from secure, renewable sources.' The awareness of the pressures on water resources from a fast-growing population showed that people were halfway there, but the combination of growing population, a long-term trend of diminishing rainfall, and the competing demands for water from neighboring countries was threatening to produce a problem beyond current understanding, making the demands from people for campaigns to raise awareness of the new dimensions of the water shortage problem to be the most urgent requirement of all.

If the water authorities were held responsible for the problems of water shortage by 48%, they were required to contribute to solving the problems by 121%. They were required to build more dams and accelerate the Disi Project by 42%, fix the worn out networks by 24%, mend the broken pipes in the streets faster by 32%, and inform and educate the public about the impending problem by 36%. This action on the part of the water authorities would provide a physical demonstration that there was a serious problem, and it would form one side of a social contract, balancing any action required of the people themselves.

The problem with asking for the public to use less water was that they were already using comparatively little, and there was not much they could do to use any less. 96% considered that they were already taking action to save water, and the 4% who were not considered that they were already using minimal amounts of water. They were already mostly using a bucket not a hose (66%), to some extent turning off the tap when brushing their teeth (28%), and all those mundane things, they used pit latrines that used little water (73%), only a few had automatic washing machines (27%), only a few had gardens (25%). Calls from the authorities for people to use even less water had to acknowledge what was already being done and be realistic in what was asked for. The government proposals for fines and increased water tariffs seemed to fall short of what was required because they carried no explanation of why additional water saving was needed, no explanation of how water was to be saved by the proposed actions, they failed to acknowledge what was already being done to save water, and they offered no reciprocal action on the part of the water authorities to contribute to the solution of the water shortage problem. Almost 90% agreed with the introduction of water inspectors because no one felt he or she was using excessive water, but 71% disagreed with increasing water tariffs because this would punish the majority of the people without necessarily addressing the physical realities of the water shortage.

What was required from the trusted sources on water conservation – the Ministry of Water and Irrigation, and the Jordan Water Company–Miyahuna – was an intense campaign of education, raising awareness of the impending problem, explaining what the water authorities are doing to counter the problem, explaining the benign mechanism of the increasing block billing system, and drawing the people into the struggle for their own sakes, and the sakes of their children.

5.2 Energy

While 79% of people were aware that Jordan faced a critical water shortage problem, only some 6% were aware that there could be a similar problem facing Jordan's consumption of energy. In contrast to water, which had always been naturally scarce and precious, there had always seemed to be enough energy for people's needs. As with water, people were careful about the energy they expended because it was expensive. They were not aware that much energy had to be imported, and that the cost of doing so could exceed the ability of the country to pay. There could be a valuable synergy, therefore, in linking the water and energy problems to bring home to people the scale of the energy problem and the nature of the action required to solve it. People had to know where the electricity, gas and kerosene in their homes came from, what it cost to get it there, and what was required to sustain supplies into the future.

As with water, people's use of energy was not so profligate that great savings could be made on the home front. 68% used gas heaters, 54% used kerosene heaters, only 13% used electricity to heat their homes, and 96% used gas for cooking. Worrying about energy saving appliances was pointless when few people had these appliances. Simply threatening to increase the tariffs on electricity and other fuels was opposed by 80% and 75% of people because electricity and other fuels were expensive enough already, the proposals came out of the blue with seemingly no justification, with no explanation as to what the problem was, or how it would be solved by this action. As with water, the trusted sources, led by the Ministry of Energy, will have to institute a campaign of education to bring energy alongside water in the national consciousness.

5.3 Waste Disposal

While water and energy could be usefully progressed together, it seemed that waste disposal was on an altogether lower level of priority, and that trying to link waste disposal with the other two would only harm the more important matters. Only 19% of people faced problems with disposing of their household waste, and they were fairly relaxed about what happened to it after collection. 39% understood that it was burned, 33% that it went to landfill, and 35% believed that their waste was already being put to some good use: either reused, composted, or used to generate power. There was no real awareness of any problem here. There was no shortage of land for landfill, burning waste to generate power would be fine, and recycling was good, but not necessarily solving any pressing problems. Education could clearly do something to modify these views, but surely not elevate waste disposal to the level of a water catastrophe.

Nevertheless, people were happy to separate their waste for recycling, provided they were given the means to do so in the form of sacks and collection containers for each recyclable material. They would like to know what problems they were helping to solve and what benefits were accruing from their efforts, and they wanted to see the recycling taking place on a sound economic footing. If a sound economic case can, in fact, be made for separating waste and the rest of the operation, then, of course, it should go ahead, but it seems difficult to envisage that waste disposal can ever assume the life and death proportions of water and energy poverty.

6.0 ANNEXES

6.1 Annex A: Main findings of the water use

6.1.1 The Water Sources of Jordan

Respondents were asked to name what they understood to be the sources of water to be found in Jordan. There were no prompts, and multiple answers were permitted.

TABLE 12: RESPONDENTS DETERMINED WATER SOURCES OF JORDAN (breakdown in total and by gender)

Water Sources	Total	Men	Women
Base	1000	634	366
Rain water	72	68	79
Dams	50	46	57
Groundwater	25	25	23
Artesian wells	15	16	15
Rivers	13	12	13
Al Disi Project	4	5	4
Springs	3	4	3
Other	2	2	4
Don't know	2	2	3
Total	186	180	201

Respondents showed a reasonably sound understanding of the sources of Jordan's water in this unprompted question at the very beginning of the questionnaire. Women had a slightly fuller understanding than men, as indicated by their higher aggregate score of 201%, compared with 180% for men.

TABLE 13: RESPONDENTS DETERMINED WATER SOURCES OF JORDAN (breakdown by age)

Sources of Water	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Rain water	72	69	74	75	74	64
Dams	50	48	51	53	47	47
Groundwater	25	24	26	28	23	18
Artesian wells	15	17	13	14	17	21
Rivers	13	15	13	14	10	12
Al Disi Project	4	4	4	4	3	7
Springs	3	2	3	3	3	5
Other	2	3	2	3	3	2
Don't know	2	3	2	3	2	2
Total	186	185	188	197	182	178

Overall awareness of the different sources of Jordan's water was slightly lower for those aged 55 years and over, but this group was slightly more aware of the Al Disi Project than average, by 7% to 4%, possibly reflecting more newspaper reading among older respondents.

TABLE 14: RESPONDENTS DETERMINED WATER RESOURCES IN JORDAN (breakdown By Location and Region)

Sources of Water	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Rain water	72	75	61	69	80	71	53
Dams	50	50	47	46	49	53	56
Groundwater	25	25	22	20	34	17	17
Artesian wells	15	15	18	21	14	12	14
Rivers	13	12	15	9	13	16	13
Al Disi Project	4	3	9	2	4	3	17
Springs	3	3	2	4	2	3	7
Other	2	2	4	1	1	6	4
Don't know	2	2	2	2	2	3	3
Total	186	187	180	174	199	184	184

The broad shape of replies was the same from both urban and rural respondents, and from those in the four regions, except that there was naturally higher than average awareness of the Al Disi Project in the South, by 17% to 4%.

6.1.2 The Water Shortage Problem in Jordan

Respondents were asked whether they thought there was a water shortage problem in Jordan, and, if so, how serious they judged the problem to be.

TABLE 15: RESPONDENTS DETERMINED THE WATER SHORTAGE PROBLEM IN JORDAN (breakdown in Total and By Gender)

Water Problem in Jordan	Total	Men	Women
Base	1000	634	366
There is a problem	84	83	87
Importance			
A Very Critical Problem	54	52	57
A Somewhat Critical Problem	25	25	25
A Problem But Not Critical	5	5	5
Not A Problem At All	15	17	11
Don't know	1	1	2
Total	100	100	100

Fully 84% of all respondents believed there was a water shortage problem in Jordan, 54% thinking it a very critical problem, 25% a somewhat critical problem, 5% a problem but not critical, and 15% not a problem at all.

A higher proportion of women than of men believed the problem to be very critical, by 87% to 83%, and correspondingly, more men than women thought there was no problem at all, by 17% to 11%.

TABLE 16: RESPONDENTS DETERMINED WATER PROBLEM IN JORDAN (breakdown by age)

Water Problem in Jordan	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
There is a problem	84	79	85	86	87	81
Importance						
A Very Critical Problem	54	52	54	51	59	54
A Somewhat Critical Problem	25	22	27	28	22	23
A Problem But Not Critical	5	4	4	7	5	4
Not A Problem At All	15	19	14	12	14	18
Don't know	1	3	1	2	N	1
Total	100	100	100	100	100	100

N = Less than 0.5%.

There were no material variations by age, either in recognizing that there was a water shortage problem, or in how severe it was thought to be, indicating that the knowledge had been ingrained in every generation.

TABLE 17: RESPONDENTS DETERMINED WATER PROBLEM IN JORDAN (breakdown by location and region)

Water Problem in Jordan	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
There is a problem	84	86	75	80	91	80	78
Importance							
A Very Critical Problem	54	54	52	54	53	56	53
A Somewhat Critical Problem	25	26	20	22	31	19	20
A Problem But Not Critical	5	6	3	4	7	4	5
Not A Problem At All	15	13	22	18	8	19	21
Don't know	1	1	3	2	1	2	1
Total	100	100	100	100	100	100	100

There were differences here, with more urban respondents aware that there was a water shortage problem than there were rural respondents, by 86% to 75%.

By region, 91% of respondents in the Amman Region asserted that there was a water shortage problem, compared with 78% in the South Region, 80% in the Central Region, and 80% in the North Region.
There were also more urban respondents judging the problem to be very or somewhat critical than there were rural respondents, by 80% to 72%.

Similarly, in the Amman Region there were 84% of respondents rating the problem very or somewhat critical, compared with 73% in the South Region, 75% in the Central Region, and 76% in the North Region.

6.1.3 Reasons for the Water Problem in Jordan

Respondents were asked what, in their opinion, were the reasons for Jordan's existing water shortage problems. Respondents were not prompted, and they were allowed to give multiple answers.

TABLE 18: RESPONDENTS DETERMINED REASONS FOR WATER PROBLEM IN JORDAN (breakdown in total and by gender)

Reasons for the Water Problem in Jordan	Total	Men	Women
Base	1000	634	366
	%	%	%
1. Geography - Climate			
Little rainfall	50	46	56
Scarce water resources	21	22	19
s.t.	71	68	75
2. Faults of the Water Authorities			
Worn out networks	26	30	19
Mismanagement by the authorities	14	16	11
Lack of dams	5	5	6
Poor supply agreements with neighboring countries	3	4	2
s.t.	48	55	38
3. Faults of the People			
Misuse of water by individuals	36	33	43
Household leaks	10	14	5
s.t.	46	47	48
4. Population			
Fast growing population	26	27	25
Immigrants in Jordan	9	12	4
s.t.	35	39	29
Other	3	3	3
Don't know	1	1	1
Total	204	213	194

The reasons most given for Jordan's critical water shortage problem reflected the geographical and climatic realities facing the country: 50% of respondents mentioning Jordan's little rainfall, and 21% mentioning scarce water resources, giving a total of 71% for this category.

The second category of reasons for Jordan's water shortage looked to faults made by the water authorities. Worn out networks were mentioned by 26%, mismanagement of the water supply by 14%, a lack of dams by 5%, and poor supply agreements with neighboring countries by 3%, giving a total for this category of 48%.
The third category consisted of faults confessed on the part of respondents themselves. Misuse of water by individuals was mentioned by 36%, and unattended water leaks in people's homes by 10%, giving a total of 46%, matching the faults of the water authorities with a rather elegant symmetry.

The fourth category of reasons identified Jordan's fast-growing population as a major cause of the country's water shortage problems. 26% of respondents referred directly to the growing population, while 9% made a political point about the numbers of immigrants present in Jordan creating an added strain on the limited water resources.

There were few differences between the nature or the weight of the replies from men and women, although men were a little more aware of worn out networks and leaks in the road, by 30% to 19%, while women were a little more aware of misuse of water by individuals around the home, by 43% to 33%, reflecting, perhaps, man's place out in the world, and woman's place in the home.

TABLE 19: RESPONDENTS DETERMINED RESOURCES FOR WATER PROBLEM IN JORDAN (breakdown by age)

Reasons for the Water Problem in Jordan	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
1. Geography – Climate						
Little rainfall	50	44	50	51	53	49
Scarce water resources	21	15	25	20	18	26
s.t.	71	59	75	71	71	75
2. Faults of the Water Authorities						
Worn out networks	26	24	29	21	31	23
Mismanagement by the authorities	14	10	17	15	16	9
Lack of dams	5	6	5	6	4	5
Poor supply agreements with neighbouring countries	3	3	3	3	6	2
s.t.	48	43	54	45	57	39
3. Faults of the People						
Misuse of water by individuals	36	34	40	38	36	32
Household leaks	10	7	14	8	12	11
s.t.	46	41	44	46	48	43
4. Population						
Fast growing population	26	22	27	26	29	23
Immigrants in Jordan	9	5	10	8	12	9
s.t.	35	27	37	34	41	32
Other	3	4	3	3	5	2
Don't know	1	1	0	1	1	2
Total	204	175	213	200	223	193

While there were inevitably some variations across the age groups on an open-ended question like this, there were none so large as to isolate any one age group from the rest. All age groups had the geography-climate category as their most important category, and all age groups gave broadly the same weight to the faults of the water authorities and the faults of the people.

TABLE 20: RESPONDENTS DETERMINED RESOURCES FOR WATER PROBLEM IN JORDAN (breakdown by location and region)

Reasons for the Water Problem in Jordan	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	351	90
	%	%	%	%	%	%	%
1. Geography – Climate							
Little rainfall	50	51	44	43	57	48	41
	21	21	21	19	22	20	26
s.t.	71	72	65	62	79	68	67
2. Faults of the Water Authorities							
Worn out networks	26	26	25	27	22	34	19
Mismanagement by the authorities	14	14	15	13	10	22	12
Lack of dams	5	5	5	5	5	6	4
Poor supply agreements with neighboring countries	3	3	4	4	2	3	4
s.t.	48	48	49	49	39	65	39
3. Faults of the People							
Misuse of water by individuals	36	36	36	36	34	38	43
Household leaks	10	11	10	13	8	11	11
s.t.	46	47	46	49	42	49	54
4. Population							
Fast growing population	26	28	16	26	26	26	23
Immigrants in Jordan	9	10	6	14	6	8	9
s.t.	35	38	22	40	32	34	32
Other	3	4	2	3	3	4	6
Don't know	1	1	2	1	0	2	2
Total	204	210	186	204	195	222	200

Urban and rural respondents were of virtually the same mind in the importance they gave to geography and climate category, the faults of the water authorities' category, and the faults of the people category.

Urban respondents, however, were more aware than rural respondents of the pressures of population on water resources, by 38% to 22%.

Respondents in Amman were slightly less likely than others to blame the water authorities for water shortages, by 39% to 48%, probably reflecting the extensive installation of new networks that has taken place there over recent years.

6.1.4 What can be done to help Overcome the Water Shortage

Respondents were asked what could be done to help overcome the water shortage.

TABLE 21: RESPONDENTS DETERMINED HOW TO OVERCOME THE PROBLEM (breakdown by gender)

What Can Be Done To Overcome Problem	Total	Men	Women
Base	1000	634	366
	%	%	%
1. Water Authority Action			
Building more dams	40	40	39
Fixing worn out networks	24	30	13
Fixing broken pipes in the street	20	23	14
Better water management	19	22	14
Quicker response to leaks	12	15	6
Improve foreign agreements	2	2	1
Desalination of sea water	2	2	2
Accelerate Al Disi Project	2	2	1
s.t.	121	136	90
2. Public Awareness			
Increase public awareness of the problem	29	30	29
Advertise water saving devices	7	9	4
s.t.	36	39	33
3. Individual Action			
Better water management by individuals	21	15	31
Re-use grey water	2	2	3
s.t.	23	17	34
4.Irrigation	1	2	1
Other	4	3	4
Don't know	2	1	4
Total	187	198	166

Respondents believed that most of what had to be done to try to help overcome Jordan's water shortage had to be undertaken by the water authorities, with 40% believing that more dams should be built to collect rainwater. 40% of men and 29% of women supported dam building. The various expressions of fixing leaking water pipes totaled 56% of all respondents, with men seeing more leaks in the streets than women, their mentions totaling 68% against 33% for the women.

Increasing public awareness of the scale of the water shortage problem was another action asked of the water authorities by 30% of men and 29% of women. The need for such action was highlighted by the comparatively few actions thought to be required of the public, with only 21% believing that better water management by individuals was needed, and only 2% mentioning the re-use of grey water. Better water management was mentioned by more women than men, by 31% to only 15%. With the re-use of grey water mentioned by 3% of women and 2% of men, the need for individual action as a whole was mentioned by twice as many women as men – 34% to 17%.

TABLE 22: RESPONDENTS DETERMINED HOW TO OVERCOME THE PROBLEM
(breakdown by age)

What Can Be Done To Overcome Problem	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
1. Water Authority Action						
Building more dams	40	35	44	38	41	39
Fixing worn out networks	24	22	25	22	29	20
Fixing broken pipes in the street	20	19	21	17	24	18
Better water management	19	12	20	20	24	14
Quicker response to leaks	12	10	13	8	18	9
Improve foreign agreements	2	0	2	1	2	2
Desalination of sea water	2	1	2	2	2	2
Accelerate Al Disi Project	2	0	0	3	2	3
s.t.	121	99	127	111	142	107
2. Public Awareness						
Increase public awareness of the problem	29	33	28	32	27	27
Advertise water saving devices	7	5	8	8	8	5
s.t.	36	38	36	40	35	32
3. Individual Action						
Better water management by individuals	21	10	22	24	23	22
Re-use grey water	2	2	1	3	3	2
s.t.	23	12	23	27	26	24
4.Irrigation	1	1	1	1	2	2
Other	4	4	5	3	3	3
Don't know	2	3	2	3	2	0
Total	187	157	194	185	210	168

Younger respondents, aged between 18 and 24 years, had slightly lower levels of awareness of some of the actions required of the water authorities, but they had high levels, close to average, for building more dams (35%), fixing worn out networks (22%), and a quicker response to leaks (10%). They were less aware than average of better water management (12%), improving water management (12%), improving water agreements with neighboring countries (0%), and accelerating the Disi Project (0%). They were also out of line with all other age groups in the weight they gave to individual actions, with only 12% against an average of 23%.

TABLE 23: RESPONDENTS DETERMINED HOW TO OVERCOME THE PROBLEM (breakdown by location and region)

What Can Be Done To Overcome Problem	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
1. Water Authority Action							
Building more dams	40	41	34	38	41	38	46
Fixing worn out networks	24	26	15	23	24	27	16
Fixing broken pipes in the street	20	21	16	22	15	27	14
Better water management	19	19	17	25	13	24	14
Quicker response to leaks	12	12	10	15	7	15	12
Improve foreign agreements	2	1	2	4	1	1	1
Desalination of sea water	2	1	3	3	2	1	1
Accelerate Al Disi Project	2	1	2	1	2	0	3
s.t.	121	122	99	131	105	133	107
2. Public Awareness							
Increase public awareness of the problem	29	30	25	26	31	32	27
Advertise water saving devices	7	7	8	8	8	6	2
s.t.	36	37	33	34	39	38	29
3. Individual Action							
Better water management by individuals	21	21	18	25	18	21	22
Re-use grey water	2	2	4	1	3	2	1
s.t.	23	23	22	26	21	23	23
4.Irrigation	1	1	2	1	1	2	0
Other	4	3	7	4	4	3	2
Don't know	2	2	2	1	1	3	6
Total	187	188	165	197	171	202	167

While urban respondents tended to generate higher levels of response than rural respondents in this open-ended question, the priorities of the two groups were essentially the same. Both groups looked to action from the water authorities to help overcome Jordan's water shortage, with only 23% of urban respondents and 22% of rural respondents mentioning individual actions to alleviate the problem.

By region, the mostly small variations in response did not amount to any serious differences of approach to this question, with reference to action by the water authorities at 99% or more, and reference to individual action between 21% in Amman and 26% in the North.

6.1.5 Irrigating the Garden in winter

Respondents were asked how often they usually irrigated their garden in winter, between November and April.

TABLE 24: RESPONDENTS DETERMINED FREQUENCIES OF IRRIGATING THE GARDEN IN WINTER (breakdown in total and by gender)

Irrigating Garden in Winter	Total	Men	Women
Base	1000	634	366
Frequency	%	%	%
Once a week	6	7	4
Twice a week	1	1	1
3-4 times a week	1	1	1
5-6 times a week	0	0	0
Every day	1	1	1
Rarely	12	13	11
s.t	21	23	18
Not at all	4	3	4
No garden	75	74	78
Total	100	100	100

21% of all respondents irrigated their garden in winter, 9% weekly or more often, and 12% only rarely.

Table 25: RESPONDENTS DETERMINED FREQUENCIES OF IRRIGATING THE GARDEN IN WINTER (breakdown by age)

Irrigating Garden in Winter	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
Frequency	%	%	%	%	%	%
Once a week	6	7	5	5	4	8
Twice a week	1	0	2	0	3	1
3-4 times a week	1	0	1	0	1	0
5-6 times a week	0	0	0	0	1	0
Every day	1	1	1	1	1	0
Rarely	12	13	11	11	13	16
s.t	21	21	20	17	23	25
Not at all	4	3	3	3	4	6
No garden	75	76	76	79	73	69
Total	100	100	100	100	100	100

There was little variation by age, with the oldest 55+'s keenest on watering their garden at 25%, and the 35-44's group least keen at 17%.

Table 26: RESPONDENTS DETERMINED FREQUENCIES OF IRRIGATING THE GARDEN IN WINTER (breakdown by location and region)

Irrigating Garden in Winter	Total	Urban	Rural	North	Amman	Central	South
	1000	835	165	269	390	251	90
Frequency	%	%	%	%	%	%	%
Once a week	6	6	5	6	7	2	9
Twice a week	1	1	1	0	1	1	3
3-4 times a week	1	1	0	0	1	0	2
5-6 times a week	0	0	0	0	1	0	0
Every day	1	1	0	0	2	0	1
Rarely	12	12	15	14	12	11	16
s.t	21	21	21	20	24	14	31
Not at all	4	3	7	3	5	2	3
No garden	75	76	72	77	71	84	66
Total	100	100	100	100	100	100	100

Urban and rural respondents showed the same incidence of winter garden irrigation, with 21% of each group using water in this way.
By region, there were more winter irrigators in the South (31%) than in the other regions.

6.1.6 Irrigating the Garden in summer

Respondents were asked how often they irrigated their garden in summer, between May and October.

TABLE 27: RESPONDENTS DETERMINED FREQUENCIES OF IRRIGATING THE GARDEN IN SUMMER (breakdown in total and by gender)

Irrigating Garden in Summer	Total	Men	Women
Base	1000	634	366
Frequency	%	%	%
Once a week	9	9	10
Twice a week	5	5	4
3-4 times a week	4	5	4
5-6 times a week	1	1	1
Every day	1	1	1
Rarely	4	5	2
s.t	24	26	22
Not at all	1	0	0
No garden	75	74	78
Total	100	100	100

Irrigating the garden in summer involved 24% of all respondents, few more than the 21% doing so in winter. 26% of men and 22% of women irrigated their garden in summer.

TABLE 28: RESPONDENTS DETERMINED FREQUENCIES OF IRRIGATING THE GARDEN IN SUMMER (breakdown by Age)

Irrigating Garden in Summer	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
Frequency	%	%	%	%	%	%
Once a week	9	10	8	9	9	14
Twice a week	5	4	4	5	6	6
3-4 times a week	4	7	6	3	3	3
5-6 times a week	1	0	1	0	1	2
Every day	1	0	1	1	3	0
Rarely	4	3	4	3	5	6
s.t	24	24	24	21	27	31
Not at all	1	0	1	1	0	0
No garden	75	76	75	78	73	69
Total	100	100	100	100	100	100

There was not much difference among the different age groups, except for those aged 55 years and over who appeared to water their garden more frequently than the others.

TABLE 29: RESPONDENTS DETERMINED FREQUENCIES OF IRRIGATING THE GARDEN IN SUMMER (breakdown by location and region)

Irrigating Garden in Summer	Total	Urban	Rural	North	Amman	Central	South
	1000	835	165	269	390	251	90
Frequency	%	%	%	%	%	%	%
Once a week	9	9	12	9	12	5	9
Twice a week	5	5	4	5	7	2	6
3-4 times a week	4	4	4	3	4	4	10
5-6 times a week	1	1	1	1	1	0	0
Every day	1	1	1	0	2	1	1
Rarely	4	3	6	5	3	4	8
s.t	24	23	28	23	29	16	34
Not at all	1	1	0	0	0	0	0
No garden	75	76	72	77	71	84	66
Total	100	100	100	100	100	100	100

Summer irrigation of the garden was higher in rural than in urban areas, but only by 28% to 23%.
By region, summer irrigation was highest in the South, at 34%.

6.1.7 How and When the Garden Was Irrigated

Respondents were asked how they usually irrigated their garden, and at what time of day. Multiple answers were possible.

TABLE 30: RESPONDENTS DETERMINED GARDEN IRRIGATING PROCESS (breakdown in total and by gender)

How and When Garden Irrigated	Total	Men	Women
Base	1000	634	366
	%	%	%
How			
Regular running hose	15	15	15
A bucket	6	7	4
Drip irrigation	2	2	2
Hose with power spray	1	2	1
s.t.	24	26	22
When			
Early in the morning	11	12	11
Late at night	8	8	8
During the day	7	8	5
s.t.	26	28	24
Not at all	1	0	0
No garden	75	74	78
Total	100	100	100

15% of households used a regular running hose to irrigate their gardens, and a further 1% used a hose with a power spray. 6% used a bucket, having listened, perhaps, to Abu Tawfir.

TABLE 31: RESPONDENTS DETERMINED GARDEN IRRIGATING PROCESS (breakdown by age)

How and When Garden Irrigated	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
How						
Regular running hose	15	13	14	15	17	17
A bucket	6	6	6	4	8	9
Drip irrigation	2	2	2	2	1	3
Hose with power spray	1	3	2	0	1	1
s.t.	24	24	24	21	27	30
When						
Early in the morning	11	10	11	10	9	19
Late at night	8	6	7	6	13	5
During the day	7	9	7	8	6	8
s.t.	26	25	25	24	28	32
Not at all	1	0	1	1	0	0
No garden	75	76	75	78	73	69
	100	100	100	100	100	100

There was little variation in how and when gardens were irrigated by age.

TABLE 32: RESPONDENTS DETERMINED GARDEN IRRIGATING PROCESS (breakdown by location and region)

How and When Garden Irrigated	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
How							
Regular running hose	15	14	18	13	19	8	22
A bucket	6	6	9	7	6	6	9
Drip irrigation	2	2	1	1	2	3	1
Hose with power spray	1	2	1	2	2	0	2
s.t.	24	24	29	23	29	17	34
When							
Early in the morning	11	12	8	8	15	8	16
Late at night	8	7	8	8	8	6	9
During the day	7	6	12	8	8	5	11
s.t.	26	25	28	24	31	19	36
Not at all	1	1	0	0	0	0	0
No garden	75	76	72	77	71	84	66
	100	100	100	100	100	100	100

Daytime irrigation was higher than average in rural areas and the South.

6.1.8 Car Washing

Respondents were asked how often they washed their car, and how they usually did so.

TABLE 33: RESPONDENTS DETERMINED CAR WASHING PROCESS (breakdown in total and by gender)

Car Washing	Total	Men	Women
Base	1000	634	366
	%	%	%
Frequency			
Every day	2	2	2
5-6 times a week	2	2	1
3-4 times a week	5	5	5
Twice a week	9	10	8
Once a week	20	21	19
Less often	13	15	9
s.t.	51	55	44
Method			
Bucket at home	22	22	23
Car wash	11	15	4
Gas station	9	10	9
Regular hose	5	6	4
Power hose	1	1	1
Other	3	1	3
s.t.	51	55	44
No car	49	45	56
Total	100	100	100

51% of respondents washed a car at some time – that is, every single car owner. 38% washed a car once a week or more often. The use of a bucket at home was the most popular method of washing the car, used by 22%, but 11% used a car wash, and 9% the facilities at the gas station, while 6% used a hose.

TABLE 34: RESPONDENTS DETERMINED CAR WASHING PROCESS (breakdown by age)

Car Washing	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Frequency						
Every day	2	3	1	2	3	2
5-6 times a week	2	0	1	2	1	4
3-4 times a week	5	4	6	5	5	3
Twice a week	9	7	7	13	11	7
Once a week	20	25	20	22	17	17
Less often	13	4	12	13	17	19
s.t.	51	43	47	57	54	52
Method						
Bucket at home	22	20	18	25	23	26
Car wash	11	6	16	10	10	10
Gas station	9	8	6	13	10	6
Regular hose	5	6	6	5	6	5
Power hose	1	0	0	2	2	0
Other	3	3	1	2	3	5
s.t.	51	43	47	57	54	52
No car	49	57	53	43	46	48
Total	100	100	100	100	100	100

Washing the car at least once a week involves 39% of 18-24's, 35% of 25-34's, 44% of 35-44's, 37% of 45-54's, and 33% of 55+'s.

TABLE 35: RESPONDENTS DETERMINED CAR WASHING PROCESS (breakdown by location and region)

Car Washing	Total	Urban	Rural	North	Amman	Central	South
	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Frequency							
Every day	2	2	1	1	3	2	1
5-6 times a week	2	2	2	1	2	2	1
3-4 times a week	5	6	1	1	8	5	2
Twice a week	9	10	4	4	16	6	2
Once a week	20	21	18	15	27	14	23
Less often	13	11	21	16	9	12	27
s.t.	51	52	47	38	65	41	56
Method							
Bucket at home	22	24	13	14	29	18	23
Car wash	11	11	15	12	8	12	16
Gas station	9	10	7	7	16	4	5
Regular hose	5	4	10	3	9	3	10
Power hose	1	1	1	1	1	1	0
Other	3	2	1	1	2	3	2
s.t.	51	52	47	38	65	41	56
No car	49	48	53	62	35	59	44
Total	100	100	100	100	100	100	100

Washing the car was more an urban than a rural occupation, with 41% of urban respondents doing so once a week or more often, compared with 26% of rural respondents.

By region, car washing was most frequent in Amman where 56% washed their car once a week or more often, compared with 29% in the Central region, 29% in the South, and 22% in the North.

6.1.9 Washing the Stairwell/Balcony/Yard/Front of House

Respondents were asked, according to the kind of house they had, whether they usually washed the stairwell/balcony/yard/front of house, and, if so, how often and how they did it.

Table 36: RESPONDENTS DETERMINED WASHING DOWN PROCESS (breakdown in total and by gender)

Washing Down Around the House	Total	Men	Women
Base	1000	634	366
Ever Wash	%	%	%
Yes	90	92	88
No	10	8	12
Total	100	100	100
Frequency			
Every day	6	6	5
5-6 times a week	5	5	6
3-4 times a week	9	6	12
Twice a week	19	21	15
Once a week	45	45	45
Less often	6	9	5
s.t.	90	92	88
Method			
Bucket	71	73	67
Regular hose	15	16	15
Broom – no water	3	2	4
Power hose	1	1	2
s.t.	90	92	88
Never wash	10	8	12
Total	100	100	100

Washing the areas around the home, like the stairwell, the balcony, the yard and the front of the house was confirmed as a potentially important area of water use, with 90% of all respondents doing such cleaning at some time. In terms of frequency, there were two important groups: the 39% of respondents who did such washing more than once a week, and the 51% who did so once a week or less often, with the former using potentially a lot more water than the latter. As for method, 71% of respondents used a bucket of water, 15% used a regular hose, and 1% a power hose. 3% of respondents used only a broom and no water.

TABLE 37: RESPONDENTS DETERMINED WASHING DOWN PROCESS (breakdown by age)

Washing Down Around the House	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
Ever Wash	%	%	%	%	%	%
Yes	90	90	90	91	92	86
No	10	10	10	9	8	14
Total	100					

Frequency						
Every day	6	6	7	5	7	2
5-6 times a week	5	6	5	6	5	5
3-4 times a week	9	9	7	10	11	7
Twice a week	19	22	21	18	15	18
Once a week	45	43	42	43	46	49
Less often	6	4	8	9	8	5
s.t.	90	90	90	91	92	86
Method						
Bucket	71	73	75	68	68	68
Regular hose	15	14	13	18	17	13
Broom – no water	3	2	2	3	4	3
Power hose	1	1	0	2	3	2
s.t.	90	90	90	91	92	86
Never wash	10	10	10	9	8	14
Total	100	100	100	100	100	100

Frequency of washing and use of a bucket of water held firm across all age groups, even to the youngest 18-24's who had 86% washing once a week or more often, and 45% using a bucket and mop. Only the 20% or so of 35-44's and 45-54's who used a hose would give much opportunity for the neighborhood water inspector.

TABLE 38: RESPONDENTS DETERMINED WASHING DOWN PROCESS (breakdown by location and region)

Washing Down Around the House	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
Ever Wash	%	%	%	%	%	%	%
Yes	90	90	90	90	90	92	89
No	10	10	10	10	10	8	11
Total	100	100	100	100	100	100	100
Frequency							
Every day	6	6	6	7	6	4	3
5-6 times a week	5	5	7	6	5	5	4
3-4 times a week	9	9	6	7	11	7	9
Twice a week	19	18	22	18	22	14	21
Once a week	45	45	44	44	42	51	44
Less often	6	7	5	8	4	11	8
s.t.	90	90	90	90	90	92	89
Method							
Bucket	71	71	67	72	71	77	55
Regular hose	15	15	18	14	16	10	28
Broom – no water	3	3	4	3	2	3	3
Power hose	1	1	1	1	1	2	3
s.t.	90	90	90	90	90	92	89
Never wash	10	10	10	10	10	8	11
Total	100	100	100	100	100	100	100

The uniformity imposed by tradition that was seen across the age groups was replicated here both in terms of urban/rural location and region, with the same frequencies and the same methods being found everywhere.

6.1.10 Maintenance on Water Pipes, Tanks and Toilet Tanks

Respondents were asked if they carried out regular maintenance on their water pipes, tanks, fixtures and toilet tanks.

TABLE 39: RESPONDENTS DETERMINED REGULAR MAINTAINANCE PROCESS (breakdown in total and by gender)

Regular Maintenance	Total	Men	Women
Base	1000	634	366
	%	%	%
Yes	63	60	67
No	37	40	33
Total	100	100	100
Frequency			
Always	13	10	17
Sometimes	6	4	10
Only when needed	44	46	40
s.t.	63	60	67
No maintenance	37	40	33
Total	100	100	100

Household leaks were admitted to be a contributory cause of Jordan's water shortage problems by 10% of respondents, and here we see that 37% of all respondents do not carry out any maintenance at all on their tanks and pipes, and a further 44% only had a look at them when there was a problem. This left only 19% who were truly carrying out regular maintenance, removing sediment from the tank before it could build up, and checking for leaks before they became obvious.

TABLE 40: RESPONDENTS DETERMINED REGULAR MAINTAINANCE PROCESS (breakdown by age)

Regular Maintenance	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Yes	63	56	65	60	64	71
No	37	44	35	40	36	29
Total	100	100	100	100	100	100
Frequency						
Always	13	5	13	14	14	17
Sometimes	6	4	8	8	5	5
Only when needed	44	47	44	38	45	49
s.t.	63	56	65	60	64	71
No maintenance	37	44	35	40	36	29
Total	100	100	100	100	100	1

The habit of regular maintenance was lowest amongst those aged between 18 and 24 years, at only 9%, compared with 19% for all respondents, and 22% for respondents aged 55 years and over. There could be a case for simple plumbing classes, especially for the youngest householders, to help people minimize loss of water around the house, and to keep the tanks clean, and some kind of inspection of tanks could improve water quality and help customer relations.

TABLE 41: RESPONDENTS DETERMINED REGULAR MAINTAINANCE PROCESS (breakdown by location and region)

Regular Maintenance	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	5
Yes	63	62	67	69	54	65	80
No	37	38	33	31	46	35	20
Total	100	100	100	100	100	100	100
Frequency							
Always	13	13	10	9	14	14	13
Sometimes	6	6	9	7	6	4	11
Only when needed	44	43	48	53	34	47	56
s.t.	63	62	67	69	54	65	80
No maintenance	37	38	33	31	46	35	20
Total	100	100	100	100	100	100	100

Rural respondents appeared a little more inclined to carry out regular maintenance than urban respondents, since their first claim was for 67% against 62% for the urban dwellers. Real regular maintenance, however, carried always or at least sometimes, was at 19% for both urban and rural respondents.
By region, 24% in the South region carried out regular maintenance, compared with only 18% in Central region and 16% in the North. Amman fell between the extremes on 20% carrying out maintenance either always or sometimes.

6.1.11 Awareness of Water Saving Methods

Respondents were asked what water saving methods they were aware of. There was no prompting.

TABLE 42: RESPONDENTS DETERMINED AWARENESS LEVEL OF WATER SAVING METHODS (breakdown in total and by gender)

Awareness of Water Saving Methods	Total	Men	Women
	1000	634	366
Methods	%	%	%
Using a bucket instead of a hose	58	56	61
Water saving devices	55	60	47
Fixing leaks immediately	25	29	16
Re-use grey water	21	22	19
Close faucet brushing teeth/washing dishes	16	15	18
Water efficient plumbing products	11	13	6
Collecting rainwater	11	12	9
Washing vegetables in buckets/bowls	10	10	12
Taking shorter showers	10	12	7
Power spray on hose	9	11	5
Brick in toilet tank	7	10	4
Fill washing machine/fewer washes	7	7	7
Water efficient appliances	4	5	2
Drought-tolerant plants/drip irrigation	2	1	3
Other	2	2	2
Don't know	3	2	4
Total	251	267	222

The best known method of water saving was using a bucket instead of a hose, mentioned by 58% of respondents. This awareness was reflected in everyday actions, as we have seen, with 71% of all respondents using a bucket for washing the stairwell, balcony, yard, or front of the house, as opposed to 16% using a hose. Similarly, 22% of all respondents used a bucket to wash their car, as opposed to 6% using a hose.
Women were a little more aware of the water saving potential of buckets than men, by 61% to 56%. Men, however, were ahead of women with water saving devices, by 60% to 47%, reflecting, perhaps, men's interest in gadgets.
The 25% aware of the importance of fixing leaks immediately corresponded fairly closely with the 19% carrying out regular maintenance of their tanks and pipes.

TABLE 43: RESPONDENTS DETERMINED AWARENESS LEVEL OF WATER SAVING METHODS (breakdown by age)

Awareness of Water Saving Methods	Total	18-24	25-34	35-44	45-54	55+
	1000	157	273	240	198	132
Methods	%	%	%	%	%	%
Using a bucket instead of a hose	58	59	58	53	60	63
Water saving devices	55	52	61	59	56	39
Fixing leaks immediately	25	18	26	27	25	25
Re-use grey water	21	19	26	18	19	21
Close faucet brushing teeth/washing dishes	16	10	20	15	15	20
Water efficient plumbing products	11	11	13	13	7	9
Collecting rainwater	11	13	10	9	14	10
Washing vegetables in buckets/bowls	10	9	11	10	10	12
Taking shorter showers	10	6	12	11	9	10
Power spray on hose	9	6	11	6	12	7
Brick in toilet tank	7	4	8	8	9	7
Fill washing machine/fewer washes	7	6	8	5	6	10
Water efficient appliances	4	4	5	3	4	2
Drought-tolerant plants/drip irrigation	2	1	3	0	1	2
Other	2	3	2	2	3	1
Don't know	3	6	2	2	3	4
Total	251	227	276	241	253	242

There were only a few variations by age. Respondents 55+ were less aware of water saving devices, by 39% to 55%, and those 18-24 were less aware than average of the water saving potential of fixing leaks immediately, by 18% to 25%.

TABLE 44: RESPONDENTS DETERMINED AWARENESS LEVEL OF WATER SAVING METHODS (breakdown BY LOCATION AND REGION)

Awareness of Water Saving Methods	Total	Urban	Rural	North	Amman	Central	South
	1000	835	165	269	390	251	90
Methods	%	%	%	%	%	%	%
Using a bucket instead of a hose	58	57	62	63	51	67	51
Water saving devices	55	56	52	55	60	47	58
Fixing leaks immediately	25	26	18	25	21	31	22
Re-use grey water	21	20	25	24	12	25	37
Close faucet brushing teeth/washing dishes	16	16	16	14	12	24	20
Water efficient plumbing products	11	10	15	13	9	10	11
Collecting rainwater	11	10	13	14	12	7	10
Washing vegetables in buckets/bowls	10	11	7	9	11	13	7
Taking shorter showers	10	11	5	7	10	13	7
Power spray on hose	9	9	9	12	4	10	14
Brick in toilet tank	7	8	6	9	8	3	10
Fill washing machine/fewer washes	7	7	4	7	5	10	3
Water efficient appliances	4	4	4	3	5	3	7
Drought-tolerant plants/drip irrigation	2	2	2	2	1	2	0
Other	2	2	2	1	2	4	0
Don't know	3	2	6	3	3	3	2
Total	251	251	246	261	226	272	259

Examining urban and rural respondents, their awareness levels seem remarkably close, except that only 18% of rural respondents mentioned fixing leaks immediately, compared with 26% of urban respondents.
By region, Amman had a low level of awareness of re-using grey water, at 12% against the average of 21%, despite the fact that Amman had as many gardens as the other regions.

6.1.12 What is Being Done Currently to Save Water

Respondents were asked what they were currently doing to save water. The list of methods was read out to respondents.

TABLE 45: RESPONDENTS DETERMINED CURRENT SAVING WATER ACTIVITIES (breakdown in total and by gender)

Currently Being Done to Save Water	Total	Men	Women
	1000	634	366
Methods	%	%	%
Using a bucket instead of a hose	66	64	68
Water saving devices	33	40	21
Fixing leaks immediately	33	41	18
Close faucet brushing teeth/washing dishes	28	31	23
Re-using grey water	21	22	19
Washing vegetables in buckets/bowls	18	19	16
Taking shorter showers	15	16	11
Fill washing machine/fewer washes	14	12	17
Efficient plumbing products	5	6	4
Power spray on hose	5	7	2
Brick in toilet tank	4	4	2
Collecting rain water	3	5	1
Water efficient appliances	2	1	2
Drought-tolerant plants/drip irrigation	1	1	1
Other	2	2	2
s.t.	250	271	207
Not doing anything	4	3	6

Giving respondents prompted awareness of what was meant by methods of saving water yielded appreciable levels of current usage. Using a bucket instead of a hose was done by 66% of respondents, the use of water saving devices by 33%, fixing leaks immediately by 33%, closing the faucet whilst brushing teeth or washing dishes by 28%, re-using grey water by 21%, washing vegetables in a bucket or bowl 18%, taking shorter showers by 15%, and filling the washing machine to reduce the number of washes by 14%.

Comparing men and women, they both had excellent levels of 64% and 68% for using a bucket instead of a hose. Men claimed higher usage levels than women for water saving devices, 40% against 21%, fixing leaks immediately, 41% against 18%, closing the faucet, 31% against 23%, and taking shorter showers, 16% against 11%. Women had 17% making sure the washing machine was full, against 12% for men.

Claims for collecting rain water were checked by seeing if there was a water barrel on the premises, and usage here was 3% in total, with 5% of men and 1% of women claiming to do so.

TABLE 46: RESPONDENTS DETERMINED CURRENT SAVING WATER ACTIVITIES (breakdown by age)

Currently Being Done to Save Water	Total	18-24	25-34	35-44	45-54	55+
	1000	157	273	240	198	132
Methods	%	%	%	%	%	%
Using a bucket instead of a hose	66	63	66	63	67	70
Water saving devices	33	29	36	35	39	20
Fixing leaks immediately	33	28	31	36	31	37
Close faucet brushing teeth/washing dishes	28	32	32	28	22	25
Re-using grey water	21	21	23	18	19	25
Washing vegetables in buckets/bowls	18	17	15	21	16	22
Taking shorter showers	15	11	16	15	14	14
Fill washing machine/fewer washes	14	11	16	13	15	14
Efficient plumbing products	5	6	7	6	4	4
Power spray on hose	5	4	5	3	8	5
Brick in toilet tank	4	2	4	4	4	3
Collecting rain water	3	3	2	5	5	2
Water efficient appliances	2	2	1	2	2	1
Drought-tolerant plants/drip irrigation	1	1	2	1	0	2
Other	2	1	2	3	4	1
s.t.	250	231	258	253	250	245
Not doing anything	4	8	4	3	3	3

The levels of current action were broadly consistent across the age groups, confirming their part in the everyday lives of all the people.

TABLE 47: RESPONDENTS DETERMINED CURRENT SAVING WATER ACTIVITIES (breakdown by location and region)

Currently Being Done to Save Water	Total	Urban	Rural	North	Amman	Central	South
	1000	835	165	269	390	251	90
Methods	%	%	%	%	%	%	%
Using a bucket instead of a hose	66	64	72	68	55	79	68
Water saving devices	33	34	31	35	37	25	37
Fixing leaks immediately	33	33	29	42	23	35	38
Close faucet brushing teeth/washing dishes	28	27	31	36	18	32	36
Re-using grey water	21	20	24	27	13	24	29
Washing vegetables in buckets/bowls	18	18	16	21	13	22	21
Taking shorter showers	15	15	12	15	12	18	14
Fill washing machine/fewer washes	14	14	14	17	9	14	24
Efficient plumbing products	5	5	8	8	3	5	8
Power spray on hose	5	5	3	10	2	3	8
Brick in toilet tank	4	4	3	5	4	1	6
Collecting rain water	3	3	5	6	2	2	3
Water efficient appliances	2	2	1	1	3	1	2
Drought-tolerant plants/drip irrigation	1	1	3	2	1	1	1
Other	2	2	4	3	1	4	2
s.t.	250	247	256	296	196	266	297
Not doing anything	4	4	2	1	9	1	1

Rural respondents had slightly higher levels of usage than urban respondents for re-using grey water, by 24% to 20%, and for collecting rainwater, by 5% to 3%.
By region, Amman recorded notably low levels for using a bucket instead of a hose, fixing leaks immediately, closing the faucet while brushing teeth or washing dishes, re-using grey water, washing vegetables in a bucket or bowl, and even making sure the washing machine had a full load.

6.1.12 Reasons for Not Doing Anything to Save Water

Those very few respondents answering that they were not currently doing anything to save water were asked why this was.

TABLE 48: RESPONDENTS DETERMINED REASONS FOR NOT SAVING WATER (breakdown in total)

Reasons For Not Saving Water	Total
Base	1000
	%
My water consumption is minimal	3
Not convinced water saving methods work	1
Other	N
Total	4

N = Less than 0.5%

Only 4% of respondents qualified for this question. Their main explanation for not doing anything special to save water was that their normal water consumption was anyway minimal, which was an understandable position.

6.1.14. Lapsed Usage of Water Saving Methods

All respondents were asked if there were any water saving methods that they had once used but had subsequently stopped using.

TABLE 49: RESPONDENTS DETERMINED LAPSED USAGE OF WATER SAVING METHODS (breakdown in total)

Water Saving Methods Stopped Using	Total
Base	1000
	%
Lapsed Usage	
Yes	2
Method Stopped Using	
Water saving device	2
Reason for stopping use	
Device was used up	2

The very few respondents involved here did not give much away.

6.1.15. Where Learned About Water Conservation

Respondents were asked where they had learned about water conservation.

TABLE 50: RESPONDENTS DETERMINED WHERE THEY LEARNED ABOUT WATER CONSERVATION (breakdown in total and by gender)

Where Learned About Water Conservation	**Total**	Men	Women
Base	1000	634	366
	%	%	%
Television	61	55	72
Family	19	20	17
Neighbours/Friends	13	13	12
School/University	10	9	11
Newspaper Articles/Advertisements	10	9	10
Media generally	7	9	3
Radio	5	6	4
Water Bills/pamphlets	4	3	5
Other	5	4	5
Don't know	1	0	1
Total	135	128	140

Television was the main source of information about water conservation, being mentioned by 61% of all respondents, 55% of men, and 72% of women.

Word of mouth from family, neighbors and friends provided a source of information for 32% of all respondents, 33% of men, and 29% of women.

Water bills and pamphlets had provided information about water conservation to only 4% of all respondents, 3% of men, and 5% of women. Given the trusted status of the Jordan Water Company-Miyahuna, this was a medium that had to be exploited more fully.

TABLE 51: RESPONDENTS DETERMINED WHERE THEY LEARNED ABOUT WATER CONSERVATION (breakdown by age)

Where Learned About Water Conservation	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Television	61	66	66	53	61	60
Family	19	24	16	18	18	22
Neighbours/Friends	13	12	11	13	15	14
School/University	10	11	10	12	7	8
Newspaper Articles/Advertisements	10	11	7	17	8	5
Media generally	7	6	7	6	8	9
Radio	5	2	4	8	8	5
Water Bills/pamphlets	4	1	3	8	3	3
Other	5	3	3	6	5	7
Don't know	1	1	1	0	1	2
Total	135	137	128	141	134	135

All age groups were reached by television. Word of mouth from family, neighbors and friends accounted for 32% of responses.

TABLE 52: RESPONDENTS DETERMINED WHERE THEY LEARNED ABOUT WATER CONSERVATION (breakdown by location and region)

Where Learned About Water Conservation	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Television	61	61	58	57	61	67	60
Family	19	19	19	21	16	24	12
Neighbours/Friends	13	14	8	16	15	10	4
School/University	10	10	10	12	6	10	21
Newspaper Articles/Advertisements	10	9	12	6	14	8	9
Media generally	7	7	8	8	7	6	7
Radio	5	6	3	4	7	5	2
Water Bills/pamphlets	4	3	7	2	6	2	7
Other	5	5	4	4	3	7	4
Don't know	1	1	1	0	2	0	0
Total	135	135	130	130	137	139	126

Urban and rural respondents both rated television equally highly as a source of information on water conservation, at 61% and 58% respectively. The family was also equally important as a source to the two groups, but neighbors and friends meant more in towns, where they were a source for 14%, but in the country they were a source for only 8%. Water bills and pamphlets were more important for rural respondents than urban, by 7% to 3%.

All four regions had uniformly benefited from television for information on water conservation, but fewer respondents in the South had had information from family, neighbours or friends – only 16% compared with the average of 32%.

6.1.16 Types of Toilet in the Home

Respondents were asked the types of toilet they had in their homes, and whether or not they had a dual flush system. A detailed breakdown of types of toilet shows the following.

TABLE 53: TYPES OF TOILETS IN THE HOUSEHOLD

Types of Toilet in the Home	Total
Base	1000
	%
Pit Latrine only	52
Pit Latrine + Flush	17
Pit Latrine + Pour-Flush Latrine	4
s.t.	73
Flush only	23
Flush + Pour-Flush Latrine	2
Pour-Flush Latrine only	2
Total	100

73% of households had a pit latrine, 52% a pit latrine only, 17% a pit latrine plus a flush toilet, and 4% a pit latrine plus a pour-flush latrine.

42% of households had a flush toilet, 23% a flush toilet only, 17% a flush toilet plus a pit latrine, and 2% a flush toilet plus a pour-flush latrine.

8% of households had a pour-flush latrine, 4% a pour-flush latrine plus a pit latrine, 2% a pour-flush latrine plus a flush toilet, and 2% a pour-flush latrine only.

77% of households had types of toilet that would normally use only small amounts of water – possibly less than a modern dual flush toilet.

TABLE 54: TYPES OF TOILETS IN THE HOUSEHOLD (breakdown in total and by gender)

Types of Toilet in the Home	Total	Men	Women
Base	1000	634	366
	%	%	%
Pit Latrine	73	77	66
Flush Toilet	42	38	47
Pour-Flush Latrine	9	9	8
Total	124	124	121
Dual Flush System			
Yes	6	6	5
No	36	33	42
No Flush Toilet	58	62	53
Total	100	100	100

23% of households had two types of toilet, so the percentages add to more than 100%. 42% of households had a western-style flush toilet, and 6% had a dual flush system.

TABLE 55: TYPES OF TOILETS IN THE HOUSEHOLD (breakdown by age)

Types of Toilet in the Home	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Pit Latrine	73	68	78	65	77	77
Flush Toilet	42	41	37	47	42	42
Pour-Flush Latrine	9	10	8	13	5	9
Total	124	119	123	125	124	128
Dual Flush System						
Yes	6	4	7	5	7	5
No	36	37	30	42	36	37
No Flush Toilet	58	59	63	53	58	58
Total	100	100	100	100	100	100

The pit latrine was used by the vast majority of all age groups: 68% of 18-24's, 78% of 25-34's, 65% of 35-44's, 77% of 45-54's, and 77% of 55+'s. Usage of a dual flush system, at its highest, only reached 7% amongst those between 25 and 34 years of age.

TABLE 56: TYPES OF TOILETS IN THE HOUSEHOLD (breakdown by location and region)

Types of Toilet in the Home	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Pit Latrine	73	70	91	90	53	82	86
Flush Toilet	42	44	28	27	58	31	47
Pour-Flush Latrine	9	9	6	9	11	5	7
Total	124	123	125	126	122	118	140
Dual Flush System							
Yes	6	6	3	5	10	2	8
No	36	38	25	22	48	29	39
No Flush Toilet	58	56	72	73	42	69	53
Total	100	100	100	100	100	100	100

The pit latrine was used by 91% of rural households and 70% of urban households. Flush toilets were more prevalent in urban households than in rural households, by 44% to 28%. The dual flush system on modern flush toilets was 3% in rural households, and 6% in urban households.

By region, usage of flush toilets was higher in Amman than in other regions, with 58% usage in Amman, against the national average of 42%. This had the effect of reducing use of the pit latrine to 53% in Amman, against 90% in the North, 86% in the South, and 82% in the Central region. Use of the pour-flush latrine persisted in Amman in 11% of households, but use of dual flush modern toilets was at its highest in Amman, in 10% of households.

The Northern region stood out for having the highest usage of pit latrines, at 90%, and the lowest usage of flush toilets, at 27%.

6.1.17 Types of Faucet in the Household

Respondents were asked if their faucets had one handle for cold and hot water.

TABLE 57: TYPES OF FAUCET IN THE HOUSEHOLD (breakdown in total and by gender)

One-Handle Faucets	**Total**	Men	Women
Base	1000	634	366
	%	%	%
All faucets	13	12	16
Some faucets	17	18	16
None	70	70	68
Total	100	100	100

13% of all households had all of their faucets of the one-handle, mixer type, while a further 17% of households had some faucets of this type, leaving 70% of households with the two handles faucets.

TABLE 58: TYPES OF FAUCET IN THE HOUSEHOLD (breakdown by age)

One-Handle Faucets	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
All faucets	13	11	11	15	18	10
Some faucets	17	17	16	23	15	14
None	70	72	73	62	67	76
Total	100	100	100	100	100	100

The highest ownership of one-handle faucets was amongst those aged between 45 and 54 years, at 18%, and the lowest amongst those 55 years and over, at 10%.

TABLE 59: TYPES OF FAUCET IN THE HOUSEHOLD (breakdown by location and region)

One-Handle Faucets	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
All faucets	13	14	10	8	21	10	7
Some faucets	17	18	11	10	31	7	7
None	70	68	79	82	48	83	86
Total	100	100	100	100	100	100	100

There were at least some one-handle faucets in 32% of urban homes, but they were present in only 21% of rural homes.

By region, 52% of homes in Amman had some one-handle faucets, but in the South they had been acquired by only 14% of homes, in the Central region by only 17% of homes, and in the North by only 18% of homes.

6.1.18 Automatic Washing Machines

Respondents were asked if they had an automatic washing machine, whether it was water-efficient, and, if so, how they knew that it was water-efficient.

TABLE 60: TE USE OF WASHING MACHINES IN THE HOUSEHOLD (breakdown in total and by gender)

Automatic Washing Machines	**Total**	Men	Women
Base	1000	634	366
Owning	%	%	%
Own	27	29	24
Don't own	73	71	76
Total	100	100	100
Water Efficient			
Yes	11	12	8
No	16	17	16
s.t.	27	29	24
How Know Water Efficient			
Through usage	7	8	5
From sales person	2	2	1
Written on machine	1	1	1
From catalogue	1	1	1
s.t.	11	12	8

27% of all respondents owned an automatic washing machine, 11% had a water-efficient machine, and this 11% gave cogent reasons for knowing that their machine was water-efficient: 7% had confirmed that it was through usage, 2% had the word of the sales person, 1% could see it written on their machine, and 1% had read it in the catalogue.

TABLE 61: THE USE OF WASHING MACHINES IN THE HOUSEHOLD (breakdown by age)

Automatic Washing Machines	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
Owning	%	%	%	%	%	%
Own	27	29	25	32	23	27
Don't own	73	71	75	68	77	73
Total	100	100	100	100	100	100
Water Efficient						
Yes	11	10	12	12	10	10
No	16	19	13	20	13	17
s.t.	27	29	25	32	23	27
How Know Water Efficient						
Through usage	7	6	9	8	6	7
From sales person	2	2	1	2	2	1
Written on machine	1	1	1	1	1	1
From catalogue	1	1	1	1	1	1
s.t.	11	10	12	12	10	10

Owning an automatic washing machine was one area where 18-24's did not lag behind older age groups as they mostly did. 29% of them owned an automatic compared with the average of 27%, and only the 35-44's of the more established older age groups had higher ownership, with 32%.

TABLE 62: THE USE OF WASHING MACHINES IN THE HOUSEHOLD (breakdown by location and region)

Automatic Washing Machines	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
Owning	%	%	%	%	%	%	%
Own	27	29	18	17	39	21	22
Don't own	73	71	82	83	61	79	78
Total	100	100	100	100	100	100	100
Water Efficient							
Yes	11	11	8	10	12	10	11
No	16	18	10	7	27	11	11
s.t.	27	29	18	17	39	21	22
How Know Water Efficient							
Through usage	7	7	7	8	5	9	9
From sales person	2	2	1	1	3	1	1
Written on machine	1	1	0	0	2	0	1
From catalogue	1	1	0	1	2	0	0
s.t.	11	11	8	10	12	10	11

Ownership of an automatic washing machine was higher in urban than in rural areas, by 29% to 18%. There was less of a gap between them with water-efficient machines, however, with 11% ownership in urban areas, and 8% ownership in rural areas.

Amman stood out from the other regions with 39% ownership of automatic washing machines, against the average of 27%, but there was little between the regions when it came to water-efficient machines, with 12% ownership in Amman, 11% in the South, and 10% in Central and the North.

6.1.19 How Much Paid for Water Each Three Months

Respondents were asked how much, on average, they paid for their water each three month billing cycle.

TABLE 63: WATER BILL COST QUARTERLY (breakdown in total and by gender)

How Much Paid for Water	**Total**	Men	Women
Base	1000	634	366
Per 3-Month Bill Cycle	%	%	%
< 5JD	4	4	4
5JD – 8JD	21	20	23
9JD – 12JD	21	21	19
13JD – 20JD	27	27	26
21JD –30JD	13	13	14
31JD – 40JD	6	7	5
41JD – 50JD	4	4	5
51JD – 70JD	1	1	1
71JD – 100JD	2	2	2
> 100JD	1	1	1
Total	100	100	100
Mean	19JD	19JD	19JD

The average three-monthly water bill for all households was around 19JD. 27% of households were paying between 13JD and 20JD, close to this average figure, 46% were paying less than 12JD, and 27% were paying more than 21JD.

TABLE 64: WATER BILL COST QUARTERLY (breakdown by age)

How Much Paid for Water	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
Per 3-Month Bill Cycle	%	%	%	%	%	%
< 5JD	4	4	5	4	2	4
5JD – 8JD	21	15	23	23	21	20
9JD – 12JD	21	21	20	23	21	16
13JD – 20JD	27	26	28	21	29	32
21JD –30JD	13	17	13	14	11	11
31JD – 40JD	6	6	5	7	7	8
41JD – 50JD	4	4	5	5	6	4
51JD – 70JD	1	1	0	1	0	2
71JD – 100JD	2	3	1	1	2	2
> 100JD	1	3	0	1	1	1
Total	100	100	100	100	100	100
Mean	19JD	22JD	17JD	18JD	19JD	20JD

All age groups were clustered tightly around the average bill of 19JD, though it was perhaps surprising to see the 18-24's with the highest average water bill of 22JD.

TABLE 65: WATER BILL COST QUARTERLY (breakdown by location and region)

How Much Paid for Water	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
Per 3-Month Bill Cycle	%	%	%	%	%	%	%
< 5JD	4	3	7	5	2	6	6
5JD – 8JD	21	20	27	24	12	27	33
9JD – 12JD	21	20	24	21	19	23	21
13JD – 20JD	27	27	21	24	30	23	26
21JD –30JD	13	14	10	12	17	11	7
31JD – 40JD	6	7	5	5	9	6	2
41JD – 50JD	4	5	5	6	6	2	4
51JD – 70JD	1	1	1	1	1	0	0
71JD – 100JD	2	2	0	1	3	1	1
> 100JD	1	1	0	1	1	1	0
Total	100	100	100	100	100	100	100
Mean	19JD	20JD	15JD	18JD	22JD	16JD	14JD

The average urban water bill was higher than the rural average by 20JD to 15JD.
By region, Amman had the highest average water bill with 22JD, followed by the North with 18JD, Central with 16JD, and the South with 14JD.

6.1.20 How the Water Bill Is Calculated

Respondents were asked how their water bill was calculated.

TABLE 66: HOW THE WATER BILL IS CALCULATED (breakdown in total and by gender)

How The Water Bill Is Calculated	Total	Men	Women
Base	1000	634	366
	%	%	%
Increasing Block – m3	47	62	20
Linear Increase	24	17	34
Flat System	1	0	1
Don't know	28	21	45
Total	100	100	100

72% of respondents indicated that they knew how their water bill was calculated, 47% classifying themselves under 'Increasing Block – m3', 24% under 'Linear Increase', and 1% under 'Flat System'. The fact that men's and women's replies differed so drastically, however, suggests that they cannot all be right. 45% of women and 21% of men admitted that they did not know how their water bill was calculated, adding to a sense of concern about the technical nature of the names of the systems of calculation. If people are expected to reduce their consumption of water, they should be enabled to monitor what they are doing from their bills with confidence.

TABLE 67: HOW THE WATER BILL IS CALCULATED (breakdown by age)

How The Water Bill Is Calculated	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Increasing Block – m3	47	49	48	45	47	46
Linear Increase	24	18	18	30	25	28
Flat System	1	0	1	0	1	0
Don't know	28	33	33	25	27	26
Total	100	100	100	100	100	100

Not knowing how the water bill was calculated was, surprisingly, highest amongst the 18-24's and the 25-34's, each at 33%.

TABLE 68: HOW THE WATER BILL IS CALCULATED (breakdown by location and region)

How The Water Bill Is Calculated	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Increasing Block – m3	47	45	52	54	42	48	47
Linear Increase	24	24	19	21	26	22	23
Flat System	1	1	0	0	1	0	0
Don't know	28	28	29	25	31	30	30
Total	100	100	100	100	100	100	100

Urban and rural respondents had fairly consistent levels, both for the type of bill calculation they had, and for not knowing how the bill was calculated.

In the North, where there was the highest incidence of Increasing Block – m3, at 54% against the average of 47%, there was also the lowest incidence of not knowing, at 25% against the average of 28%. This could be significant given the importance of the increasing block system and its ability to deliver increased access and in water supply provision. Everyone should understand that in an increasing block tariff system, the first 5 to 10 m3 have a low, subsidized tariff and the following blocks have an increasingly higher tariff. The rationale for the system is to promote water saving practices with all households and to ensure that low-income households can afford to use an amount of water that is necessary to keep themselves and their environment healthy, typically 50 liters/per capita/day.

6.1.21 Abu Tawfir

Respondents were asked if they had heard of the cartoon character, Abu Tawfir, where the character had been seen, the main messages advocated in the campaign, and the extent to which the campaign had affected behavior in relation to water conservation.

TABLE 69: HOW EFFECTIVE WAS ABU TAWFIR CAMPAIGN (breakdown in total and by gender)

Abu Tawfir	**Total**	Men	Women
Base	1000	634	366
	%	%	%
Heard of	18	13	25
Where			
Jordan TV	15	11	21
Newspapers	4	3	5
Al Waseet/Al Mumtaz	1	0	2
Mupis	1	1	0
Other	1	0	2
s.t.	22	15	30
Main Messages			
Use water saving devices	10	7	14
Use a bucket, not a hose	4	2	9
Reduce household water consumption	3	3	4
Use a power spray on a hose	1	1	0
Other	1	0	1
s.t.	19	13	28
Affect Water Conservation Behavior			
A great deal	7	4	12
A fair amount	8	7	8
Not at all	3	2	5
s.t.	18	13	25
Not heard of Abu Tawfir	82	87	75
Total	100	100	100

Abu Tawfir had been heard of by 18% of all respondents. There was a distinct female bias to this awareness, with 25% of women having heard of the character, but only 13% of men.

Abu Tawfir had been seen on Jordan Television by 15% of all respondents, 21% of women, and 11% of men. In print media, the character had been seen by 7% of all respondents, 9% of women, and 4% of men.

The main message taken from the Abu Tawfir campaign was the use of water saving devices, recalled by 10% of all respondents, 14% of women, and 7% of men. To use a bucket instead of a hose was recalled by 4% of all respondents, 9% of women, and 2% of men. The more general message of reducing household water consumption was recalled by 3% of all respondents, 4% of women, and 3% of men.

15% of all respondents answered that their behavior in regard to water conservation had been affected to some extent by the campaign, 20% of women thinking this, and 11% of men.

TABLE 70: HOW EFFECTIVE WAS ABU TAWFIR CAMPAIGN (breakdown by age)

Abu Tawfir	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%					
Heard of	18	24	22	15	15	11
Where						
Jordan TV	15	22	19	13	10	9
Newspapers	4	4	5	2	5	2
Al Waseet/Al Mumtaz	1	0	1	1	2	0
Mupis	1	0	1	0	0	1
Other	1	1	1	1	1	0
s.t.	22	27	27	17	18	12
Main Messages						
Use water saving devices	10	11	12	10	9	4
Use a bucket, not a hose	4	6	5	3	4	5
Reduce household water consumption	3	6	5	2	2	1
Use a power spray on a hose	1	0	1	1	0	0
Other	1	1	1	0	0	1
s.t.	19	24	24	16	15	11
Affect Water Conservation Behavior						
A great deal	7	8	8	5	6	6
A fair amount	8	12	10	7	6	3
Not at all	3	4	4	3	3	2
s.t.	18	24	22	15	15	11
Not heard of Abu Tawfir	82	76	78	85	85	89
Total	100	100	100	100	100	100

Awareness of Abu Tawfir declined steadily by age, from 24% among the 18-24's down to 11% among the 55+'s.This pattern was repeated throughout, with recall of seeing the campaign on Jordan TV declining from 22% among the 18-24's to 9% among the 55+'s, recall of using water saving devices from 11% among the 18-24's to 4% among the 55+'s, and a positive effect on behavior from 20% among the 18-24's to 9% among the 55+'s.

TABLE 71: HOW EFFECTIVE WAS ABU TAWFIR CAMPAIGN (breakdown by location an region)

Abu Tawfir Campaign	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Heard of	18	17	22	15	23	12	18
Where							
Jordan TV	15	14	18	13	19	11	14
Newspapers	4	4	4	2	6	2	1
Al Waseet/Al Mumtaz	1	1	1	0	1	0	4
Mupis	1	0	1	0	1	0	0
Other	1	1	1	1	1	0	0
s.t.	22	20	25	16	28	13	19
Main Messages							
Use water saving devices	10	10	11	8	13	5	14
Use a bucket, not a hose	4	4	8	4	5	3	7
Reduce household water consumption	3	3	3	3	4	3	2
Use a power spray on a hose	1	0	2	1	1	0	0
Other	1	1	0	1	0	1	0
s.t.	19	18	24	17	23	12	23
Affect Water Conservation Behavior							
A great deal	7	6	9	7	7	4	11
A fair amount	8	8	8	5	11	6	4
Not at all	3	3	5	3	5	2	3
s.t.	18	17	22	15	23	12	18
Not heard of Abu Tawfir	82	83	78	85	77	88	82
Total	100	100	100	100	100	100	100

Abu Tawfir achieved slightly higher awareness among rural respondents than urban respondents, by 22% to 17%. Rural respondents were consequently more likely to have seen Abu Tawfir on Jordan Television, by 18% to 14%, more likely to have taken messages from what they had seen, by 24% to 18%, and more likely to have had their behavior positively affected, by 17% to 14%.
Respondents in the Amman region had the highest awareness, at 23%, the highest television viewing of the character, at 19%, and the most improvement in behavior, at 18%.

6.1.22 Other Campaigns Recalled

Those who heard of Abu Tawfir were asked, without prompts, to name any other water conservation campaigns that they recalled.

TABLE 72: OTHER CAMPAIGNS RECALLED (breakdown in total and by gender)

Other Campaigns Recalled	**Total**	Men	Women
Base	1000	634	366
	%	%	%
Al Amm Ghafel/Ghafel & Hamdi	2	2	2
Farfoush	1	1	1
Zain	1	0	1
Other	2	1	5
s.t.	6	4	9
Don't know	4	3	7
No other campaigns recalled	90	93	86
Total	100	100	100

Recall of other water conservation campaigns was very low, limited to, at most, 10% of all respondents, and, more realistically, 6%.

There was slightly better recall of other campaigns by women than by men, by 16% to 7%, with campaigns named by 9% and 4% respectively.

TABLE 73: OTHER CAMPAIGNS RECALLED (breakdown by age)

Other Campaigns Recalled	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Al Amm Ghafel/Ghafel & Hamdi	2	4	3	1	1	3
Farfoush	1	1	1	1	1	0
Zain	1	1	1	0	0	0
Other	2	3	2	1	4	2
s.t.	6	9	7	3	6	5
Don't know	4	4	4	6	4	2
No other campaigns recalled	90	87	89	91	90	93
Total	100	100	100	100	100	100

There was slightly more recall of other campaigns by younger rather than older respondents, with 9% of 18-24's naming campaigns, but only 5% of 55+'s doing so.

TABLE 74: OTHER CAMPAIGNS RECALLED (breakdown by location and region)

Other Campaigns Recalled	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Al Amm Ghafel/Ghafel & Hamdi	2	2	5	3	2	1	2
Farfoush	1	1	1	1	1	0	2
Zain	1	0	1	1	1	0	0
Other	2	2	4	1	2	2	8
s.t.	6	5	11	6	6	3	12
Don't know	4	4	5	4	5	4	3
No other campaigns recalled	90	91	84	90	89	93	85
Total	100	100	100	100	100	100	100

Other water conservation campaigns were named by 11% of rural respondents, but by only 5% of urban respondents.

In the South there was the anomaly of 8% of respondents recalling campaigns other than those named here, but essentially the finding everywhere was around 90% of respondents could not recall any other water conservation campaigns.

6.1.23 What Would Encourage Voluntary Water Saving

Respondents were asked, without prompts, what would encourage them voluntarily to start using water saving methods.

TABLE 75: HOW TO ENCOURAGE VOLUNTARY WATER SAVING (breakdown in total and by gender)

Encourage Voluntary Water Saving	**Total**	Men	Women
Base	1000	634	366
	%	%	%
Inform us of water scarcity	36	36	37
Increase price of water	26	25	27
Advertise water saving devices	7	8	5
Personal conviction	7	8	5
Reduce water supply	6	6	7
Free water saving devices	5	3	8
Religious motivation	5	5	5
Make water saving money saving	4	5	3
Other	4	5	3
s.t.	100	101	100
Don't know	6	5	8
Total	106	106	108

The most popular method of encouraging voluntary water saving was to inform people about the scarcity of water, mentioned by 36% of all respondents. The second method suggested was to increase the price of water, mentioned by 26% of all respondents; a method that would effectively remove the voluntary element from any water saving that ensued. A related suggestion was to make water saving money saving, made by 4%, one that implied inducement, perhaps, but one which would have the same result of reducing consumption by avoiding higher expenditure. Advertising water saving devices and giving them away were mentioned by 7% and 5% respectively, making this the third area of encouragement.

Other suggestions were to rely on personal conviction for the desired water saving, the conviction having been instilled by the information and education supplied as a result of the most popular suggestion. In a similar vein, there was a suggestion by 5% to call on religious motivation to spur believers to greater water saving, which could be fitting given the gravity of the situation. A notable absence from this spontaneous list was any mention of the need to leave a viable water supply for Jordan's children. Men and women gave the same replies, with almost exactly the same weight given to each of them.

TABLE 76: HOW TO ENCOURAGE VOLUNTARY WATER SAVING (breakdown by age)

Encourage Voluntary Water Saving	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Inform us of water scarcity	36	38	36	39	38	28
Increase price of water	26	24	27	25	25	26
Advertise water saving devices	7	6	6	8	6	9
Personal conviction	7	6	4	8	8	8
Reduce water supply	6	3	9	5	6	9
Free water saving devices	5	8	4	6	5	4
Religious motivation	5	3	4	4	6	9
Make water saving money saving	4	4	6	2	5	3
Other	4	5	4	3	4	5
s.t.	100	97	100	100	103	101
Don't know	6	9	5	6	6	5
Total	106	106	105	106	109	106

Only the 55+'s seemed to deviate a little from the other age groups. They had 28% mentioning the need for information, against the average of 36%, but 9% mentioning religious faith, against the average of 5%.

TABLE 77: HOW TO ENCOURAGE VOLUNTARY WATER SAVING (breakdown by location and region)

Encourage Voluntary Water Saving	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Inform us of water scarcity	36	37	32	33	36	38	41
Increase price of water	26	25	27	25	29	21	23
Advertise water saving devices	7	7	5	6	8	6	6
Personal conviction	7	7	6	10	5	5	8
Reduce water supply	6	6	11	6	6	7	9
Free water saving devices	5	6	2	4	7	5	2
Religious motivation	5	4	8	10	2	3	7
Make water saving money saving	4	4	4	6	3	4	4
Other	4	4	2	2	3	8	2
s.t.	100	100	97	102	99	97	102
Don't know	6	5	12	7	5	8	7
Total	106	105	109	109	104	105	109

Replies were remarkably consistent between urban and rural and across the regions.

6.1.24 Behavior-Changing Strategies

Respondents were asked whether they thought four possible strategies would change behavior in relation to water conservation. The strategies were:

1. Water inspectors based in neighborhoods would soon pass out fines for excess water use in gardens and driveways.
2. The cost of water would increase if all people did not work together to reduce consumption.
3. They were told their present water bill might be reduced if they took some simple, cheap measures that did not change their lifestyle.
4. They were told how much it costs the government to clean and give them good water.

TABLE 78: FOUR POSSIBLE BEHAVIOR-CHANGING STRATEGIES IN RELATION TO WATER CONSERVATION RANKED BY RESPONDENTS (breakdown in total and by gender)

Behavior-Changing Strategies	**Total**	Men	Women
Base	1000	634	366
Would people change their behavior if...	%	%	%
Water Inspector fines	88	87	90
Increase cost of water if no reduction	78	76	80
Reduce water bill	70	68	73
Government inform on cost of good water	57	61	51

Water inspector fines for excess use of water in gardens and driveways received the highest endorsement from 88% of all respondents. This threat may have struck fear in people because of their own water use in the gardens and driveways, or it may have appealed to respondents because they envisaged people other than themselves being punished in this very public way. Most respondents were already using buckets for cleaning the car, and the front of the house, and for irrigating the garden, so they should have had no cause for fear.

Increasing the cost of water if there was no reduction in consumption gave some hope of avoiding the increased cost, but only if everyone reduced consumption, so this would add social pressure to the financial threat and therefore be doubly likely to change behavior.

The lure of a reduced water bill for adopting water saving methods possibly carried less menace than the first two strategies, and the 'might be reduced' may have reduced its impact.

The strategy of the government informing people of the cost of giving people good water was rated below the other three strategies, possibly because it was thought that the government was obliged to meet such costs. Anyway, this strategy received 31 percentage points less than the neighborhood water inspectors.

TABLE 79: FOUR POSSIBLE BEHAVIOR-CHANGING STRATEGIES IN RELATION TO WATER CONSERVATION RANKED BY RESPONDENTS (breakdown by age)

Behavior-Changing Strategies	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
Would people change their behavior if...	%	%	%	%	%	%
Water Inspector fines	88	93	86	88	87	90
Increase cost of water if no reduction	78	81	76	82	73	77
Reduce water bill	70	67	67	75	71	71
Government inform on cost of good water	57	55	59	51	59	67

All age groups ranked the four strategies in the same order and gave them the same high levels of endorsement that they would, indeed, change behavior.

TABLE 80: FOUR POSSIBLE BEHAVIOR-CHANGING STRATEGIES IN RELATION TO WATER CONSERVATION RANKED BY RESPONDENTS (breakdown by location and region)

Behavior-Changing Strategies	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
Would people change their behavior if...	%	%	%	%	%	%	%
Water Inspector fines	88	88	91	91	86	88	91
Increase cost of water if no reduction	78	78	76	71	82	76	80
Reduce water bill	70	72	60	63	81	72	41
Government inform on cost of good water	57	58	56	71	48	52	70

The water inspectors and the threat of an increase in the price of water were strongly supported everywhere, but respondents in Amman were particularly attracted to the idea of a reduced water bill, and for some reason a little cool about being informed of the true cost of water.

6.1.25 Attributes of Water Saving Technologies

Respondents were asked which attributes of new water saving technologies attracted their interest most.

TABLE 81: ATTRIBUTES OF NEW WATER SAVING TECHNOLOGIES ATTRACTED THE RESPONDENTS INTEREST (breakdown in total and by gender)

Water Saving Technologies	**Total**	Men	Women
Base	1000	634	366
Attractive Attributes	%	%	%
1. Cheap or free	32	29	40
2. Easy to use	19	16	25
3. Easily available	14	14	14
4. Tested	11	10	11
5. Recommended by royalty	10	15	2
6. Recommended by friends and family	7	8	5
7. Modern	7	8	3
Total	100	100	100

Cheap or free was a winning attribute by a good margin, supported by 32% of all respondents, 29% of men, and 40% of women.

TABLE 82: ATTRIBUTES OF NEW WATER SAVING TECHNOLOGIES ATTRACTED THE RESPONDENTS INTEREST (breakdown by age)

Water Saving Technologies	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
Attractive Attributes	%	%	%	%	%	%
1. Cheap or free	32	28	34	36	31	27
2. Easy to use	19	24	19	20	14	21
3. Easily available	14	15	11	9	19	17
4. Tested	11	12	11	10	10	13
5. Recommended by royalty	10	8	9	13	11	11
6. Recommended by friends and family	7	8	9	5	7	7
7. Modern	7	5	7	7	8	4
Total	100	100	100	100	100	100

Cheap or free appealed most to all ages.

TABLE 83: ATTRIBUTES OF NEW WATER SAVING TECHNOLOGIES ATTRACTED THE RESPONDENTS INTEREST (breakdown by location and region)

Water Saving Technologies	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
Attractive Attributes	%	%	%	%	%	%	%
1. Cheap or free	32	32	32	28	39	29	29
2. Easy to use	19	19	19	21	18	20	16
3. Easily available	14	14	11	11	14	17	13
4. Tested	11	12	6	12	7	13	11
5. Recommended by royalty	10	9	19	13	9	7	18
6. Recommended by friends and family	7	7	8	6	8	7	10
7. Modern	7	7	5	9	5	7	3
Total	100	100	100	100	100	100	100

Rural respondents stood out for their greater endorsement of royal recommendation than urban respondents, by 19% to 9%. Royal recommendation also appealed more in the South than other regions, by 18% to the average of 10%.

6.1.26 Agreement with Proposed Government Action

Respondents were asked the degree to which they agreed or disagreed with two possible courses of government action

'The government should enforce penalties on people who misuse water.'

'The government must increase water tariffs to reduce water consumption.'

TABLE 84: RESPONDENTS AGREE/DISAGREE WITH GOVERNMNET ACTION (breakdown in total and by gender)

Proposed Government Action	**Total**	Men	Women
Base	1000	634	366
	%	%	%
1. Government Penalties			
Strongly agree	63	64	61
Somewhat agree	27	24	31
Somewhat disagree	4	6	1
Strongly disagree	5	6	6
Don't know	1	0	1
Total	100	100	100

2. Increase Water Tariffs			
Strongly agree	6	7	5
Somewhat agree	21	24	17
Somewhat disagree	13	16	8
Strongly disagree	58	52	68
Don't know	2	1	2
Total	100	100	100

Fully 90% of all respondents agreed that the government should enforce penalties on people who misuse water. Clearly few of that 90% believed that they themselves would be the target of these penalties because their mostly careful use of water made them far from misuses.

In contrast, 71% of all respondents disagreed with the proposal that the government must increase water tariffs to reduce water consumption. Respondents again clearly thought that their own consumption of water was quite minimal, and that they would be incurring higher water costs with little scope for reducing water consumption.

Women and men were equally strong in their agreement with penalties and their disagreement with increased tariffs.

TABLE 85: RESPONDENTS AGREE/DISAGREE WITH GOVERNMNET ACTION (breakdown by age)

Proposed Government Action	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
1. Government Penalties						
Strongly agree	63	67	65	61	61	61
Somewhat agree	27	26	24	29	24	31
Somewhat disagree	4	3	3	5	4	3
Strongly disagree	5	4	7	5	10	4
Don't know	1	0	1	0	1	1
Total	100	100	100	100	100	100
2. Increase Water Tariffs						
Strongly agree	6	7	6	5	7	9
Somewhat agree	21	25	22	24	16	20
Somewhat disagree	13	16	12	15	13	11
Strongly disagree	58	48	59	55	63	59
Don't know	2	4	1	1	1	1
Total	100	100	100	100	100	100

All age groups were strong in their agreement with penalties and their disagreement with increased tariffs. The 18-24's were least strong in their disagreement with increased tariffs, but they still recorded 64% against and 32% for the proposal.

TABLE 86: RESPONDENTS AGREE/DISAGREE WITH GOVERNMNET ACTION (breakdown by location and region)

Proposed Government Action	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
1. Government Penalties							
Strongly agree	63	61	75	68	54	66	80
Somewhat agree	27	29	15	21	35	22	15
Somewhat disagree	4	4	2	2	4	5	1
Strongly disagree	5	6	7	9	6	6	3
Don't know	1	0	1	0	1	1	1
Total	100	100	100	100	100	100	100
2. Increase Water Tariffs							
Strongly agree	6	6	7	7	6	5	8
Somewhat agree	21	22	20	20	26	11	30
Somewhat disagree	13	13	16	11	14	18	4
Strongly disagree	58	58	55	61	53	62	58
Don't know	2	1	2	1	1	4	0
Total	100	100	100	100	100	100	100

Urban and rural respondents both recorded 90% agreement with penalties, and 59% and 57% disagreement with increased tariffs. Similarly, the regions were united in the levels of their agreement and disagreement.

6.1.27 Other Methods of Encouraging Reduced Water Consumption

Respondents who disagreed with either of the two government proposals were asked what, other than increases in tariffs and enforcing penalties, could be done to encourage people to reduce their water consumption. There were no prompts.

TABLE 87: OTHER METHODS OF ENCOURAGING REDUCED WATER CONSUMPTION (breakdown in total and by gender)

Other Encouragements To Reduce Consumption	**Total**	Men	Women
Base	1000	634	366
	%	%	%
Increase awareness of the problem through mosques	38	37	39
Decrease the water supply	15	13	19
Provide cheap water saving devices	8	6	9
Strict government supervision of water	5	6	5
Increase cost of high consumption	2	3	1
Other	2	2	1
Don't Know	4	4	5
s.t.	74	71	79
Not asked	26	29	21
Total	100	100	100

Those disagreeing with either of the two government proposals – mostly the increased water tariffs – thought the mosque should be used to increase awareness of the severity of the water shortage problem and encourage reduced water consumption through the force of its moral authority. This was supported by 38% of all respondents, 37% of men, and 39% of women.

Decreasing the water supply was surprisingly proposed by 15%, who thought one supply of water a week instead of two could be preferable to higher tariffs. 13% of men and 19% of women suggested this.
Cheap water saving devices could have been an easy option, perhaps, but only 8% suggested this.

TABLE 88: OTHER METHODS OF ENCOURAGING REDUCED WATER CONSUMPTION (breakdown by age)

Other Encouragements To Reduce Consumption	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Increase awareness of the problem through mosques	38	36	37	35	42	41
Decrease the water supply	15	17	16	14	15	13
Provide cheap water saving devices	8	3	8	10	9	6
Strict government supervision of water	5	4	5	4	8	8
Increase cost of high consumption	2	1	3	4	1	0
Other	2	0	1	3	2	2
Don't Know	4	5	5	5	4	2
s.t.	74	66	75	75	81	72
Not asked	26	34	25	25	19	28
Total	100	100	100	100	100	100

All age groups showed high support for the mosque to lend its weight to reduce water consumption through teaching and argument, with the 45-54's and the 55+'s having the highest levels of support with 42% and 41% respectively.

TABLE 89: OTHER METHODS OF ENCOURAGING REDUCED WATER CONSUMPTION (breakdown by location and region)

Other Encouragements To Reduce Consumption	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Increase awareness of the problem through mosques	38	39	30	38	41	37	29
Decrease the water supply	15	14	18	17	13	18	10
Provide cheap water saving devices	8	7	8	6	6	11	10
Strict government supervision of water	5	5	7	7	3	7	7
Increase cost of high consumption	2	2	2	2	2	2	2
Other	2	1	3	2	2	1	1
Don't Know	4	3	8	4	3	6	6
s.t.	74	71	76	76	70	82	65
Not asked	26	29	24	24	30	18	35
Total	100	100	100	100	100	100	100

Rural respondents showed slightly less support for the mosque than urban respondents, by 30% to 39%, but it remained their top suggestion. Similarly, in the South there was apparently less support for the mosque than in the other regions, but there were fewer respondents answering this question there because fewer had disagreed with the government proposals, and, again, it was still their best supported suggestion.

6.1.28 Trusted Sources of Water Conservation Information

Respondents were asked which sources they trusted the most to get information on water conservation. No prompts were given.

TABLE 90: TRUSTED SOURCES OF WATER CONSERVATION INFORMATION (breakdown in total and by gender)

Trusted Sources of Information	Total	Men	Women
Base	1000	634	366
	%	%	%
Ministry of Water & Irrigation	48	47	49
Jordan Water Company-Miyahuna	21	17	28
Family/Friends/Neighbours	14	18	9
TV/Radio/Newspapers	8	9	6
Plumber	4	3	5
Northern Governorate Water Administration	2	3	0
Other	2	1	2
Don't Know	1	2	1
Total	100	100	100

The most trusted source of information about water conservation was the Ministry of Water and Irrigation, supported by 48% of all respondents. The second was the Jordan Water Company-Miyahuna, with 21% of all respondents. Below these came family, friends and neighbors, with 14%, and then a gap down to TV, radio and newspapers, with 8%.

Men and women gave the Ministry of Water and Irrigation even weight of support, with 47% and 49% respectively. Women were notably more supportive than men of the Jordan Water Company – Miyahuna, by 28% to 17%. Conversely, men reposed more trust than women in information from family, friends and neighbors, by 18% to 9%.

Although only the most trusted source for 3% of men and 5% of women, the plumber was an interesting choice, and possibly one worth pursuing.

TABLE 91: TRUSTED SOURCES OF WATER CONSERVATION INFORMATION (breakdown by age)

Trusted Sources of Information	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Ministry of Water & Irrigation	48	48	50	46	47	46
Jordan Water Company-Miyahuna	21	22	19	21	22	21
Family/Friends/Neighbours	14	10	12	18	14	17
TV/Radio/Newspapers	8	8	9	8	6	5
Plumber	4	4	5	2	5	3
Northern Governorate Water Administration	2	3	2	1	2	3
Other	2	3	2	1	2	2
Don't Know	1	2	1	3	2	3
Total	100	100	100	100	100	100

There were no real variations by age. Trust in the Ministry of Water and Irrigation extended unwaveringly across the age bands, as did trust in the Jordan Water Company – Miyahuna, though at a lower level.

TABLE 92: TRUSTED SOURCES OF WATER CONSERVATION INFORMATION (breakdown by location and region)

Trusted Sources of Information	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Ministry of Water & Irrigation	48	48	45	47	41	55	60
Jordan Water Company-Miyahuna	21	23	11	12	35	11	14
Family/Friends/Neighbors	14	13	22	17	12	16	9
TV/Radio/Newspapers	8	7	9	11	6	7	7
Plumber	4	4	3	3	3	6	2
Northern Governorate Water Administration	2	2	4	6	0	0	2
Other	2	1	3	1	2	2	2
Don't Know	1	2	3	3	1	3	4
Total	100	100	100	100	100	100	100

Trust in the Ministry of Water and Irrigation was high among both urban and rural respondents, at 48% and 45% respectively. The Jordan Water Company – Miyahuna, however, was comparatively well trusted by urban respondents, at 23%, but less so by rural respondents, at only 11%. Rural respondents compensated for this by having high trust in word of mouth information from family, friends and neighbours, with 22%, against 13% among urban respondents.

By region, while the Ministry of Water and Irrigation was well trusted in all regions – as high as 60% in the South – the Jordan Water Company – Miyahuna drew its support mainly from Amman, where it was the most trusted source for 35%.

6.2 Annex B: Main findings of the energy use

6.2.1 Energy Sources in Jordan

Respondents were asked, unprompted, to name the energy sources in Jordan that they were aware of.

TABLE 93: RESPONDENTS DETERMINING ENERGY SOURCES OF JORDAN (breakdown in total and by gender)

Energy Sources in Jordan	**Total**	Men	Women
Base	1000	634	366
	%	%	%
Electricity	77	75	81
Oil – Petrol	49	48	50
Solar Energy	47	35	67
Wind Power	17	17	19
Other	2	2	2
Don't know	1	1	1
Total	193	178	220

There was some confusion here, with electricity named as a source of energy in Jordan by 77% of all respondents. Gas, on the other hand, was omitted from the list, despite the fact that the country does produce about 30 million cubic feet per day of natural gas. Recent news of importing natural gas from Egypt, however, may have established gas as an imported fuel. Oil was included by 49% of all respondents, and solar energy was mentioned by 47% of all respondents, and wind power by 17%.

TABLE 94: RESPONDENTS DETERMINED ENERGY SOURCES OF JORDAN (breakdown by age)

Energy Sources in Jordan	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Electricity	77	72	76	83	76	75
Oil – Petrol	49	39	50	55	50	47
Solar Energy	47	45	48	52	42	42
Wind Power	17	18	20	19	15	12
Other	2	3	3	1	3	3
Don't know	1	0	1	1	1	2
Total	193	177	198	211	187	181

Replies were broadly consistent across the age groups, though the 18-24's were a little less confident about oil than other age groups – 39% against the average of 49%.

TABLE 95: RESPONDENTS DETERMINED ENERGY RESOURCES IN JORDAN (breakdown By Location and Region)

Energy Sources in Jordan	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Electricity	77	79	64	72	83	80	56
Oil – Petrol	49	49	49	46	48	54	50
Solar Energy	47	47	42	44	53	38	50
Wind Power	17	18	16	19	16	18	14
Other	2	2	4	2	2	2	4
Don't know	1	1	1	1	0	1	4
Total	193	196	176	184	202	193	178

There were no material variations by location or region.

6.2.2 Awareness of Energy Saving Methods

Respondents were asked to state the energy saving methods they were aware of. No prompts were used.

TABLE 96: RESPONDENTS DETERMINED AWARENESS LEVEL OF ENERGY SAVING METHODS (breakdown in total and by gender)

Energy Saving Methods	**Total**	Men	Women
Base	1000	634	366
Aware of:	%	%	%
Fluorescent lights	61	65	54
Turn off lights when leaving room	52	49	58
Energy saving light bulbs	44	48	38
Unplugging appliances	27	29	25
Solar water heaters	17	16	20
Kerosene heaters	3	2	5
Air conditioner only when needed	3	3	2
Other	3	2	6
Don't know	1	1	0
Total	211	215	208

Using fluorescent rather than incandescent lighting was mentioned as an energy saving method by 61% of all respondents. Turning off the lights when leaving a room was mentioned by 52%, and energy saving light bulbs was mentioned by 44%.

Unplugging appliances – including turning off the stand-by – was mentioned by 27%. In the same area of concerned thoughtfulness was using the air conditioner only when really needed in summer, but this was only mentioned by 3% of all respondents.

Solar water heaters were quite well mentioned by 17% of all respondents, while kerosene heaters were possibly an odd choice, but they were only mentioned by 3% of all respondents.

TABLE 97: RESPONDENTS DETERMINED AWARENESS LEVEL OF ENERGY SAVING METHODS (breakdown by age)

Energy Saving Methods	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
Aware of:	%	%	%	%	%	%
Fluorescent lights	61	50	62	63	66	58
Turn off lights when leaving room	52	51	55	48	60	45
Energy saving light bulbs	44	42	46	48	41	40
Unplugging appliances	27	19	32	30	25	25
Solar water heaters	17	15	19	16	17	18
Kerosene heaters	3	4	3	2	4	4
Air conditioner only when needed	3	4	3	2	2	2
Other	3	2	3	5	3	5
Don't know	1	1	0	0	1	1
Total	211	188	223	214	219	198

The use of fluorescent rather than incandescent lighting was most mentioned by older respondents aged between 45 and 54, at 66%, and least mentioned by the youngest respondents aged 18 to 24, at 50%. There were a few other minor variations like this, but findings were essentially quite uniform by age.

TABLE 98: RESPONDENTS DETERMINED AWARENESS LEVEL OF WATER SAVING METHODS (breakdown BY LOCATION AND REGION)

Energy Saving Methods	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
Aware of:	%	%	%	%	%	%	%
Fluorescent lights	61	61	59	69	51	65	64
Turn off lights when leaving room	52	53	48	57	44	63	43
Energy saving light bulbs	44	44	45	45	47	38	47
Unplugging appliances	27	28	23	20	25	37	29
Solar water heaters	17	18	12	16	20	14	17
Kerosene heaters	3	3	4	3	2	5	8
Air conditioner only when needed	3	3	2	3	2	2	3
Other	3	3	4	3	3	4	7
Don't know	1	0	1	0	1	0	1
Total	211	213	198	216	195	228	219

There were no substantive variations in response, either by location or region.

6.2.3 What is being Done Currently to Save Energy

Respondents were asked what they were currently doing in order to save energy. The presence in the home of fluorescent lighting, solar water heating and energy saving light bulbs was checked by the interviewer.

TABLE 99: RESPONDENTS DETERMINED CURRENT SAVING ENERGY ACTIVITIES (breakdown in total and by gender)

Current Energy Saving	**Total**	Men	Women
Base	1000	634	366
	%	%	%
Fluorescent lighting	75	79	66
Turning off lights when leaving room	67	67	66
Unplugging appliances when not in use	44	48	38
Energy saving light bulbs	42	47	32
Solar Water Heating	13	12	15
Air conditioner only when needed	5	6	3
Other	2	1	3
s.t.	248	260	223
Not doing anything to save energy	N	N	N

N = less than 0.5%.

The 75% usage of fluorescent lighting, the 42% usage of energy saving light bulbs, and the 13% usage of solar water heating were all checked out by the interviewers. There was a high level of energy saving practice, therefore, making the claims for turning off lights and equipment on stand-by highly credible.

Females were slightly behind males in citing fluorescent lighting – 66% against 79%, energy saving light bulbs – 32% against 47%, and turning off equipment on stand-by – 38% against 48%. Females, however, were very slightly ahead of males for citing solar water heating, by 15% to 12%. Less than 0.5% of respondents were not doing anything to save energy.

TABLE 100: RESPONDENTS DETERMINED CURRENT SAVING ENERGY ACTIVITIES (breakdown by age)

Current Energy Saving	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Fluorescent lighting	75	72	74	77	74	73
Turning off lights when leaving room	67	69	67	64	69	65
Unplugging appliances when not in use	44	42	48	45	41	41
Energy saving light bulbs	42	46	42	44	40	32
Solar Water Heating	13	15	12	11	14	17
Air conditioner only when needed	5	4	7	5	6	3
Other	2	1	1	1	4	2
s.t.	248	249	251	247	248	233
Not doing anything to save energy	N	0	1	1	0	0

The 18-24's had the highest usage of energy saving light bulbs, at 46% against the average of 42%, and they also had relatively high usage of solar water heating, at 15% against the average of 13%.

Those 55 years and over were low on energy saving light bulbs, at 32% against the average of 42%, but high on solar water heating, at 17% against the average of 13%. Energy saving light bulbs had irritated the eyes of some respondents, which could account for the comparatively low usage here.

TABLE 101: RESPONDENTS DETERMINED CURRENT SAVING ENERGY ACTIVITIES (breakdown by location and region)

Current Energy Saving	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Fluorescent lighting	75	74	75	86	60	82	83
Turning off lights when leaving room	67	65	76	77	52	78	66
Unplugging appliances when not in use	44	43	48	51	31	54	52
Energy saving light bulbs	42	41	45	45	43	34	49
Solar Water Heating	13	14	11	10	18	10	14
Air conditioner only when needed	5	6	2	7	2	4	18
Other	2	2	1	0	2	3	1
s.t.	248	245	258	276	208	265	283
Not doing anything to save energy	N	N	0	N	N	N	0

Rural respondents had higher levels of turning off lights and unplugging equipment than urban respondents, and also a slightly higher usage of energy saving light bulbs, by 45% to 41%, but urban respondents had higher usage of solar water heating, by 14% to 11%.

The South had the highest level of turning off air conditioning, at 18% against the average of 5%, the highest usage of energy saving light bulbs, at 49% against the average of 42%, and a good usage of solar water heating at 14%, but the highest usage of solar water heating was actually Amman's 18%.

6.2.4. Lapsed Usage of Energy Saving Methods

Respondents were asked if there were any energy saving methods that they had stopped using, what they were, and why they had stopped using them.

TABLE 102: RESPONDENTS DETERMINED LAPSED USAGE OF ENERGY SAVING METHODS (breakdown in total)

Lapsed Energy Saving Usage	Total
Base	1000
Stopped Using	%
Yes	4
No	96
Total	100
What No Longer Used	
Solar Water Heating	2
Energy Saving Light Bulbs	2
s.t.	4
Why Stopped	
Energy saving light bulbs irritated eyes	2
High price	2

Only 4% of all respondents had stopped using a method of energy saving. 2% had stopped using energy saving light bulbs, and 2% had stopped using solar water heating.

6.2.5 Where Learned About Energy Conservation

Respondents were asked where they had learned about energy conservation. No prompts were given.

TABLE 103: RESPONDENTS DETERMINED WHERE THEY LEARNED ABOUT ENERGY CONSERVATION (breakdown in total and by gender)

Where Learned about Energy Conservation	Total	Men	Women
Base	1000	634	366
	%	%	%
TV/Newspapers/Media	69	64	77
Family	28	28	28
Neighbours	11	10	14
School	5	4	6
Personal experience	4	4	4
Electrician	2	2	2
Other	3	3	2
Don't know	1	0	1
Total	123	115	134

Television, the newspapers, and the media generally were the source of information about energy conservation for 69% of all respondents. After that it was a question of word of mouth from family and neighbors, mentioned by 39% of all respondents. Absent from the list were the trusted sources of the Jordan Electric Company and the Ministry of Energy, or any mention of fuel bills and pamphlets.

Men and women had learned about energy conservation in the same way.

TABLE 104: RESPONDENTS DETERMINED WHERE THEY LEARNED ABOUT ENERGY CONSERVATION (breakdown by age)

Where Learned about Energy Conservation	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
TV/Newspapers/Media	69	73	72	69	65	64
Family	28	24	25	29	32	27
Neighbours	11	8	9	13	14	13
School	5	10	5	6	1	2
Personal experience	4	1	3	5	4	8
Electrician	2	2	2	1	4	2
Other	3	3	4	2	2	6
Don't know	1	0	1	1	1	0
Total	123	121	121	126	123	122

The 18-24's had 10% learning from school, against the average of 5%, and only 8% learning from neighbors, against the average of 11%, but otherwise there no real variations by age.

TABLE 105: RESPONDENTS DETERMINED WHERE THEY LEARNED ABOUT ENERGY CONSERVATION (breakdown by location and region)

Where Learned about Energy Conservation	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
TV/Newspapers/Media	69	70	65	61	72	71	72
Family	28	28	27	33	25	29	20
Neighbours	11	11	12	13	12	9	8
School	5	4	7	4	3	5	10
Personal experience	4	4	2	5	1	7	2
Electrician	2	2	4	1	3	2	3
Other	3	3	4	3	3	4	6
Don't know	1	1	1	0	1	0	1
Total	123	123	122	120	120	127	122

Fewer than average proportions of respondents in the South had learned about energy conservation from family members or neighbors, but 10% there mentioned school, against the average of 5%. Otherwise there were no real variations by location or region.

6.2.6 Automatic Washing Machines

Respondents were asked if they had an automatic washing machine, and, if so, whether or not it was energy efficient, and, if it was, how they knew it was.

TABLE 106: THE USE OF WASHING MACHINES IN THE HOUSEHOLD (breakdown in total and by gender)

Automatic Washing Machines	**Total**	Men	Women
Base	1000	634	366
	%	%	%
Energy Efficient	7	9	4
Not Energy Efficient	20	19	20
s.t.	27	28	24
How Know Energy Efficient			
Through usage/Low bills	4	6	2
From catalogue	2	1	1
From sales person	1	1	1
s.t.	7	9	4
No Automatic Washing Machine	73	72	76
Total	100	100	100

27% of all respondents had an automatic washing machine, and 7% had one that was energy efficient. Their reasons for believing their machine was energy efficient looked convincing in that they had confirmed they had lower electricity bills, and had the word of their sales person or catalogue to rely on.

TABLE 107: THE USE OF WASHING MACHINES IN THE HOUSEHOLD (breakdown by age)

Automatic Washing Machines	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Energy Efficient	7	6	7	9	7	8
Not Energy Efficient	20	22	18	23	16	18
s.t.	27	28	25	32	23	26
How Know Energy Efficient						
Through usage/Low bills	4	4	4	5	5	5
From catalogue	2	1	2	3	1	2
From sales person	1	1	1	1	1	1
s.t.	7	6	7	9	7	8
No Automatic Washing Machine	73	72	75	68	77	74
Total	100	100	100	100	100	100

Ownership of energy efficient automatic washing machines was evenly spread across all age groups, from 6% among the 18-24's to 8% among the 55+'s.

TABLE 108: THE USE OF WASHING MACHINES IN THE HOUSEHOLD (breakdown by location and region)

Automatic Washing Machines	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Energy Efficient	7	8	7	6	8	7	8
Not Energy Efficient	20	21	11	11	30	14	14
s.t.	27	29	18	17	38	21	21
How Know Energy Efficient							
Through usage/Low bills	4	4	5	6	3	4	7
From catalogue	2	3	1	0	3	1	1
From sales person	1	1	1	0	2	2	0
s.t.	7	8	7	6	8	7	8
No Automatic Washing Machine	73	71	82	83	62	79	79
Total	100	100	100	100	100	100	100

Urban households owned more automatic washing machines in total than rural households, by 29% to 18%, but energy efficient machines were at much the same levels – urban 8% and rural 7%.
Similarly, Amman had around twice as many automatics in total as the other regions, but ownership of energy efficient machines was virtually equal across all four regions at around 7%.

6.1.7 Dish Washers

Respondents were asked if they owned a dish washer, and, if so, whether it was energy efficient.

TABLE 109: DISH WASHERS USE IN THE HOUSEHOLD (breakdown in total)

Dish Washers	**Total**
Base	1000
	%
Yes	1
No	99
Total	100
Energy Efficient	
Yes	0
No	1
s.t.	1
No Dishwasher	99
Total	100

Only 1% of all respondents owned a dish washer, and no one owned an energy efficient dish washer.

1.2.8 Forms of Heating in the House

Respondents were asked what forms of heating they had in their house.

TABLE 110: FORMS OF HEATING IN THE HOUSEHOLD (breakdown in total and by gender)

Heating in the House	**Total**	Men	Women
Base	1000	634	366
	%	%	%
Gas Heaters	68	68	67
Kerosene Heaters	54	56	50
Electric Heaters	13	11	17
Central Heating: Boiler + Radiators	7	4	10
Solid Fuel Heating	2	2	2
Fire Place	1	1	1
Other	1	1	1
No Heating	1	1	2
Total	147	144	150

Gas and kerosene were the most used forms of heating in the home, with gas heaters in 68% of homes, and kerosene heaters in 54%. Electric heaters were used in 13% of homes. Central heating was only present in 7% of homes.

TABLE 111: FORMS OF HEATING IN THE HOUSEHOLD (breakdown by age)

Heating in the House	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Gas Heaters	68	69	62	68	71	70
Kerosene Heaters	54	52	51	55	54	58
Electric Heaters	13	17	17	10	14	8
Central Heating: Boiler + Radiators	7	8	3	9	8	6
Solid Fuel Heating	2	2	2	1	3	4
Fire Place	1	1	1	0	1	1
Other	1	1	1	2	1	2
No Heating	1	0	1	1	2	2
Total	147	150	138	146	154	151

Younger respondents were more likely to electric heaters than other age groups. 17% of 18-24's and 17% of 25-34's had electric heaters, compared with 10% of 35-44's and only 8% of 55+'s.

TABLE 112: FORMS OF HEATING IN THE HOUSEHOLD (breakdown by location and region)

Heating in the House	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Gas Heaters	68	69	61	63	75	61	64
Kerosene Heaters	54	53	55	59	48	59	48
Electric Heaters	13	14	12	10	16	12	16
Central Heating: Boiler + Radiators	7	7	2	1	14	1	4
Solid Fuel Heating	2	1	6	5	1	0	4
Fire Place	1	0	3	1	1	1	0
Other	1	1	1	1	1	0	6
No Heating	1	1	2	1	0	1	7
Total	147	146	142	141	156	135	149

By location, gas heating was a little more urban, and kerosene heating was a little more rural, but these two fuels dominated the heating scene. Electric heating was slightly more urban than rural, by 14% to 12%.
There were real differences, however, when it came to central heating, with urban homes having 7%, and rural homes only 2%. Rural homes made up for this shortfall by having more solid fuel heating and fire places – 9% to 1%.

By region, Amman had the highest usage of gas heating, with 75% against the average of 68%, the highest usage, with the South, of electric heating, at 16% against the average of 13%, and by far the highest usage of central heating, at 14% against the average 7%.
7% of homes in the South had no heating at all.

1.2.9 Solar Heating

Respondents were asked if they had a solar water heating system, and if they had a solar space heating system connected to the boiler.

TABLE 113: SOLAR HEATING IN THE HOUSEHOLD (breakdown in total and by gender)

Solar Heating	**Total**	Men	Women
Base	1000	634	366
	%	%	%
Water Heating System	14	13	16
Space Heating System	N	0	N
Total	14	13	16

N = Less than 0.5%.

14% of households had a solar water heating system, but space heating systems connected to the boiler were limited to less than 0.5% of households.

TABLE 114: SOLAR HEATING IN THE HOUSEHOLD (breakdown by age)

Solar Heating	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Water Heating System	14	15	12	12	15	17
Space Heating System	N	0	N	N	0	0
Total	14	16	12	12	15	17

Again we see, with solar water heating systems, that new technologies were not limited to any one age group, but spread across them all, from 15% among the 18-24's, to 17% among the 55+'s.

TABLE 115: SOLAR HEATING IN THE HOUSEHOLD (breakdown by location and region)

Solar Heating	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Water Heating System	14	14	12	10	18	10	14
Space Heating System	N	N	0	0	N	0	0
Total	14	14	13	10	19	10	15

Solar water heating systems were owned by almost equal proportions of urban and rural households, being in 14% of urban households, and 12 % of rural households.

Solar water heating systems were owned across all four regions, with the highest level of ownership in Amman, at 18%, the second in the South, at 14%, and 10% in the North and the Central region.
Solar space heating systems connected to the boiler were owned by less than 0.5% of households.

6.2.10. Energy Used for Cooking

Respondents were asked what types of energy they used for cooking.

TABLE 116: ENERGY USED FOR COOKING IN THE HOUSEHOLD (breakdown in total and by gender)

Energy Used for Cooking	**Total**	Men	Women
Base	1000	634	366
	%	%	%
Gas	96	95	96
Electricity	2	2	1
Both	1	2	1
Other	1	0	2
Total	100	100	100

Gas was used for cooking by 96% of all respondents, and electricity by only 2%.

TABLE 117: ENERGY USED FOR COOKING IN THE HOUSEHOLD (breakdown in total and by gender)

Energy Used for Cooking	**Total**	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Gas	96	94	96	95	98	95
Electricity	2	3	2	3	1	2
Both	1	3	1	2	1	2
Other	1	0	2	1	0	0
Total	100	100	100	100	100	100

Around 96% of all age groups cooked with gas, while the minority of 2% or so of households cooking with electricity were also spread across all age groups.

TABLE 118: ENERGY ISED FOR COOKING IN THE HOUSEHOLD (breakdown by location and region)

Energy Used for Cooking	**Total**	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Gas	96	95	96	94	96	97	96
Electricity	2	2	1	3	2	2	1
Both	1	2	1	1	2	1	1
Other	1	1	1	1	1	1	2
Total	100	100	100	100	100	100	100

While gas was the fuel of choice for cooking in every part of the country, cooking with electricity was slightly more to be found in urban rather than rural areas, by 2% to 1%, and very slightly more in the North than other regions, at 3%

6.2.11 How Much Paid for Household Energy

Respondents were asked how much they paid per month for the fuel they used in their homes.

TABLE 119: ENERGY BILL COST (breakdown in total and by gender)

How Much Paid for Energy in the Home	Total	Men	Women
Paid Per Month			
Electricity	23.9JD	22.9JD	25.5JD
Gas	21.1JD	22.1JD	19.3JD
Kerosene	17.8JD	19.2JD	15.5JD
Other Fuel	4.6JD	4.4JD	5.0JD
Total	67.4JD	68.6JD	65.3JD

The average monthly expenditure on electricity by all respondents was 23.9JD, on gas 21,1JD, on kerosene 17.8JD, and other fuels 4.6JD.

TABLE 120: ENERGY BILL COST (breakdown by age)

How Much Paid for Energy in the Home	Total	18-24	25-34	35-44	45-54	55+
Paid Per Month						
Electricity	23.9JD	25.2JD	21.9JD	24.1JD	24.7JD	24.9JD
Gas	21.1JD	21.5JD	19.4JD	21.0JD	22.8JD	21.6JD
Kerosene	17.8JD	16.9JD	16.1JD	18.5JD	18.2JD	20.5JD
Other Fuel	4.6JD	6.1JD	2.2JD	4.3JD	7.9JD	3.2JD
Total	67.4JD	69.7JD	59.6JD	67.9JD	73.6JD	70.2JD

Monthly expenditure on each fuel used in the household was on average fairly consistent across the age groups. Examining the small variations that did arise, however, it can be seen that the 18-24's had the highest monthly expenditure on electricity, reflecting in part the fact that 17% of this age group used electricity for heating their homes, against 13% for the sample as a whole. Similarly, the 55+'s spent most on kerosene for heating, and this age group had 58% using kerosene for heating, against the national average of 54%.

TABLE 121: ENERGY BILL COST (breakdown by location and region)

How Much Paid for Energy in the Home	Total	Urban	Rural	North	Amman	Central	South
Paid Per Month							
Electricity	23.9JD	24.4JD	21.2JD	21.1JD	27.9JD	21.0JD	23.1JD
Gas	21.1JD	21.4JD	19.3JD	20.4JD	24.1JD	17.9JD	18.9JD
Kerosene	17.8JD	17.4JD	19.8JD	20.1JD	15.8JD	18.4JD	18.4JD
Other Fuel	4.6JD	4.7JD	4.1JD	4.2JD	7.5JD	0.3JD	5.4JD
Total	67.4JD	67.9JD	64.4JD	65.8JD	75.3JD	57.6JD	65.8JD

The differences between the monthly fuel expenditures of urban and rural respondents were no more than two or three JD either way, but they nevertheless followed the use of the particular fuel for heating. Thus, 14% of urban respondents used electricity for heating, against 12% for rural respondents, and urban respondents consequently paid 24.4JD per month for electricity, against 21.2JD paid by rural respondents. Similarly, use of gas for heating in urban areas involved 69% of respondents, against 61% in rural areas, and urban expenditure on gas was 21.4JD per month, against rural expenditure on gas of 19.3JD per month.

Rural respondents were greater users of kerosene for heating by only 55% to 53%, and rural expenditure on kerosene was 19.8JD per month, against 17.4JD per month on the part of urban respondents.

By region, the same pattern can be discerned, with the Amman region the highest users of gas, central heating, and electricity for heating, and consequently having the highest expenditure on gas and electricity, by up to 6.9JD per month on electricity, and up to 6.2JD per month on gas.

6.2.12 What Would Encourage Voluntary Energy Saving

TABLE 122: HOW TO ENCOURAGE VOLUNTARY ENERGY SAVING (breakdown in total and by gender)

Respondents were asked what would encourage them to begin voluntary energy saving.

Encouragement To Voluntary Energy Saving	Total	Men	Women
Base	1000	634	366
	%	%	%
1. Price Penalty			
Higher fuel bills	33	29	39
High cost of living	25	25	27
Fines for high use	6	5	7
s.t.	64	59	73
2.Price Incentive			
Save energy, save money	6	8	2
3. Awareness and Education			
Raise awareness of energy saving	13	15	10
4. Jordan's Low Energy Resources	6	5	7
5. New Energy saving Technology	5	4	5
Other	3	3	3
Don't know	10	9	11
Total	107	103	111

Respondents were aware that the most potent encouragement to energy saving would flow from the aggressive use of pricing and fines to enforce lower energy consumption – coercion, in fact, rather than encouragement. Thus, the top factors for bringing about energy saving were higher fuel bills (33%), and the high cost of living (25%). Add 6% mentioning fines for high energy use, and 64% some sort of monetary pressure to compel people into using less energy.

The other side of the same coin was to suggest giving an incentive to energy saving through saving money, mentioned by 6%. This was essentially the same as avoiding higher costs by using less energy, but expressed in a more appealing way.

Only 13% here mentioned the route of encouraging energy saving through awareness and education, with a further 6% wanting to know more about the poverty of Jordan's energy resources, leaving future behavior to be guided by conscience and civic responsibility.

New energy saving technology was only mentioned by 5%, suggesting a belief, perhaps, that technology and devices could not do enough alone without behavioral change by the great mass of consumers.

Men and women were equally convinced of the need for forceful price pressures to bring about real energy saving, with 67% of men, and 75% of women endorsing this area.

TABLE 123: HOW TO ENCOURAGE VOLUNTARY ENERGY SAVING (breakdown by age)

Encouragement To Voluntary Energy Saving	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
1. Price Penalty						
Higher fuel bills	33	32	34	32	30	34
High cost of living	25	19	26	28	30	20
Fines for high use	6	6	5	6	5	8
s.t.	64	57	65	66	65	62
2.Price Incentive						
Save energy, save money	6	2	7	7	7	7
3. Awareness and Education						
Raise awareness of energy saving	13	15	12	17	11	12
4. Jordan's Low Energy Resources	6	8	6	7	5	5
5. New Energy saving Technology	5	7	2	4	6	6
Other	3	3	3	2	3	5
Don't know	10	12	11	7	11	9
Total	107	104	106	110	108	106

All age groups showed high levels of support for monetary pressure to bring about energy saving.

TABLE 124: HOW TO ENCOURAGE VOLUNTARY ENERGY SAVING (breakdown by location and region)

Encouragement To Voluntary Energy Saving	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
1. Price Penalty							
Higher fuel bills	33	33	31	32	35	27	38
High cost of living	25	26	24	20	30	27	18
Fines for high use	6	6	5	6	6	4	12
s.t.	64	65	60	58	71	58	68
2.Price Incentive							
Save energy, save money	6	6	8	9	3	8	4
3. Awareness and Education							
Raise awareness of energy saving	13	14	8	15	15	11	8
4. Jordan's Low Energy Resources	6	6	5	6	3	9	7
5. New Energy Saving Technology	5	4	7	5	4	5	2
Other	3	3	4	3	2	4	8
Don't know	10	9	12	9	11	11	6
Total	107	107	104	105	109	106	103

Using prices and fines to make people save energy was supported by 65% of urban respondents, and 60% of rural respondents. The only real difference between urban and rural respondents was that rural respondents showed slightly less faith in the power of information alone to change behavior, with only 8% of rural respondents supporting this suggestion, against 14% of urban respondents. By region, the South had a higher than average belief in the power of fines – 12% against the average of 6%. In contrast, the South had a lower

than average belief in the power of awareness and new energy saving technology to bring about worthwhile change – 8% to 13% on raising awareness, and 2% to 5% on energy saving technology.

6.2.13 Agreement with Proposed Government Action

Respondents were asked the degree to which they agreed or disagreed with two Government proposals on possible courses of action to reduce energy consumption.

1. 'The government must increase tariffs on electricity to reduce energy consumption.'
2. 'The government must increase the tariff on all other fuels to reduce energy consumption'

TABLE 125: RESPONDENTS AGREE/DISAGREE WITH GOVERNMNET ACTION (breakdown in total and by gender)

Agreement with Government Proposals	Total	Men	Women
Base	1000	634	366
	%	%	%
1. Increase Electricity Tariffs			
Strongly agree	6	7	4
Somewhat agree	14	17	8
Somewhat disagree	14	17	8
Strongly disagree	66	58	80
Don't know	N	1	N
Total	100	100	100
2. Increase Tariffs on Other Fuels			
Strongly agree	7	7	7
Somewhat agree	15	17	12
Somewhat disagree	13	16	8
Strongly disagree	62	58	70
Don't know	3	2	3
Total	100	100	100

Although some 64% of all respondents suggested that higher costs would encourage them to take action to save energy, fully 80% turned round and disagreed with the proposal that the government must increase electricity tariffs to bring about the same end, and 75% disagreed that the government should increase tariffs on other fuels. 75% of men and 88% of women disagreed with higher electricity tariffs, and 74% of men and 78% of women disagreed with higher tariffs on other fuels.

TABLE 126: RESPONDENTS AGREE/DISAGREE WITH GOVERNMNET ACTION (breakdown by age)

Agreement with Government Proposals	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
1. Increase Electricity Tariffs						
Strongly agree	6	10	6	2	5	8
Somewhat agree	14	17	14	12	13	14
Somewhat disagree	14	13	14	15	12	14
Strongly disagree	66	58	65	71	70	64
Don't know	N	2	1	0	0	0
Total	100	100	100	100	100	100
2. Increase Tariffs on Other Fuels						
Strongly agree	7	11	5	9	6	7
Somewhat agree	15	20	15	12	13	17
Somewhat disagree	13	11	13	15	11	15
Strongly disagree	62	55	64	63	68	59
Don't know	3	3	3	1	2	2
Total	100	100	100	100	100	100

The proposal to increase electricity tariffs was disagreed with by between 71% and 86% of all age groups. Similarly, the proposal to increase tariffs on other fuels was disagreed with by between 66% and 79% of all age groups.

TABLE 127: RESPONDENTS AGREE/DISAGREE WITH GOVERNMNET ACTION (breakdown by location and region)

Agreement with Government Proposals	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
1. Increase Electricity Tariffs							
Strongly agree	6	6	6	6	6	4	10
Somewhat agree	14	14	15	19	14	6	20
Somewhat disagree	14	14	14	10	16	16	7
Strongly disagree	66	66	65	65	64	73	62
Don't know	N	N	N	0	0	1	1
Total	100	100	100	100	100	100	100
2. Increase Tariffs on Other Fuels							
Strongly agree	7	6	12	7	7	4	17
Somewhat agree	15	16	8	18	19	6	14
Somewhat disagree	13	13	13	11	14	16	4
Strongly disagree	62	62	65	64	58	70	57
Don't know	3	3	2	0	2	4	8
Total	100	100	100	100	100	100	100

Fully 80% of urban respondents and 79% of rural respondents disagreed with increased electricity tariffs, while 75% and 78% respectively disagreed with higher tariffs on other fuels. By region, disagreement with higher electricity tariffs was actually lower than average in the South, by 69% to 80%, but disagreement was 75% in the North, 80% in Amman, and 89% in the Central region. The South also had a lower level of disagreement with higher tariffs on other fuels, at 61%, against 72% in Amman, 75% in the North, and 86% in the central region.

6.2.14 Encouraging Reduced Energy Consumption

Those disagreeing with either of the government proposals were asked what, other than increases in tariffs, in their opinion, could be done to encourage people to reduce their energy consumption.

TABLE 128: OTHER METHODS OF ENCOURAGING REDUCED ENERGY CONSUMPTION (breakdown in total and by gender)

Encourage Reduced Energy Consumption	Total	Men	Women
Base	1000	634	366
Suggested Action	%	%	%
Increase awareness	54	50	62
Provide affordable technology	8	8	8
Educate people in energy conservation	7	7	6
Provide affordable electricity meters so shared meters can be split	5	4	6
Other	4	4	4
Don't know	6	6	5
s.t.	84	79	91
Not asked	16	21	9
Total	100	100	100

Having disagreed with the proposals to raise electricity and other fuel prices in order to reduce consumption, the fall-back position was to suggest increasing awareness and understanding of Jordan's energy problems,

made by 54% of respondents. In defence of this position, it could be pointed out that no justification for increasing the tariffs had been offered, and agreement with the proposals depended on the appreciation of Jordan's energy poverty that respondents brought to the interview from their general knowledge, which could be highly variable from one respondent to another. In 75% to 80% of cases, as we have seen, Jordan's energy problems were not thought severe enough to justify government-imposed tariff increases on everyone, regardless of individual rates of energy consumption.

5% of respondents were concerned because they had to share an electricity meter with other households, and they wanted their own meter so that they could benefit from any energy savings they could make.

TABLE 129: OTHER METHODS OF ENCOURAGING REDUCED ENERGY CONSUMPTION (breakdown by age)

Encourage Reduced Energy Consumption	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
Suggested Action	%	%	%	%	%	%
Increase awareness	54	55	52	56	54	57
Provide affordable technology	8	10	6	10	7	6
Educate people in energy conservation	7	4	8	6	10	5
Provide affordable electricity meters so shared meters can be split	5	1	5	5	5	5
Other	4	4	4	4	4	7
Don't know	6	5	7	7	6	2
s.t.	84	79	82	88	86	82
Not asked	16	21	18	12	14	18
Total	100	100	100	100	100	100

The call for increased awareness of energy conservation extended across all age groups.

TABLE 130: OTHER METHODS OF ENCOURAGING REDUCED ENERGY CONSUMPTION (breakdown by location and region)

Encourage Reduced Energy Consumption	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
Suggested Action	%	%	%	%	%	%	%
Increase awareness	54	56	48	48	61	53	47
Provide affordable technology	8	7	10	8	5	12	7
Educate people in energy conservation	7	7	7	6	5	11	4
Provide affordable electricity meters so shared meters can be split	5	5	4	7	4	4	1
Other	4	4	4	4	5	4	3
Don't know	6	5	10	5	3	9	10
s.t.	84	84	83	78	83	93	72
Not asked	16	16	17	22	17	7	28
Total	100	100	100	100	100	100	100

Increasing awareness was by far the top suggestion of both urban and rural respondents, though the urban level was higher by 56% to 48%.

By region, the North and the South were close to the lower rural level of support, with 48% and 47% respectively.

6.2.15 Trusted Sources of Energy Conservation Information

Respondents were asked which source they trusted the most to get information on energy conservation. No prompts were given.

TABLE 131: TRUSTED SOURCES OF WATER CONSERVATION INFORMATION (breakdown in total and by gender)

Trusted Sources of Information	Total	Men	Women
Base	1000	634	366
	%	%	%
Jordan Electric Company	32	27	39
Ministry of Energy	31	31	30
The Electrician	14	15	11
Family/Friends/Neighbors	13	14	12
The Media	7	9	5
Other	2	2	1
Don't know	1	2	2
Total	100	100	100

The Jordan Electric Company and the Ministry of Energy were the two most trusted sources of information about energy conservation, supported by 32% and 31% of all respondents, respectively.
At a lower level, the electrician was supported by 14%, more than the 4% trusting the plumber for information about water conservation.

The media were only trusted by 7%, in line with the 8% trusting the media for information about water conservation. Women strongly supported the Jordan Electric Company with 39%, with the Ministry of Energy second with 30%, while men put the Ministry of Energy first with 31%, and the Jordan Electric Company second with 27%.

TABLE 132: TRUSTED SOURCES OF ENERGY CONSERVATION INFORMATION (breakdown by age)

Trusted Sources of Information	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Jordan Electric Company	32	27	32	31	33	37
Ministry of Energy	31	41	29	28	33	22
The Electrician	14	12	17	13	13	12
Family/Friends/Neighbours	13	8	11	18	12	21
The Media	7	8	9	6	7	6
Other	2	3	2	2	2	0
Don't know	1	1	0	2	0	2
Total	100	100	100	100	100	100

The 55+'s supported the Jordan Electric Company with an exceptional 37%, while the 18-24's gave the Ministry of Energy an outstanding 41%.

TABLE 133: TRUSTED SOURCES OF ENERGY CONSERVATION INFORMATION (breakdown by location and region)

Trusted Sources of Information	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Jordan Electric Company	32	33	24	29	35	32	22
Ministry of Energy	31	31	27	32	28	29	41
The Electrician	14	13	16	10	16	15	11
Family/Friends/Neighbors	13	12	18	17	12	13	11
The Media	7	7	8	7	7	6	12
Other	2	2	2	1	2	2	2
Don't know	1	2	5	4	0	3	1
Total	100	100	100	100	100	100	100

In the South the Ministry of Energy was rated very highly at 41%, while the Jordan Electric Company was lower than average there at 22%, but, overall, these two were the most trusted sources across the whole country.

6.2.16 Awareness of Government Interest in Nuclear Energy

Respondents were asked if they were aware that the government was now trying to explore the use of nuclear energy.

TABLE 134: AWARENESS OF GOVERNMENT INTEREST IN NUCLEAR ENERGY IN JORDAN (breakdown in total and by gender)

Nuclear Energy	Total	Men	Women
Base	1000	634	366
Aware of Government Interest	%	%	%
Yes	51	55	43
No	49	45	57
Total	100	100	100

51% of respondents were aware of the government's interest in nuclear energy, 55% of men, and 43% of women.

TABLE 135: AWARENESS OF GOVERNMENT INTEREST IN NUCLEAR ENERGY IN JORDAN (breakdown by age)

Nuclear Energy	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
Aware of Government Interest	%	%	%	%	%	%
Yes	51	45	49	55	54	49
No	49	55	51	45	46	51
Total	100	100	100	100	100	100

Awareness of the government's interest in nuclear energy was a little lower than average among the 18-24's, at 45%, but close to the average for the other age groups.

TABLE 136: AWARENESS OF GOVERNMENT INTEREST IN NUCLEAR ENERGY IN JORDAN (breakdown by location and region)

Nuclear Energy	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
Aware of Government Interest	%	%	%	%	%	%	%
Yes	51	49	58	57	48	45	59
No	49	51	42	43	52	55	41
Total	100	100	100	100	100	100	100

Awareness of interest in nuclear energy was higher among rural respondents than urban respondents, by 58% to 49%, and higher in the South (59%) and North (57%), than in the Central region (45%) or Amman (48%).

6.3 Annex C: Main findings of the Household Waste Disposal

6.3.1 Current Disposal of Household Waste

Respondents were asked how they currently disposed of their household waste. Multiple answers were permitted.

TABLE 137: CURRENT DISPOSAL OF HOUSEHOLD WASTE (breakdown in total and by gender)

Household Waste Disposal	Total	Men	Women
Base	1000	634	366
	%	%	%
Taken to public waste container	80	86	69
Placed on street for collection	16	10	26
Put in refuse pit	6	5	8
Burned	3	3	3
Separate out into different containers	N	N	1
Total	105	104	107

N = Less than 0.5%.

80% took their household waste to the public waste container serving their neighborhood.

16% put their household waste on the street for collection, with 26% of women citing this, compared with 10% of men. Throwing household waste into a refuse pit, and burning it, would probably have been secondary methods of waste disposal, accounting for the small level of multiple answering.

Less than 0.5% of respondents separated out their household waste into different containers. 1% of women and less than 0.5% of men said so.

TABLE 138: CURRENT DISPOSAL OF HOUSEHOLD WASTE (breakdown by age)

Household Waste Disposal	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Taken to public waste container	80	75	79	82	84	76
Placed on street for collection	16	18	14	15	12	25
Put in refuse pit	6	9	8	5	5	5
Burned	3	3	2	3	4	4
Separate out into different containers	N	0	1	0	0	0
Total	105	105	104	105	105	110

Placing household waste on the street for collection was highest among the 55+'s, at 25.

All of the people separating out their waste into different containers were aged 25-34.

TABLE 139: CURRENT DISPOSAL OF HOUSEHOLD WASTE (by location and region)

Household Waste Disposal	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Taken to public waste container	80	79	81	76	81	83	79
Placed on street for collection	16	16	14	20	16	13	11
Put in refuse pit	6	6	8	4	7	4	16
Burned	3	3	2	1	4	2	4
Separate out into different containers	N	N	1	N	1	N	0
Total	105	104	106	101	109	102	110

There were no real differences between urban and rural waste disposal methods.

By region, respondents in the South were more likely than average to put their refuse in a pit, by 16% to 6%, and a little less likely than average to place their rubbish on the street for collection, by 11% to 16%.

6.3.2 Separating Household Waste

Respondents were asked specifically whether they separated out their household waste – for example, glass, metal, etc. Those who did so were asked which types of waste they separated, who collected their separated waste, and where they had learned about this practice.

TABLE 140: SEPARATING HOUSEHOLD WASTE (breakdown in total and by gender)

Separating Household Waste	Total	Men	Women
Base	1000	634	366
Separating	%	%	%
Yes	9	7	13
What Separated			
Glass	5	3	7
Metal	4	3	5
Plastic	4	2	7
Paper	2	2	2
Residue	3	3	3
Who Collects			
Municipal collection	6	4	8
Drop it off myself	3	3	5
s.t.	9	7	13
Where Learned			
Family	5	3	6
TV	3	1	6
Neighbours	1	1	1
Other	0	2	0
s.t.	9	7	13
Do not separate household waste	91	93	87
Total	100	100	100

Asking specifically whether respondents separated their household waste increased the spontaneous level of less than 0.5% to 9%. There were 13% of women doing so, compared with 7% of men. Respondents who separated their household waste actually separated glass, metal, plastic and paper, and what was left after these materials had been put in their containers. 6% had their separated waste collected by their municipal waste disposal services, and 3% dropped it off themselves. Respondents had learned about separating waste and recycling from a number of informal sources, like members of their family and the television, but not from any official source.

TABLE 141: SEPARATING HOUSEHOLD WASTE (breakdown by age)

Separating Household Waste	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
Separating	%	%	%	%	%	%
Yes	9	8	9	10	10	7
What Separated						
Glass	5	4	4	5	6	5
Metal	4	2	5	4	4	3
Plastic	4	2	4	3	6	2
Paper	2	4	2	2	3	1
Residue	3	1	1	4	4	2
Who Collects						
Municipal collection	6	6	7	7	7	5
Drop it off myself	3	2	2	3	3	2
s.t.	9	8	9	10	10	7
Where Learned						
Family	5	4	5	5	5	3
TV	3	3	3	4	3	2
Neighbors	1	0	1	1	0	2
Other	0	1	0	0	2	0
s.t.	9	8	9	10	10	10
Do not separate household waste	91	92	91	90	90	90
Total	100	100	100	100	100	100

There were no real differences between the age groups in any aspect separating household waste. Separators were evenly spread out across all ages, and not, say, concentrated among younger people, as one might suspect.

TABLE 142: SEPARATING HOUSEHOLD WASTE (breakdown by location and region)

Separating Household Waste	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
Separating	%	%	%	%	%	%	%
Yes	9	9	6	9	10	9	4
What Separated							
Glass	5	5	4	4	6	5	0
Metal	4	4	2	4	4	4	3
Plastic	4	4	1	4	2	6	2
Paper	2	3	1	3	2	2	0
Residue	3	3	2	4	2	4	0
Who Collects							
Municipal collection	6	6	5	7	8	4	3
Drop it off myself	3	3	1	2	2	5	1
s.t.	9	9	6	9	10	9	4
Where Learned							
Family	5	5	2	5	6	3	2
TV	3	3	3	3	3	3	1
Neighbors	1	1	0	1	1	1	1
Other	0	0	1	0	0	2	0
s.t.	9	9	6	9	10	9	4
Do not separate household waste	91	91	94	91	90	91	96
Total	100	100	100	100	100	100	100

People already

separating their household waste were slightly more likely to be urban rather than rural, by 9% to 6%, and to be from the North (9%), Amman (10%), or the Central region (9%), rather than from the South (4%).

6.3.3 Problems in Disposing of Household Waste

Respondents were asked if they faced any problems in disposing of their household waste.

TABLE 143: PROBLEMS IN DISPOSING OF HOUSEHOLD WASTE (breakdown in total and by gender)

Problems in Disposing of Waste	Total	Men	Women
Base	1000	634	366
Problem Disposing of Waste	%	%	%
Yes	19	19	20
Problems Faced			
Waste not collected regularly enough	13	15	10
Location of collection point	11	12	10
No containers for recycling	3	4	2
No collection for separated waste	1	2	1
Other	1	1	2
No problems faced	81	81	80
Total	100	100	100

19% of respondents faced problems in disposing of their household waste. The two main problems were that collections were not regular enough, mentioned by 13% of all respondents, and the neighborhood collection point was inconvenient to get to. Irregular collections could leave rubbish in the streets, and piling up around filled bins at the collection point. Some of those 9% of all respondents who separated their waste faced problems in that there were no containers at the collection point to take recyclable materials, and there was no collection service for separated waste.

TABLE 144: PROBLEMS IN DISPOSING OF HOUSEHOLD WASTE (breakdown by age)

Problems in Disposing of Waste	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
Problem Disposing of Waste	%	%	%	%	%	%
Yes	19	25	21	16	16	18
Problems Faced						
Waste not collected regularly enough	13	17	15	10	11	13
Location of collection point	11	13	14	6	11	11
No containers for recycling	3	5	3	3	3	2
No collection for separated waste	1	1	2	2	1	0
Other	1	1	1	2	2	0
No problems faced	81	75	79	84	84	82
Total	100	100	100	100	100	100

The 18-24's were a little more likely to face problems than older people, with 25% against the average of 19%.They were a little more likely than others to complain that their household waste was not collected regularly enough from their collection point, and that there were no containers to take their separated waste.

TABLE 145: PROBLEMS IN DISPOSING OF HOUSEHOLD WASTE (breakdown by location and region)

Rural

Problems in Disposing of Waste	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
Problem Disposing of Waste	%	%	%	%	%	%	%
Yes	19	20	17	23	17	19	19
Problems Faced							
Waste not collected regularly enough	13	14	12	21	9	12	12
Location of collection point	11	12	7	16	9	9	8
No containers for recycling	3	3	4	3	2	5	2
No collection for separated waste	1	1	3	1	1	2	2
Other	1	2	0	1	1	3	2
No problems faced	81	80	83	77	83	81	81
Total	100	100	100	100	100	100	100

respondents faced fewer problems than urban respondents, by 17% to 20%. This was mainly because rural collection points were considered less of a problem to get to than urban points, by 7% to 12%, The problems caused by not enough collections from the points were encountered almost equally in rural and urban areas – 12% and 14% respectively. There were slightly more problems in the North than in the other regions, by 23% against the average of 19%.The location of collection points and the irregular collections troubled 16% and 21% in the North, compared with the averages of 11% and 13% respectively.

6.3.4 What Happens To Waste after Collection

Respondents were asked what they thought happened to their household waste after it had been collected. No prompts were given.

TABLE 146: WHAT HAPPENS TO WASTE AFTER COLLECTION (breakdown in total and by gender)

What Happens To Waste After Collection	Total	Men	Women
Base	1000	634	366
What Believed To Happen	%	%	%
Burned	39	41	35
Dumped at disposal sites	33	37	27
Separated and reused	26	21	36
Some composted	8	8	6
Used for power generation	1	2	1
Other	1	1	2
Don't know	2	2	2
Total	110	112	109

39% of all respondents believed their household waste was taken away to be burned, 33% believed it was dumped in disposal sites or landfill, while 26% believed their waste was separated and reused. 36% of women believed this, compared with 21% of men. 8% of respondents believed that some of their household waste was composted, and 1% believed it was used for power generation.

TABLE 147: WHAT HAPPENS TO WASTE AFTER COLLECTION (breakdown by age)

What Happens To Waste After Collection	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
What Believed To Happen	%					
Burned	39	53	37	38	32	36
Dumped at disposal sites	33	23	36	36	33	34
Separated and reused	26	27	23	27	27	28
Some composted	8	6	6	5	11	11
Used for power generation	1	2	2	N	2	2
Other	1	1	1	0	2	4
Don't know	2	1	3	2	3	4
Total	110	113	108	108	110	119

18-24's were more likely than average to believe their waste was burned, by 53% to 39%, and less likely than average to believe it was dumped in landfill, by 23% to 33%.
The belief that waste was separated and reused was consistent at around 26% across all ages.

TABLE 148: WHAT HAPPENS TO WASTE AFTER COLLECTION (breakdown by location and region)

What Happens To Waste After Collection	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
What Believed To Happen	%	%	%	%	%	%	%
Burned	39	39	36	38	36	41	44
Dumped at disposal sites	33	33	34	32	34	33	36
Separated and reused	26	26	25	25	27	26	23
Some composted	8	8	5	8	7	9	4
Used for power generation	1	1	4	3	1	N	3
Other	1	1	1	1	2	N	1
Don't know	2	2	5	4	2	1	2
Total	110	110	110	111	109	110	113

Urban and rural respondents held the same beliefs about the destination of their household waste, except that 4% of rural respondents believed their waste was used to generate power, against only 1% of urban respondents. Similarly, there were no real differences across the regions.

6.3.5 Disposable Rather Than Plastic Bags

Respondents were asked if they used disposable rather than plastic bags while shopping.

TABLE 149: DISPOSABLE RATHER THAN PLASTIC BAGS (breakdown in total and by gender)

Disposable Bags For Shopping	Total	Men	Women
Base	1000	634	366
Use Disposable Bags	%	%	%
Yes	4	4	4
No	96	96	96
Total	100	100	100

Only 4% of respondents used disposable bags rather than plastic bags while shopping. Men and women were exactly the same in this.

TABLE 150: DISPOSABLE RATHER THAN PLASTIC BAGS (breakdown by age)

Disposable Bags For Shopping	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
Use Disposable Bags	%	%	%	%	%	%
Yes	4	5	4	5	3	3
No	96	95	96	95	97	97
Total	100	100	100	100	100	100

Use of disposable shopping bags varied only from 3% among the 45-54's and the 55+'s to 5% among the 18-24's and the 35-44's.

TABLE 151: DISPOSABLE RATHER THAN PLASTIC BAGS (breakdown by location and region)

Disposable Bags For Shopping	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
Use Disposable Bags	%	%	%	%	%	%	%
Yes	4	5	0	4	4	4	4
No	96	95	100	96	96	96	96
Total	100	100	100	100	100	100	100

No rural respondents at all used disposable bags rather than plastic bags while shopping.

6.3.6 Understanding of the Term 'Recycling'

Respondents were asked what they understood by the term, 'recycling'. No prompts were given.

TABLE 152: UNDERSTANDING OF THE TERM 'RECYCLING' (breakdown in total and by gender)

Understanding of 'Recycling'	Total	Men	Women
Base	1000	634	366
What Understood	%	%	%
Separate waste and re-use	57	59	55
Re-using Materials	34	32	38
Use waste as raw materials	5	5	4
Other	2	2	2
Don't know	2	2	1
Total	100	100	100

96% of respondents proved quite satisfactorily that they understood the term, recycling'.
96% of men and 97% of women understood the term.

TABLE 153: UNDERSTANDING OF THE TERM 'RECYCLING' (breakdown by age)

Understanding of 'Recycling'	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
What Understood	%	%	%	%	%	%
Separate waste and re-use	57	65	59	52	61	50
Re-using Materials	34	28	33	43	29	37
Use waste as raw materials	5	4	5	5	5	5
Other	2	3	2	0	2	3
Don't know	2	0	1	0	3	5
Total	100	100	100	100	100	100

All age groups had what may be termed proven levels of understanding at over 90%.

TABLE 154: UNDERSTANDING OF THE TERM 'RECYCLING' (breakdown by location and region)

Understanding of 'Recycling'	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
What Understood	%	%	%	%	%	%	%
Separate waste and re-use	57	59	50	57	50	66	69
Re-using Materials	34	33	40	32	42	28	22
Use waste as raw materials	5	5	4	6	7	2	4
Other	2	2	2	2	1	2	1
Don't know	2	1	4	3	0	2	4
Total	100	100	100	100	100	100	100

Good understanding of the term was demonstrated by 97% of urban respondents and 94% of rural respondents. By region, there was good understanding by 95% in the North, 99% in Amman, 96% in Central, and 95% in the South.

6.3.7 Encouragement to Voluntary Waste Separation

Respondents were asked what would encourage them voluntarily to start separating their waste.

TABLE 155: ENCOURAGEMENT TO VOLUNTARY WASTE SEPARATION (breakdown in total and by gender)

Encouragement to Voluntary Waste Separation	Total	Men	Women
Base	1000	634	366
	%	%	%
Provide special containers at collection point	33	33	33
Provide special sacks for each type of material	9	9	8
s.t.	42	42	41
Increase awareness of problem	10	10	11
Educate about environmental risks	20	18	23
s.t.	30	28	34
Knowledge of parties that recycle solid waste	8	9	6
Government to enforce separation of waste	6	5	7
Other	2	4	2
s.t.	88	88	90
Nothing would encourage me to separate waste	11	11	10
Don't know	1	1	0
Total	100	100	100

Encouragement to separate waste could come from three main sources. The first, mentioned by 42% of all respondents, would be the provision of the means to do the job, in the form of special containers to take glass, metal, plastics, paper, etc. at waste collection points, and special sacks to take each material to the site, or to leave in the street for collection.

The second source of encouragement, mentioned by 30% of respondents, would be to educate people on the need to separate waste. While 96% of respondents may have understood the meaning of the term, 'recycling',

they may not have known why separating and recycling was important to them personally, or to the country as a whole.

The third area of encouragement would come from knowing of the existence of specialized parties that recycle solid waste, with 8% of respondents mentioning this.

The possibly controversial nature of people having to separate waste was indicated by the 6% of respondents believing the government would have to compel citizens to separate, and by the 11% who declared that nothing could persuade them to separate waste. It will have to be demonstrated that separating waste can be done easily and cleanly, and does not involve scrabbling around in heaps of household waste.

Men and women gave the same replies at each stage.

TABLE 156: ENCOURAGEMENT TO VOLUNTARY WASTE SEPARATION (breakdown by age)

Encouragement to Voluntary Waste Separation	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Provide special containers at collection point	33	31	31	34	36	30
Provide special sacks for each type of material	9	7	8	8	10	13
s.t.	42	38	39	42	46	43
Increase awareness of problem	10	13	7	12	11	8
Educate about environmental risks	20	20	21	21	17	19
s.t.	30	33	28	33	28	27
Knowledge of parties that recycle solid waste	8	7	10	7	8	8
Government to enforce separation of waste	6	8	5	7	4	6
Other	2	1	4	4	4	2
s.t.	88	87	86	93	90	86
Nothing would encourage me to separate waste	11	9	11	7	10	14
Don't know	1	4	3	0	0	0
Total	100	100	100	100	100	100

All of the sources of encouragement received virtually the same levels of endorsement form across all ages.

TABLE 157: ENCOURAGEMENT TO VOLUNTARY WASTE SEPARATION (breakdown by location and region)

Encouragement to Voluntary Waste Separation	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Provide special containers at collection point	33	34	24	32	33	32	33
Provide special sacks for each type of material	9	9	8	11	8	7	9
s.t.	42	43	32	43	41	39	42
Increase awareness of problem	10	9	14	12	8	10	12
Educate about environmental risks	20	20	19	20	21	20	12
s.t.	30	29	33	32	29	30	24
Knowledge of parties that recycle solid waste	8	8	8	8	8	7	8
Government to enforce separation of waste	6	6	5	3	6	7	8
Other	2	2	6	3	3	4	2
s.t.	88	88	84	89	87	87	84
Nothing would encourage me to separate waste	11	11	12	9	10	12	13
Don't know	1	1	4	2	3	1	3
Total	100	100	100	100	100	100	100

Fewer rural than urban respondents mentioned the need for special containers for each material – 24%rural v. 34% urban – but urban and rural respondents had essentially the same levels of response for special bags or sacks for each recyclable material.

By region, respondents in the South had a lower response than others to having the environmental risks explained – 12% against the average of 20% - and respondents in the North were slightly less keen on government compulsion to separate waste – 3% against the average of 6% - but, for the rest, there was great uniformity of response across the regions.

6.3.8 Global Warming

Respondents were asked to say how serious they believed the threat of global warming to be in Jordan, and what impacts they thought global warming was having on Jordan.

TABLE 158: THE THREAT OF GLOBAL AWARENESS (breakdown in total and by gender)

Global Warming	Total	Men	Women
Base	1000	634	366
	%	%	%
Seriousness of Threat			
Very serious	61	59	63
Somewhat serious	23	24	19
Not very serious	2	3	2
Not a threat at all	1	1	1
Don't know	13	13	15
Total	100	100	100
Impacts on Jordan			
Lack of rain - drought	36	34	40
Desertification - fires	6	5	9
Damage to plants	19	13	29
s.t.	61	52	78
Very high temperature in summer	9	8	13
Fluctuations in temperature	19	24	11
Floods	4	5	3
s.t.	23	29	14
Environmental pollution	28	23	36
Other	2	2	2
Don't know	15	15	16
Total	138	129	159

84% of respondents believed that global warming was a serious threat to Jordan – 61% very serious, and 23% somewhat serious.

Men and women had the same levels of belief in global warming – 83% of men of men believing it to be a serious problem, and 82% of women.
The main impact of global warming on Jordan was believed to be drought, referred to by 36% of respondents. Very hot summers were mentioned by only 9%.

Some respondents believed that global warming could be detected in the form of climate change, with unseasonal fluctuations in temperatures (19%), and even, possibly, floods (4%).
Environmental pollution was believed to be a consequence of global warming by 28%.

TABLE 159: THE THREAT OF GLOBAL AWARENESS (breakdown by age)

Global Warming	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Seriousness of Threat						
Very serious	61	66	64	60	57	55
Somewhat serious	23	18	21	26	23	23
Not very serious	2	2	1	2	4	4
Not a threat at all	1	1	0	2	3	1
Don't know	13	13	14	10	13	17
Total	100	100	100	100	100	100
Impacts on Jordan						
Lack of rain - drought	36	45	33	38	29	40
Desertification - fires	6	8	6	6	8	4
Damage to plants	19	15	20	19	21	16
s.t.	61	68	59	63	58	60
Very high temperature in summer	9	7	12	10	9	6
Fluctuations in temperature	19	17	21	18	21	17
Floods	4	4	4	3	5	4
s.t.	23	21	25	21	26	21
Environmental pollution	28	23	26	32	30	26
Other	2	1	1	1	4	2
Don't know	15	18	16	12	17	16
Total	138	138	139	139	144	131

Close to 80% of all age groups believed global warming to be a serious threat in Jordan, with all age groups agreed that global warming was impacting on Jordan by worsening drought conditions and making already hot summers even hotter.

TABLE 160: THE THREAT OF GLOBAL AWARENESS (breakdown by location and region)

Global Warming	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Seriousness of Threat							
Very serious	61	60	66	61	54	65	73
Somewhat serious	23	23	18	17	30	19	14
Not very serious	2	3	1	4	3	0	1
Not a threat at all	1	2	0	3	0	2	0
Don't know	13	12	15	15	13	14	12
Total	100	100	100	100	100	100	100
Impacts on Jordan							
Lack of rain - drought	36	36	35	35	41	34	26
Desertification - fires	6	6	8	5	6	8	6
Damage to plants	19	19	17	21	19	16	13
s.t.	61	61	60	61	66	58	45
Very high temperature in summer	9	10	7	7	13	8	3
Fluctuations in temperature	19	20	16	21	18	19	18
Floods	4	4	4	4	5	0	11
s.t.	23	24	20	25	23	19	29
Environmental pollution	28	27	34	29	22	32	39
Other	2	2	0	1	1	3	0
Don't know	15	15	18	16	13	20	14
Total	138	139	139	139	138	140	130

There were no real differences between urban and rural respondents here.
By region, the South was closely in line with the rest of the country in the seriousness with which they viewed global warming in Jordan, but they were below average for lack of rain and drought conditions – South 26%,average 36% - and damage caused to plants through lack of rain – South 13% v. average 19%. The South, however, was above average for climate change flooding – 39% v. average 28% - and environmental pollution – 39% v average 28%.

6.3.9 Trusted Sources on Waste Management

Respondents were asked which source they trusted most for information on waste management.

TABLE 161: TRUSTED SOURCES ON WASTE MANAGEMENT (breakdown in total and by gender)

Trusted Sources	Total	Men	Women
Base	1000	634	366
Most Trusted Source	%	%	%
Ministry of Environment	39	38	42
Our Municipality	36	38	32
Family/Friends/Neighbours	8	7	11
The Media	6	8	4
Private Sector Waste Management	2	2	1
Other	5	4	5
Don't know	4	3	5
Total	100	100	100

39% of respondents chose the Ministry of Environment as their most trusted source of information on the management of waste. The Ministry of Environment was the most trusted source for 42% of women and 38% of men.
Only a little behind the Ministry of Environment came the municipalities handling respondents' waste disposal. They were the most trusted source for 38% of men and 32% of women.

Table 162: TRUSTED SOURCES ON WASTE MANAGEMENT (breakdown by age)

Trusted Sources	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
Most Trusted Source	%	%	%	%	%	%
Ministry of Environment	39	45	40	37	38	36
Our Municipality	36	32	36	35	40	33
Family/Friends/Neighbours	8	8	6	8	8	15
The Media	6	6	7	8	6	2
Private Sector Waste Management	2	3	2	2	2	1
Other	5	5	4	5	4	7
Don't know	4	1	5	5	2	6
Total	100	100	100	100	100	100

All age groups endorsed the Ministry of Environment and local Municipalities as the most trusted sources.

TABLE 163: TRUSTED SOURCES ON WASTE MANAGEMENT (breakdown by location and region)

Trusted Sources	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
Most Trusted Source	%	%	%	%	%	%	%
Ministry of Environment	39	40	36	36	39	42	43
Our Municipality	36	36	32	34	43	29	27
Family/Friends/Neighbors	8	7	13	12	5	9	10
The Media	6	6	7	9	5	6	7
Private Sector Waste Management	2	2	1	2	1	2	2
Other	5	5	5	5	3	6	7
Don't know	4	4	6	2	4	6	4
Total	100	100	100	100	100	100	100

Both urban and rural respondents had the Ministry of Environment as their most trusted source, and their Municipality as their second source.
By region, Amman actually put the Municipality ahead of the Ministry of Environment by 43% to 39%, but the other regions put the Ministry first.

6.3.10 Environmental Problems in the Neighborhood

Respondents were asked if they faced any environmental problems in their neighborhoods.

TABLE 164: ENVIRONMENTAL PROBLEMS IN THE NEIGHBORHOOD (breakdown in total and by gender)

Environmental Problems in Neighborhood	Total	Men	Women
Base	1000	634	366
	%	%	%
Waste not collected regularly	23	21	28
Not enough containers at waste collection point	5	5	5
Flies and insects around waste	4	3	4
Waste incinerator too close to homes	6	7	5
s.t.	38	36	42
Broken sewage pipes on street	4	3	6
Flooding cesspits	4	4	4
Poor sewage system	3	4	3
s.t.	11	11	13
Sheep/poultry near homes	2	1	3
Lack of green areas	1	1	2
Other	5	4	7
Nothing wrong	52	54	47
Don't know	2	1	2

38% had problems with waste collection, and 11% had problems with the sewage system.
52% had nothing wrong.

Environmental Problems in Neighborhood	Total	18-24	25-34	35-44	45-54	55+
Base	1000	157	273	240	198	132
	%	%	%	%	%	%
Waste not collected regularly	23	33	21	22	17	28
Not enough containers at waste collection point	5	7	6	5	6	2
Flies and insects around waste	4	3	4	3	6	3
Waste incinerator too close to homes	6	7	7	6	8	4
s.t.	38	50	38	36	37	37
Broken sewage pipes on street	4	5	4	4	5	2
Flooding cesspits	4	4	3	3	6	3
Poor sewage system	3	2	3	5	5	2
s.t.	11	11	10	12	16	7
Sheep/poultry near homes	2	1	2	2	2	4
Lack of green areas	1	3	1	2	0	2
Other	5	7	3	6	5	5
Nothing wrong	52	45	56	53	49	52
Don't know	2	2	1	1	2	2

Problems with waste collection were suffered disproportionately by the 18-24's, at 50% against the average of 38%.

TABLE 165: TRUSTED SOURCES ON WASTE MANAGEMENT (breakdown by location and region)

Environmental Problems in Neighborhood	Total	Urban	Rural	North	Amman	Central	South
Base	1000	835	165	269	390	251	90
	%	%	%	%	%	%	%
Waste not collected regularly	23	23	25	26	19	25	28
Not enough containers at waste collection point	5	6	4	4	7	5	2
Flies and insects around waste	4	3	5	7	3	2	1
Waste incinerator too close to homes	6	7	4	7	5	7	9
s.t.	38	39	38	44	34	39	40
Broken sewage pipes on street	4	3	8	7	2	7	0
Flooding cesspits	4	3	4	6	2	4	1
Poor sewage system	3	3	3	3	2	5	4
s.t.	11	9	15	16	6	16	5
Sheep/poultry near homes	2	1	5	4	1	2	1
Lack of green areas	1	1	2	1	2	0	0
Other	5	3	12	6	2	6	10
Nothing wrong	52	53	46	40	62	49	49
Don't know	2	2	1	1	1	3	0

Problems with waste collection were experienced by 39% in urban areas and 38% in rural areas, but sewage problems were greater in rural areas, by 15% to 9%.
By region, the North experienced slightly more problems with waste collection than the rest of the country, and the North, along with the Central region, suffered most from sewage problems.
Amman came off lightest with 62% experiencing no problems, compared with 49% experiencing none in the Central and South regions, and only 40% experiencing none in the North.