



ReWater MENA Project

**The 2nd Focus group discussion in the Wadi Eseer—
20th, July 2020**

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Objectives of the workshop, agenda, and participants

Objectives of the day

The Second Focus Group Discussion (FGD2) was held in Wadi Eseer on the twentieth of July 2020, in the presence of a group of farmers. This discussion was organized in order to highlight the agricultural real status in Wadi Eseer region and communicate with farmers to explore their willingness to use treated wastewater from Wadi Eseer Wastewater Treatment Plant in agriculture. The study objectives can be summed up as follows:

- Meet with the farmers participants
- Learn and understand the agricultural status and conditions and irrigation water sources in Wadi Eseer.
- Maintain continuous communications and cooperation with farmers willing to use treated wastewater in agriculture.
- Learn about the real status of the use of treated wastewater in agriculture in Wadi Eseer region.
- Motivate farmers to use treated wastewater in agriculture.

Detailed agenda

The work agenda included some inquiries, through which the aims can be fulfilled, and it was divided into five domains, each of them consisting of a set of questions (as clarified in details in Table1).

Table 1. Focus group agenda / Questions of the discussion

| Wadi Eseer – Focus Group 2 (FG2) | |
|--|------------------------------|
| Location: | Wadi Eseer /Bustan Awwad |
| Date: | 20/7/2020 |
| Participants: | 16-20 persons |
| Time / Duration | 10:45- 1:00 / around 2 hours |
| Domain (1): General Information | |
| 1. What are the sources of irrigation water? | |
| 2. How many days are allocated for irrigation? | |
| 3. How much is the acreage of the cultivated land? | |
| 4. What is the kind of cultivated plants and trees (trees, vegetables...etc.?) | |
| 5. What is the age of the currently grown crop? | |
| 6. What is the type of applied irrigation style (surface irrigation, drip irrigation, flood/furrow irrigation)? | |
| 7. What is the kind of used fertilizer and how long has the land been fertilized? | |
| Domain (2): Irrigation by fresh water (water springs) This domain aims at recognizing the real status of spring water irrigation in Wadi Eseer) | |
| 1. Since when has fresh water used for irrigation? | |
| 2. Is water quantity for irrigation sufficient to meet all water needs of the farms? | |
| 3. Have you been suffering from shortage of water or dry springs over the last years? | |
| 4. Have the product or the crops been affected by the water shortage? | |
| 5. Are there unexploited agricultural lands because of the lack of irrigation water? | |
| Domain (3): Irrigation by treated wastewater (this domain aims to recognize the real status of wastewater irrigation in Wadi Eseer) | |

| |
|---|
| 1. How many agreements/contracts have been signed with the Water Authority for re-utilization of wastewater from Wadi Eseer water treatment plant (farmers whose farms are close to the plant)? |
| 2. Since when has treated wastewater used for irrigation? |
| 3. Is water quantity for irrigation sufficient to meet all water needs of the farms? |
| 4. What was the source of irrigation before shifting to irrigation by treated wastewater? What is the reason behind utilizing treated wastewater in irrigation? |
| 5. Are there any challenges or negative effects to the usage of treated wastewater (using fertilizers, productivity and quality of the crops)? |
| Domain (4): Enhancing the utilization of treated wastewater in irrigation (future prospects): This domain aims to adopt a participatory methodology in selecting a model to increase the direct utilization of treated wastewater in irrigation in Wasi Eseer. The facilitator will ask farmers if they are willing to expand in the utilization of treated wastewater in irrigation, either in the currently uncultivated lands or the lands irrigated by fresh water (water springs). Then a chart will be developed (Reuse model) as follows: |
| <pre> graph LR A["Land Uncultivated cultivated at an area of 5 dunums, irrigated by fresh water ,water is insufficient land covering 10 dunums....."] --> B["Current crops - None - Vegetables"] B --> C["proposed crops according to Jordanian standards for reuse •-Trees •Fodder"] C --> D["Crops to be cultivated by farmers - 5 dunums of olive trees -5 dunums of vegetables , irrigated by fresh water, 5 dunums for fodder, irrigated by treated wastewater"] </pre> |
| 1. What are the obstacles that hinder expansion in utilization of treated wastewater in irrigation in Wadi Eseer? |
| 2. Will the treated water be used if distribution networks are available to cultivate uncultivated land and expand the agricultural area? |
| 3. Will the current crop type be changed or replaced if the treated wastewater is reused in line with the reuse standards? |
| 4. For your knowledge, are there cultivable agricultural areas situated close to the plant that can be irrigated by treated wastewater (other than the participating farmers) and are not currently being used or exploited? |
| Domain (5): Production and Cost |
| 1. How much is the amount of product per year (ton/dunum)? |
| 2. How much is the average of product sale (Dinar/ton)? |
| 3. How much does water for irrigation costs per year? |
| 4. How much is the cost of preparing land / transportation / labor / fertilization / taxes/ fees and other costs? |

The work agenda included five domains, each of which seeks to achieve one of the workshop objectives. The first and the second domains aim to identify the agricultural real status in the region. Through the first domain, we can learn about the size of agricultural areas, the types of prevailing agricultural crops, and the irrigation methods used by farmers. As for the second domain, it will contribute to identify the nature of irrigation water sources, which include the number of water springs farmers rely on for irrigation, as well as the quantity and quality of water flowing from the springs.

With regard to the third domain, it aims to focus on the real status of how treated wastewater is used in agriculture, in order to assess the number of agreements concluded with the Ministry of Water that allow farmers to use treated wastewater, the quantities of treated water used for irrigation and what are the main challenges facing them. As for the fourth domain, it aims to detect the degree of the farmers' desire and willingness to use treated wastewater from Wadi Eseer treatment plant. Moreover, this domain will help understand the main obstacles for the use of treated water in agriculture, in addition to estimating the farmers' willingness to grow other crops (better adapted to treated wastewater) and change their practices. The last domain focusses on the issues related to the costs of agricultural activities and production quantities.



Participants of the workshop

The total number of the participants in the second focus group was seventeen, among them fifteen farmers, while two participants were guests (the venue owner and an agriculture engineer, volunteer). The work team asked a farmer to invite the participants to the focus group. It is worth noting that despite RSS invitations sent to concerned stakeholders from Miyahuna (the company responsible for managing water issues in Amman), no one attended. **Table 2** shows the names of the participants.

Table 2. List of participants of the 2nd Focus Group Discussion

| | Name | Affiliation |
|----|------------------------|-------------|
| 1 | Kamel Al-Mhirat | Farmer |
| 2 | Madd Allah Al-Mahammed | Farmer |
| 3 | Hussien Al-Sulihat | Farmer |
| 4 | Rebhi Al-Sulihat | Farmer |
| 5 | Raja Al-Mahammed | Farmer |
| 6 | Fallah Al-Mhirat | Farmer |
| 7 | Kamel Al-Shahwan | Farmer |
| 8 | Khaleed Abu alsundus | Owner |
| 9 | Waed Salameh | Volunteer |
| 10 | Jamal Al-Mahammed | Farmer |
| 11 | Shawesh Al-Mahammed | Farmer |
| 12 | Saleh Al-Sulihat | Farmer |
| 13 | Subhi Al-Mahammed | Farmer |
| 14 | Jafar Al-Mahammed | Farmer |
| 15 | Mufleh Al-Mahammed | Farmer |
| 16 | Khalil Al-Mhirat | Farmer |
| 17 | Menwer Al-Mahammed | Farmer |

It is noted that there was no presence of women among the participants in the focus group, and this is due to the nature of the workshop and its objectives, as it specifically targets farmers. The vast majority of farms are owned and run by males.

Report of the focus group discussion

Proceedings of the session

The workshop started with a welcoming speech from Dr. Mo'ayad Al-Sayyed, the project coordinator in Jordan, where he explained the objectives of the day and the expected results to the participants. He also stressed the importance of the participation of farmers and taking lessons from their experiences, as well as motivating them to participate, provide information and give their suggestions. Dr. Mo'ayad, explained the importance of farmers' participation in the workshop to learn about the agricultural real status in the region, to explore the availability of water sources and the quality and quantity of water flowing from the springs being used for irrigation. Dr. Mo'ayad explained that the main goal of the discussion was to understand the farmers' willingness to use treated wastewater coming from Wadi Eseer plant.



The focus group was divided into two sessions, over two hours, during which they had a break of about 15 minutes. In the first session, the participants were introduced to each other followed by a discussion of the first domain of the agenda, and part of the second domain. In the second session, the topics of the others domains were resumed and discussed together.

Dr. Moa'yad concluded the session by thanking all the participants for their participation in the first focus group for providing valuable information.

The session was directed by Dr. Mo'ayad, with the assistance of the work team and Eng. Emad Al-Khalil, representative of LISODE.

Introducing participants and having an idea about them is one of the basic requirements of the workshop, so each participant is assigned a specific time to introduce himself and provide others with information about his agricultural activities.

The methodology of the open-ended questions was applied to the discussion in order to motivate the participants to provide as much information as they can without restrictions, in addition to adopting the method of dialogue, sharing information, and motivating all attendees to participate and breaking the state of deadlock as well as building-up confidence between the workshop management team and the participants.

The roles have been distributed among the members of the work team to attain all observations from the participants and collect as much notes and information as possible. As planned, cellular phones devices were used for audio recording of the session, and the team prepared a satellite geographical map of the region showing the exploited and unexploited agricultural areas, to inform farmers of these areas and help them identify the location of their own farms on the map. The map also identifies the location of Wadi Eseer treatment plant and the surrounding lands that are suitable for growing plants and trees.

For the purpose of an appropriate management of the dialogue and discussion and to give everyone a chance to participate without limiting the participation to certain people, the organizers of the

workshop adopted a fair distribution of time among the participants, trying not to deviate from the main discussion topics and avoid ineffective and direct debate between the participants.

At the beginning of the focus groups, the participants and the work team participants introduced themselves to each other. Each participant provided basic information about himself including the name, agricultural expertise and other important agricultural information. However, the time was short and it was difficult to give further details and adequate information about farmers. The work team briefed the participants on the geographical map to determine the location of their farms, but the farmers were not able to do so because of unclear and vague destinations on the map, which covered a large area in the region.

In the first session, the discussion was focused on the first, the second and part of the third domain. The open-ended questions' methodology was applied during the session, the participants were encouraged to participate and provide information, while ensuring a fair distribution of the opportunity to speak among the participants. Thus, the majority of farmers participated in the discussion and provided valuable information about the agricultural and water conditions in the region.

It was found that there were no farmers depending on treated wastewater from Wadi Eseer plant; the Ministry of Water and irrigation did not sign any contract with the farmers (except for 2) – those contracts are made to allow them exploit treated wastewater, meaning that it will be difficult to get information on the practices related to using treated wastewater when no one is using it. However, the farmers presented their suggestions and views regarding the use of treated wastewater in agriculture, and expressed strong willingness to use that water in their farms as an alternative to spring water because spring water is not sufficient to expand irrigation and agricultural activities.

In the second session, the discussion continued through open-ended questions related to the remaining part of the third domain and the completion of the fourth and fifth domains.

Through discussion and interventions, it was found that the participants do not have sufficient information about the quality of treated wastewater coming from Wadi Al-Seer plant and its impact on agricultural crops.

At the end of the discussion, the participants presented some recommendations, calling that their remarks and suggestions can be submitted to the stakeholders and the decision-makers at the Ministry of Water and Irrigation and Miyahuna Company. In addition, they expressed their desire to continue holding discussions and strengthening the dialogue through the participation of decision-makers and the invitation of more farmers, to inform them of developments regarding the use of treated wastewater. The participants requested to boost field visits, a continuous monitoring of the quality of treated wastewater, to be provided with available information and to raise the farmers' awareness about water quality.

Main ideas raised during the discussion

The following shows the most important interventions and discussion points with the participants:

- There are 14 water springs in the region for the same area, 4 of those springs are only used for irrigating farms.
- Ain Al-Safra / Al-Shahawein / Al-Faraweit / Al-Hamdan are the main water springs used as water sources for irrigation and they are close to the water treatment plant.

- The Ministry of Water and Irrigation signed two agreements with two farmers, allowing them to use treated wastewater from the plant for agriculture.
- With regard to the amount of current water flowing from these springs, Ain Al-Safra and Al - Shahawein' condition is stable, but for the remaining water springs the water flow is lower than before.
- It is imperative to monitor water springs in the area exposed to pollution coming from treated wastewater from Wadi Al-Seer plant.
- The water flow decreases from these springs led to reducing the cultivated area in the region.
- The cost of agricultural labor is the highest among the costs of other agricultural activities, as its amounts is close to 70% of the total costs of agricultural activities, and the rest of the costs are divided between the costs of spraying and fertilizing the land.
- The farmers stressed the need to refer to the study of the environmental impact of the Wadi Eseer plant, to identify its environmental effects on the region and the agricultural crops.
- The irrigation method used by farmers are the drip and surface irrigation, as the drip method is mainly used for fruit trees, whereas the method of surface irrigation is used for vegetable crops.
- There is a distribution schedule for irrigation among farmers, in order to distribute water shares and irrigation time between them. The shares depend on the area of agricultural land according to the divisions of the Department of Lands and Survey.
- The high areas of the plant are planted with grains and olives, and they rely on rain fed irrigation.
- There is a strong willingness of farmers to rent agricultural lands surrounding the plant (owned by the state), but their request was rejected by the Ministry of Agriculture for fear of being taken over (acquisition) in the future. (Because the tenant has the right to own the land after 10 years).
- 150 dunums of the farms' area located under the plant are areas owned by farmers and are irrigated from water springs, such as Al-Faraweit, and there are large areas irrigated by rain fed.
- It will be helpful to conduct a study on a small area of land to know the amount of water saved from irrigation methods used (drip and flood).
- Farmers have a strong desire to use water coming from the wastewater plant in agriculture and are willing to sign contracts with the Ministry of Water and Irrigation for this purpose, but the Ministry refuses to do so for now.
- Farmers seek to increase the amount of water used for irrigation to expand their agricultural activities.
- The majority of farmers do not have drip irrigation systems and rely on traditional (surface) irrigation.
- The farmers called for holding a workshop in the presence of representatives of the Ministry of Water and Irrigation and Miyahuna Company to discuss the challenges they are facing; in addition to asking the Ministry to sign contracts that would allow them to use treated wastewater.
- Farmers are demanding to make collective tanks above the plant area so that the water coming out of the plant would be pumped to these tanks and then used for irrigation.
- The optimal utilization of unexploited lands around the treatment plant is imperative.

- The farmers express their fears that the Ministry of Water and Irrigation will build closed transportation to transfer treated wastewater from Wadi Eseer wastewater treatment plant to the Kafein Dam, and thus it would become impossible for farmers to use that water for irrigation.
- The majority of tree crops in the region are olives, lemon, palm and guava.
- The cultivated area in Wadi Eseer, which depends on water springs for irrigation, does not exceed 500 dunums.
- The farmers demand that the Royal Scientific Society should have a greater role in analyzing water and soil, observing farmers in the field, and monitoring the quality of water from the wastewater treatment plant.

Conclusions and recommendations

Conclusion

- It was an opportunity to meet some farmers in the region.
- Many participants have a desire to use treated wastewater from Wadi Eseer treatment plant in agriculture.
- The Ministry of Water and Irrigation is not willing to sign more contracts with farmers to use treated wastewater.
- There is a strong desire among farmers to expand their agricultural activities if more water quantities are available for irrigation.
- Farmers do not have information about the impact of climate change on springs used for irrigation.
- There is a lack of communication between farmers and the Ministry of Water and Irrigation or Miyahuna Company.
- Farmers are demanding to hold meetings with the stakeholders at the Ministry of Water and Irrigation and Miyahuna to discuss the real status of agriculture and water resources in the region.

Recommendations

The recommendations are divided into two aspects/parts, the first part focusses on the technical issues related to farmers and the other is related to the management of the focus group. They can be explained as follows.

Technical aspect/part

- Holding regular meetings and workshops with farmers to provide clarifications and explanations on the situation regarding farmers having a contract to use treated wastewater. This would help understand why some can have access to these resources and some other cannot; and maybe find compromise or solutions that could be beneficial for most people (or at least, understood and transparent to all)
- Raising farmers' awareness on the importance of using water-saving irrigation systems and abandon surface irrigation.

- Providing farmers with reports or information illustrating the quality of treated wastewater from Wadi Eseer plant.
- Conducting studies focusing on the positive and negative effects of farmers' desire to shift to using treated wastewater as an alternative to spring water in irrigation.
- Explain the reasons why the Ministry of Water and Irrigation does not want to sign more contracts with farmers to allow them use treated wastewater.

The administrative aspect/part

- It is preferable not to rely on farmers to invite participants to attend workshops and meetings in order to achieve transparency and justice in selecting participants.
- It is necessary to invite farmers who have contracts with the Ministry of Water and Irrigation that allow them to use treated wastewater in agriculture to attend similar discussions.
- Pay attention to the type of participants to be gathered, especially in the case of a first meeting. If they strongly disagree on some points, it may affect the overall discussion, create parallel discussions and debates, thus creating an uncomfortable and tensed atmosphere. In some cases, having separate groups of discussions can be considered as an option to avoid those debates.
- Focus groups are made to gather a small number of participants (8 to 10); if more people is coming, than split the group in two smaller groups and facilitate the 2 discussions.
- Pay attention to the way invitations are circulated; the way the participants are invited to a workshop may create a bias in the category of participants coming effectively to the workshop. For example, you may have a lot of farmers growing the same crops that will be represented and you may have less diversity.
- And it is imperative to take into account the issue of diversity in the selection of participants from the farmers, for example a representative of vegetable farmers, a representative of fruit trees, and representatives of farmers using agricultural wells ... etc.
- Provide identification cards including the name of each participant to facilitate communication enhance confidence and hinder any inconvenience.
- Use tools to take down notes and register important information while managing the focus group so that the participants can recognize them, such as colored flash cards.
- Supply required pens, notebooks and water on the tables for the participants.

Annex: List of the participants



الجمعية العلمية الملكية
Royal Scientific Society

مشروع الاستخدام المستدام والأمن لمياه الصرف الصحي المعالجة في منطقة الشرق الأوسط وشمال إفريقيا

مجموعة العمل المركزة (٢)

وادي السير

تاريخ ٢٠٢٠/٠٧/٢٠

| الرقم | الاسم | رقم الهاتف |
|-------|------------------------------------|------------|
| ١ ✗ | تامر محمود فارس العصيلات (أبو علي) | ٠٧٧٩٥٧٧٠٢٣ |
| ٢ | مدالله سمور علي المحاييد | ٠٧٩٦٤٢٢٨٤٤ |
| ٣ | حسينه علي عابد الصليحات | ٠٧٧٣٠٨٣٧٠٦ |
| ٤ | ربيعي علي عابد الصليحات | ٠٧٩٠١٠٤٣٤١ |
| ٥ | رجا محمد المحاييد | ٠٧٧٢٣٨٠٩٠٦ |
| ٦ ✗ | فلاح ابوظهر المرزبان | ٠٧٧١٤١٠٥١٥ |
| ٧ | كامل الشحوان | |
| ٨ ✗ | م.الدوار ابراهيم | ٠٧٩٧٠١٧٩٤٤ |
| ٩ | وعبد ايمن صبيح سلامة | ٠٧٨٢٧١٦٢٧١ |



الجمعية العلمية الملكية
Royal Scientific Society

مشروع الاستخدام المستدام والأمن لمياه الصرف الصحي المعالجة في منطقة الشرق الأوسط وشمال إفريقيا

مجموعة العمل المركزة (٢)

وادي السير

تاريخ ٢٠٢٠/٠٧/٢٠

| الرقم | الاسم | رقم الهاتف |
|-------|--|------------|
| ١ | جمال علي المحاييد | ٠٧٧٢٣٨٠٩٠٦ |
| ٢ ✗ | صنورا ابراهيم المرزبان | ٠٧٧٤٦٠٧٦٤٦ |
| ٣ | د.شويش هندي المحاييد | ٠٧٩٩٥١٤٦٦٦ |
| ٤ | فلاح يوسف تامل السليحات | ٠٧٧٧٠٥٦٢٨٠ |
| ٥ | بركت جميل باقر المحاييد | ٠٧٩٥٩٠٢٥٩٩ |
| ٦ | هنرا جميل باقر المحاييد | ٠٧٩٥٥٥٤٧٧٦ |
| ٧ ✗ | فلاح حسينه عبدالله المحاييد (أبو أحمد) | ٠٧٩٥٢٤٢٠٧٥ |
| ٨ ✗ | نور ابراهيم محمد المرزبان | ٠٧٧٦٨٥٥٩٧٧ |