

**Hashemite Kingdom of Jordan**

**Ministry of Agriculture**

**“Exploring High-Value, Socially-Inclusive, Water-Efficient Agriculture Project in Jordan” (P170476).**

**Environmental and Social Management Checklist for Improving  
Energy Security in Alkarak & Al-Tafila with Solar Energy  
(Supply and Installation of 70KwP)**

November , 2023

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## ***A- Description of the Project Area:***

### **1- The Hydroponics Farms In Tannur – Wadi Al Hessa/ Al Tafila & Al Mujib Valley/ Al Karak, Jordan**

The project is located in the

A- southern part of the Jordan in Wadi Al Mujib, Karak Governorate, near the village of Ariha 80 km South-West of the capital Amman, approximately 400 m above sea level. The drive from Amman to the farm location in Wadi Al Mujib will take about one hour depending on the weather and traffic. The project area is by far one of the most fertile regions due to the rich soil, high rate of rainfall in winter and suitable weather year long. The project will be implemented on Government land (up to one and half hectares) owned by MoA (Annex 2, land ownership). The site is located about 10 Km to the west of the Madaba – Karak street. The Mujib Dam will be the water source for the project through a water network of the Jordan Valley Authority, it is located adjacent to the planned Hydroponic farm on the eastern and western boundary of the plot about 150-200 m. Located directly to the east of the Hydroponics farm are fruit and vegetable farms. The Mujib Dam is a storage water system carrying 30 million cubic meters of surface water from the Wadi Al Mujib on the Central Badia through the East Jordan up to the Dead Sea. The nearest farmhouse from the project site is in Wadi Mujib, which is located to the west of the site about one km from the site, while Ariha village is located about 4.6 km to the south west, Theban City \Madaba Governorate is located about 7 km to the north west and Al Qaser city is located about 16.5 km to the south west of the project site, which are considered outside the project influence area. The project land is surrounded by agricultural farms. To the north and east of the project land are farms located on either side of the dam.

The second installation of Solar PV will be conducted in Al-Tafila Hydroponic Project site that is owned by Ministry of Agriculture, the designated area for the Solar PV will be up to 1.5 hectare. The site located in Wadi Al Hessa, near the village of Al Burbaitah, 1.8 km south of Al-Karak -AlTafila road in Al Tafila Governorate, the site is approximately 400 m above sea level.

### **2- Introduction of the project**

The hydroponic project is based on supporting the establishment, installation and initial operations of a pilot hydroponics unit (e.g., computer-based humidity control systems, heat control systems and processing/packing equipment and solar energy). The pilot high-tech hydroponic farm will be constructed within the boundary of the

- a- village of Al Ariha in the Wadi Al Mujib area located near the city of Al Qasr, on the Land plot no.(3) parcel no. (5), in al Karak Governorate, on a land surface area of 1.5 Hectare or 15 (Dunoms) and in will be constructed within the boundary of the village of Al Burbaitah in the Wadi Al Hessa area located near the city of Tafileh, on the Land plot no.(3) parcel no. (5), in the Tafileh Governorate, on a land surface area of 1.5 Hectare or 15 (Dunoms). The new component of solar energy which aims to: (i) increase reliance on renewable energy, (ii) increase renewable energy and (iii) contribute to the green economy and sustainable development in the Wadi Al Mujib region.
- b- village of Al Al Burbaitah in the Wadi Al Hessa area located near the city of Tafileh, on the Land plot no.(3) parcel no. (5), in the Tafileh Governorate, on a land surface area of 1.5 Hectare or 15 (Dunoms).

### **3- The Solar System**

The solar energy system that will be installed:

- A- In Karak site is off grid, required power is 75 kilowatts including: (i) 65 kilowatts to operate pumps for irrigation and drainage, cooling fans, automatic filters, well pumps, air pumps, and it will be operated in 3 phases, and (ii) 10 kilowatts to operate the fertilizer device, lighting, refrigeration air conditioner. A 3-phase group with an inverter, and a 1-phase group works on another inverter.
- B- In Tafilah site is off grid: AalTafila: The required power load in Tafilah is 80 kilowatts and is divided into two parts including: (i) 70 kilowatts power will be connected and used to operate pumps for irrigation and drainage, cooling fans, automatic filters, well pumps, air pumps, and it will be operated in 3 faz, and (ii) 10 kilowatts power will be used to operate the fertilizer, lighting, refrigeration, cn, and it works on one phase.

### **B- Purposes of the Environmental and Social Management Plan (ESMP)**

An Environmental and Social Impact Assessment (ESIA) for Al-Karak & Tannur – Wadi Al Hessa sites ([https://moa.gov.jo/AR/ListDetails/%d9%85%d8%b4%d8%a7%d8%b1%d9%8a%d8%b9\\_%d8%a7%d9%84%d9%88%d8%b2%d8%a7%d8%b1%d8%a9/31/8](https://moa.gov.jo/AR/ListDetails/%d9%85%d8%b4%d8%a7%d8%b1%d9%8a%d8%b9_%d8%a7%d9%84%d9%88%d8%b2%d8%a7%d8%b1%d8%a9/31/8)) has analysed the E&S risks and impacts of the Hydroponic Project. The study addresses the E&S baseline conditions that would be applicable for the new solar PV system which will be located in the same site. |A summary of the Environmental and Social Impacts mentioned on ESIA<sup>1</sup>.

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<sup>1</sup> The project is likely to have limited negative impacts. This section provides a summary of anticipated environmental and social risks from project activities. The specific risks and effects that the project's execution is expected to have in accordance with the receptors will be identified using the specific data collected from each execution locations and the surrounding area during the ES screening phase.

**The most important aspects arising from the key project activities are the following;**

- During the construction phase, impacts are related to labor and working conditions especially Occupational Health and safety of the workers, caused by vehicles and driving, manual handling, working from heights, noise, vibration, electrical and fire hazards. Moreover, other risks could be related to child labor, Sexual Exploitation and Abuse (SEA)/ Sexual Harassment (SH), on site, which can have health and safety impacts during the construction phase.
- Pollution from Hazardous Waste: The improper handling of PV panels during construction can result in damaged or broken modules (considered E-Waste). or resulting of such wastes at the Decommissioning Phase (at the end-of-life span of panels and batteries). The hazardous materials contained either in the PV modulus or in the other electrical components, may cause soil and water pollution; negative effects on public health, and environmental damage, if not disposed of or recycled in a safe manner at authorized disposal or recycling facilities, according to the Palestinian Cabinet Decree on the Management of Hazardous Waste – No. 6, 2021. Similarly, small amounts of domestic waste are anticipated from packaging.
- Air pollution: increased dust is expected during the installation of the Solar PV system installation, or due to traffic of machinery entering the site.
- While the project is located in an arid area, dust cleaning is required during operation, water usage is expected to increase during summer and dry seasons.
- Biodiversity: very limited site-specific impacts where trees could obstruct sun rays and require to be removed in order to create open unshaded area for PV panels.

### C. Environmental and Social Management & Monitoring Plan

Contractors, consistent with the terms of the bidding documents shall commit to fully implementing all the measures stipulated in this Simplified ESMP for Tannur – Wadi Al Hessa/ Al Tafila & Al Mujib Valley/ Al Karak sites. Table -1- below illustrates the project environmental and social management and monitoring plan. Regular inspection will be conducted by MoA E&S team to ensure compliance:

**Table 1: Environmental and Social Management & Monitoring Plan**

<b>Impact</b>	<b>Mitigation measure</b>	<b>Monitoring measure</b>	<b>frequency</b>	<b>Implementation responsibility</b>	<b>Supervision Responsibility</b>
<b>Non-hazardous waste</b>	<p>The Contractor shall ensure cleanliness, waste management and arrangement Identify expected types and volumes of waste, how it will be stored, if required, and when and where it will be disposed of, where disposal should be done at a recognized landfill.</p> <p>The site as separation and storage of different types of waste such as Hazardous, non-hazardous and recyclable materials construction, plastic, paper, etc. to facilitate proper disposal for the generated waste. Apply good waste maangement practices at all times in all project sites, including approved designated and protected areas for temporary waste storage, if required.</p> <p>Prohibit stockpiling of materials or</p>	<p>-by setting Inspection reports - Keep monthly log of disposed quantities</p>	Daily	Contractor	Ministry of Agriculture (MoA)

## Simplified ESMP

<b>Impact</b>	<b>Mitigation measure</b>	<b>Monitoring measure</b>	<b>frequency</b>	<b>Implementation responsibility</b>	<b>Supervision Responsibility</b>
	generated construction waste on private land.				
<b>Hazardous waste</b>	<p>The Contractor shall provide safe and closed storage space for the identified hazardous materials</p> <p>Proper labelling of hazardous materials must also be used for the storage pin. The Contractor shall maintain Materials Sheets (MSDS). Material safety data on site.</p> <p>The contractor shall liaise with the relevant governmental bodies (MoEnv.) to properly transfer waste at regular intervals and dispose of them according to the national hazardous waste regulations</p>	<p>Presence of protected storage area for hazardous waste</p> <p>Log for hazardous waste storage and transfer to designated landfill.</p>	Daily or weekly	contractor	MoA
<b>Effect on plants existing in the project site</b>	1-Prevent removal of existing plants unless necessary, plant a replacement in the Project site	All green cover maintained. No. of trees uprooted and no. of planted trees.	Once Incident occurs	contractor	MOA
<b>Effect on animals list in the Project and surrounding area</b>	<p>Prevent workers from hunting or killing animals</p> <p>Prevent workers from destroying the nests of terrestrial birds if present in the project site</p>	Coordinate with The Royal Society For The Conservation of Nature RSCN where required	during a phase The installation	contractor	MOA and RSCN



Simplified ESMP

Impact	Mitigation measure	Monitoring measure	frequency	Implementation responsibility	Supervision Responsibility
<p><b>Occupational health and safety during installation</b></p>	<p>Compliance with environmental, safety, and health policies and procedures and safety on site all implementation stage .  <a href="https://moa.gov.jo/AR/ListDetails/%d9%85%d8%b4%d8%a7%d8%b1%d9%8a%d8%b9%d8%a7%d9%84%d9%88%d8%b2%d8%a7%d8%b1%d8%a9/31/8">https://moa.gov.jo/AR/ListDetails/%d9%85%d8%b4%d8%a7%d8%b1%d9%8a%d8%b9%d8%a7%d9%84%d9%88%d8%b2%d8%a7%d8%b1%d8%a9/31/8</a></p> <p>Appointing individual responsible for daily supervision including compliance with health and safety policies at the site.                      - Training the workers on health and safety risks and measures related to installation of PV system including proper use of PPEs’ before starting the project activities.                      Provide PPEs to all project workers at no cost</p> <p>Supplier health assigned health and safety officer assess the risks and implement proper measures, communicate he risks and mitigation measures with workers and MoA supervision team                      Ensure that slippery areas are marked, and shoes are provided                      Reducing the use of extended cables at work sites.                      Ensure that the cables are within specific paths                      - Reducing work that requires working at</p>	<p>Ensure public safety before starting any activity.                      Make sure to practice proper measures in                      The project                      Location                      inspection                      periodic                      facilities                      The project</p>	<p>- before starting any activity                      - in a way continuous                      - Monthly</p>	<p>contractor</p>	<p>MoA                      Ministry of Labor</p>

Simplified ESMP

<b>Impact</b>	<b>Mitigation measure</b>	<b>Monitoring measure</b>	<b>frequency</b>	<b>Implementation responsibility</b>	<b>Supervision Responsibility</b>
	heights as much the possibility. - Provide safety net if there is need to Reducing work at heights. - Provision of first aid equipment and supplies in a location				
<b>Effect on the soil due to Possibility of leakage chemicals and oils stored.</b>	Storage of broken hazardous waste, hazardous material, oils in no-permeable area. Don't allow vehicle maintenance or refueling at the project site. Working on Procedures response from spills	Waste, chemicals and fuel check not the presence of spills	daily	contractor	MOA
<b>Increase levels Noise at site project during Construction works</b>	Use effective site management applications, and ensure that All equipment is properly maintained and operated, Reducing the use of motors when --not needed	no of complaints regarding noise level	monthly	contractor	MOA
<b>Air Pollution by Dust and Emissions</b>	Perform periodic preventive maintenance and check for construction vehicles and machineries prior commencement of work To remove and dispose excavated material from maintenance location upon completion of work	daily observation for levels dust during activities construction phase	daily	contractor	Contractor and MOA
<b>Public health and safety</b>	Strictly comply with the local regulations regarding the working hours and the levels of noise	Timesheet log	Continuous during working hours	MoA	MoA

Simplified ESMP

Impact	Mitigation measure	Monitoring measure	frequency	Implementation responsibility	Supervision Responsibility
<p><b>Occupational safety and Health include mandatory use of appropriate PPE</b></p>	<p><b>Supplier shall provide personal protective equipments (PPE's) to all workers and mandate workers use of the PPEs</b></p> <p>Exposure to heat and high temperatures during worktimes. Access to drinking water and rest periods</p>	<p>Daily inspection by Safety Officer / Supervision Consultant Team</p>	<p>Continuous during working hours</p>	<p>Contractor/ Lead Technical officer</p>	<p>MoA</p>
	<p>Provision of First aid kit</p>		<p>Once provided Listed and Documented</p>	<p>Contractor</p>	<p>MoA</p>
<p><b>Grievance Redress management (GRM)</b></p>	<p>Risk</p> <ul style="list-style-type: none"> <li>- Possible complaints/grievances from the public during construction for noise and disturbances</li> <li>-Possible complaints from workers (working conditions, employment rights, wages, remuneration, .... etc.)</li> </ul> <p>Mitigation measures:</p> <ul style="list-style-type: none"> <li>Ensure that the grievance system uptake channels are in place and functioning adequately</li> <li>-the responsible staff handling complaints have the relevant training and respond in a timely manner as per SEP and LMP</li> <li>-the grievance mechanism has an appeal procedure in the event the complainant is not</li> </ul>	<p>Grievance record (log)</p>	<p>Continuous</p> <p>The contractor should establish “workers GM” and keeps a log of all their complaints and produce regular reports – every xx days.</p>	<p>Contractor</p>	<p>MoA/ Local Committee</p>

Simplified ESMP

Impact	Mitigation measure	Monitoring measure	frequency	Implementation responsibility	Supervision Responsibility
	<p>satisfied with the resolution</p> <ul style="list-style-type: none"> <li>-ensure widely dissemination of the GM with mobile project signs</li> <li>-ensure separate GMs for project workers and for stakeholders as outlined in the LMP and the SEP of the</li> </ul>				
<b>Code of Conduct (CoC)</b>	<p>Ensure signing of project's cods of conduct by all project workers. Ensure that new staff is trained and informed of the CoC</p>	<p>Contract record</p>	<p>continuous</p>	<p>Contractor</p>	<p>MOA</p> <p>Codes of conduct will be signed by all project personnel</p>
<b>Employment</b>	<p>Risk: Equal opportunity to benefit from Employment Opportunities</p> <p>Provide temporary Job opportunities to vulnerable groups or members of the community. The project will ensure that adequate training, provision of PPEs, non-hazardous work, ect,depending on the type of work will be provided to them.</p> <p>Mitigation measures:</p> <p>The contractor should follow the employment process in accordance to contract's requirements</p>	<p>Review of Contractor's employment plan and ongoing records</p> <p>HR document check</p> <p>Payments and employment documents check &amp; Visual inspection</p>	<p>Continuous during construction</p>	<p>Contractor</p>	<p>MoA</p>

Simplified ESMP

Impact	Mitigation measure	Monitoring measure	frequency	Implementation responsibility	Supervision Responsibility
<p><b>Child Labor</b></p>	<p>Risk: Possibility of employing minors (below 18 years old)</p> <p>Mitigation measures: The contractor should comply with the national labor law and the requirements of working conditions as per and LMP (Labor Management Procedures) of the project which strictly prohibit the employment of workers under the age of 18 years old.</p> <p>The contractor will keep a site log of all workers with age verification records</p>	<p>Log of workers on site</p> <p>Site inspection and document check</p> <p>Age verification records</p>	<p>Continuous during construction duration</p>	<p>Contractor</p>	<p>MoA</p> <p>Continuous During construction duration</p>
<p><b>Forced Labor</b></p>	<p>Risk: Migrant workers, refugees are vulnerable to forced labor practices such as exploitation and abuse</p> <p>Mitigation measures: The contractor should comply with the requirements of the Labor Management Procedures (LMP) of the project</p>	<p>Log of workers on site</p> <p>Site inspection and document check (complaints log and pay stubs)</p>	<p>Continuous during construction duration</p>	<p>Contractor</p>	<p>MoA</p> <p>Continuous during construction duration</p> <p>Site inspection and document check</p>
<p><b>Stakeholder Engagement and Communication</b></p>	<p>Risks: Possible lack of engagement, misinformation or complaints/grievances from the public during construction works</p>	<p>Site inspection and document check (Complaints log)</p>	<p>Continuous during construction</p>	<p>Contractor</p>	<p>MoA</p> <p>Continuous during construction</p>

Simplified ESMP

Impact	Mitigation measure	Monitoring measure	frequency	Implementation responsibility	Supervision Responsibility
	<p>Possible complaints from workers (working conditions, employment rights, wages, remuneration.... etc.)</p> <p>Mitigation measures: Contractor shall establish a good communication plan with local population and communicate regularly on key issues of concern for adjacent communities</p> <p>The contractor will keep a complaints log and record grievances and actions taken to address grievances received against the project</p> <p>The contractor will also keep workers grievance log to be shared with the GM Focal Point from MoA</p>				
<b>Labor Influx</b>	<p>Risk: Labor Influx is not anticipated for the sub-project given the small scale of works</p> <p>Mitigation measures: The Contractor will employ from the local labor force as much as possible</p> <p>The Bidding Documents will include the Additional Labor Conditions</p>	<p>Log of workers on site</p> <p>Site inspection during construction</p>	<p>Continuous during construction</p>	<p>Contractor</p>	<p>MoA</p> <p>Site inspection and document check</p> <p>During construction period</p>

Simplified ESMP

Impact	Mitigation measure	Monitoring measure	frequency	Implementation responsibility	Supervision Responsibility
<p><b>SEA/SH</b></p>	<p>Risks:                      - Risks of negative interactions between the workers or MSSRP staff and the public- - limited local capacity to prevent/respond to incidents</p> <p>Risks on Syrian refugees being particularly vulnerable to SEA/SH risks</p> <p>Mitigation measures:                      All workers under the project (PMU, Consultants, Contractors, etc.) will sign the Commitment Letter                      GBV Service Provider is hired and has in place a dedicated hotline for receiving SEA/SH related complaints                      Provide separate facilities for men and women (i.e., bathrooms, changing rooms, separate areas for praying) e.g. Bathrooms for female site engineers</p>	<p>- Site inspection to verify Commitment Letter is signed by all project workers</p> <p>- Grievances received through the GBV hotline                      Monitoring adherence to the CL through application of the "Supervision Strategy and Guiding Procedures"</p>	<p>Continuously                      During construction and operation</p>	<p>Contractor</p>	<p>MoA</p> <p>Continuously                      During construction and operation</p> <p>Any complaint will be dealt with and managed in complete confidentiality, social reform and legal measures will be taken if necessary, with awareness and guidance from religious, social and ethical aspects</p> <p>On GBV related complaints, ensure there are relevant referral pathways to address the complaints using a survivor centric approach and principles of confidentiality and</p>

Simplified ESMP

Impact	Mitigation measure	Monitoring measure	frequency	Implementation responsibility	Supervision Responsibility
					anonymity and data privacy measures as per the World Bank Good Practice Note on Addressing Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) in Investment Project Financing <sup>2</sup>
<b>Vulnerable Groups</b>	<p>Risks of possible exclusion from project benefits, including job opportunities</p> <p>Mitigation measures: The contractor will ensure the following during construction for people with special needs:</p> <ul style="list-style-type: none"> <li>- Accessible parking spaces</li> <li>- Accessible entrance/door</li> <li>- Bathrooms with accessible features</li> <li>- Safe floor surface</li> </ul> <p>The contractor will ensure fair and equal employment opportunities for women, refugees, and persons with disabilities</p>	<ul style="list-style-type: none"> <li>- Review Contractor's employment plan and ongoing records</li> <li>- Site inspection</li> </ul>	Continuous during construction	Contractor	<p>MoA</p> <p>Continuous during construction</p>

<sup>2</sup> <https://thedocs.worldbank.org/en/doc/741681582580194727-0290022020/original/ESFGoodPracticeNoteonGBVinMajorCivilWorksv2.pdf>



Simplified ESMP

<b>Impact</b>	<b>Mitigation measure</b>	<b>Monitoring measure</b>	<b>frequency</b>	<b>Implementation responsibility</b>	<b>Supervision Responsibility</b>

#### **D. Environmental and Social Reporting**

MoA- will be responsible for regular monitoring and evaluation on environmental and social impacts, to observe the issues at site level and support the implementation of the project. MoA will be responsible for regular monitoring and reporting including evaluating the contractors' reports and spot visits to implementation sites.

During construction phase(i) MoA will supervise that contractors work is done in compliance with the environmental and social requirements described in the ESMP and report on that on their site visit reports. (ii) The MoA environmental and social specialist will conduct environmental and social monitoring, as well as assess environmental management performance and compliance using reporting template that is available at MoA )hat identified the relevant project risks and mitigation measures

#### **E. Budget**

The implementation of this ESMP including all the submissions, preparation of subsequent environmental and social requirements, will be the responsibility of the contractors during execution of this project and the relevant costs be included explicitly in the BoQ.





# COMPLIANCE WITH THE PROJECT ENVIRONMENTAL REQUIREMENTS

## AlKarak (A-Mujaib Site)

This report questions are aimed to summarize the environmental compliance during the implementation and testing stages of the Hydroponic Project in Al-Karak (Al- Mujaib Site)

*(Please refer to the questions in the comments, answer it and please answer the following):*

### *Construction Stage Questions:*

#### **1. Occupational Health and Safety (construction)**

- a) Have the contractor assigned a Health, Safety and Environment Officer? What was the role he took to ensure of occupational health and safety on ground? Have the OHS conducted daily inspection in the site? What are the main compliance or noncompliance remarks?

Have the contractor OHS person trained the contractor and Workers on OHS requirements? What topics were included in the training? Have MoA Environmental Specialist reviewed the material, and what guidance the MoA Environmental Specialist provided during the review and during the field visits?

- b) What Protective safety equipment's were provided to workers during installation and during testing? And have the workers been trained to properly wear/use it?
- c)
- d) Have any of the workers was exposed to sun? How MoA verified the following: The contractor is fully committed to the labor law and the number of working hours without counting the rest times, which are usually at noon, in addition to providing suitable housing for the workers, in addition to wearing a helmet for the workers that somewhat protects them from the sun's rays.
- e)
- f) What OHS related issues were raised during the installation stage, and the testing stage?
- g)
- h) Have any incident or accident been informed to MoA and how those been resolved?
- i)
- j) How did the contractor met all hygiene and sanitary needs of Workers with separate facilities for males and females at installation/construction stage?
- k)
- l) How did the contractor ensured safety at the project site during dust or rainy days? In addition to having the workers rest (does this mean to take days off)
- m)
- n) Provide Signage: How MoA followed up with the contractor after asking him to put the signage? Add photos and verify if the sinage were kept all the project period?

.The contractor was asked to put appropriate signs to indicate the project site, raise awareness and warn to preserve occupational health, emergency numbers and telephone numbers of those concerned (HOW)?

How and What the workers been trained to understand, aware, and comply to the signage?

- o) **Provision of First aid kit**  
available Basic first aid kit content (wound antiseptic, burn treatment, plasters of various sizes and shapes, small, medium and large sterile gauze pads, sterile eye pads, triangular bandages, rolled crepe pads, safety pins, sterile disposable gloves tweezers)

Identify closest Medical center/hospital for emergency cases

The nearest medical center, Tafila Hospital, has been identified, and the emergency and civil defense numbers have been circulated to the workers

- p) How did the contractor meet all hygiene and sanitary needs of Workers with separate facilities for males and females at testing and operation stage:

**1. Accidents**

**Please explain what the contractor have done in terms of covering the trucks, and how MoA monitor that, have the vehicles been equipped with seats that complies with national regulations, and barriers for transporting workers?**

**Have any incident of a type occurred during the construction stage?**

**2. Solid Waste**

**Please provide details on waste generated during construction, what has the contractor done in terms of what types of waste were generated, what the waste the generated during construction, a where it was collected, how many times it was transferred and to what landfill, according to ESMP you need to provide log**

- 3. Flood Occurrence Please provide progress of the action done at Al-Karak site, where the MoA activities stand and when the site will be considered safe**

**4. Increased Water Demand:**

- a. Please provide details on the RO reject material, where it was collected, where it was disposes.**
- b.**
- c. Please verify where the oils and vehicle fuel was disposed and Hazardous Materials must not be thrown at the project site to prevent contamination of groundwater and surface water**

**5. Disturbance of biodiversity**

**6. Public Health and Safety (Similar to the above, please provide details on how the contractor maintained public safety during the construction, and testing stage:**

- (A) What have the contractor done to strictly comply with the local regulations regarding the working hours and the levels of noise**

**Testing and Operation Stage:**

**1. Occupational Health and Safety (testing and Operation)**

What measures have the contractor testing and MoA operation of the Hydroponic in terms of using the chemicals (pesticides, fertilizers, and other types of hazardous material):

Who was assigned to handle the hazardous material? Does the person has received OHS training and IPM training. Has the person received regular medical checks? Did the person received PPEs, and have been trained on wearing them? Who trained the person? Did MoA persons created log of hazardous material present in the farm (used and saved for disposal), where the MoA team store the hazardous material? An where the MoA team store the empty cans of hazardous waste? And to what landfill it is transferred to? What issues have faced the implementation of proper OHS measures during use of hazardous material, how MoA solved that? Is it recorded?

## **2. Application of the IPM during testing and Operation**

Please explain how MoA teams implemented the IPM in steps: first define who are the team members fro contractor, MoA and the associations who has the responsibility to (select, handle, dispose the hazardous material in the sites)

Please verify what tasks as per IPM where implemented on ground to (select the material, fill logs, maintain the log, the dosing, applying the OHS requirements during the process, the health conditions of workers, have they been regularly checked?

What the log included, and what incidents occurred during using of Pest control material? How did you solved such incident.

Please provide summary on the IPM training including the material, who was targeted, what the training included, the duration, the nonjob training

## **3. Solid Waste and Hazardous Waste Management**

For Nonhazardous waste: what type of waste generated during testing and operation? Where its stored, who is monitored.

For the hazardous waste: what type of waste generated during testing and operation, the hazardous material log, identification and use of storage area/container, the hazardous waste transfer process.

For both, do you have logs, and who is responsible for monitoring that waste is not disposed? Did you encounter any issue? How was it solved?

#### **4. Water usage/wastewater generation/ RO refuse storage and disposal**

Please provide all details on

- a) Water usage: the water source? Is it enough, location, how far from the project area? Is sustainable or the quality deteriorates?
- b) Wastewater generation: Where the wastewater collected? Do you notice and dissipation/leakage to the soil? Or the adjacent lower areas?
- c) RO refuse (reject): where the material is stored? Who is checking that it's not leaking to soil? Where is it

The progress of implementing the flood management tools (explain the issue, the actions decided by MoA, the activities implementation and their progress)

- d) Any other issue due the drying of the nearby Dam and how it was resolved?

#### **AlTafila Site**

This report questions are aimed to summarize the environmental compliance during the testing stages and operational stages of the Hydroponic Project in AlTafila Site:

*(Please refer to the questions in the comments, answer it and please answer the following):*

##### **1. Occupational Health and Safety (testing and Operation)**

What measures have the contractor testing and MoA operation of the Hydroponic in terms of using the chemicals (pesticides, fertilizers, and other types of hazardous material):

Who was assigned to handle the hazardous material? Does the person has received OHS training and IPM training Did the person received PPEs, and have been trained on wearing them?

Did MoA persons created log of hazardous material present in the farm (used and saved for disposal), where the MoA team store the hazardous material? An where the MoA team store the empty cans of hazardous waste? And to what landfill it is transferred to?

A:

##### **2. Application of the IPM during testing and Operation**



Please explain how MoA teams implemented the IPM in steps: first define who are the team members from contractor, MoA and the associations who has the responsibility to (select, handle, dispose the hazardous material

Please verify what tasks as per IPM were implemented on ground to (select the material, fill logs, maintain the log, the dosing, applying the OHS requirements during the process, the health conditions of workers, have they been regularly checked?

What the log included, and what incidents occurred during using of Pest control material? How did you solve such incident.

Please provide summary on the IPM training including the material, who was targeted, what the training included, the duration, the nonjob training

### **3. Solid Waste and Hazardous Waste Management**

For Nonhazardous waste: what type of waste generated during testing and operation? Where its stored, who is monitored.

For the hazardous waste: what type of waste generated during testing and operation, the hazardous material log, identification and use of storage area/container, the hazardous waste transfer process.

For both, do you have logs, and who is responsible for monitoring that waste is not disposed? Did you encounter any issue? How was it solved?

### **4. Water usage/wastewater generation/ RO refuse storage and disposal**

Please provide all details on

- a) Water usage: the water source? Is it enough, location, how far from the project area? Is sustainable or the quality deteriorates?
- b) Wastewater generation: Where the wastewater collected? Do you notice and dissipation/leakage to the soil? Or the adjacent lower areas?
- c) RO refuse (reject): where the material is stored? Who is checking that it's not leaking to soil? Where is it disposed and how frequent? Do you have logs?
- d) Any other issue due the drying of the nearby Dam and how it was resolved?

