



# Partnering for Nexus in the MENA region: lessons from UfM/Sida/GWP-Med Matchmaker-II

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1<sup>st</sup> Regional Roundtable on WEFE Nexus in the  
Mediterranean

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# Sustaining Partnerships to advance the Resilient Water Sector in MENA Region



# Networking for Nexus

- IWRM is mainly concerned with the allocation of water between competing uses
- IWRM does not address broader issues such as security
- Climate change will cause a further 15% decline in freshwater resources by 2040

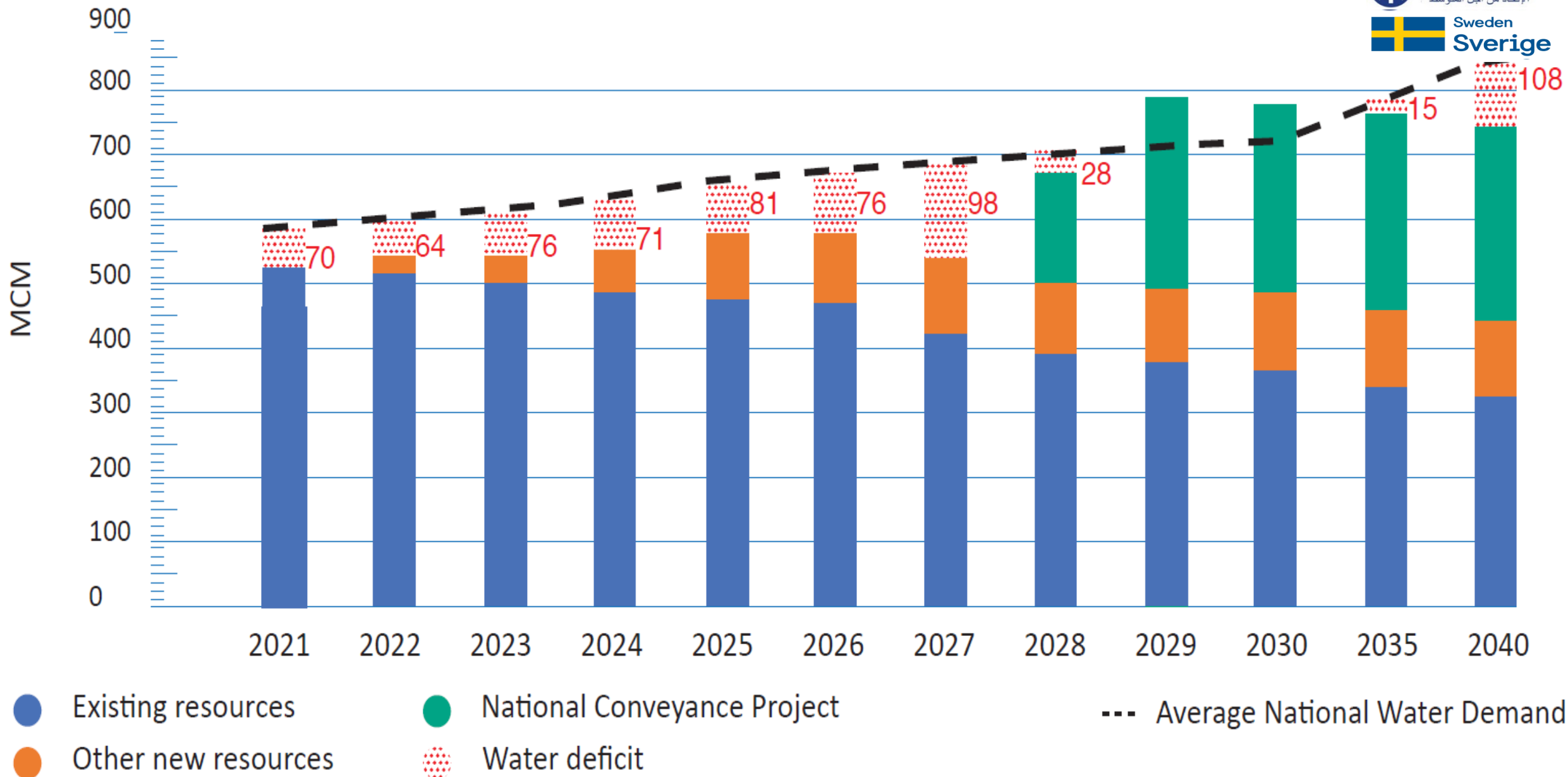
## Reclaimed water

- Reclaimed water from advanced wastewater treatment technologies has increased the use of reclaimed water for irrigation by two-thirds since 2008
- More than 90% of Jordan's reclaimed water is being used, mostly for irrigation, creating valuable new water supplies

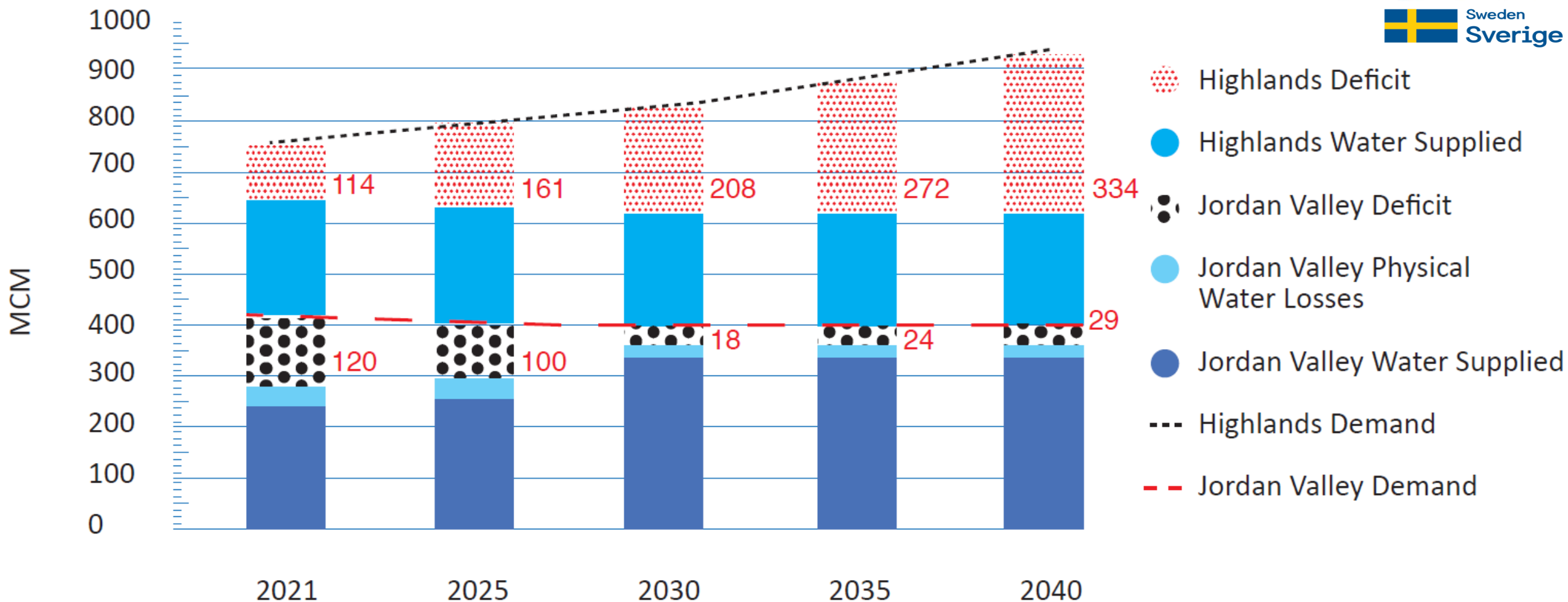
% of water	Water Use
47.5%	Municipal
48.6%	Irrigation
3.3%	Industrial
0.6%	Others



# Demand and Supply Projections for the Municipal Sector (Drinking Water)



# Demand and Supply Projections for Irrigation



**On-farm water use efficiency is only around 60% leaving a huge room for improvement.**

# NEXUS

- Nexus approach integrates policy-making, planning and management across sectors and scales
- Inter linkages between sectors to improve investment planning, optimize resource use and reduce trade-offs.
- Offers effective implementation of the SDGs.
- The Nexus and the Integrated Water Resources Management (IWRM) are complementary concepts

**Water sector uses 9% of Jordan's total electricity to produce, treat and deliver water and manage wastewater services**

- Nexus finds optimal solution and trade-offs among all sectors
- The global level 15% of the available in your global water resources are used for energy whilst 8% of global energy are used in the water sector
- NEXUS helps controlling the ongoing depletion of water resources, phasing out of conventional water use for irrigation?.
- Nexus creates cooperation between science and policy and in return improve the legitimacy of certain national policies.

# WEFE Nexus in Jordan and Palestine

Prove, through piloting,

the integrated concept of applying **local WEFE Nexus technical solutions**

while capacitating beneficiary groups on **employment options**,

offering measurable and **scalable** contributions for further application in MENA countries,

and assisting the **UfM Water Agenda** to enter and mark progress on tangible benefits,

contributing to **Sweden's Strategy for MENA 2021-2025**





## Matchmaker 2 WEFE Nexus approach

The Project technical pilots incorporate the WEFE Nexus and their inter-relations:

- **Water:** Utilising tertiary treated wastewater, through a nature-based solution (NbS) ie. constructed wetlands, for irrigation.
- **Energy:** Utilising solar power infrastructure for irrigation while lowering costs, reducing the carbon footprint, and increasing water efficiency for energy production (where applicable).
- **Food:** Utilising treated wastewater for agriculture production.
- **Ecosystem:** Assisting local ecosystems and the services they provide through constructed wetlands towards increasing food production; increasing the irrigated farms' ecological niche; improving environmental conditions over the irrigated area e.g. soil conditions, including compared to the direct application of wastewater coming from a plant (that does not include tertiary treatment).

**VIDEO**

# What Climate Change Means for Water

- 15% less water runoff from wadis by 2040
- 15% less groundwater recharge by 2040.
- Reduced water quality – the decrease in groundwater recharge due to the lack of precipitation, accompanied by high temperatures, leads to high salinity levels
- Damage to water and wastewater infrastructure from more frequent and severe floods and droughts
- Higher demand during hotter summers
- Less water for rainfed and irrigated agriculture

# Nexus Impacts of Matchmaker 2

## KPI's

- Volume of treated wastewater (effluent of constructed wetlands) used
- Energy production coming from renewable energy sources (solar)
- Equivalent carbon dioxide saved from entering the atmosphere due to solar power
- Cost impact on the selected farms
- Quality of Treated wastewater (effluent of constructed wetlands) quality
- Quality of the ground water in the areas irrigated with treated wastewater
- Number of families benefiting by the interventions (direct beneficiaries)
- Number of female farmers engaged in the project
- Number of young scientists and researchers involved
- Number of trainees on monitoring and evaluating WEF E Nexus approach

# Cont'd Impact of Matchmaker 2

## KPI's

- Comparative analysis between the pilot farms and the conventional farms in terms of health and productivity
- The cost affordability of wastewater management and project operation.
- The return on investment from capacity development program.
- On Job training sessions
- Job creation, specifically for females in the targeted areas and the number of employees who were contributed to the project compared to the situation before implementation.
- Furthermore, employability/entrepreneurship benefits will stem from capacitation activities implemented within the Project.

## Technical Interventions, in Palestine & Jordan, include

- **Building 3 constructed wetlands** for tertiary treatment of the WWTP outflow, providing **45 m<sup>3</sup>** (Palestine) and **21 m<sup>3</sup>** (Jordan) of treated wastewater/day, and **reusing that for irrigation in 3 pilot farms**
- **Planting of trees** in the new irrigation areas in the 3 pilot farms
- **Installing 3 irrigation networks** of **>60 dunums** (Palestine) and **>9 dunums** (Jordan) in the 3 pilot farms
- **Installing 3 solar power stations** supplying with **60 kWp (Palestine)** and **37 kWp** (Jordan) to cover the irrigation pumping costs of the new plantations

# Soft activities supporting the Technical Interventions in Palestine & Jordan, in a cross-country context

- Capacity development for practitioners, farmers, decision makers and NGOs
- Advice to farmers for shifting cultivations to value-generating crops is provided
- Farmers are capacitated towards increasing their business opportunities
- Brief Market Analysis presenting an overview of current national market on WEFE Nexus technologies and applications as well as trends in natural resources efficiency uptake, is elaborated



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