



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

Dr. Ghazi Abu Rumman

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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

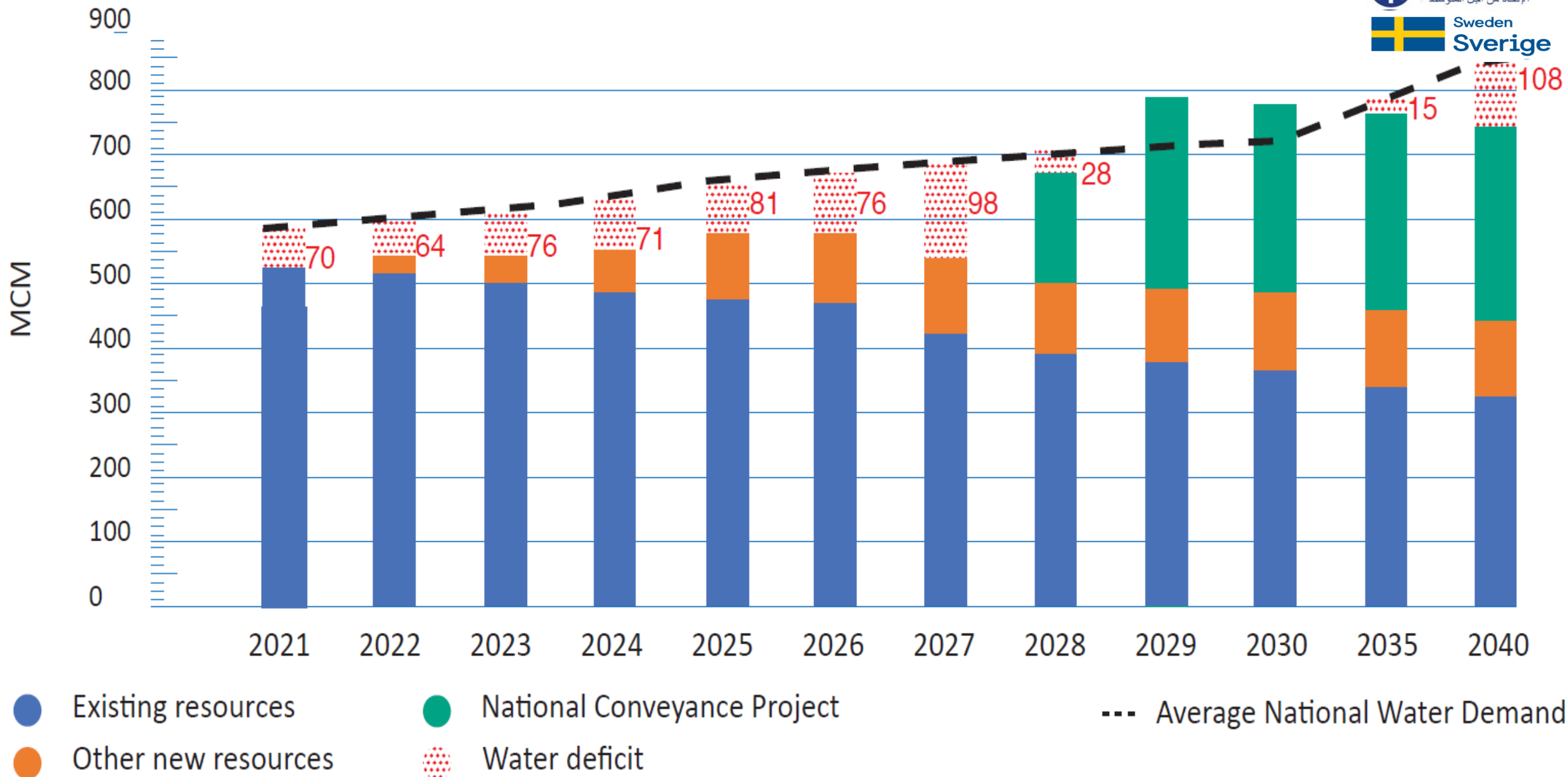
Reclaimed water

- 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

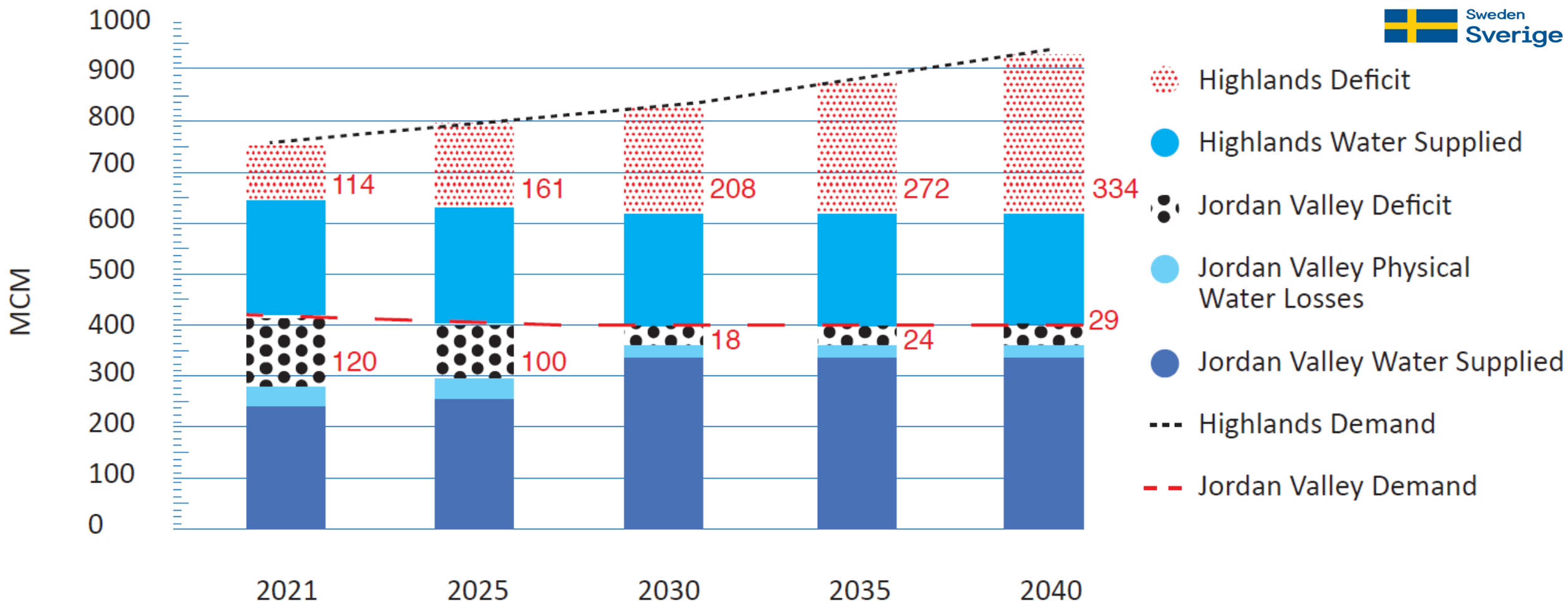
% of water	Water Use
47.5%	Municipal
48.6%	Irrigation
3.3%	Industrial
0.6%	Others



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 m³** (Palestine) and **21 m³** (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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