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# Country Pilot Improved Water Allocation for Agriculture

(JORDAN)

03-10-2022



# Water Resources

## ➤ **Ground water:**

- **renewable GW water with over abstraction about 170 MCM (Amman-Zarqa basin, Yarmouk basin, Azraq basin)**
- **Non renewable water(Disi basin)**

## ➤ **Surface water :**

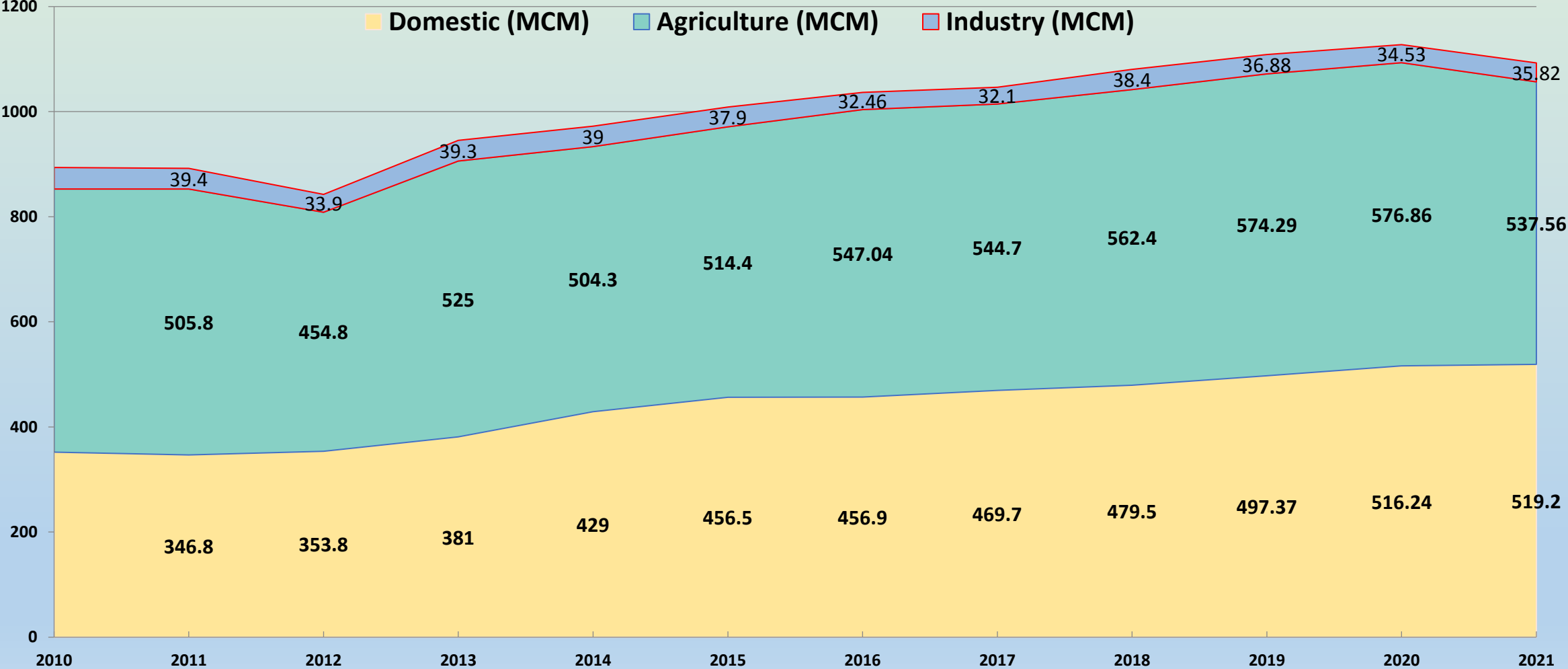
- **Local surface water (runoff, wades ,springs)**
- **Transboundary surface water (lake Tiberia, Wehdeh dam)**

## ➤ **Non conventional water :**

- **Treated waste water**
- **Brackish water**
- **Desalinated water**

Only 8% of rainfall is available for Surface  
Runoff and Groundwater recharge

# Water Uses for different sectors:



# Main challenges in water management and water allocation for agriculture in Jordan

## Challenges in water sector :

- Increasing gap between supply and demand.
- Limited and decreasing renewable water resources.
- Climate change and drought
- High capital cost of new water projects.
- High cost of electrical power consumption
- High water loss (NRW), about 53%.
- High competition between irrigation and domestic uses

## Main challenges for pilot area :

- The natural runoff to the wadi arab dam has become very low which makes available fresh water in the dam not enough for farmers.
- The dam itself is being used also as buffer storage that stores water from KAC during winter, however there is also high competition on water resources in KAC and JVA can not pump too much water to the dam to satisfy the needs of the farmers.
- The Use of Reclaimed water (TWW mixed with fresh water) is not favourable for farmers due to concerns related to the impact of water quality on citrus trees

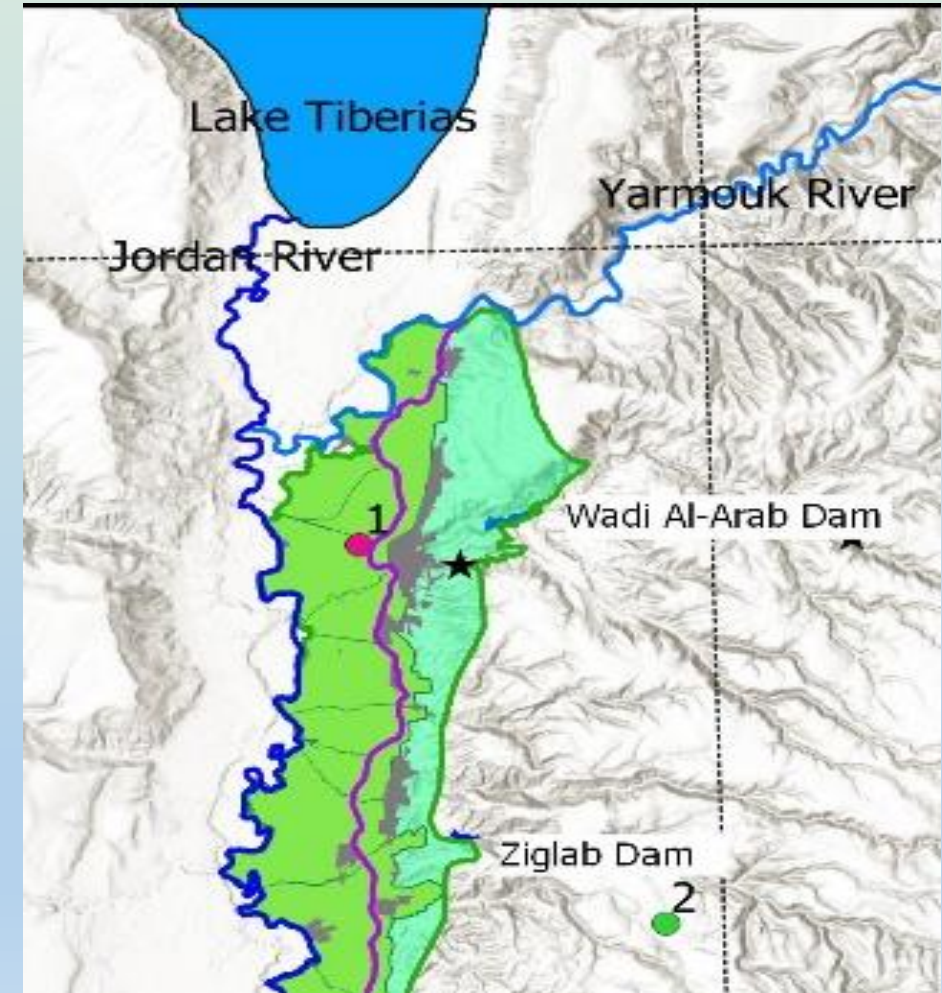
## Pilot area:

# farm units below Wadi Al Arab Dam until King Abdullah canal in the northern Jordan Valley

- Area is 15,000 Durem, 200 hundred farms
- Average Precipitation is 412 mm
- Average runoff in JV basin is 16 MCM
- Crop pattern is citrus mainly in addition to Banana and vegetables

## Justifications:

- Decreasing cost of energy for pumping water from KAC to wadi arab dam
- Real water shortages problem in this area
- Availability of TWW that is being discharged currently to the river of Jordan
- Availability of data and measurements and studies



## Current allocation under wadi Arab dam :

- The water allocation committee (JVA, Miyahuna,YWC) meets once a year in springtime to agree on amounts to be allocated to water supply of Amman and to the farmers in the Jordan Valley.
- Implementation of this allocation plan is organized from the Control Centre in Deri Allah in coordination with the Stage Offices.
- Farmers request irrigation water based on the size of their plot of land and the crop requirement.
- The control centre decides on this request and staff from the stage offices opens the gates at the farm units based on the agreed Schedule.
- This flow is commonly not metered but estimated, and bills are issued based on these estimated amounts

# Stakeholder:

- Jordan valley authority
- Water users association
- Farmers
- Ministry of agriculture
- water authority of Jordan
- Yarmouk water company
- Miyahuana water company
- Donor Community

# What the pilot want to achieve?

## Pilot area objectives:

- Reducing competition between domestic and irrigation uses in KAC.
- Decreasing cost of energy for pumping water from KAC to wadi arab dam
- Protecting Jordan river from pollution .
- Increasing the share of farmers from reclaimed water resources

## Other objectives:

- to establish sustainability.
- protect health,
- ensure equity endurance
- protect environment
- enhancing implementation of the water reallocation and water substitution policies
- Share the results and findings with top management and decision makers
- Share knowledge with MWI staff



# Proposed activities with Timeline

2020-2023

- Improvements of TWW effluents in Irbid governorate that would encourage its reuse and substitute fresh water with TWW for irrigation

2022-2023

- Increase farmers' acceptance for reclaimed water reuse (TWW with fresh water)
- Raise awareness of WUAs in the pilot area to get their support and ensure Ownership
- Farmers accept this allocation scheme and feel the benefit of it.
- Agreement with WUAs and Farmers on using reclaimed water gradually, get support for rehabilitation of on-farm irrigation networks, get more share of water than before
- Continue supporting farmers on shift in cropping patterns, adopting newer and efficient irrigation systems, scheduled irrigation, etc..

2024- >>>

- Reducing pumping from KAC to Wadi Arab dam and save water to Wadi Arab 2 project (Drinking water to Irbid)

## **Supporting Studies**

- Water accounting to identify the actual needs or irrigation water and efficiencies in Irrigated areas below Wadi Arab dam
- Irrigated areas maps
- Survey of the actual needs and actual crop pattern and requirements
- Water quality assessment and continuous assessment for the impact of water quality on crops production

## **Monitoring**

- Monitoring reporting and sharing of results
- The whole allocation project will be linked to the SCADA system of JVA

# Thank you For Listening

