

# Hashemite Kingdom of Jordan

## Jordan Water Sector

### Improved Water Allocation for Agriculture in the Arab Region – Jordan Case

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# National Water Strategy of Jordan (2016-2025)- National Water Re-Allocation Policy

Jordan is a nation burdened with extreme water scarcity that has always been one of the biggest barriers to our economic growth and development. This crisis situation has been aggravated by a population increase that has doubled in the last two decades alone because of refugees fleeing to Jordan from neighboring countries. We must then add to this the transboundary and climate change issues affecting Jordan's water supplies.

This reallocation policy is intended to serve as a vehicle to set action plans for redistributing the water flexibly between sectors and governorates. It intends to employ a conveyance system for water connecting the southern and northern regions and another conveyance system for treated wastewater in the Jordan Valley to maximize the use of treated wastewater for irrigation and free the expensive used fresh water to be used for domestic purposes.

The variation and differences in water resources cost also triggered the reallocation of water between the governorates trying to equalize the cost burden all over the utilities and insure equitable distribution in different locations.

# Water Reallocation Policy - Bases

- The main pillars for water reallocation are the sustainability, health, efficiency, equity, economy, environment and nature.
- Priority is given to the domestic uses, followed by the other economic sectors according to their importance and contribution to the GDP.
- The main criterion on which the policy is built is the "Adaptive Capacity", meaning the consumption shall be restricted to certain quantities of water.
- The structure of the subscribers served from the network varies depending on the economic activities.

# Water Reallocation Policy - Themes

## **On Use Priorities:**

- Domestic needs have the priority;
- Other priorities shall be given to other economic sectors tied to its importance, economic returns and contribution to the GDP.

## **On Resource Utilization:**

- Surface water should be utilized first, followed by the utilization of ground water aquifers according to their safe capacity.
- Desalination of brackish ground water shall have priority when and where feasible and where safe yields of fresh water is fully achieved.

# Water Reallocation Policy - Themes

## **On Resource Utilization:**

- The desalinated sea water will be exploited as soon as possible to be an alternative non-traditional source to reduce the depletion of traditional water.
- Wastewater shall be treated and purified for full utilization for industrial, agricultural, cooling and other uses except for drinking purposes.
- Deep Aquifer water shall be extracted and utilized with due consideration to their potential yield.

# Water Reallocation Policy - Themes

## **On Distribution and Reallocation Priorities:**

- Each governorate shall retain its available water for its sole needs, unless is otherwise necessary, then it will be transferred.
- Shared water resources shall be allocated to the governorate of the highest need and geographically closest, and which can technically receive the water.
- Supplied water shall be increased to achieve the target shares by the reduction ratios in NRW.
- Availability of water infrastructure shall be insured during the reallocation process.

# Water Reallocation Policy - Themes

## **On Planning and Management:**

- Planning guidance on sustainable design and construction shall be introduced to the Building Code to ensure that all new homes and apartments shall meet the 120, 100, and 80 l/c/d standard,
- Water appliances and water saving devices shall be adopted in all housing designs,
- Storage of rain water from roofs shall be enforced,
- Measures shall be adopted aiming at protecting surface water supplies from pollution and minimizing losses by surface evaporation and seepage.

# Water Reallocation Policy - Themes

## **On Planning and Management:**

- Water harvesting schemes in highlands shall be enhanced especially the design and construction of desert dams,
- Infrastructure including mains and laterals shall be rehabilitated to achieve improved services, reduce losses and protect water from pollution,
- In extreme events, during drought periods and when climate changes result in reduced water quantities, scenarios allowing reducing the impact shall be pursued and implemented with care.



# Water Reallocation Policy - Themes

## **On Treated Wastewater:**

- The quality of treated wastewater from all municipal and industrial wastewater treatment plants shall meet national standards, monitored regularly, and reviewed periodically.

## **On Treated Wastewater Standards:**

- Wastewater Standards shall be revised and amended to meet direct and indirect water reuse for the production of high value crops.

# Water Reallocation Policy - Themes

## **On Irrigation:**

- Fresh water allocated to irrigated agriculture in the high lands shall be capped and eventually reduced according to medium and long term plans,
- Irrigation water in the Jordan valley shall be increased when new or treated wastewater is increased,
- Fresh water shall be replaced by treated wastewater. Thus, The irrigated agriculture can be expanded only where treated wastewater is available.

# Water Reallocation Policy - Themes

## **On Local Cooperation:**

- Close cooperation via a joint committee between Ministries of Water and Irrigation, Environment, Agriculture and other organizations whose activities directly or indirectly involve the performance in the water sector to develop short-, medium- and long-term plans to monitor and control the water quality, use and impacts,
- Close cooperation shall be maintained. So that the project implementation plans are taken into account in the considerations and scenarios of water allocation.

# Water Reallocation Policy - Themes

## **On the Role of Society:**

- Jordanians are aware of the water scarcity and all associated problems. They will also have to be made aware that water is shared by all those living in Jordan,
- Stakeholder's participation in planning, implementation and monitoring of major projects, plans, and climate change effects shall be encouraged and effected,
- The public through all communication means shall be enlightened and educated on the value of water, their role on its sustainability and its relevance to their future.

# Water Reallocation Policy - Themes

## **On the Role of Private Sector:**

- The role of private sector shall be enhanced and expanded with regard to the treated wastewater reuse, irrigated agriculture in the Jordan Valley with the aim of reducing the water usage and/or increasing the production per cubic meter used.

## **On Monitoring:**

- A monitoring system for the reallocation plan shall be established based on collected, formatted and retrievable data,
- Modern technologies for data collection, validation, analysis, modeling, sharing, and dissemination shall be employed and expanded,
- The National Water Master Plan shall include updated information on water use for all sectors and areas, ground water levels, abstraction, rainfall, evaporation, spring discharge, etc. which shall be used for reallocation update every five years.

# Water Reallocation Policy - Themes

## **On Legislation:**

- Laws and regulations in effect shall be enforced and updated periodically when needed.

## **On Institutional Considerations:**

- Different training and education programs shall be implemented in order to achieve high level and efficient planning, operation and management.

## **On Policy Follow-up:**

- The Policy shall be monitored and evaluated after the completion of every water resource project and updated every 3 years and whenever there is a change in inputs, especially during drought and wet seasons, change demographics and in economic developments in other sectors.



Thanks you for your attention