



Ministry of Water & Irrigation  
وزارة المياه والري

# Surface Water Utilization Policy

2016

This document is an integral part of the National Water Strategy, related policies and action plans.

1. National Water Strategy 2016-2025.
2. Water Sector Capital Investment Program (2016-2025).
3. Water Demand Management Policy.
4. Energy Efficiency and Renewable Energy in the water sector Policy.
5. Water Substitution and Re-Use Policy.
6. Water Reallocation Policy.
- 7. Surface Water Utilization Policy.**
8. Groundwater Sustainability Policy.
9. Climate Change Policy for a Resilient Water Sector.
10. Decentralized Wastewater Management Policy
11. Action Plan to Reduce Water Sector Losses (Structural Benchmark).

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## **Foreword**

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.

In the face of these challenges, and to achieve our goal of successful integration of Jordan's water resources management, the Ministry of Water and Irrigation has been active in putting forward four new policies that set clearly defined rules to manage the scarce water resources efficiently and sustainably. These new policies lay out the measures and actions required to achieve our national goals for long-term water security. These result-oriented policies are built upon and updated from previously adopted strategies, policies, and plans. Together, they are an integral and ongoing part of the overall management efforts that have already been achieved.

This policy is the result of the efforts of working group to whom I am thankful. My team has been putting great efforts to enhance water governance that support these policies at all levels, which include enforcement of a suitable legal framework and regulatory tools, enhancing efficient institutional capacities, and supporting dynamic management plans that adapt the concepts of participation and decentralizations all under the umbrella of Integrated Water Resource Management which I am sure will show results in the near future.

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**Minister of Water and Irrigation**

## **Introduction**

Surface water accounts for about 65% of the total available fresh water resources in Jordan, which basically consists of the base flow in wadis, rivers, springs' discharge and flood water during rainy seasons. Surface water volumes are mainly dependent on rainfall which fluctuates in time and space, it also depends on the aquifers characteristics that feed wadis base flow and springs, those characteristics define the quality, quantity, and durability of discharged water.

Because of the relative durability of the surface water from springs and base flow discharge which does not require high investments for its development. This water resource is almost entirely tapped in Jordan. The flood water, caused by the rain in winter, is characterized by volatility in terms of quantity, which requires the infrastructure investments to store this water and use it when needed.

Only 50% of surface water quantities are being utilized in Jordan, part of the remaining is stored in the dams or lost.

To address the above, it is essential to maximize the use of surface water to the greatest extent possible by increasing the storage capacity of dams, construction of new dams, and investment in rainwater harvesting in remote areas and from rooftops. Most of the surface water in Jordan is used for agricultural purposes, while there is a need and a top priority to meet the growing demand for municipal purposes which calls for the development of action plans and programs for further utilization of surface water for municipal purposes and for high returns economic activities. In this respect, the surface water utilization policy is highly needed.

## **Objectives**

The objective of this policy is to present in more details what is envisioned towards the maximum utilization and optimum use of surface water, its protection, its management, and propose measures needed towards successfully integrating all its components.

## **Water Resources Development**

1. The full potential of surface water shall be tapped to the extent permissible by economic feasibility, and by social and environmental impacts.
2. Assessment of the available and potential surface resources shall be conducted periodically.
3. An integrated development and conservation program shall be established to increase surface water development in Jordan, including the development of sustainable management plans for surface systems in the Jordan Valley.
4. A far sighted plan shall be formulated for the development of surface water resources, and a revolving three-year plan shall be extracted from it and updated as necessary. The revolving [management] plan shall be compatible with those formulated for the other sectors of the economy. A parallel investment plan shall accompany the development plan.
5. Supply-enhancing measures shall be adopted, including surface and subsurface storage, minimizing losses by surface evaporation and seepage, soil and water programs, and protecting surface water supplies from pollution.
6. Potential shall be tapped and maximum use made of the extensive experience gained within MWI in the design and construction of water harvesting schemes (ponds and desert dams) in the Highlands.
7. Land use in all catchments and sub-catchments shall be subject to permitting in cooperation with ministries and municipalities such that the generation of sediments subject to being transported by rainwater is minimized.
8. Springs, and the existing water supply infrastructure shall be rehabilitated to achieve improved protection of water resources from pollution, to facilitate discharge and/or enhance recharge. If expropriation of established users' rights on springs is foreseen for the public good, such expropriation shall be made based on clear higher priority need, and against fair compensation.

9. Protection zones for all drinking water sources shall be delineated and monitored.
10. Cooperation with concerned authorities and other governmental bodies shall be undertaken to ensure that restrictions imposed on protection zones are implemented and enforced (MoMa, LUA committees, RDEP/Rangers, etc.)
11. Storage of dams shall be enhanced by removing/managing sediments already accumulated over the years, and by minimizing losses due to evaporation.
12. Sedimentation caused by soil erosion shall be minimized by delineating bare soil areas on sloping terrains and planting them, starting with areas closer to the dam and moving out to cover the entire catchment.
13. A comprehensive monitoring and assessment program for surface water quantity, quality, uses and protection shall be in place in order to enhance surface water resources.
14. Interactive use of multiple resources (especially groundwater and surface water) with different qualities shall be targeted to maximize the usable flows, and maximize the net benefit from the use of a unit flow of water. Furthermore, where the opportunity allows, priority shall be given to substituting groundwater used for any purpose by surface water where available.
15. Whereas climate change is anticipated to lead to reduced precipitation and higher temperatures for which provisions shall be made to reduce the impacts thereof, measures shall be taken to account for extreme events such as higher rainfall intensities and lower temperatures.

## **Treated Wastewater as Surface Water**

16. The quality of treated wastewater from all municipal and industrial wastewater treatment plants shall meet national standards, monitored regularly, and reviewed periodically.
17. Public health and the environment, in particular surface water supplies destined for potable use shall be protected from contaminated wastewater in the areas surrounding wastewater treatment plants.

## **Irrigation**

18. Water allocated to irrigated agriculture is dynamic in nature as the total amounts of surface water vary. The agricultural sector's share of water resources shall be capped over a planning horizon, and will favor other sectors that show a higher economic return per cubic meter consumed.
19. Resource management shall continually aim at achieving the highest possible efficiency in the conveyance, distribution, application and use. One such policy is the separation of bulk from retail and entrusting the retail function to private entities, as JVA is doing with Water Users Associations and WAJ with the corporatized utilities.
20. Institutional arrangements and legislation in effect shall be periodically reviewed to appraise adequacy of the retail function for irrigation water being handled by the empowered WUAs.
21. Appropriate water tariffs and incentives shall be introduced in order to promote water efficiency in irrigation and higher economic returns for irrigated agricultural products.

## **Local and Regional Cooperation**

22. Cooperation and coordination among public and private entities involved in environmental considerations of water development and management shall be assured.
23. Work shall take place with Ministries of Environment and Agriculture and the NGOs, particularly the RSCN, to monitor biodiversity in various surface water bodies and by developing short-, medium- and long-term plans to address issues of ecological impacts.
24. Close cooperation shall be maintained with the other organizations whose activities may directly impact the performance in the water sector. Planning for project implementation and thereafter for water allocation shall be based on these considerations.
25. Efforts shall be sustained to establish Jordan's rights in shared surface water resources through international agreements. Shared basins shall be managed on the basis of an integrated approach (IWRM) not foregoing the need for regional cooperation to develop contingencies for droughts and impacts of climate change.

## **Role of Society**

26. Jordanians are aware that water is a resource to be shared by all those living on Jordan's soil and that strategies related to the resource are national strategies rather than sector strategies.
27. Jordanians shall be made well aware of water scarcity and the importance of conserving and protecting our limited water resources. Society shall be educated through various means about the value of water for them and the wellbeing of the country for the sustainability of life, and for economic and social development.
28. Participation of stakeholders shall be introduced and enhanced in water resources management and legislated for their involvement wherever necessary.
29. The public should be enlightened on the value of tillage on sloping grounds as it would minimize erosion and retain a significant amount of moisture in the soil to the extent that it can be a feasible source for non-irrigated agriculture.

## **Monitoring**

30. A comprehensive national water data bank will be established and kept at MWI, and shall be supported by a decision support unit. It will be supported by a program of monitoring and a system of data collection, entry, updating, processing and dissemination of information, and shall be designed to become a terminal in a regional data bank setup.
31. The monitoring system for all surface water resources (springs, base flows, etc..) shall be supported.
32. Data collected in the monitoring process shall be formatted for storage in and retrieval from computer files. Hard copies and computer backup copies shall be maintained at all times.
33. Adoption of modern technologies for data collection, validation, analysis, modeling, sharing, and dissemination shall be expanded.
34. The National Water Master Plan shall include a comprehensive surface water management plan for each catchment.

35. A Water Yearbook shall be produced incorporating all gathered data (groundwater levels, abstraction, rainfall, evaporation, spring discharge, etc.) along with a chapter on rights; the yearbook describes the water situation for each basin and is updated on a yearly basis.

## **Legislation**

36. Laws in effect shall be enforced with due diligence. Update legislation whenever necessary to respond to emerging needs including the needs for improving compliance of the water users with these laws.

37. Laws and regulations for water protection zones already in place to safeguard the quality of water resources should be periodically reviewed and updated when needed.

## **Institutional Considerations**

38. Human resources development shall occupy an advanced rank in the priority scale. Continuous education, on-the-job training and overseas training programs shall be organized and implemented. Over-employment shall be trimmed to reach optimum employment levels compatible with efficient management.

39. Internal communication, both intra-institutionally and inter-institutionally, shall be enhanced and eased through processes and procedures developed for this purpose.

## **Operations**

40. Bulk water distribution (incl. reducing energy consumption) all the way to improving the efficiency of water distribution of irrigation systems at the field level or distribution systems within the municipalities shall be improved.

## **Policy Follow-up**

41. Clauses of this policy document should be monitored on yearly basis, and a relevant report shall be prepared. A review is also warranted every three years, amendments proposed and acted upon.