



# WATER SECTOR



## Green Growth National Action Plan 2021-2025



**19 PRIORITY ACTIONS** for implementation in the 2021-2025 period:



**13** investment preparation and demonstration actions

**9** enabling policy and institutional reform actions



### About National Green Growth Plan for Jordan

The NGGP charts out a plan for Jordan to achieve an expanding yet sustainable and resilient economy that ensures the creation of green jobs for its citizens and increased investment in green projects. The NGGP uses a cost-benefit analysis approach to identify the challenges and opportunities for project implementation and focuses on tackling these barriers in the six green growth sectors: Agriculture, Energy, Tourism, Transport, Waste and Water. **Four driving principles of green growth are identified and mainstreamed across the actions in the Green Growth National Action Plan 2021-2025:**

- Transparent governance processes and enforcement of legislation
- Mechanisms to incentivize green growth
- Integrated planning processes that value societal impacts
- Behavior shifts and capacity building



### A National Green Growth Plan for Jordan



Implementation of these actions will contribute to the Water Sector Green Growth SubObjective and the following:



#### Addressing key challenges

related to both supply and demand side management, through implementation of infrastructure and building community stewardship of resources.



#### Introducing incentives

and financing mechanisms to reduce the overall cost burden of water resource management on public resources.



#### Increasing access to water

and sanitation for vulnerable members of society, including school children and displaced persons.

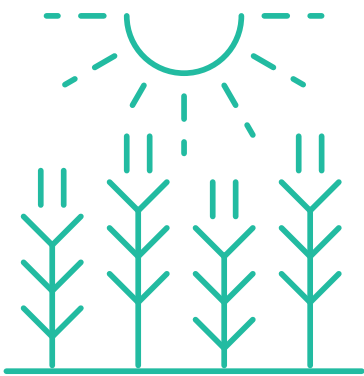


#### Increasing the capacity

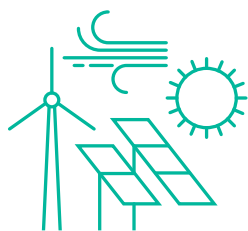
of public sector decision makers to use incentive structures, data and policy innovations in water sector management.



The following table shows the **water sector green growth actions** and can be used by action owners to begin **project proposal formulation** for the purpose of mobilizing public budget or external grants, loans or other financial support for implementation. It is understood that detailed implementation approach, outputs, timeline, budget, and stakeholders may change depending on the source of finance during the process of implementation.



Water Sector Green Growth Actions 2021-2025		
#	Action Title	Total Estimated Implementation Cost (USD)
WR01	Implement capacity building program for evidence-informed investment decision making in the water sector	760,000
WR02	Establish a rainwater harvesting project financing facility to support projects that argument rural and urban water supply	15,000,000
WR03	Implement Key Wastewater Treatment Projects to improve Water Supply Augmentation	69,400,000
WR04	Establish incentives for pollution prevention with industry in the Zarqa River Basin	950,000
WR05	Construct dams and implement a parallel community water resource stewardship programs for several communities in the Jordan Valley	66,900,000
WR06	Technical Assistance to support water efficiency in businesses, industries and commercial activities (Based on SwitchMed Experience)	4,414,000
WR07	Implement Water Supply Improvement Project for Balqaa Governorate	2,300,000
WR08	Improve irrigation efficiency in the Jordan Valley (Mid-Ghors)	28,500,000
WR09	Increasing willingness of end user stakeholder to accept wastewater reuse in Jordan	1,000,000
WR10	Construct an industrial wastewater treatment plant in Zarqa	27,700,000
WR11	Enhance the Energy Efficiency in the well fields and Pumping Stations	71,000,000
WR12	Increase the resilience of displaced persons and host communities to climate change-related water and climate change challenges	7,000,000
WR13	Programming to increase the availability of WASH in Schools and strengthening WinS standards for climate change impacts	1,500,000

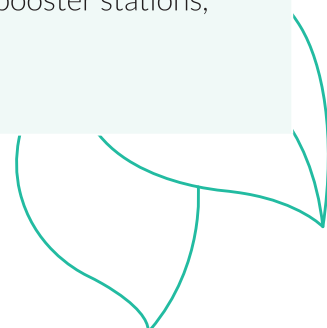


## Purpose & Objectives of Water Sector Green Growth Actions

#	Purpose/Objectives
WR01	Implement capacity building program for evidence-informed investment decision making in the water sector
	Therefore, the purpose of this action is to update the institutional process for developing projects, empower water sector stakeholders with the necessary conceptual understanding of green growth as it pertains to the water sector to inform better decision making, and support the participative design and implementation of a graphical interface of the Jordan Water Project Model together with the development of a single installation file for the model.
	<ul style="list-style-type: none"> <li>• Support capacity of the water sector (MWI, JVA, and water utilities) around the concept of water and green growth by making use of better tools and incorporating criteria to consider environmental impacts as well as social impacts.</li> <li>• Conduct needs assessment for training and provide targeted training in green growth planning for the water sector to MWI and JVA officials.</li> <li>• Develop a long-term green growth roadmap for the water sector, with an accompanying investment and financing plan to optimize and prioritize sector investments.</li> <li>• Develop and implement a Strategic Modeling Tool for Water Management in Jordan (JordanCap)/Develop a Graphical Interface for the Strategic Planning Tool.</li> <li>• Offer training for the Strategic Modeling Tool for Water Management Users and IT professionals to analyze, update, and extend the JWP model autonomously.</li> </ul>
WR02	Establish a rainwater harvesting project financing facility to support projects that augment rural and urban water supply
	The purpose of this action is to work with the Cities and Villages Development Bank to establish and manage a revolving financing facility for RWH in Jordan's municipalities for domestic, commercial, and small agricultural purposes.
	<ul style="list-style-type: none"> <li>• Consolidate governance of RWH as a means for improved sustainable water supply.</li> <li>• Increase access to finance for micro, small, and medium size RWH projects for agriculture, residential, and commercial use.</li> <li>• Increase awareness about the benefits of RWH to water users, utilities, and decision makers.</li> <li>• Structuring a financing mechanism for investments in RWH.</li> <li>• Catalyze innovation and green job creation through the development of Ministry of Micro, Small and Medium Enterprises (MSMEs) to provide RWH system maintenance services.</li> </ul>
WR03	Implement Key Wastewater Treatment Projects to improve Water Supply Augmentation
	<ul style="list-style-type: none"> <li>• Increase production and use of treated wastewater to alleviate current water stress and improve ecosystem quality</li> </ul>

#	Purpose/Objectives
WR04	Establish incentives for pollution prevention with industry in the Zarqa River Basin
	The purpose of this action is to undertake a process of consultation to bring industrial sources of pollution to identify the appropriate mix of voluntary environmental goals in exchange for support with environmental awareness, technical process changes, and access to necessary technologies to remediate pollutive practices.
	<ul style="list-style-type: none"> <li>• Identification and development of geo-database of key industries in the region and their current status with regard to volume and nature of produced wastewater, and practices for disposing treated or untreated industrial wastewater in Zarqa river.</li> <li>• Assessment of regulatory and law enforcement frameworks on treatment, storage, and disposal of industrial wastewater.</li> <li>• Development of industrial wastewater management action plan for industrial activities, including the promotion of on-site treatment and re-use of treated industrial wastewater.</li> <li>• Economic evaluation and testing of the options (e.g. tax credits) for the implementation of Voluntary Incentive Program compared to the costs for building an industrial WWT facility.</li> <li>• Raising the level of awareness of target industry about industrial wastewater-based pollution prevention, the developed action plan, and on WWT system operations.</li> </ul>
WR05	Construct dams and implement a parallel community water resource stewardship programs for several communities in the Jordan Valley
	The purpose of this action is to address both supply and demand for water in these key communities through the construction of infrastructure and implementation of community-based stewardship approaches.
	<ul style="list-style-type: none"> <li>• Building new dams to raise the total storage capacity and improve supply for different uses in potential drought hotspots.</li> <li>• Increase awareness about climate change, combining local knowledge and international best practice to train water farmers on water efficiency techniques.</li> <li>• Identify water-efficiency opportunities for livelihood development in the tourism, agriculture, and water services sectors.</li> </ul>
WR06	Technical Assistance to support water efficiency in businesses, industries and commercial activities (Based on SwitchMed Experience)
	The purpose of this action is to support the shift towards more sustainable production and consumption patterns to be implemented by SMEs and industries, giving rise to low carbon and climate resilient societies.
	<ul style="list-style-type: none"> <li>• Scale up RECP in Jordan, building on the capacities and experience gathered thanks to the MED TEST II project which was implemented within the regional SwitchMed program in 2015-2017.</li> <li>• Support industry through the application of a systematic approach on effective innovations, including best available techniques for maximizing water use efficiency.</li> <li>• Train local technical assistance providers in the RECP/TEST methodology to build capacity in the local market.</li> <li>• Develop incentive programs to encourage offering products and services that improve water use efficiency in businesses. Such programs might include low cost loans, tax incentives, grants, and fee waivers.</li> <li>• Financial or tax incentives to encourage businesses to use reclaimed water instead of freshwater.</li> <li>• An annual awards program recognizing the achievements of businesses, institutions, and individuals in the field of water efficiency shall be implemented, to promote and develop a rational use and protection of water resources.</li> </ul>

#	Purpose/Objectives
WR07	Implement Water Supply Improvement Project for Balqa Governorate
	The purpose of this action is to reduce the percentage of NRW loss by improving water networks
	<ul style="list-style-type: none"> <li>• Reduction of about %10-%5 of water losses from the municipal water supply system in the targeted areas.</li> <li>• Reduction of energy consumption for water pumping through the water supply system.</li> <li>• Increasing the efficiency of water supply services as well as the amount of water delivered through the municipal water network.</li> <li>• Installation of new water metering units at the administrative level to enhance the water network's control and management.</li> <li>• Contribute to improve the quality of supplied water and reduce the incidence of water pollution as a result of improved water supply infrastructure.</li> <li>• Building capacity of water utilities in NRW management.</li> </ul>
WR08	Improve irrigation efficiency in the Jordan Valley (Mid-Ghors)
	<ul style="list-style-type: none"> <li>• Introducing demand management measures such as efficiency improvements, loss reduction to save/ conserve water.</li> <li>• This action aims at improving efficiency of irrigation network in the mid-section of the Jordan Valley through rehabilitating and upgrading the existing irrigation networks.</li> </ul>
WR09	Increasing willingness of end user stakeholders to accept wastewater reuse in Jordan
	<p>The purpose of this action will be to increase the engagement and influence the behavior of end user stakeholders on wastewater reuse and the development of a circular economy.</p> <ul style="list-style-type: none"> <li>• Promote circular economy and reuse of reclaimed wastewater among end user stakeholders through tailored engagements.</li> </ul>
WR10	Construct an industrial Wastewater Treatment Plant in Zarqa
	The purpose of this action is to reduce the environmental impact of hazardous waste in Zarqa River, and serves as a first move towards the rehabilitation of the Zarqa River Basin. T
	<ul style="list-style-type: none"> <li>• Introducing efficient energy recovery systems at selected WWTPs using onsite waste-based biogas systems, which can contribute to:</li> <li>• Reduce environmental impacts and GHG emissions from WWTP through proper management of generated biomass (sludge).</li> <li>• Reduce energy costs for WWTP operation by producing energy(electricity) from biogas.</li> </ul>
WR11	Enhance the Energy Efficiency in the well fields and Pumping Stations
	<ul style="list-style-type: none"> <li>• Improving EE in water supply systems (wellfield extraction facilities, pumping and booster stations, transmission pipelines etc.).</li> <li>• Reducing the electricity consumption cost and saving energy.</li> <li>• Reducing GHG emissions and their associated environmental impacts.</li> </ul>



#	Purpose/Objectives
WR12	Increase the resilience of displaced persons and host communities to climate change related water and climate change challenges
	The overall aim of this project is to support the development of a comprehensive response framework to climate change, combined with the Syrian crisis, especially in an urban context.
	<ul style="list-style-type: none"> <li>• Increase the resilience of municipal governments, by managing urban risks and vulnerabilities in the context of climate change combined with the high influx of DPs.</li> <li>• Improve DPs and host community's engagement and livelihood security support.</li> <li>• Increase community-level resilience to water challenges, by expanding the coverage of resilient water supply systems, and using innovative, low-cost, and replicable techniques that are suitable for a context with a high DPs presence.</li> <li>• Improve policies and plans to increase urban resilience in the region, by developing a regional urban risks and vulnerabilities management model.</li> </ul>
WR13	<p>Increase the availability of WASH in Schools and strengthening WinS standards for climate change impacts</p> <ul style="list-style-type: none"> <li>• To build school's capacity to adapt to and mitigate the effects of climate change and water scarcity</li> </ul>
WR14	<p>Improve implementation of decentralized water supply and sanitation solutions in Al-Azraq</p> <ul style="list-style-type: none"> <li>• Provide improved sanitation services for refugee populations in Al Azraq using semi-centralized solutions that can be expanded on in the future (16,000 people with access to safe sanitation).</li> <li>• Provide training and awareness to local citizens and operators on WWT and reuse.</li> <li>• Demonstrate proof of concept for decentralized or semi-centralized solutions.</li> </ul>
WR15	<p>Implement a program of Performance-based Contracts to Achieve NRW Reduction</p> <ul style="list-style-type: none"> <li>• Eliminate the need to pump excessive water from renewable groundwater sources to compensate for NRW losses, which will lead to a reduction in the total energy consumption of water pumping and decrease the abstraction level relative to safe yield abstraction.</li> <li>• Gradually address the financial instability of utilities by increasing cost recovery.</li> </ul>
WR16	Reduce water losses and increase water savings in King Abdullah Canal
	The purpose of this action is to undertake construction on the King Abdullah Canal to either rehabilitate the length of the canal to reduce leaking, or to convert a portion of the canal into a closed pipeline
	<ul style="list-style-type: none"> <li>• Conduct a comprehensive analysis of potential scenarios to reduce physical and administrative losses in King Abdullah Canal. Two possible scenarios: <ul style="list-style-type: none"> <li>a. Rehabilitation of King Abdullah Canal (110km).</li> <li>b. Converting the Northern part of King Abdullah Canal (65km) into a closed pipeline.</li> </ul> </li> <li>• Implementation of either scenario will result in water savings and improved monitoring and control of the available water resources.</li> </ul>
	Expand the As Samra Wastewater Treatment Plant (Phase III)
WR17	<p>Whilst the project aims to provide the public with a suitable service of wastewater collection, conveyance, and treatment service, the plant also provides a reliable and sustainable source of high-quality reclaimed water that allows complete reuse in the Jordan Valley for irrigation, replacing the fresh groundwater resources currently used</p> <ul style="list-style-type: none"> <li>• Increased capacity of As-Samra to treat an additional 35 MCM of generated wastewater.</li> <li>• As Samra WWTP will treat 70% of Kingdom wastewater providing 100% of treated wastewater for irrigation purposes.</li> </ul>

#	Purpose/Objectives
WR18	Undertake feasibility studies to explore storm water systems and groundwater filtration
	<ul style="list-style-type: none"><li>Decrease the amount of stormwater lost to evaporation and flooding through the use of low impact development/ecosystem-based approaches to infrastructure</li></ul>
WR19	Undertake Desalination of Seawater at the Gulf of Aqaba through Renewable Energy Sources
	<ul style="list-style-type: none"><li>Reduction in Jordan's carbon footprint, as power is generated from RE sources rather than from traditional sources.</li><li>Improvement in water security and resilience to climate change effects through the provision of an additional supply of water to Amman.</li><li>Improvement in health and living standards as a result of improved sanitation brought on by access to an additional supply of water.</li><li>Increase in economic activity through the use of water for productive uses.</li></ul>



# OVERVIEW: Jordan Green Growth National Action Plan 2021-2025

The Green Growth National Action Plan 2021-2025 lays out pathways for sustainable development that will increase resilience, strengthening Jordan’s capacity to contain shocks and recover from catastrophic events such as COVID-19.



**FIGURE 2**  
Relationship between the Five National Green Growth Objectives and SDGs

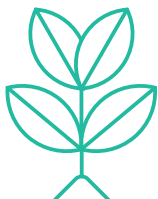


Figure 1 below shows a summary of the green growth planning and implementation in Jordan:



**FIGURE 1**  
Green Growth Planning and Implementation in Jordan