

Driving Water and Energy Efficiency in Water

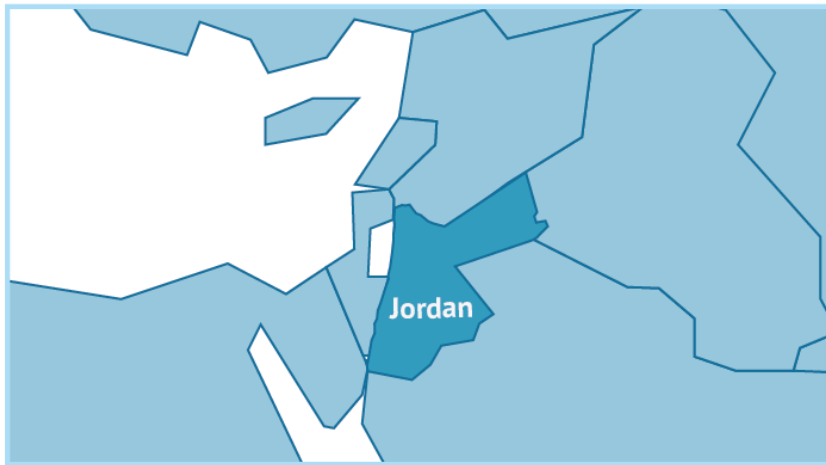
Case study from Jordan:
Water utilities mitigating climate change: beyond the obvious

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November 29, 2017

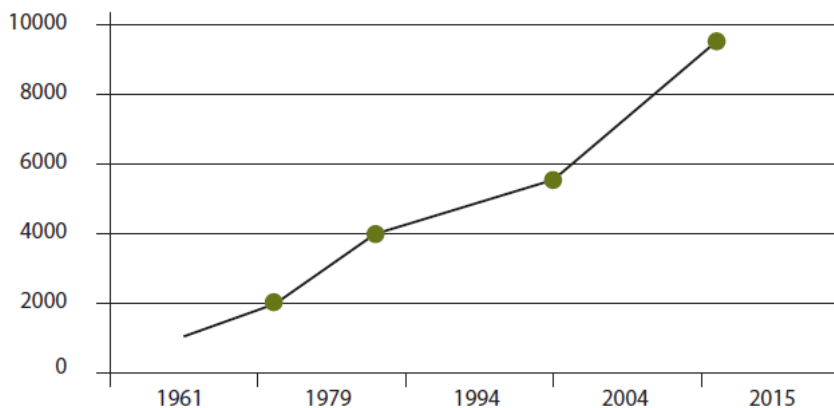


Jordan Key Facts

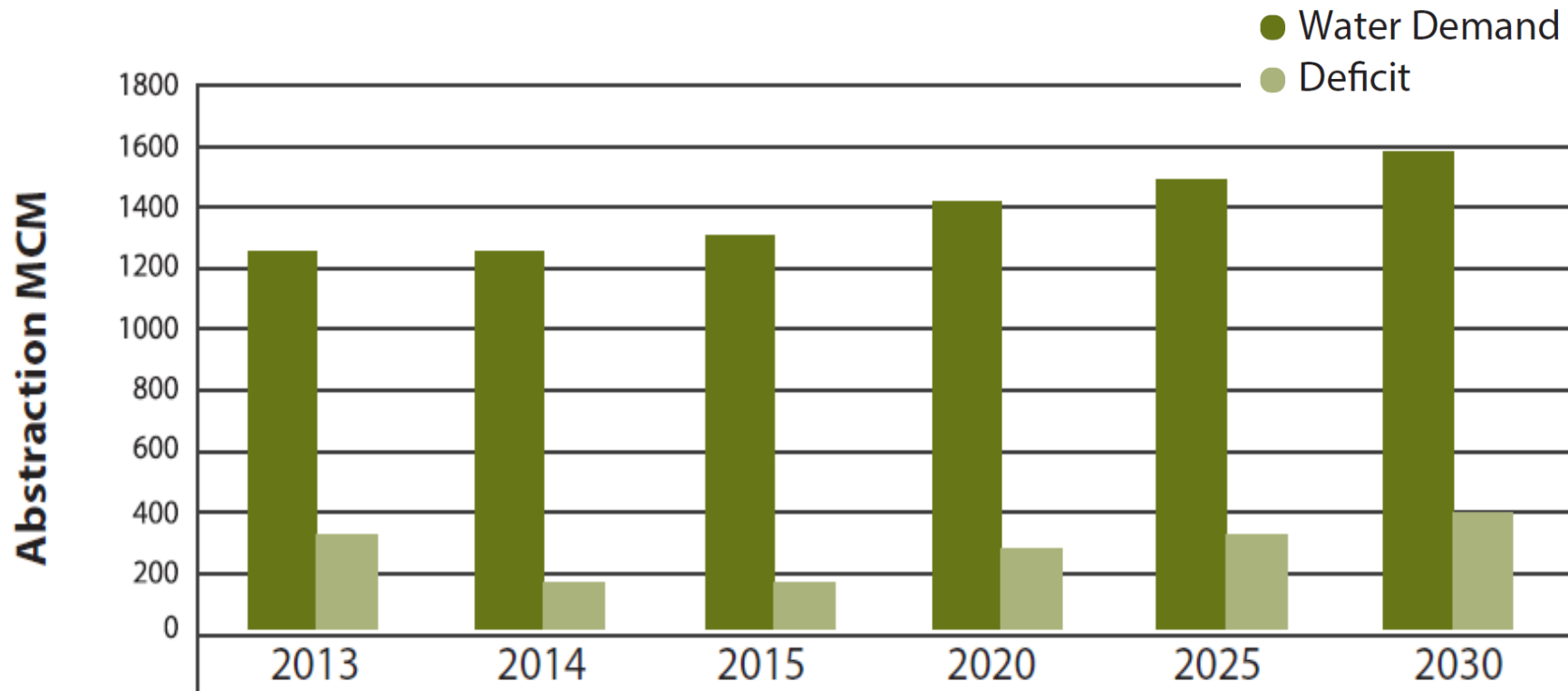


- Very vulnerable to climate change
- Most water stressed country in the world (130 m³/cap/year)
- Water shortage a chronic problem
- Annual population growth of 5.3%

Population Growth 1960-2015



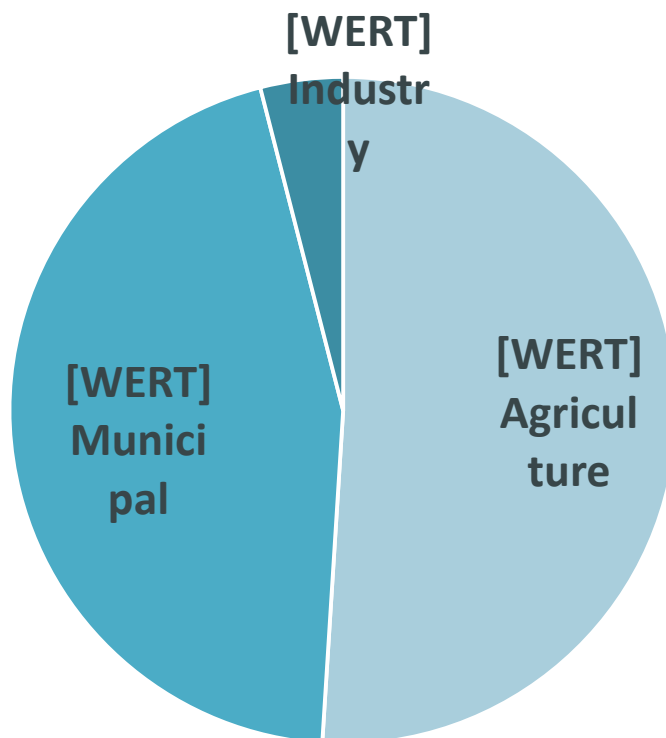
Linking Water and Climate in Jordan: Projecting Water Deficit to 2030



By 2025, water demand will exceed available water resources by 26 % if no additional measures are taken.

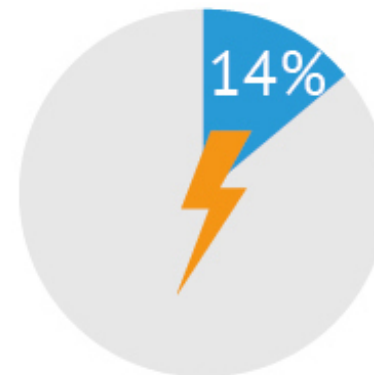
Linking Water and Climate in Jordan: Energy & Water Nexus

Water Use in Jordan by Sector

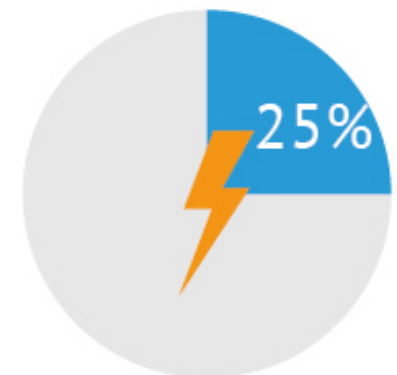


Energy for Water 2014 - 2030

2015



BAU 2030



- 2015: 15 % of national energy consumption attributed to water
2030: BAU scenario: 25 %

Electricity generation is expected to grow at an annual average growth rate of 4.1 % until 2040.



Hashemite Kingdom of Jordan Intended Nationally Determined Contribution (INDC)¹

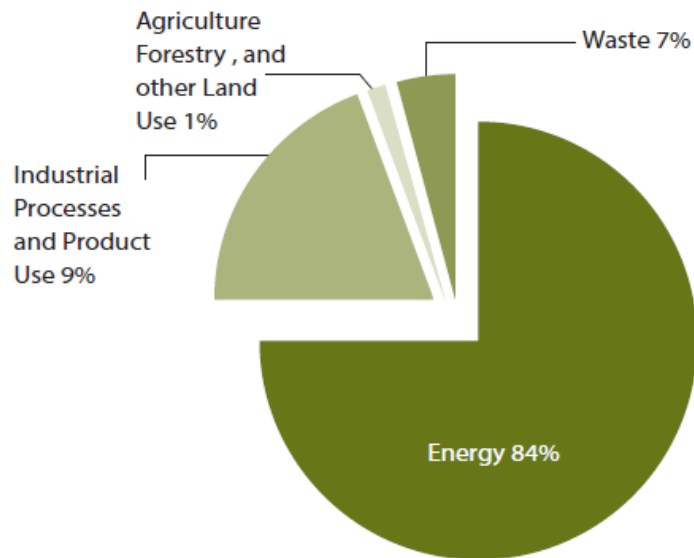
Jordan's INDC Summary

Jordan nationally determines to reduce its greenhouse gas emissions by a bulk of 14 % until 2030. This contribution of GHGs reduction will be unconditionally fulfilled at, maximally, 1.5 % by the Country's own means compared to a business as usual scenario level.

However, Jordan, conditionally and subject to availability of international financial aid and support to means of implementation, commits to reduce its GHGs emissions by additional, at least, 12.5 % by 2030.

The outcome targets above are accompanied by a diverse combination of numerous GHGs cut-oriented actions in all involved sectors of emissions in addition to the adaptation actions in targeted sectors. These actions (policies, strategies, legislations, measures, etc) are articulated in this document. The methodological approaches underlying Jordan's INDC are included in this communication as well.

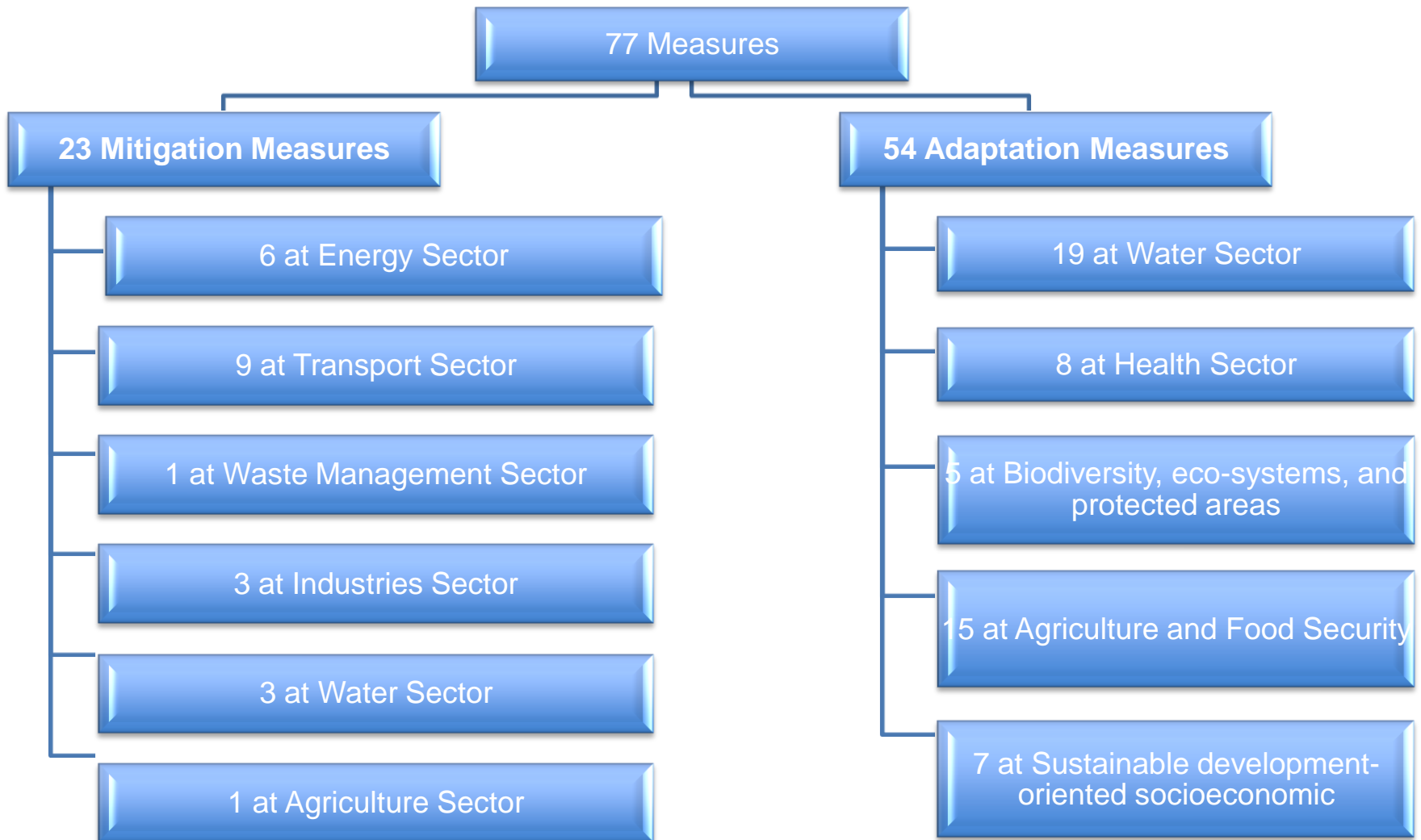
GHG net emissions by sector

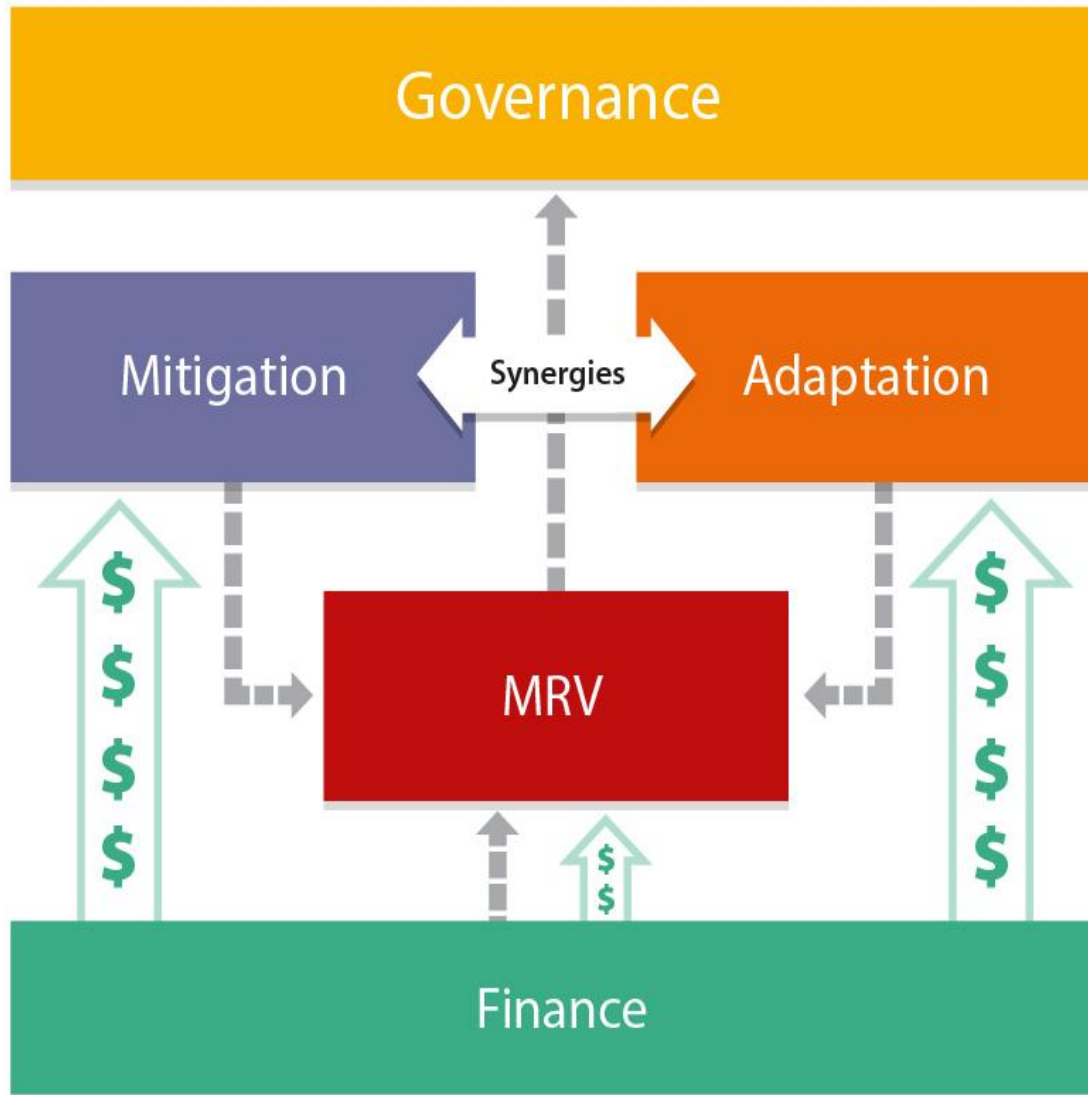


- In 2012: 28 million tons (Mt) of CO₂eq
- Wastewater contribution is included in the waste sector
- 15% of the GHG from energy is from water pumping

NDCs Targets by 2030: 14 %

- Unconditional outcome to reducing GHGs emissions **by 1.5 %**
- Conditional outcome to reducing GHGs emissions **by 12.5 %**
- **Estimated cost:**
 - **USD 5,700,000,000**
 - Secured by GoJ: USD 542,750,000





How does Jordan address climate relevant water actions in their NDCs?



Jordan is strongly committed to the goals of the PA to respond to climate change.

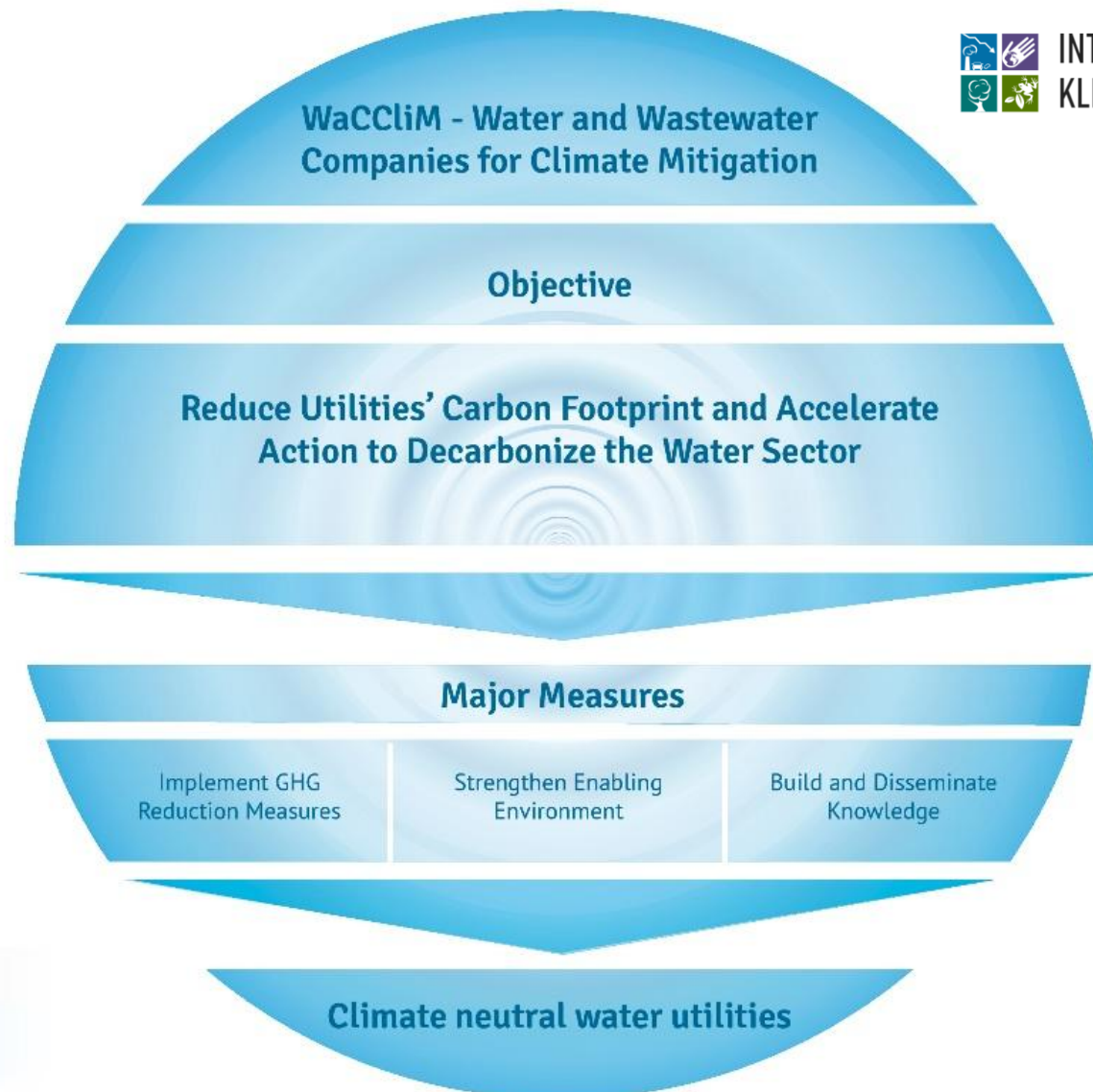
Climate Change Policy of the Hashemite Kingdom of Jordan 2013-2020

Mitigation

Adaptation

ACTIVITIES	Diversifying renewable energy sources (biogas, solar, wind, hydro)	Rainwater Harvesting technologies
	Improving Energy Efficiency in water and wastewater utilities	Irrigation efficiency
	Empowering Water User Associations (capacity development, financial sustainability)	Operational efficiency of wastewater treatment
		Circular economy approaches and safe use of treated wastewater
Water Efficiency		

Water and Wastewater Companies for Climate Mitigation (WaCCliM)



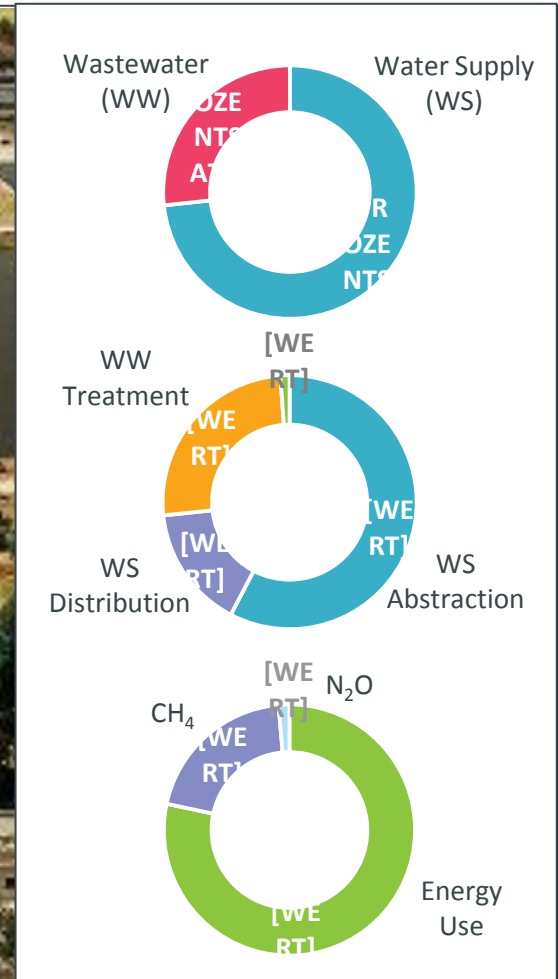
**INTERNATIONALE
KLIMASCHUTZINITIATIVE (IKI)**

WaCClIM Pilot Utility in Madaba, Jordan

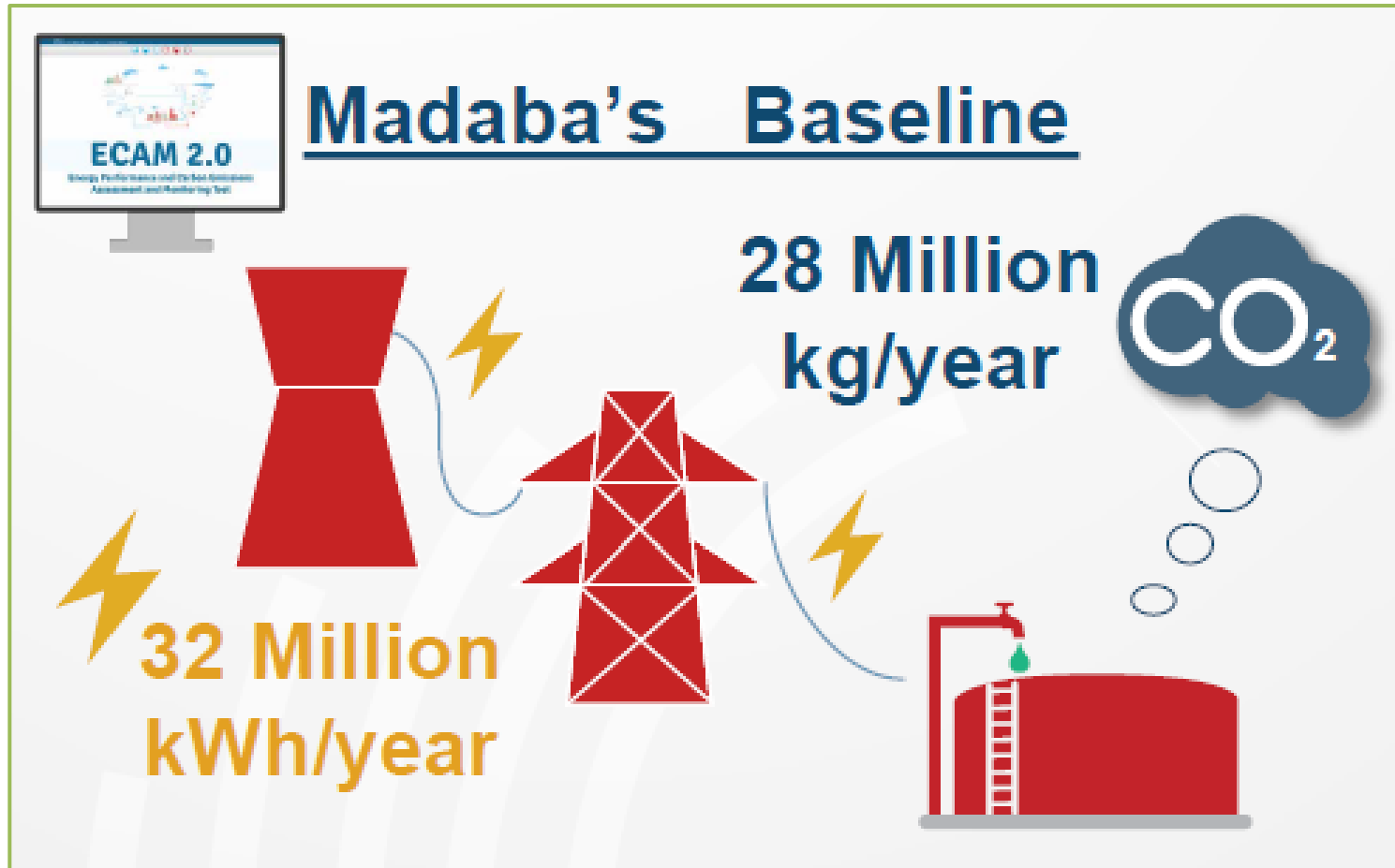
Water poorest country
15 % of Jordans energy consumption attributed to water
pumping



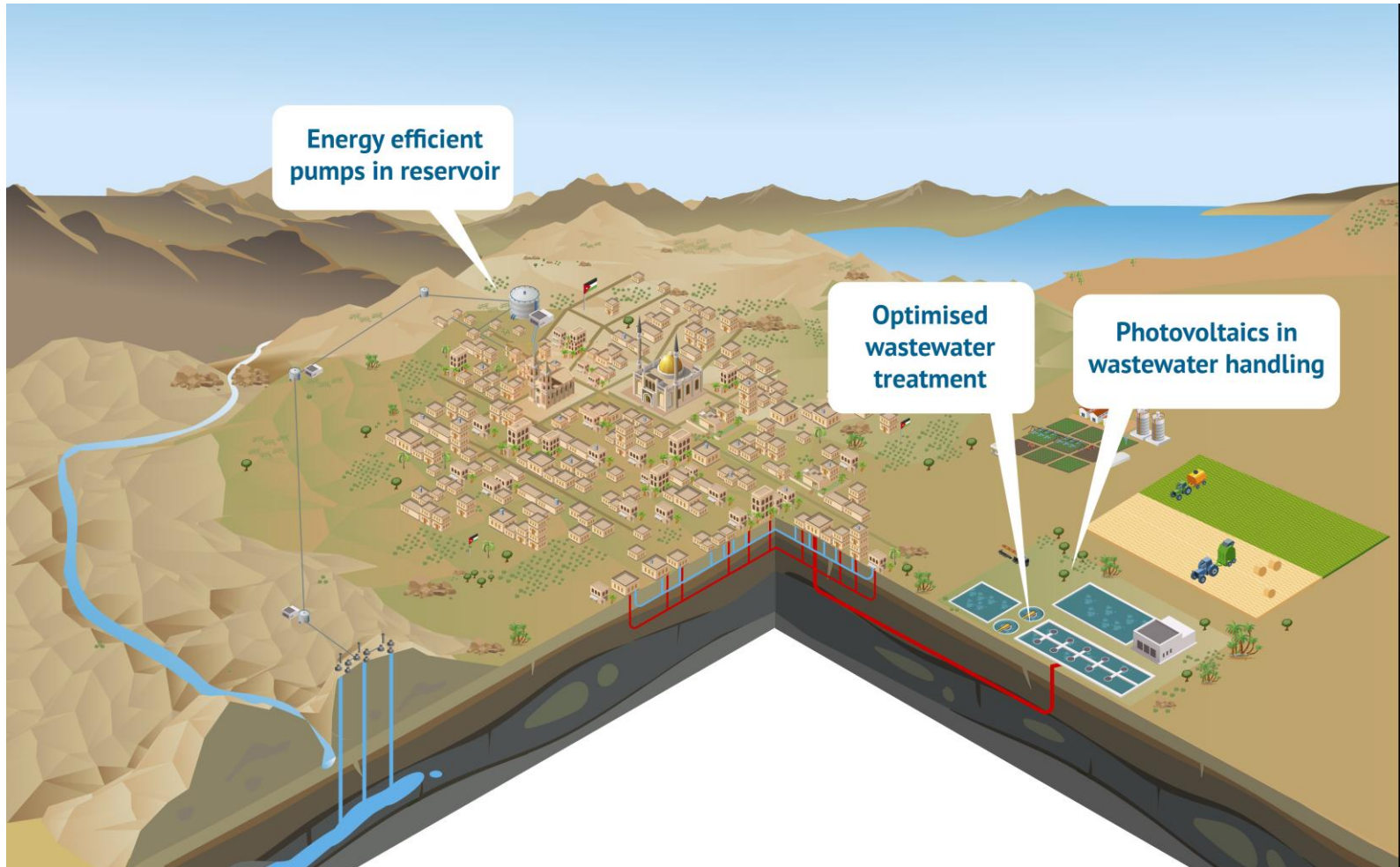
Pilot Utility in Madaba



Madaba Utility: Baseline
28 M kg CO₂e/a; 73 % attributed to water supply



Madaba, Jordan: GHG reduction opportunities



10 M kg/a 

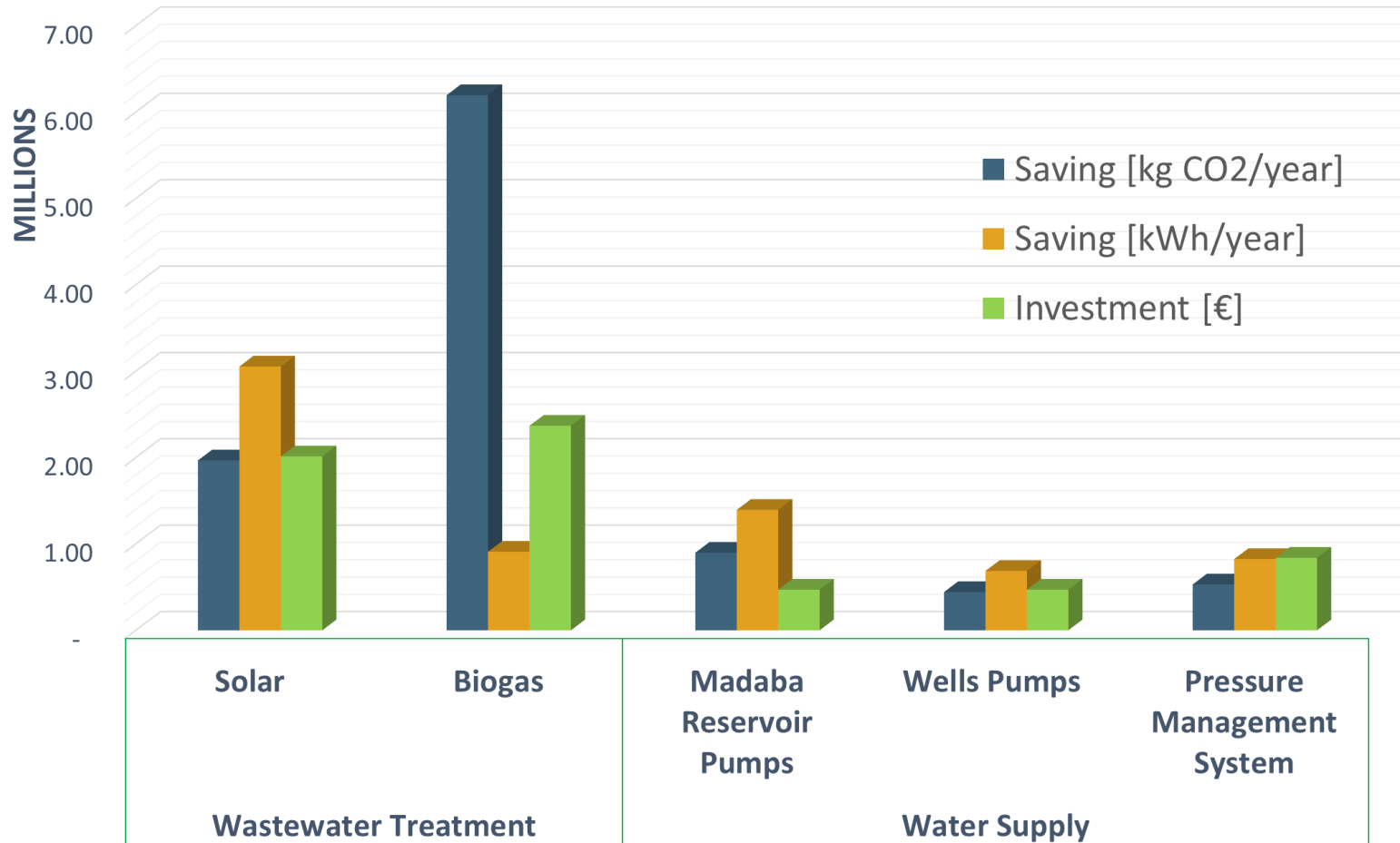
7,000
MWh/a



200,000

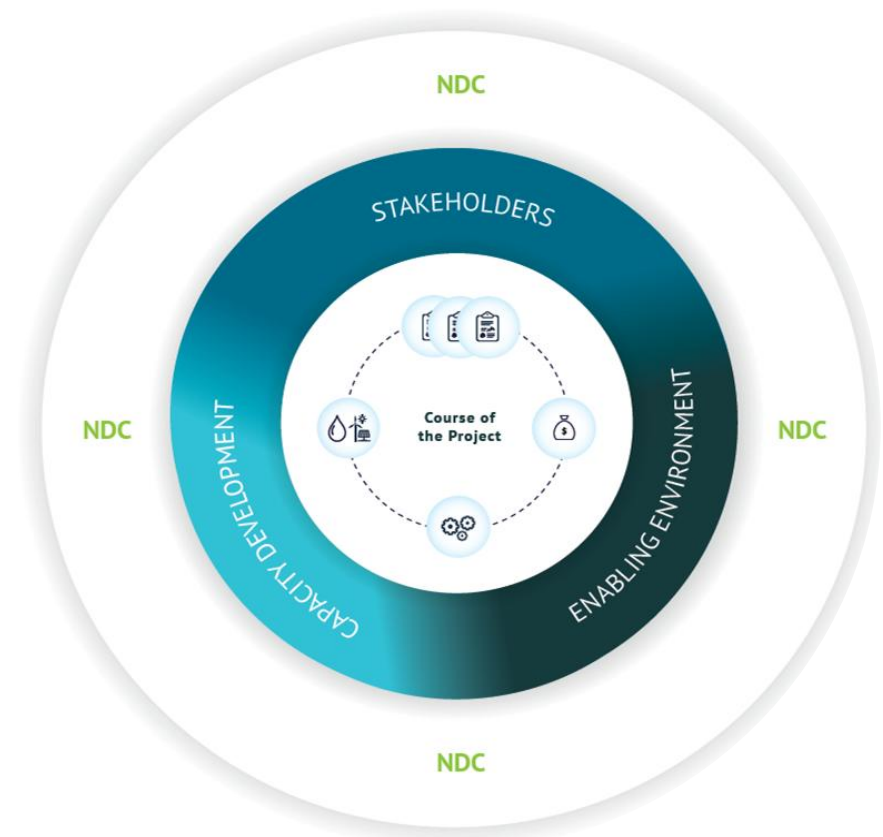


Madaba, Jordan: Measures and Impacts



1. **Development of GHG Reduction Policy** for the Water Sector (entire urban water cycle)
2. **Development of Financing Mechanism** for the Water Sector
3. Identify and develop **NAMA projects (i.e. biogas, energy efficiency)** in water sector while contributing to **water security**

Project Pipeline Development

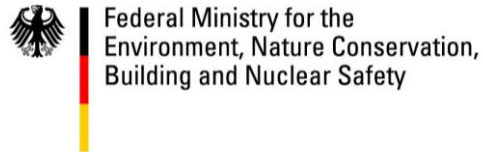


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This project is part of the International Climate Initiative

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