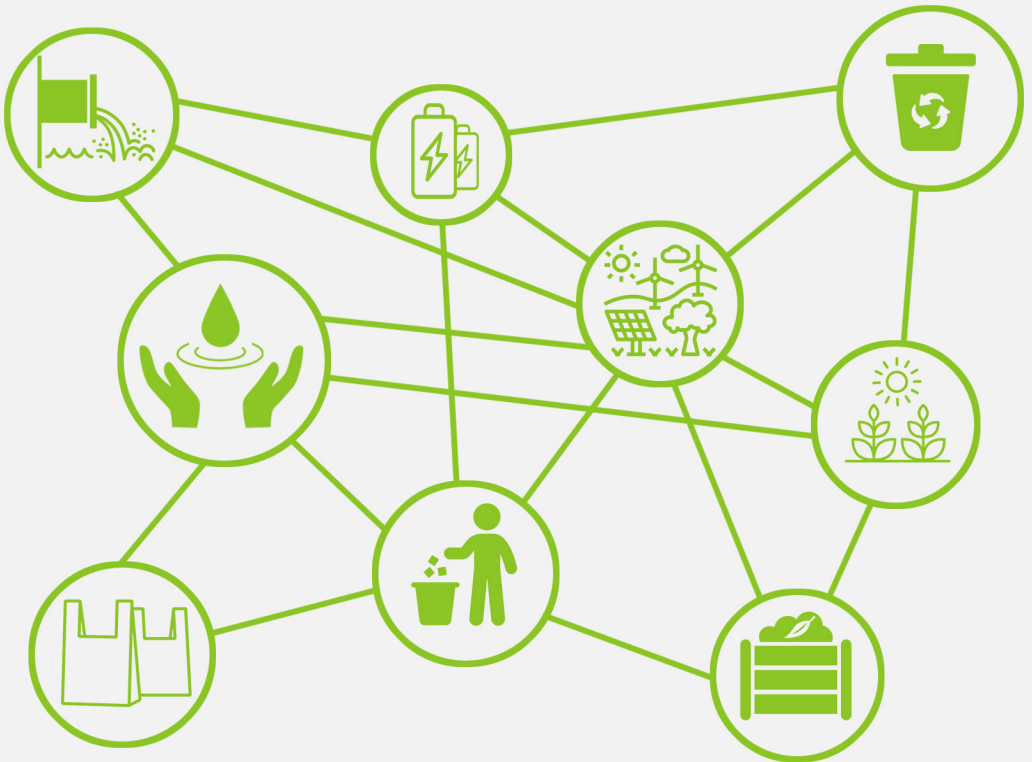




Ministry of Foreign Affairs of the Netherlands



Environmental Statistics & Locally Proposed Activities to Combat Climate Change: Infographic Brief



West Asia-North Africa Institute, September 2019



This manual is produced by the West Asia and North Africa (WANA) Institute within the project “Enabling Communities for Climate Change Adaptation Planning: Understanding Gender Roles”, funded by the Embassy of the Kingdom of the Netherlands in Jordan.

PERMISSION TO REPRODUCE

The information in this publication may not be reproduced, in part or in whole and by any means, without charge or further permission from the WANA Institute. For permission to reproduce the information in this publication, please contact the WANA Institute Communications Department at info@wana.jo

Published by The WANA Institute, 70 Ahmad Al-Tarawneh St, Jubeiha, 11941, Amman, Jordan.

Author: Dr. Majd Al Naber, and Eng. Reem Al Haddadin.

Infograph Design: Eng. Hadeel Qatamin

Printed in Amman, Jordan

© 2019 WANA Institute. All rights reserved.

Manufactured in Jordan

Table of Contents

Background.....	1
Main environmental challenges for the Arab states	5
National environmental figures & climate change proposed activities	7
Key sectors.....	8
Water & agriculture.....	9
Environment & waste	16
Energy & transportation	18

Background

“Nature has no boundaries”, this might define the close linkages between local and global environment.¹ Concerns for environmental issues have increased over the last decade; specially in developing countries. Governments and policymakers have been urged by scientists and environmentalists to support and reach greater environmental excellence. Countries around the world have different priorities for saving the environment, based on local challenges. The main environmental challenges facing the WANA region are the decrease in agricultural production, food insecurity, the increasing rate of deforestation, and water mismanagement and misallocation.² These challenges have significantly intensified with the increasing effects of climate change. Climate change is a change in global and regional climate patterns such as abnormal variations in mean temperatures, which is attributed to an increase in levels of atmospheric carbon dioxide.³

There are several projected impacts for climate change in Jordan such as; the increase of the mean temperature between 1.8 – 2.6 Celsius by 2025 associated with unprecedented decrease in rainfall and greater evaporation rates.⁴ These impacts will proportionally cause excess demand for the uses of non-renewable sources such as nonrenewable groundwater, and will put greater constraints on the water sector. Accordingly, water per capita will

¹ “Jordan Needs Plan to Tackle Dire Environmental Challenges!” Jordan Times, November 6, 2018. <http://www.jordantimes.com/news/local/'jordan-needs-plan-tackle-dire-environmental-challenges'>.

² Twining-Ward, Tom, Kishan Khoday, Cara Tobin, Fadhel Baccar, Janine Twyman Mills, Walid Ali, and Zubair Murshed. “Climate Change Adaptation in the Arab states – UNDP. “Climate Change Adaptation in the Arab States Best practices and lessons learned, July 2018.

³ Jain, Manisha. “What Is Climate Change?” Science ABC. Science ABC, May 22, 2019. <https://www.scienceabc.com/social-science/climate-change-definition-causes-and-effects.html>.

⁴ “Jordan’s Third National Communication on Climate Change.” Jordan’s Third national Communication on Climate Change, November 2014. <https://jordankmportal.com/resources/jordans-third-national-communication-on-climate-change>

drop down from 130 to 90 cubic meters per person per year by 2025.⁵ On the other hand, the burning of fuel in the energy and waste sectors will exacerbate the effect of climate change as energy sector contributes 74 percent of the national GHG (Greenhouse Gases) emissions, while the waste sector contributes 13 percent.⁶ All of these will directly affect the sustainability of the environmental ecosystems in all Jordanian governorates with different intensities.

Jordanian local communities have undergone demographic shifts in population coupled with climate change, which pushed them towards becoming vulnerable groups. Consequently, their roles and responsibilities have been endangered and have undergone drastic conditions. To offset the impact, environmental policies are developed to present appropriate solutions from different stakeholders' perspectives. However, these policies usually lack an important stakeholders' perspective of the local community, whose priorities and needs are not considered. Moreover, climate change impacts have been proven to affect women and men differently.⁷ Therefore, policies that are meant to find effective answers are required to be gender sensitive.

Against his backdrop, WANA Institute came up with the idea of this project with an objective to empower local communities (selected climate change ambassadors and community-based organisations) by developing and upscaling climate change adaptation plans mainstreaming the gender perspectives and providing these communities with a platform to raise their voices and exchange ideas and experiences with policy makers,

⁵ "Jordan's Third National Communication on Climate Change." Jordan's Third national Communication on Climate Change, November 2014. <https://jordankmportal.com/resources/jordans-third-national-communication-on-climate-change>.

⁶ "The National Climate Change Policy of the Hashemite Kingdom of Jordan 2013-2020." MOPIC, March 2013. <http://inform.gov.jo/en-us/By-Date/Report-Details/ArticleId/67/smid/420/ArticleCategory/220/The-National-Climate-Change-Policy-of-the-Hashemite-Kingdom-of-Jordan-2013-2020>.

⁷ "أغيلار لورينا." IUCN, 2009. دليل تدريبي حول النوع الاجتماعي والتغير المناخي

government and non-government organisations and donors. Extensive trainings were provided to the local communities covering the topics of: climate change definition, climate change and gender, climate change adaptation and mitigation options, proposal writing, and social media and advocacy. Moreover, several workshops were conducted with the purpose of developing climate change adaptation plans at the governorate level for Irbid, Zarqa and Balqa.

Locally developed adaptation plans were launched at an event that brought together government officials, international donors, and experts in June 2019. In August, the launch was followed by a roundtable meeting with the purpose of sharing local communities' proposed ideas and activities with different environmental organisations. The meeting highlighted the efforts put forth toward facing the climate change in Jordan by these organisations.

This infographic booklet came about to reflect the interactive roundtable meeting, the publication overviews the main environmental challenges the region and Jordan are facing, focusing on climate change effects. It presents gender sensitive climate change adaptation activities that were proposed by local communities in response to their environmental context. The plans depicted imminent needs and priorities set by the local communities for the water, agriculture, energy, transportation and waste sectors.

This booklet is part of a project that was implemented between the years (2017-2019) under the following title "Enabling Communities for Climate Change Adaptation Planning: Understanding Gender Roles" with funding from the Embassy of the Kingdom of the Netherlands in Jordan.

Main Environmental Challenges for the Arab States*



Unsustainable agriculture production



Overexploitation of natural resources



Water scarcity and poor management



Climate change

Climate Change in the Arab States



Deforestation**



Increased of **24%**



Annual Temperature*



Increase of **2-6 °C** by 2100



Crop Yield*



Drop of **30%** with a temperature increase of 1.5 –2.5 °C

Drop of **60%** with a temperature increase of 3-4 °C

* Twining-Ward, Tom, Kishan Khoday, Cara Tobin, Fadhel Baccar, Janine Twyman Mills, Walid Ali, and Zubair Murshed. "Climate Change Adaptation in the Arab States - UNDP." Climate Change Adaptation in the Arab States Best practices and lessons learned, July 2018.

**"Arab World - Forest Area (% of Land Area)." Arab World - Forest area (% of land area), n.d. <https://www.indexmundi.com/facts/arab-world/indicator/AG.LND.FRST.ZS>.

Natural Disasters*

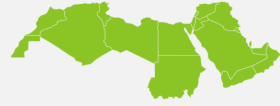
Since 1980s

2x



It has doubled
globally

3x



It has tripled in the
Arab States

Drought*



Normally occurs every **6-8** years, now it takes place every **1-2** years

Flash Floods*



The number of people affected by flash floods has **doubled** over the past **10** years.

Projected Impact of Climate Change in Jordan**



Increase of mean temperature of
1.8-2.6 degree Celsius by 2055.

* Twining-Ward, Tom, Kishan Khoday, Cara Tobin, Fadhel Baccar, Janine Twyman Mills, Walid Ali, and Zubair Murshed. "Climate Change Adaptation in the Arab States - UNDP." Climate Change Adaptation in the Arab States Best practices and lessons learned, July 2018.

**Jordan's Third National Communication on Climate Change, November 2014. <https://jordankmportal.com/resources/jordans-third-national-communication-on-climate-change>.

National Environmental Figures & Climate Change Proposed Activities



Key Sectors

Water & Agriculture



Environment & Waste



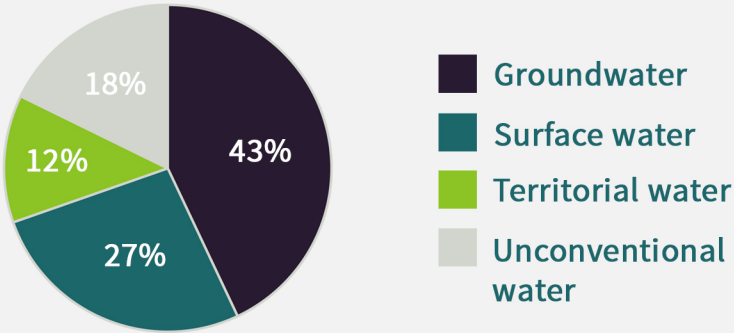
Energy & Transportation



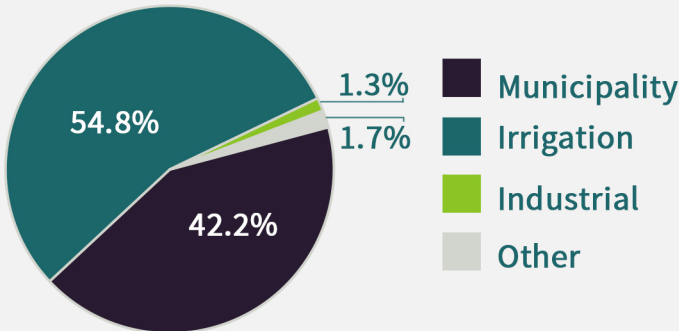


Water & Agriculture

Water Resources*



Water Allocation*



Amount of Water in MCM per Year*

1076



Supply

1412



Demand

* "Water Budget 2018 الموازنة المائية الاستراتيجية والتخطيط السياسي ومديرية المياه والسري مديرية السياسات والتخطيط الاستراتيجي الموازنة المائية 2018, n.d. [http://www.waj.gov.jo/sites/ar-jo/Documents/2018 الموازنة المائية 2019.pdf](http://www.waj.gov.jo/sites/ar-jo/Documents/2018%20الموازنة%20المائية%202019.pdf).



Water & Agriculture

Agricultural Water *



60%

**of the total water needs (700MCM)
are allocated to the agriculture
sector**

Agriculture & GDP *



Agriculture

Contributed about

**3-4% to the GDP
in 2013**

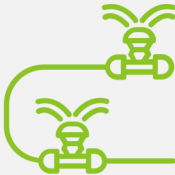


* "National Water Strategy." National Water Strategy of Jordan, 2025 – 2016 Ministry of Water and Irrigation | Hashemite Kingdom of Jordan, [http://www.mwi.gov.jo/sites/en-us/Hot Issues/Strategic Documents of The Water Sector/National Water Strategy\(25.2.2016-\(2025-2016\).pdf](http://www.mwi.gov.jo/sites/en-us/Hot%20Issues/Strategic%20Documents%20of%20The%20Water%20Sector/National%20Water%20Strategy%20(25.2.2016-(2025-2016).pdf).



Water & Agriculture

Agriculture*



40% irrigated



60% rainfed



Produce **90%** of the national agricultural products



The agricultural land has increased in the last ten years by **7.7%****

* "National Water Strategy." National Water Strategy of Jordan, 2025 – 2016 Ministry of Water and Irrigation | Hashemite Kingdom of Jordan, [http://www.mwi.gov.jo/sites/en-us/Hot Issues/Strategic Documents of The Water Sector/National Water Strategy \(25.2.2016-\(2025-2016\).pdf](http://www.mwi.gov.jo/sites/en-us/Hot%20Issues/Strategic%20Documents%20of%20The%20Water%20Sector/National%20Water%20Strategy%20(25.2.2016-(2025-2016).pdf).

** "Table 1.1: Number and Area of Agricultural Holdings by Type of Holding and Governorate, 2017 (Area: Dunum)." Department of Statistics, http://www.dos.gov.jo/dos_home_a/main/agriculture/census/tables1/tab1_1.pdf.



Water & Agriculture

Agricultural Trade in 2018*

Product In Tonnage	Vegetables	Fruits
Export	408,220.4	115,782.8
Import	52,065.3	152,152.3

* "التقارير السنوية للصادرات و المستوردات الاردنية." Exports and Imports of Jordan, n.d. <http://www.moa.gov.jo/ar-jo/adminpagearjo/exportsandimportsofjordanarjo.aspx>.



Water & Agriculture

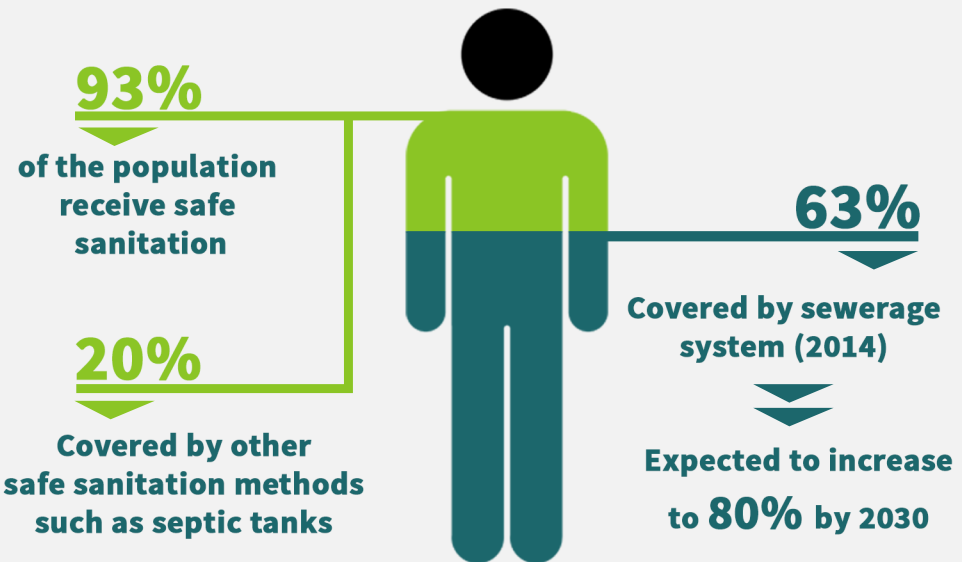
Treated Wastewater*



Jordan is reusing **91%** of its treated wastewater in agriculture to reallocate fresh water for domestic purposes.

Water treatment plants are expected to treat **240 MCM** per year by 2025.

Sanitation Services*



* "National Water Strategy." National Water Strategy of Jordan, 2025 – 2016 Ministry of Water and Irrigation | Hashemite Kingdom of Jordan, [http://www.mwi.gov.jo/sites/en-us/Hot Issues/Strategic Documents of The Water Sector/National Water Strategy \(25.2.2016-\(2025-2016\).pdf](http://www.mwi.gov.jo/sites/en-us/Hot%20Issues/Strategic%20Documents%20of%20The%20Water%20Sector/National%20Water%20Strategy%20(25.2.2016-(2025-2016).pdf)



Water & Agriculture

Proposed Activities



Home Garden

Enhance the cultivation of home garden by providing advice and capacity at household level



Compost

Train women in producing compost from domestic waste



Rangeland

Develop joint programmes on solutions to mitigate deforestation



Drought Tolerant Crops

Encourage farmers to cultivate crops tolerant to high temperatures



Water Use Efficiency

Raise awareness on the use of water saving techniques and technologies



Sanitation

Ensure access to sanitation services



Water & Agriculture

Proposed Activities



Agricultural Calendar

Design applications that provide an agricultural calendar which includes agriculture seasons, crop water requirements and seasonal plant diseases



Water Harvesting & Recycling

Activate the role of women on the importance of water harvesting at the household level



Environment & Waste

Municipal Waste Generation*



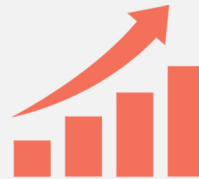
2.2 million tons
of solid municipal
waste yearly



5% annually
growing rate

Municipal Waste Increase**

2 million
tons in 2012



1.5 million
tons in 2000

Waste per Capita**



The per capita waste
generation in Jordan
is **0.9 kg/day**

Landfills**



There are **21** working
landfill sites in Jordan,
7 are closed landfill sites

***“Development of a National Strategy to Improve the Municipal Solid Waste Management Sector in the Hashemite Kingdom of Jordan.” Baseline Study on the Existing MSWM System in the Hashemite Kingdom of Jordan (1st Draft Report), September 2014. http://www.mma.gov.jo/Files/Docs/043930_11102018BaselineReport.pdf

** “Solid Waste Management in Jordan.” EcoMENA, March 2019, 31. <https://www.ecomena.org/swm-jordan/>



Environment & Waste

Proposed Activities



Origami Art

Convert paper/plastic waste to origami art



Carbon Tax

Invest the revenue from the national carbon tax in environmental projects for women



Plastic Bags

Minimize the use of plastic bags



Dumping in Landfills

Monitor and evaluate dumping that matches international standards



Littering

Awareness campaigns to tackle this social behaviour



Solid Waste Recycling

Promote the culture of solid waste sorting and recycling at the domestic and national level

Cesspits

Provide suitable solutions for construction of safe cesspits





Energy & Transportation

Power Generation *



18207 GWh
in 2014
corresponds with
more than
13.3 million
of **CO₂** emissions

GHG Emissions **



are mostly
driven by the energy
sector

Energy Sectors Contribution to GHG Emissions **



Transportation and Industry
74%



Waste
13%



Manufacturing
8%

* Ministry of Water & Irrigation. Energy Efficiency and Renewable Energy in the Water Sector Policy 2016, [http://www.mwi.gov.jo/sites/en-us/Documents/Policies/Energy Efficiency and Renewable Energy Policy 3.3.2016.pdf](http://www.mwi.gov.jo/sites/en-us/Documents/Policies/Energy%20Efficiency%20and%20Renewable%20Energy%20Policy%203.3.2016.pdf).

** "The National Climate Change Policy of the Hashemite Kingdom of Jordan 2020-2013." MOPIC, n.d. <http://inform.gov.jo/en-us/By-Date/Report-Details/ArticleId/67/smid/420/ArticleCategory/220/The-National-Climate-Change-Policy-of-the-Hashemite-Kingdom-of-Jordan2020-2013->.



Energy & Transportation

Proposed Activities



Public Transportation

Develop eco-friendly public transportation vehicles



Renewable Energy

Enhance the importance of energy efficiency and renewable energy



Batteries Landfills

The importance of special landfill for expired hybrid and electric car batteries



Vehicle Engines

Launch community campaigns to promote the importance of periodic maintenance of vehicle engines



info@wana.jo | Tel: + 96265344701 | Royal Scientific Society 70 Ahmad Tarawneh, Amman, Jordan

www.wanainstitute.org