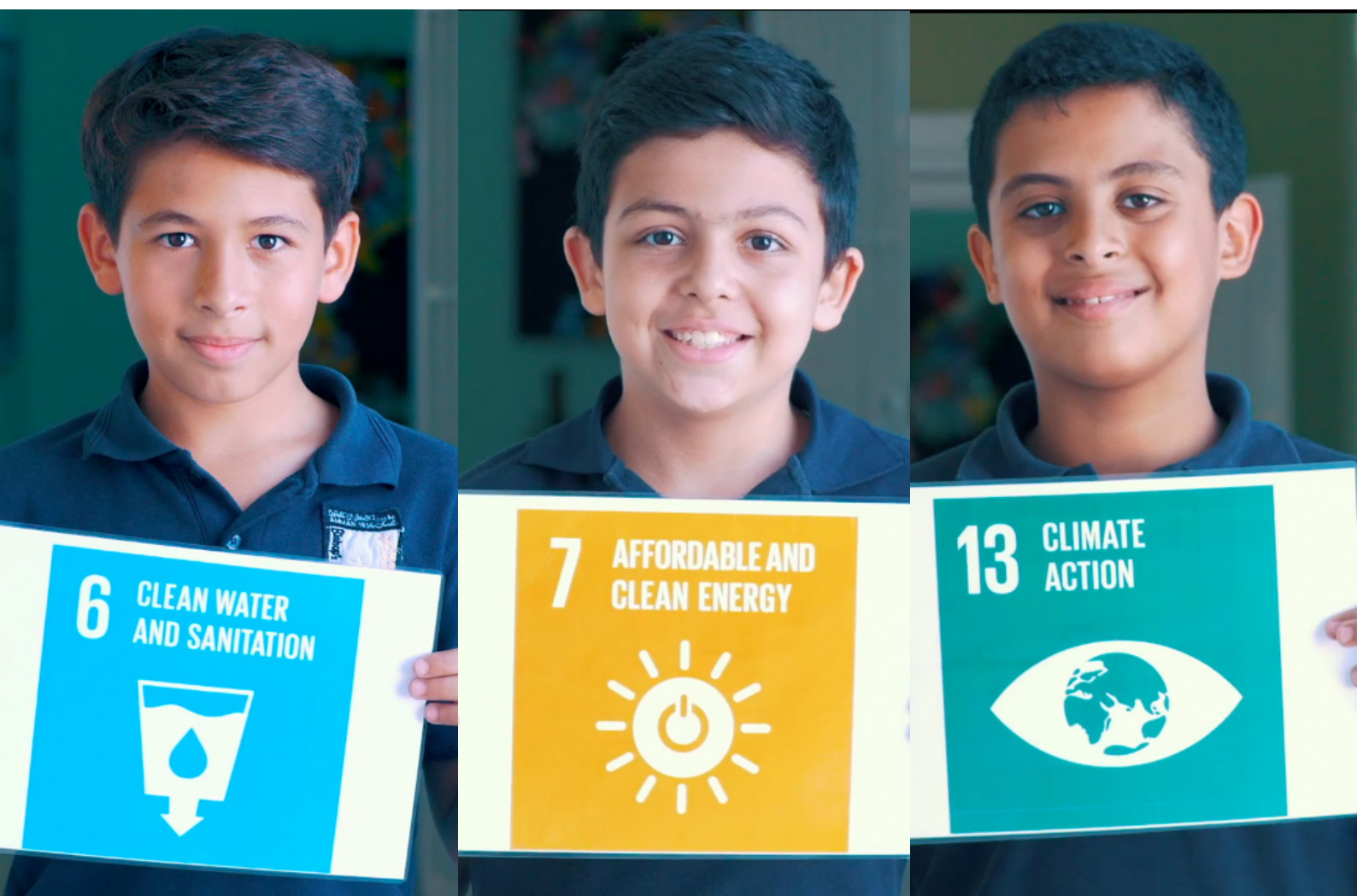



**A GUIDANCE NOTE FOR  
SDG IMPLEMENTATION IN JORDAN:  
Water, Energy, and Climate Change**





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## List of Acronyms

EMRC	Energy and Minerals Regulatory Commission
ESCAP	The UN Economic and Social Commission for Asia and the Pacific
FAO	Food and Agricultural Organisation
FES	Friedrich-Ebert-Stiftung
GHG	Greenhouse Gas Emissions
GWP	Global Water Partnership
INDC	Intended Nationally Determined Contributions
IPCC	Intergovernmental Panel on Climate Change
IWRM	Integrated Water Resource Management
JREEEF	Jordan Renewable and Energy Efficient Energy Fund
MCM	Million Cubic Meters
MDG	Millennium Development Goals
MOA	Ministry of Agriculture
MOE	Ministry of Energy
MOEnv	Ministry of Environment
MOPIC	Ministry of Planning and International Cooperation
MWI	Ministry of Water and Irrigation
NDC	Nationally Determined Contributions
SDG	Sustainable Development Goals
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
VNR	Voluntary National Review
WAJ	Water Authority of Jordan
WANA	West Asia – North Africa
WASH	Water, Sanitation, Hygiene
ZRB	Zarqa River Basin

## 1. Introduction

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On 27 September 2015, a high-level plenary meeting of the UN General Assembly adopted 17 Sustainable Development Goals (SDGs)<sup>1</sup> (Figure 2), officially known as “Transforming Our World: the 2030 Agenda for Sustainable Development”. This was one of the outcomes of a 3-year process following the Millennium Development Goals (MDGs)<sup>2</sup>, involving its 193 Member States, as well as the global civil society. The SDGs were set to synthesise the environmental, social and economic dimensions of development in order to address poverty and equality for all in a healthy environment.

Jordan was one of the first countries globally to work towards the achievement of the MDGs and considerable progress was made during the first ten years, especially in the area of “poverty eradication, maternal and child health, communicable diseases, universal primary education, and environmental sustainability.”<sup>3</sup>

However, Jordan still faces dire environmental challenges, one of these being that the country is ranked as having one of the lowest levels of water resource availability in the world.<sup>4</sup> An already difficult situation is being exacerbated by a high influx of refugees and the impacts of climate change. Jordan is also prone to the impacts of climate change, with forecasts predicting longer dryer seasons and even less precipitation in the future.<sup>5</sup> Jordan is also one of the few energy resource poor countries in the Middle East, with government debt levels having increased by 50 per cent largely due to the interruption of the regular cheap supply of natural gas from Egypt since the start of the Arab Spring. Forced to find alternative energy sources to fill the 80 per cent energy gap, another USD 6 billion was added in energy costs to the deficit since 2011.<sup>6</sup>

With the above in mind, the West Asia-North Africa Institute (WANA) in partnership with Friedrich-Ebert-Stiftung (FES) aims to help demystify the environment-related SDG process in Jordan, build momentum and provide guidance at the institutional level on how to tackle the challenges associated with inter-sectorial goals through the project “Pathways Towards the Sustainable Development Goals in Jordan”, of which this guiding note is the end-result.

Although all 17 SDGs are of equal importance, this project targeted three SDGs that can be considered crucial for Jordan, because they directly speak to the pressing challenges in Jordan’s environmental development, namely: Goal 6 (Ensure access to water and sanitation for all), Goal 7 (Ensure access to affordable, reliable, sustainable and modern energy for all), and Goal 13 (Take urgent action to combat climate change and its impacts).

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<sup>1</sup> Image credit: <http://unsdsn.org/wp-content/uploads/2016/06/sdgs-list-en.jpg>

<sup>2</sup> At the Millennium Summit in September 2000, the largest gathering of world leaders in history adopted the UN Millennium Declaration, committing their nations to a new global partnership to reduce extreme poverty and setting out a series of time-bound targets, with a deadline of 2015, that became known as the Millennium Development Goals (MDGs)

<sup>3</sup> “Jordan,” Sustainable Development Knowledge Platform, accessed October, 2017, <https://sustainabledevelopment.un.org/memberstates/jordan>

<sup>4</sup> “Jordan: Water is Life,” WHO, accessed August, 2017, <http://www.who.int/heli/pilots/jordan/en/>

<sup>5</sup> Ministry of Environment and UNDP, *Jordan’s Third National Communication on Climate Change (Amman: 2014)* Available from <http://unfccc.int/resource/docs/natc/jornc3.pdf>

<sup>6</sup> USAID, *Jordan Country Development Cooperation Strategy 2013 - 2017*, (USAID: Amman, 2015), 1

The overall objectives of this guiding note are:

- To describe the current (global) knowledge of the three selected SDGs, their gaps, possible interlinkages between other SDGs, and the pre-requisites for impactful implementation;
- To take stock of the current implementation status of the three SDGs in Jordan, including gaps and challenges, and opportunities;
- Based on the above inventory, to provide practical recommendations and guidance for decision-makers on ways to bridge the gaps between policy and practice in Jordan.

Following this general Introduction chapter, chapter 2 introduces the SDGs. This introduction was based on extensive background literature research and analysis from international reports, the SDG knowledge platform and reports produced by UN Organisations. Chapters 3 through 5 discuss the global importance of implementing each of the three SDGs and their interactions with all the other SDGs. Related to the latter, it has been analysed that all the SDGs interact with one another. Understanding these interactions – whether positive or negative – is key for unlocking the full potential of their implementation, as well as ensuring that progress is made in a sustainable way. The nature of these interactions will vary, depending on the policy options and strategies chosen to implement them. For each of the three SDGs, these interactions are described in the respective chapters. Where information was not available from existing studies, the discussion includes the result of additional analysis of key SDG interactions based on available information, done for the purpose of this guiding note. Chapter 6 focuses on the situation in Jordan. The implementation status of the three selected SDGs is described, including related challenges and opportunities, based on a series of meetings and interviews with stakeholders between March and September 2017. In chapter 7, some policy recommendations for more thoughtful implementation of the three SDGs in Jordan are distilled, taking lessons from previous and current experience. Chapter 8 adds some general conclusions on the methods and outcomes of the project.



## 2. The Sustainable Development Goals

The world today faces urgent environmental threats, which include water scarcity, climate change impacts and the loss of biodiversity. Poor governance and conflict today further worsen the situation. The 2030 Agenda for Sustainable Development aims to respond to these challenges by adopting sustainable development as the overlaying principle for global cooperation on social inclusion, economic development and environmental sustainability. This comes with the commitment to reduce inequalities within and among countries, showcasing the clear demand for sustainable consumption and production patterns and ultimately “aspires for peace, fair governance and justice”.<sup>7</sup> As a result, the agenda calls for action in five key themes; People, Planet, Prosperity, Peace and Partnerships (Figure 1).<sup>8</sup>



**Figure 1: The five key elements that underpin the SDGs**

The 17 SDGs are part of this 2030 Agenda, comprising of 169 targets that set out qualitative and quantitative objectives aimed to be reached by 2030. A set of indicators accompanying the goals were defined by the ‘Inter-Agency and Expert Group on SDG Indicators’ to monitor compliance.<sup>9</sup> The targets are global in nature and universally applicable, taking into account different national realities, policies and priorities. The need for countries to work together to achieve them, is embedded as a central idea, challenging the assumption that “development is a

<sup>7</sup> Jens Martens, “The 2030 Agenda – a new start towards global sustainability?”, in *Spotlight on Sustainable Development*, ed. Jens Martens et al. (Beirut: Development Alternatives with Women for a New Era (DAWN), Third World Network (TWN), Social Watch, Global Policy Forum (GPF) and Arab NGO Network for Development (ANND), 2016), 11

<sup>8</sup> “The United Nations Information Centre,” Accessed June, 2017, <http://colombo.sites.unicnetwork.org/files/2015/09/SDG-pics.png>

<sup>9</sup> Sustainable Development Solutions Network, *Getting Started with the Sustainable Development Goals: A Guide for Stakeholders* (2015), 6



phenomenon that occurs only in countries of the global south while the global north is already developed”.<sup>10</sup>

The SDGs build on the MDGs that were set in 2000. The latter focused on halving extreme poverty in all its dimensions, which includes low income, chronic hunger, lack of schooling and others. While much has been achieved, many countries however did not make sufficient progress on environmental sustainability, and the SDGs were set to continue the process.



Figure 2: The Sustainable Development Goals

<sup>10</sup> Jens Martens, “The 2030 Agenda – a new start towards global sustainability?”, 11

### 3. SDG 6: Clean Water and Sanitation

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Even though worldwide water extraction grew by approximately twice the rate of the global population growth in the twentieth century, more than 700 million people still remain without access to improved sources of drinking water and 2.5 billion people do not have access to adequate sanitation.<sup>11</sup> Big businesses including large-scale agricultural activities need greater water supplies to sustain national economic growth and development needs. The Food and Agricultural Organisation (FAO) predicts that by 2025 two-thirds of the world population could be living in water stressed countries if current consumption patterns persist. The UN is attempting to address the problem of access to water and sanitation through the 2030 Agenda: SDG 6.

As water is a cross-cutting development issue, countries must develop strategies to implement this goal and its targets by prioritising water needs of different sectors. As a result of the SDG negotiations, it was finally recognised that water supply and sanitation is a human right, emphasising that local communities around the world should have sovereignty over their natural resources and universal access to public water and sanitation services.

The SDG 6 targets (Table 1) were phrased to largely showcase this connection with human rights language. However, studies<sup>12</sup> have indicated that some target keywords like “substantially increase” or “substantially decrease” as in targets 6.3 and 6.4, are either not specific enough or may be too ambitious in some cases, which does not help holding governments accountable for their responsibilities. The word “efficiency”<sup>13</sup> in target 6.4 is also too vague and does not clearly specify efficiency from a social and environmental perspective, despite the direct impacts of unsustainable and unjust water allocation and supply on the natural and social environment.

SDG 6 also focuses on implementing the strategy of Integrated Water Resource Management (IWRM) which is defined by the Global Water Partnership (GWP) as "a process which promotes the coordinated development and management of water, land and related resources, in order to maximise the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems". This approach has been highly regarded by the UN and the Global Water Partnership as the best management solution since it combines social equity, economic efficiency and ecological sustainability. However, skeptics fear that the concept is a vague “one-size-fits-all” strategy that may ignore local knowledge and cultural realities.<sup>14</sup> It is precisely this local knowledge that must be integrated in implementing the SDG as part of a “human-rights water management” approach to ensure inclusion of the right-holders in decision making.

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<sup>11</sup> “Sustainable Development Goal 6: Ensure availability and sustainable management of water and sanitation for all,” FAO, last modified 2017, <http://www.fao.org/sustainable-development-goals/goals/goal-6/en/>

<sup>12</sup> Meera Karunanathan, “Whose rights to water will the 2030 Agenda promote?”, in *Spotlight on Sustainable Development*, ed. Niclas Hallstrom et al. (Beirut: Development Alternatives with Women for a New Era (DAWN), Third World Network (TWN), Social Watch, Global Policy Forum (GPF) and Arab NGO Network for Development (ANND), 2016), 58

<sup>13</sup> Water efficiency focuses on reducing water wastage by reducing the amount used where appropriate (like flushing toilets, watering landscapes etc). It also focuses on measuring the amount needed for a particular purpose and only supplying the needed amount hence reducing “water wastage”

<sup>14</sup> Meera Karunanathan, “Whose rights to water will the 2030 Agenda promote?”, 58

<b>Table 1: SDG 6 Targets</b>	
6.1	By 2030, achieve universal and equitable access to safe and affordable drinking water for all
6.2	By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
6.5	By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
6.6	By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
6a	By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies
6b	Support and strengthen the participation of local communities in improving water and sanitation management

### 3.1 The Global Need to Implement SDG 6

Access to safe drinking water and adequate sanitation is crucial for the eradication of poverty and for sustainable development. It is also a human right.<sup>15</sup> However, due to poor decision making and infrastructure, water insecurity and deficient hygiene impact food security, livelihoods and educational opportunities. This challenge is further exasperated by approximately 22.5 million refugees - over half are under the age of 18 – that have globally been forced to leave their homes and live in refugee camps or in host countries<sup>16</sup>, increasing the pressure on accessing safe adequate water, sanitation and hygiene for both host communities and refugees. All SDG 6 targets directly speak to that need.

There are many direct and indirect benefits associated with the implementation of SDG 6, summarised in Figure 3 below. It is for example imperative to consider how young women and girls walk long distances – sometimes after the sun sets – to fetch water whether in refugee camps or in host communities, which directly puts them at risk. Hence, with improved water access, sanitation and hygiene, young women and girls are better protected from sexual violence.

<sup>15</sup> “Human right to water and sanitation,” United Nations, accessed September, 2017, [http://www.un.org/waterforlifedecade/pdf/human\\_right\\_to\\_water\\_and\\_sanitation\\_media\\_brief.pdf](http://www.un.org/waterforlifedecade/pdf/human_right_to_water_and_sanitation_media_brief.pdf)

<sup>16</sup> “Figures at a Glance,” UNHCR, accessed August, 2017, <http://www.unhcr.org/figures-at-a-glance.html>.

Furthermore, water access and sanitation play a huge role in health and nutrition, as poor water quality increases the risk for water borne diseases and decreases the quality of health.

Water access and sanitation is also directly linked with food security and livelihoods. Sustainable agriculture has the great potential to address water scarcity as ensuring sustainable water withdrawals in agriculture e.g. by using irrigation water more efficiently, could directly reduce the number of people suffering from water scarcity.

There is also a direct link with better education. Each day, nearly 1,000 children die due to preventable water and sanitation-related diarrhoeal diseases that could be spread in schools.<sup>17</sup> Water, Sanitation, Hygiene (WASH) programmes around the world address this by providing better toilet facilities and increased drinking water access points in schools. An increase in toilet utilities per community in schools directly improves student well-being.

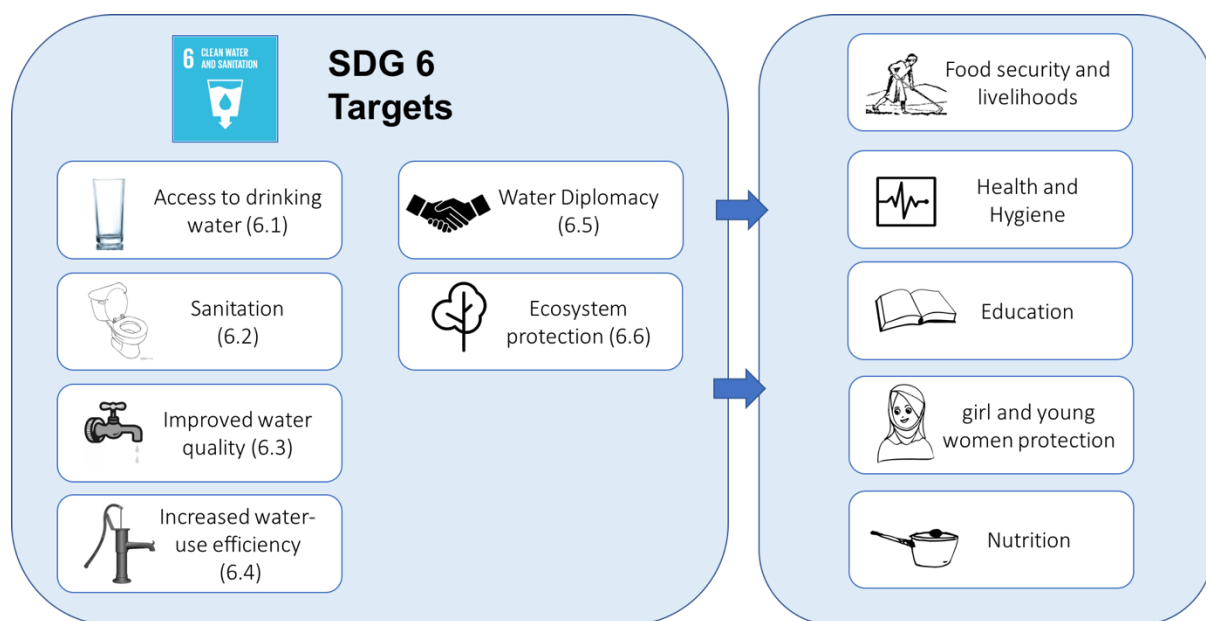


Figure 3: SDG 6 implementation benefits

### 3.2 SDG 6 Interactions

To assist efforts towards implementing SDG 6 in an integrated manner, it is important to identify the interlinkages, synergies and trade-offs among various targets within the SDG itself and with other SDGs in the 2030 Agenda. Analysis has concluded that all SDG 6 targets are both positively and mutually reinforcing to one another.<sup>18</sup> For example, by increasing water sanitation and hygiene, water quality will drastically improve, further reducing pollution and hence increasing human well-being.

Related to the SDG 6 interactions with other SDGs, a UN-Water Analytical Brief (2016) demonstrated a dynamic, two-way interdependence between the SDG 6 targets and every other

<sup>17</sup> "SDG 6: Clean Water and Sanitation," United Nations, accessed August, 2017, <http://in.one.un.org/page/sustainable-development-goals/sdg-6/>

<sup>18</sup> UN-Water, "Water and sanitation interlinkages across the 2030 Agenda for Sustainable Development," (Geneva: UN-Water: 2016), 16-33

SDG. Many SDG targets cannot be achieved without also meeting the targets under SDG 6, and vice versa.<sup>19</sup> As such, these interlinkages need to be well understood also in view of the Social, Economic and Environmental dimensions of sustainable development of the 2030 Agenda. The latter is part and parcel of the “indivisible whole” nature of the 2030 Agenda, these three dimensions of sustainable development are viewed as “intertwined”, like three strands of the DNA. The 17 SDGs therefore have a clear starting point in at least one of the three dimensions of sustainable development and embed all three dimensions within their targets.

Therefore, in the same UN Water brief<sup>20</sup>, the interactions between all the SDGs and SDG 6 with their individual targets are thoroughly analysed. Each interlinkage was recognised under one of the three dimensions. It was demonstrated that these interactions either fall under all three, or under only one or two themes (Figure 4).









There are four interlinkages with SDG 6 that fall under all three dimensions, showcasing how SDG 6 directly affects and is affected by eliminating hunger (SDG 2), access to energy (SDG 7), economic growth (SDG 8), and sustainable communities (SDG 11). Table 2 outlines how these key SDGs interact with SDG 6.



**Figure 4: All SDG interlinkages with SDG 6 under three dimensions of the UN-Water Framework**

<sup>19</sup> UN-Water, “Water and sanitation interlinkages across the 2030 Agenda for Sustainable Development,” 16-33.

<sup>20</sup> *ibid*

<b>Table 2: Key Interactions of SDG 6 with Other SDGs</b>	
<b>Key Interactions</b>	<b>Goals</b>
Sustainably increasing water recycling and efficient water use will directly create a resilient agricultural sector. A resilient and sustainable agriculture sector will hence play a role in increasing food security. Water quality also plays a role in increasing agricultural productivity, which increases food security. <sup>21</sup>	 
Ensuring water supplies such as ground water extraction requires high amounts of energy, while thermal cooling and resource extraction need substantial amounts of water. In most cases, increasing energy efficiency would directly support water targets. However, increasing large energy production infrastructure like hydropower could increase pressure on water resources. <sup>22</sup>	 
Millions of water related employment positions ensure that water is made available every day for domestic use, ensures the treatment of waste water, and hence sustain food security through irrigation for agriculture. Therefore, aiming to achieve water security includes creating meaningful jobs related to water and wastewater development and service provision. Moving to achieve proper water governance is directly linked to sustainable economic growth. <sup>23</sup>	 
Water security can also be connected to economic trade, which includes a huge growth potential in virtual water trade and the production and trade of food.	
Sustainable cities are all about creating a society that can be a hub for ideas, innovation, science and productivity. However, rapid urbanisation is exerting pressure on water supplies, sewage, the living environment, and public health. These challenges can be overcome partly by improving water governance and achieving SDG6 targets that help improve resource use and help reduce poverty. <sup>24</sup>	 

<sup>21</sup> Adapted from UN-Water, “Water and sanitation interlinkages across the 2030 Agenda for Sustainable Development,” 16-33.

<sup>22</sup> ibid

<sup>23</sup> Adapted from World Water Week, “Thematic Scope: Water for sustainable development” available from <http://www.worldwaterweek.org/wp-content/uploads/2015/11/Thematic-Scope-2016.pdf>

<sup>24</sup> Adapted from "Cities - United Nations Sustainable Development Action 2015." United Nations. Accessed August 24, 2017. <http://www.un.org/sustainabledevelopment/cities/>.

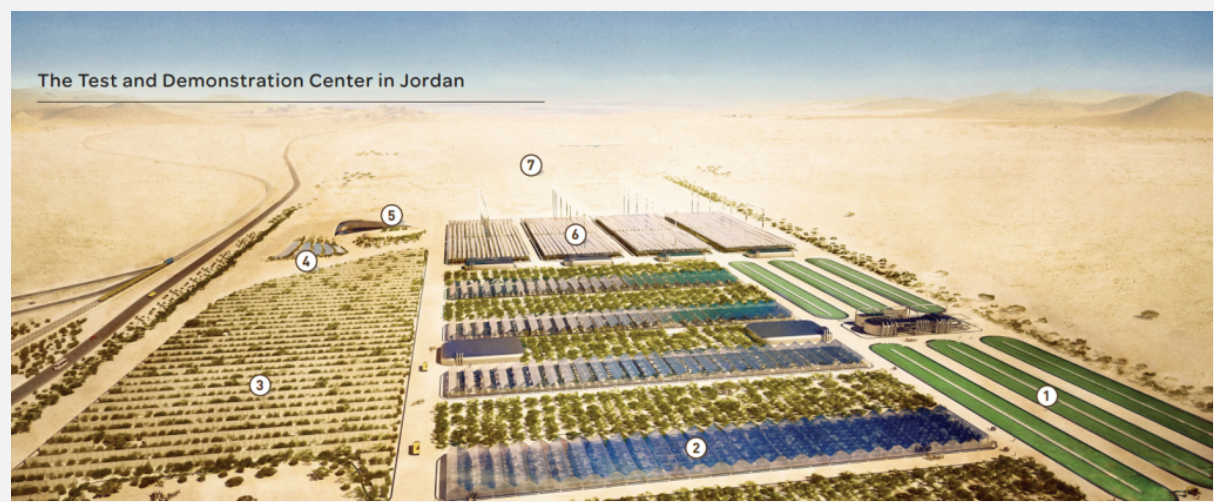


The example in the box below demonstrates the interlinkage of SDG 6 with SDG 2 through sustainable agriculture.

**Box 1: The Sahara Forest Project – An example of resilient sustainable agriculture in Jordan<sup>25</sup>**

The Sahara Forest Project is a new environmental solution originally piloted in Doha to utilise scarce resources to produce food in desert ecosystems.

The Sahara Forest Project Launch Station in Jordan (Aqaba) was inaugurated in September, 2017. The 3-hectare facility uses sun, saltwater, desert areas and CO<sub>2</sub> to produce food, freshwater and clean energy. It contains saltwater-cooled greenhouses that utilise saltwater to provide excellent conditions for the production of high-quality vegetables - like cucumber and tomatoes. Photovoltaic panels provide power for the electrical installations in the facility. Outdoor growing zones contribute to more yields from various crops while also storing CO<sub>2</sub> from the atmosphere into vegetation of degraded land. A desalination unit with a capacity of 10 thousand litres of freshwater per day will provide the necessary water for the greenhouse and outdoor vegetation. The potential annual production could reach up to 130 thousand kg of vegetables.



<sup>25</sup> Adapted from "Jordan." Sahara Forest Project. Accessed August 24, 2017. <https://www.saharaforestproject.com/jordan/>.



## 4. SDG 7: Affordable and Clean Energy

The United Nations Development Programme (UNDP) estimates that between 1990 and 2010, the number of people with access to electricity has increased by 1.7 billion. However, it is estimated that about 2.9 billion people still have no access to ‘modern energy’ services and over 1.1 billion have no electricity.<sup>26</sup> Hence, demand for affordable energy will keep on increasing due to a growing global population. At the same time, the energy sector is still the dominant contributor to climate change, producing around 60 per cent of the Greenhouse Gas (GHG) emissions worldwide.<sup>27</sup> In this regard, global efforts have encouraged clean energy production which already resulted in over 20 per cent of power generation from renewable energy sources as of 2011.<sup>28</sup>

The sustainable development challenge therefore lies in finding ways to resolve the need for modern energy production while decreasing the potential impact on the world’s natural resource base and on climate change. That’s why all 5 targets of SDG 7 (Table 3) are equally important and should be achieved together.

<b>Table 3: SDG 7 Targets</b>	
7.1	By 2030, ensure universal access to affordable, reliable and modern energy services
7.2	By 2030, increase substantially the share of renewable energy in the global energy mix
7.3	By 2030, double the global rate of improvement in energy efficiency
7a	By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology
7b	By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support

### 4.1 The Global Need to Implement SDG 7

Energy is a cross-cutting theme that is essential to all the other SDGs and central to sustainable development, climate change and human well-being. Expanding infrastructure and upgrading technology to provide clean energy in all developing countries is therefore crucial to encourage growth and help the environment.

<sup>26</sup> “Sustainable Development Goal 7 - Post 2015 Sustainable Development Agenda,” Sustainable Energy for All, accessed June, 2017, <http://www.se4all.org/sdg7>.

<sup>27</sup> *ibid*

<sup>28</sup> “Goal 7: Affordable And Clean Energy,” United Nations Development Programme, accessed July, 2017, <http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-7-affordable-and-clean-energy.html>.

### 4.1.1 Energy Access and Social Development

Access to sustainable and affordable energy, or the absence of it, has far-reaching implications on many dimensions of human wellbeing, social and economic development.

Most economic activities are impossible without adequate and reliable access to modern energy services. Also, the production of renewable and modern energy services can create new revenue sources for rural areas in developing countries, while increasing the tax base for improving service provisions. At the same time, energy production can create new employment opportunities and thus increase the standards of living.<sup>29</sup> Energy access is also an essential prerequisite for the delivery of services such as education and health.<sup>30</sup>

Ensuring adequate access to energy helps in fighting poverty, which is referred to as “overcoming energy poverty”. People living in poverty are the least likely to have access to energy services, and are more likely to stay in that situation if they stay unconnected to the network. Therefore, meaningful energy access cannot be considered as delivered if energy services are available for a short period of time, or when a community is grid-connected but individual households are not and the energy prices are too expensive for people to use.<sup>31</sup> In particular, small-scale community renewable energy projects have been directly linked to reducing poverty in developing countries.<sup>32</sup>

As for the effect on human wellbeing, the “Spotlight on Sustainable Development 2016”<sup>33</sup> report demonstrates that an increased energy use has a direct positive correlation with human wellbeing, however until a certain threshold (Figure 6); energy consumption above 250 kWh per capita per day does not further add to higher standards of living. This implies that U.S citizens consume roughly double the amount of energy European citizens’ consume, yet without significantly increasing their quality of life.<sup>34</sup> Therefore, it is interesting to compare this upper threshold with the internationally accepted bottom threshold to define ‘access to modern energy’ (see box below).

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<sup>29</sup> OECD, *Linking Renewable Energy to Rural Development*, (OECD: France), available from <https://www.oecd.org/regional/regional-policy/Renewable-rural-energy-summary.pdf>

<sup>30</sup> Isabella Alloisio et al, *SDG 7 as an enabling factor for sustainable development: the role of technology innovation in the electricity sector*, (ICSD: 2017) available from <http://ic-sd.org/wp-content/uploads/sites/4/2017/01/AlloisioUpdate.pdf>

<sup>31</sup> Indicators used for energy access are usually considered as the number of people/households connected and use energy regularly. See United Nations Economic and Social Commission for Asia and the Pacific, “Statistical Yearbook for Asia and the Pacific,” (2015), available from [http://www.unescap.org/sites/default/files/SDGs\\_07\\_SYB2015.pdf](http://www.unescap.org/sites/default/files/SDGs_07_SYB2015.pdf).

<sup>32</sup> Julia Terrapon-Pfaff, Carmen Dienst, Julian König and Willington Ortiz, “A cross-sectional review: Impacts and sustainability of small-scale renewable energy projects in developing countries,” *Renewable and Sustainable Energy Reviews*, vol 40 (December 2014): 1-10

<sup>33</sup> Spotlight on Sustainable Development 2016, Report by the Reflection Group on the 2030 Agenda for Sustainable Development, available from [https://neu.globalpolicy.org/sites/default/files/contentpix/spotlight/pdfs/Agenda2030\\_engl\\_160708\\_WEB.pdf](https://neu.globalpolicy.org/sites/default/files/contentpix/spotlight/pdfs/Agenda2030_engl_160708_WEB.pdf)

<sup>34</sup> Niclas Hallstrom, “Energy at a crossroad”, in *Spotlight on Sustainable Development*, ed. Niclas Hallstrom et al. (Beirut: Development Alternatives with Women for a New Era (DAWN), Third World Network (TWN), Social Watch, Global Policy Forum (GPF) and Arab NGO Network for Development (ANND), 2016), 61.

The correlation between energy use and human well-being

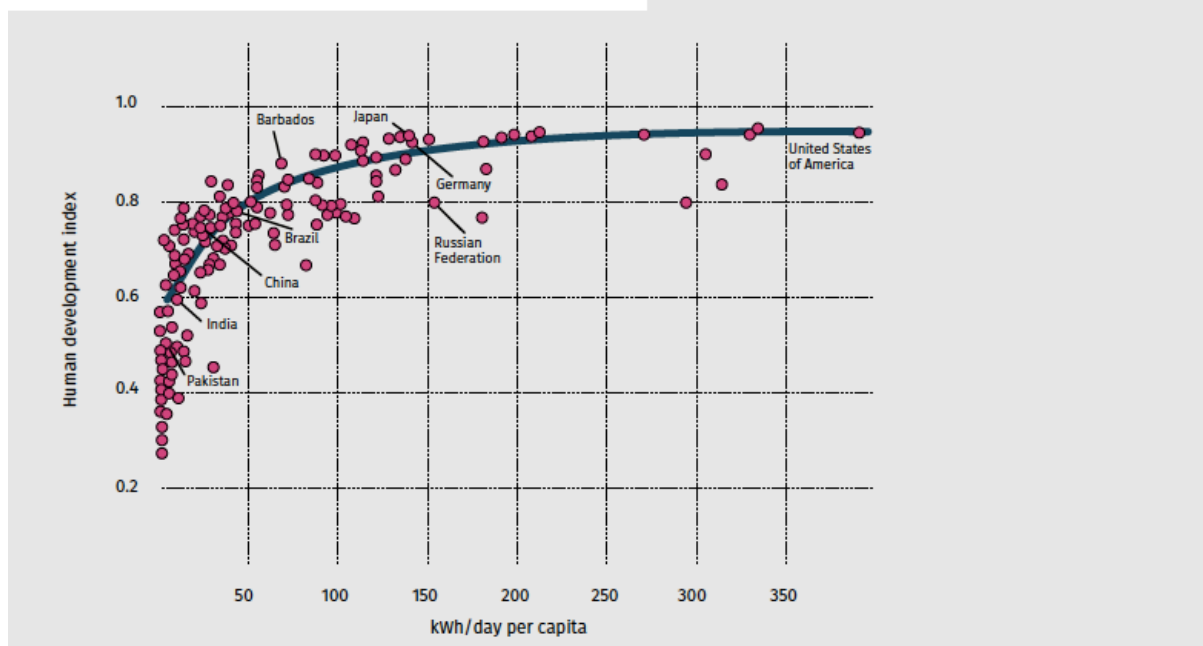


Figure 5: The correlation between energy use and human well-being<sup>35</sup>

### Box 2: Rethinking ‘Access to Modern Energy’<sup>36</sup>

The current definition of ‘modern energy’ access used by the International Energy Agency, the United Nations, and reported by the World Bank is based on a minimum annual threshold of 500 kWh for urban households and around 250 kWh for rural households. As such, the international definition of modern energy access means access to 50-100 kWh per person per year. Although this may sound reasonable for areas without access to electricity, this is what an average American would use in less than three days. Putting things into perspective, this corresponds to 3 per cent of the global average energy consumption and it is only enough to turn on a few light bulbs for a few hours per day. Perhaps, SDG 7 could be used to also help upgrade the bottom threshold of ‘access to modern energy’ – the surge in the correlation curve of energy use and human well-being (Figure 5) could give an indication – in order to meet the general SDG principles of social inclusion, economic development and environmental sustainability.

#### 4.1.2 SDG 7 and The Paris Agreement

The impacts of climate change are increasingly being felt by populations globally. The World Bank predicts that certain cities will become unlivable, agricultural viability will decrease and pressure on already scarce water resources will escalate, potentially increasing migration and the risk of conflict.<sup>37</sup>

<sup>35</sup> Niclas Hallstrom, “Energy at a crossroad”, 61.

<sup>36</sup> Todd Moss, “SDG Seven: Update the ‘Modern’ in Universal Modern Energy Access,” *Centre for Global Development*, 4 April, 2015, <https://www.cgdev.org/blog/sdg-goal-seven-update-modern-universal-modern-energy-access>.

<sup>37</sup> “Climate Change – Overview,” World Bank, accessed August, 2017, <http://www.worldbank.org/en/topic/climatechange/overview>

There was a significant turning point for both sustainable development and climate change agendas in 2015. Two major international agreements were concluded: the adoption of the SDGs and the adoption of a new international climate agreement, the Paris Agreement, under the United Nations Framework Convention on Climate Change (UNFCCC).

The signing of the Paris Agreement in October 2016 was a significant step forward in strengthening the global response to the threat of climate change, and the efforts to reduce greenhouse gas emissions worldwide. The agreement calls on countries to keep global temperatures from rising above 2°C this century and are requested to set ambitious goals by putting forward Nationally Determined Contributions (NDCs)<sup>38</sup>, and to report on their emissions and implementation efforts.

Even though there is no formal relationship between the Paris Agreement and the SDGs, the 2030 Agenda expressly acknowledges the need for global response to climate change through SDG 13 and the increase in renewable energy through SDG 7. This way, the bidirectional relation between both themes is being recognised: (1) the struggle against climate change is positively driven by the deployment of sustainable energy services, and (2) the integration of climate change measures into national policies positively contributes to the deployment of renewable energies and energy efficiency measures. This is illustrated by the fact that all SDG 7 targets are aligned with climate change actions within the Paris Agreement and the Intended Nationally Determined Contributions (INDCs).<sup>39</sup> Hence, there is enormous potential for mutually supportive implementation of SDG 7 and its interlinkages with achieving the Paris Agreement and mitigate climate change.

If not addressed, climate change has the potential to slow down and even reverse the progress on all the SDGs. Therefore, advancing in implementing SDG 7 targets directly decreases GHG and mitigates climate change through the Paris Agreement.

## 4.2 SDG 7 Interactions

The energy revolution is a driver to revolutionising all other SDGs, and SDG 7 can be considered as an enabling factor for implementation, in particular SDG 13 on climate change mitigation and adaptation.

The International Council for Science has concluded that the SDG 7 targets positively react to 46 other SDG targets (with mutual beneficial outcomes), neutrally to 10 other SDG targets and negatively to 2 other SDG targets (with trade-offs).<sup>40</sup> Table 4 below explains the key interactions between SDG 7 and six other goals. This selection was based on the strength of the interlinkages

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<sup>38</sup> Nationally Determined Contributions (NDCs) is a term used under the United Nations Framework Convention on Climate Change (UNFCCC) for reductions in greenhouse gas emissions. Once the Paris Agreement is ratified, the NDC will become the first greenhouse gas targets under the UNFCCC that is applied equally to both developed and developing countries.

<sup>39</sup> Eliza Northrop, Hana Biru and Sylvia Lima, *Examining The Alignment Between The Intended Nationally Determined Contributions And Sustainable Development Goals*, (World Resource Institute, 2016) available from [https://www.wri.org/sites/default/files/WRI\\_INDCs\\_v5.pdf](https://www.wri.org/sites/default/files/WRI_INDCs_v5.pdf).

<sup>40</sup> D.J. Griggs, M. Nilsson, A. Stevance and D. McCollum, "A Guide to SDG Interactions: From Science to Implementation," (Paris: International Council for Science, 2017) 14.

and the magnitude and scale of impact in relation to the overall objective of the 2030 Agenda, while ensuring a balanced consideration of the economic, social and environmental dimensions.<sup>41</sup>

The most related link with SDG 7 is SDG 13. Completion of SDG 7 targets is directly linked – especially as far as energy efficiency and renewable energy is concerned – to the completion of SDG 13 targets (See more in chapter 5 and table 4 below).

<b>Table 4: Key Interactions of SDG 7 with Other SDGs <sup>42</sup></b>	
<b>Key Interactions</b>	<b>Goals</b>
Ensuring the world’s poor have access to affordable and reliable energy services directly enables the goal on poverty eradication. With upcoming technology innovations, renewable energy generation will become profitable. This could enable poor communities with electricity transmission access to make use of local clean energy and in some cases – depending on energy policy – allow revenue generation.	 
As one of the renewable energy sources, bioenergy is gaining its importance in the energy mix. In the future, commercialising bioenergy production will directly lead to an increase in agricultural jobs and more diverse income streams for land owners hence increasing agriculture. However, it is also important to point out that commercialising bioenergy could lead to a higher global food price making it harder for the poor to afford food.  Another key interaction is energy used for agricultural operation. Providing energy at the farm level will help farmers pump ground-water, pump surface water for irrigation which in turn increases food security.	 
The use of energy-efficient appliances such as clean cooking stoves is important for improved air quality. Energy is also needed for refrigeration which contributes to food health and its association with health risks.	 
Ensuring water supplies such as ground water extraction requires high amounts of energy, while thermal cooling and resource extraction need substantial amounts of water. In most cases, increasing energy efficiency would directly support water targets through decreasing the number of people affected by water shortages (efficient pumping) and minimising water pollution. According to a study done by The PBL Netherlands Environmental Assessment Agency (2012) <sup>43</sup> , the global water demand can be reduced by 25 per cent in 2020, if efficient renewable energy technologies are utilised. This can be applicable in most cases; however, the mismanagement of solar and wind energy may lead to the over-exploitation and depletion of water resources.	 
Moving towards a renewable energy mix can directly increase and encourage innovation. This could in turn increase employment opportunities. Other interactions could include losing employment opportunities when moving to renewable energy, since millions of people work in the fossil fuel industry and may struggle to find new job opportunities when economies decarbonise.	 

<sup>41</sup> D.J. Griggs, M. Nilsson, A. Stevance and D. McCollum, “A Guide to SDG Interactions: From Science to Implementation,” 14

<sup>42</sup> *ibid.*

<sup>43</sup> *ibid* 43

An immediate and significant increase in renewable energy worldwide will directly cause GHG to decrease. This will therefore help efforts to keeping global warming to well below 2 degrees Celsius adhering to the Paris Agreement and therefore combating climate change.



**Box 3: Illustrative Example of SDG 7 and SDG 6 Interaction in Jordanian Context – Renewable Energy and Water Treatment**

Jordan boasts some of the highest solar energy potential in the region, with an average global solar irradiance of 1600–2300 kWh/m<sup>2</sup> annually<sup>44</sup>. Jordan is also known to be the second water poorest country in the world, with availability of less than 100 litres per capita per day. According to the 2016-2025 National Water Strategy, Jordan spent 141 million JD on electricity to pump water both across the country and from deep aquifers in 2014, making up 45 per cent of the annual operational and maintenance costs for water supply.

Using renewable energy for pumping water – particularly in remote areas – will help decrease the financial burden while also directly contributing to decreased GHG. As per the same National Water Strategy, by 2025, Jordan looks to cut energy consumption at water utilities by 15 per cent and raise the renewable energy contribution by 10 per cent. To achieve this, in September 2016, the Greek Government granted 1 million euros to Jordan to install a well and run a wastewater treatment plant using renewable energy in Salhiyet Al Naim in Ruweished District in the Northern Badia. The well extracts 50 cubic meters water per day currently benefiting 130 people.<sup>45</sup>

Upscaling such initiatives that play a role in energy saving while increasing treated wastewater can be expected in future scenarios. Demand-side power management technologies will provide an increased flexibility to provide energy to many water generation and treatment facilities, with many of Jordan’s existing and future water supply and treatment systems being ideal candidates for this technology. However, a caveat to this is that it may facilitate over pumping certain aquifers. Therefore, caution should be taken in this regard and proper water extraction levels should be defined.

While stakeholders tend to focus on SDG 7 interactions with other SDGs, it is also important to think about the interlinkages amongst the energy targets themselves as well. For example, distributing energy sources like biomass and solar (target 7.2) will directly benefit rural communities, however doing so through a centralised system – heavy infrastructure – could elevate the risk of increased energy prices (target 7.1) which will cause some households forego access to the network.<sup>46</sup>

<sup>44</sup> Al-Salaymeh, A. "Modelling of Global Daily Solar Radiation On Horizontal Surfaces For Amman City." [http://www.eng.uaeu.ac.ae/en/research/journal/issues/v11/pdf\\_iss1\\_11/p5.pdf](http://www.eng.uaeu.ac.ae/en/research/journal/issues/v11/pdf_iss1_11/p5.pdf)

<sup>45</sup> "Ministry launches first well powered by renewable energy in badia." Jordan Times. September 06, 2016. Accessed July 26, 2017. <http://www.jordantimes.com/news/local/ministry-launches-first-well-powered-renewable-energy-badia>

<sup>46</sup> D.J. Griggs, M. Nilsson, A. Stevance and D. McCollum, "A Guide to SDG Interactions: From Science to Implementation," 130



## 5. SDG 13: Climate Action

Climate change has been globally recognised as the single biggest threat to development.<sup>47</sup> Countries around the world are experiencing first-hand the drastic effects of climate change, from extreme draughts to floods, primarily impacting the most vulnerable and poorest communities.

It is expected that the effects of climate change will continue to rise with increasing GHG, which are now more than 50 per cent higher than 1990.<sup>48</sup> It is widely recognised that urgent action is needed to combat climate change and minimise its effects to be able to effectively implement all the other SDGs. For example, ensuring universal access to affordable electricity (SDG 7) means investing in clean energy sources such as solar, wind and thermal. Adopting cost-effective standards for a wider range of technologies could also reduce the global electricity consumption in buildings and industry by 14 per cent,<sup>49</sup> further decreasing GHG by avoiding around 1,300 medium sized fossil fuel power plants.<sup>50</sup>

SDG 13 acknowledges and recognises that the UNFCCC<sup>51</sup> is the primary forum for negotiating global response on climate change, see section 4.1.2 above. SDG 13 targets (Table 5) emphasise the need to combine climate change mitigation and adaptation. Although the 2013 Agenda reserved a stand-alone SDG for climate change, it could have enhanced the main goal found in the Paris Agreement and aimed to even go beyond the “2°C or 1.5°C” target.

<b>Table 5: SDG 13 Targets</b>	
13.1	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
13.2	Integrate climate change measures into national policies, strategies and planning
13.3	Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
13a	Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilising jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalise the Green Climate Fund through its capitalisation as soon as possible
13b	Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalised communities

<sup>47</sup> “SDG 13,” Sustainable Development Knowledge Platform, accessed August 2017, <https://sustainabledevelopment.un.org/sdg13>

<sup>48</sup> “Goal 13: Climate Action,” UNDP, accessed August, 2017, <http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-13-climate-action.html>

<sup>49</sup> *ibid*

<sup>50</sup> *ibid*

<sup>51</sup> As one of the three Rio Conventions that were forged in parallel of the Rio Declaration in 1992, the UNFCCC entered into force on 21 March 1994. Today, it has near-universal membership. The 197 countries that have ratified the Convention are called Parties to the Convention. Preventing “dangerous” human interference with the climate system is the ultimate aim of the UNFCCC. See more [http://unfccc.int/essential\\_background/convention/items/6036.php](http://unfccc.int/essential_background/convention/items/6036.php).



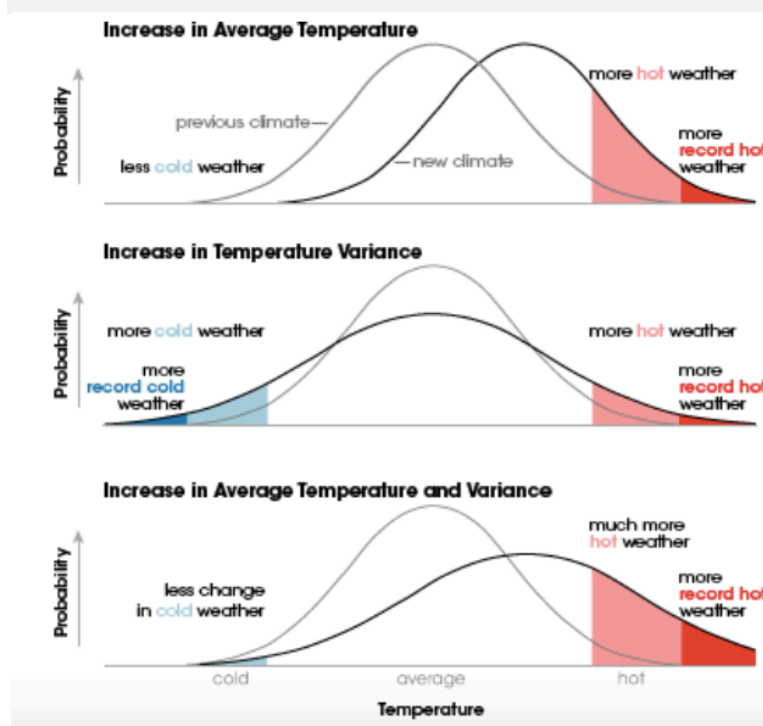
## 5.1 The Need to Implement SDG 13

### 5.1.1 Natural Disasters and Climate Change

Climate change models provide an idea of what to expect in the future. While climate change scientists do not agree on all the details, most of the models predict a dark future. According to the Intergovernmental Panel on Climate Change (IPCC), an increase in GHG in the atmosphere will boost temperatures over most land surfaces. Possible increases in global temperatures have been directly linked with risks of draught and increased intensities of storms including tropical cyclones. Other environmental changes brought by increased temperatures could include melting glaciers and ice caps which directly leads to sea level rise, making coastal flooding more severe.<sup>52</sup> It is estimated that climate change affects a total of 211 million people and causes the deaths of an average of 83 thousand people annually between 2000 and 2013.<sup>53</sup>

Although skeptics may want a more precise scientific reason for the correlation between climate change and natural disasters, there is consensus that the correlation exists and that the earth is experiencing higher temperatures and hence more likelihood of natural disasters. This is related to the fact that climate change influences global temperature averages and extremes (see box).

#### Box 4: Climate Change and Weather-related Disasters<sup>54</sup>



Climate change does not only affect *average* global temperatures, but also *extreme* temperatures, increasing the likelihood of weather-related disasters.

If climate change causes increasing global average temperatures, there will be a greater probability of hot and record hot weather, and less cold weather (top).

If temperature variance increases, this will extend extreme events causing both more record hot weather and more record cold weather (middle).

However, if both average temperature and variance increase, this will have little effect on cold weather but will highly increase the likelihood of it and record hot weather (bottom).

<sup>52</sup> "The Impact of Climate Change on Natural Disasters," NASA, accessed August, 2017, [https://earthobservatory.nasa.gov/Features/RisingCost/rising\\_cost5.php](https://earthobservatory.nasa.gov/Features/RisingCost/rising_cost5.php)

<sup>53</sup> As natural disasters have increased in frequency and intensity, more people have been affected by them see "Goal13: Take urgent action to combat climate change and its impacts," UNSTAT, accessed August, 2017, <https://unstats.un.org/sdgs/report/2016/goal-13/>

<sup>54</sup> NASA, "The Impact of Climate Change on Natural Disasters"

UNDP has estimated that around US\$ 6 billion are needed annually in disaster risk reduction over 15 years, to help avoid US\$ 360 billion in losses and damage caused by climate change disasters such as floods and tropical cyclones. As a result, and as part of this goal, it aims to mobilise US\$ 100 billion annually by 2020 to address the needs of developing countries and help mitigate to climate change.<sup>55 56</sup>

### 5.1.2 Climate Change and Sustainable Development

Increased natural disasters caused by climate change hinder sustainable development. Since 2009, an estimated one person every second has been displaced by a disaster, with an average of 22.5 million people displaced by climate- or weather-related events since 2008.

However, climate change does not need to cause calamities to gradually affect factors of sustainable development. For example, the effects of climate change amplify risks to ecosystems, human welfare and health, not in the least child health and jeopardising efforts to combat diseases. Climate change enhances poverty, while it is just one of the many challenges that developing countries must face. Increases in temperature and changes in precipitation are directly linked to crop yields and the spread of vector-borne diseases such as malaria.<sup>57</sup>

As stated before, climate change impacts can put other development goals into jeopardy and increase the impact of non-climate stressors such as migration and water demand. Therefore, implementing the Paris Agreement is thought to be essential for the achievement of the SDGs through providing a roadmap for climate action to reduce GHG.<sup>58</sup> As a side-effect, reducing GHG and investing in renewable energy has attracted US\$ 286 billion in global investment in 2015 making it twice as commercially attractive as fossil fuels<sup>59</sup>. This “energy transition” will on its turn impact other sectors, leaving them for example with so-called “stranded assets” – assets that unexpectedly lose value as a result of climate change, e.g. assets related to fossil fuel extraction. From this perspective, climate change commitments have an impact on financial services, changing the investment perspective. The value of global financial assets at risk from climate change has been estimated at US\$2.5 trillion by the London School of Economics, and US\$4.2 trillion by the Economist. Addressing climate change while contributing to sustainable development will therefore require collective action and collaboration across the investment value chain.<sup>60</sup>

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<sup>55</sup> “Climate Action: Why it Matters,” UN, Accessed August, 2017, [http://www.un.org/sustainabledevelopment/wp-content/uploads/2017/07/16-00055m\\_Why-it-Matters\\_Climate-Action\\_3p.pdf](http://www.un.org/sustainabledevelopment/wp-content/uploads/2017/07/16-00055m_Why-it-Matters_Climate-Action_3p.pdf)

<sup>56</sup> “Climate Action: Why it Matters to Business,” UN, Accessed August, 2017, [http://www.un.org/sustainabledevelopment/wpcontent/uploads/2016/07/1600055\\_Why\\_it\\_Matters\\_Climate\\_Action\\_Business\\_letter\\_size\\_1p.pdf](http://www.un.org/sustainabledevelopment/wpcontent/uploads/2016/07/1600055_Why_it_Matters_Climate_Action_Business_letter_size_1p.pdf)

<sup>57</sup> USAID, “Climate-Resilient Development a Framework for Understanding and Addressing Climate Change,” (Washington: USAID, 2104), 1

<sup>58</sup> “Goal 13: Climate Action,” UN, accessed August, 2017, <http://www.un.org/sustainabledevelopment/climate-change-2/>

<sup>59</sup> UN, “Climate Action: Why it Matters to Business”

<sup>60</sup> Ernest and Young, *Climate change the investment perspective*, (EYCM, 2015) available from [http://www.ey.com/Publication/vwLUAssets/EY-climate-change-and-investment/\\$FILE/EY-climate-change-and-investment.pdf](http://www.ey.com/Publication/vwLUAssets/EY-climate-change-and-investment/$FILE/EY-climate-change-and-investment.pdf)

## 5.2 SDG 13 Interactions

The links between SDG 13, SDGs 6 and 7 are extensively discussed in previous chapters, yet starting from respectively SDG 6 and SDG 7 (see chapters 3.2 and 4.2) and not from SDG 13. The comprehensive literature study undertaken for this guiding note yielded only one study that singled SDG 13, and its interactions with all other SDGs. The study briefly demonstrates that SDG 13 has (only) six connections with all other SDGs, ranking (only) 11 on the total goal integration list between SDGs, yet without specifying the nature of these interactions.<sup>61</sup> This result is contradictory to the widely acknowledged strong involvement of climate change with all aspects of sustainable development, and hence the urgency to address climate change through SDG 13 to achieve all other SDGs. As such, the methodology used in the study failed to reflect this multiplicity of links with SDG 13. It demonstrates that the criteria to measure direct interactions amongst the SDG targets also need to be selected based on the political and environmental value of the SDG. More thorough analysis and research on how SDG 13 can directly influence or hinder the achievement of all the other SDGs is much needed.

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<sup>61</sup> David Le Blanc, *Towards integration at last? The sustainable development goals as a network of targets*, (UN DESA: 2015) available from [http://www.un.org/esa/desa/papers/2015/wp141\\_2015.pdf](http://www.un.org/esa/desa/papers/2015/wp141_2015.pdf)

## 6. Taking Stock of the SDG Implementation Process in Jordan

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### 6.1 Introduction

Jordan was relatively free from environmental problems until the 1970s. This changed quickly over the past decades. With population growth and the sudden increase in urbanisation and development, together with economic, social, and political transformations, environmental challenges emerged. Adding to this, Jordan lies at the centre of one of the most volatile regions in the world and has been the destination of many sudden influxes of refugees fleeing conflict from neighboring countries. According to the 2015 census, Jordan's population stands at 9.5 million, 30 per cent are non-Jordanians and more than 1.3 million are Syrians with 89 per cent currently living in host communities.<sup>62</sup> Such circumstances have placed huge pressure on water and energy resources. Despite this, the country has still made significant developmental achievements over the past decade.

Jordan was one of the first countries in the West Asia – North Africa (WANA) region to take urgent action towards implementing the MDGs. Following up on the 2030 Agenda, the Ministry of Planning and International Cooperation (MoPIC) took responsibility for mobilising the SDG process in Jordan. Since 2015, the government has pursued a path to internalise the SDGs into national development plans. In 2016, Jordan has launched a new 10-year socio-economic blueprint called “Jordan 2025: A National Vision and Strategy” aimed at creating a resilient and inclusive economy deepened with reform and inclusion.<sup>63</sup>

As part of the SDG process, Jordan is one of the first countries in the WANA Region to produce the Voluntary National Review (VNR<sup>64</sup>) alongside Egypt (2016), Morocco (2016) and Qatar, presented in July 2017. The VNR aims to facilitate the sharing of experiences, including successes, challenges and lessons learned on implementing the SDGs, with the aim to accelerate the implementation of the 2030 Agenda. The VNR represents the country's roadmap to sustainable development and aims to strengthen policies and institutions of governments to mobilise multi-stakeholder support and partnerships for the implementation of the goals. Following the VNR, MOPIC is planning to create a data dashboard with up-to-date data on SDG implementation for all sectors further enhancing transparency and accountability.<sup>65</sup>

Even though Jordan seems determined to embark on implementing the 2030 Agenda, these commitments come within a very challenging landscape. The next chapters describe the status of the SDG implementation, make an overall assessment of the gaps and challenges as identified by different stakeholders, and based on these, conclude with formulating opportunities and guidance to policy-makers on possible ways forward to better implement the SDGs.

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<sup>62</sup> Ministry of Planning and Cooperation, *Jordan's Way to Sustainable Development* (Amman: 2017)

<sup>63</sup> *ibid*

<sup>64</sup> For more information about the VNR, please check “Jordan's Way to Sustainable Development” available from <https://sustainabledevelopment.un.org/content/documents/16289Jordan.pdf>

<sup>65</sup> During the panel discussion on the 19<sup>th</sup> October 2017, MOPIC described their intent to create an electronic dashboard.

## 6.2 Approach

In order to better understand how the three selected SDGs are being achieved in Jordan, key stakeholders were consulted to collect first-hand information on current implementation, identified challenges, and opportunities for future implementation of the three SDGs.

Initially, three focus groups, one for each SDG, were planned between May and August 2017. These focus group discussions were set to invite 15 key persons from different stakeholder groups including the public, academia, donor and civil society. After the first focus group on SDG 7 (May 2017) with less than 50 per cent participation, the data collection methodology was shifted to focus on one-on-one stakeholder in-depth interviews instead, held between June and August 2017.

The interviews targeted a total of 20 key stakeholders from the energy and water sectors, representing the public, academia, donor and civil society in Jordan. Interviews ran for approximately 45-60 minutes, discussing three major questions: (1) what is their respective organisation doing to help implement the three targeted SDGs, (2) what do they see as the challenges and opportunities for the implementation of these SDGs in Jordan, and (3) what are their key recommendations for better implementation of these SDGs in Jordan going forward. To top off the stakeholder consultation, a panel discussion - that gathered fifty experts from three sectors and engaged with representatives of MOPIC, the UN SDG group, the civil society and science community - was held on 17 October 2017 where additional information was collected.

All interviews were entirely transcribed verbatim and the panel discussion key outcomes summed up. Out of the twenty interviews, a total of 17 were selected based on their applicability and added value. Some stakeholders preferred to stay anonymous for reasons of confidentiality which was respected for the purpose of the study. There was some overlapping data which will be mentioned and referenced in the sections below. This is overlap is also reflected in the stated implementation challenges that were very similar between the three SDGs, being mainly social and institutional.

Relevant information was extracted and used to analyse the Jordanian situation. Additional data were collected through background literature study of different sources including donor reports, press releases and strategic reports. Maps and figures representing aspects of the water and energy sector were created in-house.

## 6.3 Jordan's Water Situation

Jordan ranks as the world's second water-poorest country, where water per capita is 88 per cent below the international water poverty line.<sup>66</sup> The climate in Jordan can almost entirely be defined as being semi-arid or arid. Ninety per cent of the country receives an annual rainfall of less than 200 mm. Its total national water supply, as of 2015 is 106 m<sup>3</sup> per capita per year, with a domestic supply capacity of 48 m<sup>3</sup> per capita per year (131 litres per capita per day).<sup>67</sup>

The largest water user is the agricultural sector, accounting for up to sixty per cent of the total water supply in the kingdom. Thirty-six per cent goes to municipal use which has been under extreme pressure due to increases in population. As for access to sanitation, around 65 per cent of Jordan's population has access to sewage system services.<sup>68</sup>

### 6.3.1 SDG6 Implementation in Jordan

With the enormous water challenges Jordan is facing, paving the way to implement SDG 6 started with the MDGs in the past. Under MDG 7, Jordan managed to increase access to water supply, although intermittent. It was also successful in increasing access to sanitation to 63 per cent compared to 48 per cent in 2000.<sup>69</sup>

However, achieving satisfactory results for SDG 6 will take a long time for Jordan. Countries working on the SDGs are urged to internalise each goal's targets and indicators, making them more applicable and sustainable while taking the country context into consideration. The Jordan National Water Strategy 2016-2025, further here-in called the "MWI Strategy", includes a set of indicators and targets to be followed by the Ministry of Water and Irrigation (MWI) and the Water Authority of Jordan (WAJ) to refine, expand and work on their implementation plan. The nationalised indicators build on previous MDG drinking water and sanitation targets, which overlap with the first three SDG 6 targets, but fall short on focusing on the other (new) SDG 6 targets. The ministry is planning to further nationalise the remaining targets in 2018. Table 6 illustrates the nationalised targets and indicators based on the first three SDG 6 targets only.

The MWI Strategy also includes monitoring the progress of SDG 6. Jordan was chosen by the UN-Water Integrated Monitoring Initiative for SDG 6, to become one of the pilot countries to monitor SDG 6 implementation. Using AQUISTAT - the Food and Agricultural Organisation of the United Nations (FAO) water information system - Jordan will start monitoring its SDG 6 implementation in 2018 to help reduce water stress and enhance the efficiency of water use.<sup>70</sup> For this process, the ministry has produced a water baseline for Jordan which will be publicly disclosed in December 2017. This baseline will be a starting point to produce specific indicators

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<sup>66</sup> World Vision, *Jordan Fact Sheet – Water, Sanitation and Hygiene*, available from <http://www.wvi.org/sites/default/files/WASH%20-%20Jordan.pdf>

<sup>67</sup> Michael Gilmont et al, *Decoupling National Water Needs for National Water Supplies: Insights and Potential for Countries in the Jordan Basin*, (WANA: Amman, 2017)

<sup>68</sup> WASH Jordan Working Group, UNHCR, available from [data.unhcr.org/syrianrefugees/download.php?id=6467](http://data.unhcr.org/syrianrefugees/download.php?id=6467)

<sup>69</sup> Ministry of Water and Irrigation, *Establishing the Post-2015 Development Agenda: Sustainable Development Goals (SDG) Towards Water Security: The Jordanian Perspective*, (Amman, 2016)

<sup>70</sup> Anonymous, Senior Official at Ministry of Water and Irrigation, interview conducted by Lara Nassar, Amman, Jordan (11 July 2017)

for future monitoring and evaluation running to 2030. In an effort to help coordinate efforts to implement SDG 6 targets, the MWI has formed a national committee responsible for planning initiatives. The committee consists of members of other ministries such as Ministry of Environment, Ministry of Agriculture, and Ministry of Planning and International Cooperation, and the civil society.<sup>71</sup>

The following achievements have been made in Jordan related to implementing the first three nationalised SDG 6 targets:

	<b>SDG 6 Targets</b>	<b>National Targets</b>	<b>Indicators To Be Used To Measure Progress Towards Quantified Sub-targets</b>
6.1	By 2030, achieve universal and equitable access to safe and affordable drinking water for all	Universal access to safe and affordable drinking water	Percentage of population with access to safely managed drinking water services
6.2	By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	Achieve access to adequate sanitation, end open defecation  Achieve access hygiene for all	Percentage of population with access to safely managed sanitation services  Percentage of population with access to hygiene
6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Improve water quality  Halving the proportion of untreated wastewater  Increasing recycling and safe reuse by X percentage	Water Quality Index  Percentage of wastewater (domestic and industrial) safely treated  Percentage of municipal wastewater safely reused and industrial wastewater recycled.

The following achievements have been made in Jordan related to implementing the first three SDG 6 targets:

***Universal access to safe and affordable drinking water (target 6.1)***

Although Jordan’s water distribution has reached over 94 per cent of the population, the system is still far from optimal. Around 65 litres per capita per day<sup>73</sup> are lost due to a combination of

<sup>71</sup> *ibid*

<sup>72</sup> Ministry of Water and Irrigation, *National Water Strategy 2016 – 2025*, (Amman, 2016)



both water theft and water leakage.<sup>74</sup> In response, the MWI is currently combating water theft by conducting inspections and detecting illegal water operations and shutting them down.<sup>75</sup> According to the Jordan Times in May 2017, authorities have managed to tackle 30 thousand violations on water resources since 2013.<sup>76</sup> Since the start of the SDG process, authorities have even pushed harder to decrease water theft.

As part of the increased efforts to minimise water losses and better manage water resources, Miyahuna – a national limited liability company fully owned by WAJ – has increased their jurisdiction to cover two other governorates in Jordan aside from the capital Amman; Irbid and Zarqa. The company is working to decrease water losses in the system through projects for repairing infrastructure, replacing old water meters with digital meters and improved monitoring of water leakages.<sup>77</sup> They also partner with the MWI to help stop water theft from the domestic water system. Related to the efficient use of water, MWI introduced a Water Allocation Policy in 2016 which augments water supply and controls water allocation among sectors.

The MWI Strategy also aims to increase the water budget by approximately 552.5 MCM by 2025. This amount contributes to additional drinking water supply of 422.5 MCM, increased treated waste water by 94 MCM and marginal water<sup>78</sup> by 36 MCM. As part of this plan, the Ministry plans to implement the Red Dead Sea Project<sup>79</sup> which will contribute a total of 235 MCM, i.e. more than half of the total extra drinking water supply by 2025. Figure 6 demonstrates the additional drinking water resources and their respective relative contributions planned by the MWI Strategy.<sup>80</sup>

On top of this, the Strategy promotes building effective partnerships with the civil society and engaging with all stakeholders to build awareness on the efficient use and conservation of water and protecting water infrastructure from theft.

### ***Achieve access to adequate sanitation and access hygiene for all (target 6.2)***

With the onset of the Syrian crisis in 2011 and the massive influx of refugees, it became necessary for MWI to create a new coordination mechanism to address the emerging needs of the host communities in Jordan. The Jordan Response Platform for the Syria Crisis (JRPSC) has therefore created a WASH task force to plan and help improve WASH services in Jordan and in specific host communities. This includes mobilising municipalities to support schools and develop WASH learning and practice centers for youth in Jordan.

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<sup>73</sup> ibid

<sup>74</sup> Anonymous, Senior Official at Ministry of Water and Irrigation, interview conducted by Lara Nassar, Amman, Jordan (11 July 2017)

<sup>75</sup> ibid

<sup>76</sup> Hana Namrouqa, "Authorities tackle 3000 violations," *Jordan Times*, May 6, 2017, <http://www.jordantimes.com/news/local/authorities-tackle-30000-violations-water-resources-2013>

<sup>77</sup> Ghazi Khalil, CEO, Muhammad Ouran, Customer Service Director and Mohammad Kharbsheh, Senior Engineer at Miyahuna, Interview conducted by Lara Nassar, Amman, Jordan, (9 July 2017)

<sup>78</sup> Marginal water contributes to wastewater from urban areas, saline and agricultural drainage into groundwater.

<sup>79</sup> Sometimes called the Two Seas Canal, the project is a planned pipeline that runs from the coastal city of Aqaba by the Red Sea to the Lisan area in the Dead Sea. It will provide potable water to Jordan, Israel and the Palestinian territories, bring sea water to stabilise the Dead Sea water level and generate electricity to support the energy needs of the project.

<sup>80</sup> Ministry of Water and Irrigation, *National Water Strategy 2016 – 2025*, (Amman, 2016)

On a national scale, The MWI strategy also plans to create a new framework that will cover IWRM and WASH to compromise legal and regulatory requirements for the whole water sector in Jordan.

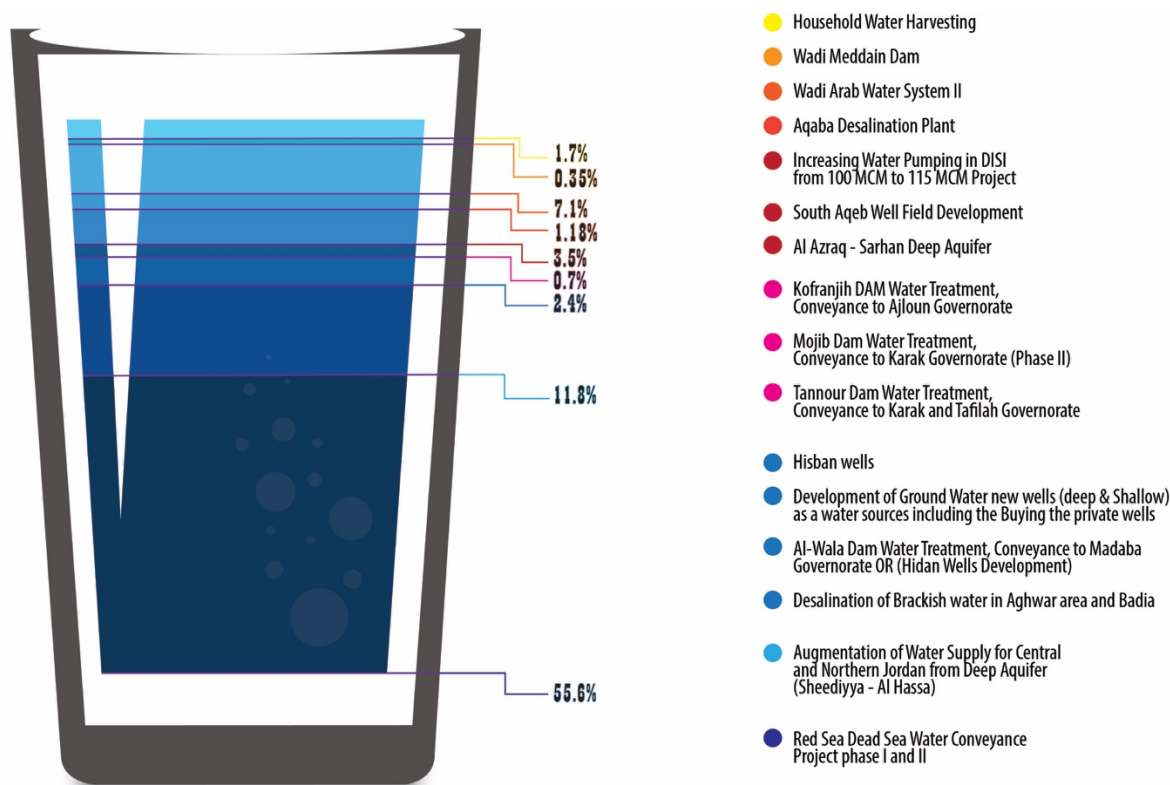


Figure 6: Planned additional drinking water resources (422.5 MCM) and their relative contribution to the total extra drinking water supply by 2025.

***Halving the proportion of untreated wastewater and Increasing recycling and safe reuse (target 6.3)***

The government is exploring new ways to harness treated wastewater and desalinated brackish and seawater. Thirty wastewater treatment plants are now being used to treat 98 per cent of the collected wastewater<sup>81</sup> (Figure 7). This treated wastewater is currently providing 95 per cent of the water used for agriculture in the Jordan Valley.<sup>82</sup>

<sup>81</sup> Anonymous, Senior Official at Ministry of Water and Irrigation, interview conducted by Lara Nassar, Amman, Jordan (11 July 2017)

<sup>82</sup> Ghazi Khalil, CEO, Muhammad Ouran, Customer Service Director and Mohammad Kharbsheh, Senior Engineer at Miyahuna, Interview conducted by Lara Nassar, Amman, Jordan, (9 July 2017)

## Wastewater treatment plants in Jordan

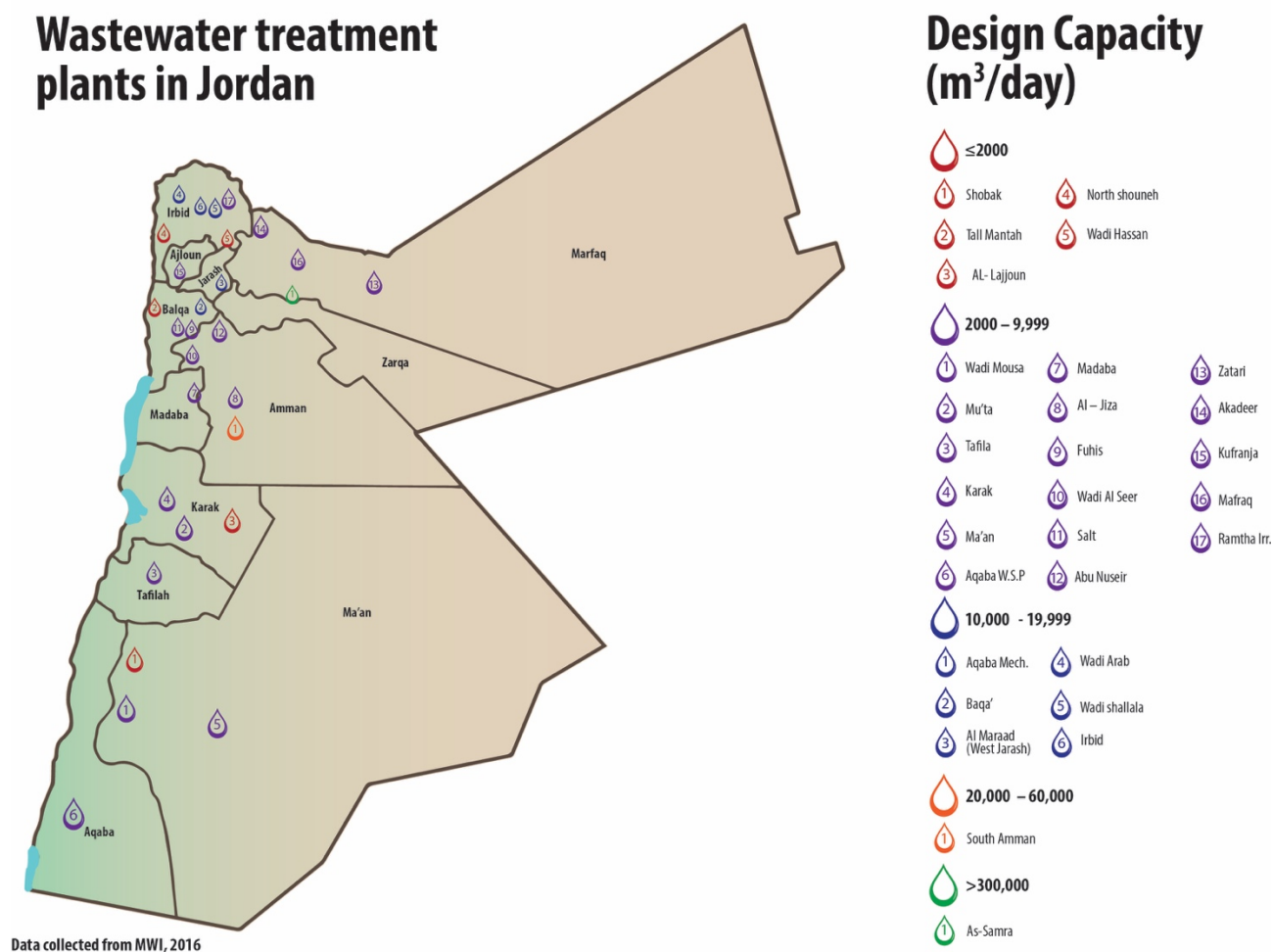


Figure 7: Waste water treatment plants in Jordan

### 6.3.2 Challenges in Implementing SDG 6

When it comes to implementing SDG 6, Jordan is facing a number of challenges, which can mainly be attributed to six major themes: scarce natural water resources, demographics, infrastructure, social issues, poor data and institutional challenges.

#### *Water supply from available resources*

Jordan's water supply challenges have been prominent since the early 1990s. Despite the intentions of MWI Strategy to increase water supply by adding additional drinking water resources, it is anticipated that Jordan will still need to over-abtract from its already depleted aquifers and will report a national water deficit of 88 MCM in 2025.<sup>83 84</sup> This deficit is already a

<sup>83</sup> Ministry of Water and Irrigation, *National Water Strategy 2016 – 2025*, (Amman, 2016)

<sup>84</sup> Anonymous, Senior Official at Ministry of Water and Irrigation, interview conducted by Lara Nassar, Amman, Jordan (11 July 2017); Ghazi Khalil, CEO, Muhammad Ouran, Customer Service Director and Mohammad Kharbsheh, Senior Engineer at Miyahuna, Interview conducted by Lara Nassar, Amman, Jordan, (9 July 2017); HE Khaldoun Khashman, Secretary General at Arab Countries Water Utilities Association, interview conducted by Lara Nassar, (19 July 2017); Anonymous, Swiss Cooperation Office – Jordan, interview conducted by Lara Nassar, (18 July 2017)

fact, with Jordan's total water demand and supply in 2017 accounting to 1,412 MCM, 1,027 MCM respectively<sup>85</sup>, leaving a water supply gap of 386 MCM to be addressed.

This deficit affects all sectors, leaving the biggest gap in the agricultural sector. Although the Ministry allocates 700 MCM of water per year, they actually cap supply to 500-550 MCM per year. This therefore leaves approximately 200 MCM that is in theory to be added to the yearly deficit.<sup>86</sup> However, much could be done to help improve efficient use of water for agriculture in Jordan. A study conducted by WANA Institute in 2016 suggested that improved agricultural productivity could potentially reduce water consumption by up to 168 MCM per year in Jordan and strategic import substitution of water-intense crops could save an additional 52.5 MCM per year to the volume of water available for agriculture.<sup>87</sup>

### ***Demographic challenges***

Since 2001, UNRWA and UNHCR have registered 2.8 million refugees, making Jordan the largest refugee hosting country worldwide when comparing the proportion of refugees to the Jordanian population.<sup>88</sup> This augments pressure on the water sector.<sup>89</sup> It has been currently estimated that 440 JD are needed for water costs per refugee per year.<sup>90</sup> These accounts to water supply, sanitation and indirect opportunity costs per cubic meter.

The sudden increase in population has proven to be a major challenge for ministries in their endeavors to plan for the future. As an example, in the strategy preceding the 2016 National Water Strategy, the government had planned to increase water supply by pumping 100 million MCM water per year from the Disi aquifer.<sup>91</sup> This increased water supply was supposed to compensate for the water extracted from the over-exploited Azraq aquifer. However, with the sudden influx of refugees in 2011, the government could no longer leave the Azraq aquifer to replenish and is therefore still overexploiting it to cover demand.<sup>92</sup>

### ***Infrastructure***

As mentioned before, the amount of unaccounted water is one of the major challenges in the water sector. Although the government has been working on both theft and water losses, several

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<sup>85</sup> Ministry of Water and Irrigation, *National Water Strategy 2016 – 2025*, (Amman, 2016)

<sup>86</sup> Anonymous, Senior Official at Ministry of Water and Irrigation, interview conducted by Lara Nassar, Amman, Jordan (11 July 2017)

<sup>87</sup> Michael Gilmont et al, *Decoupling National Water Needs for National Water Supplies: Insights and Potential for Countries in the Jordan Basin*, (WANA: Amman, 2017)

<sup>88</sup> Ministry of Planning and International Cooperation, *Jordan's Way to Sustainable Development*, (MOPIC: 2017) available from <https://sustainabledevelopment.un.org/content/documents/16289Jordan.pdf>

<sup>89</sup> Anonymous, Senior Official at Ministry of Water and Irrigation, interview conducted by Lara Nassar, Amman, Jordan (11 July 2017); Ghazi Khalil, CEO, Muhammad Ouran, Customer Service Director and Mohammad Kharbseh, Senior Engineer at Miyahuna, Interview conducted by Lara Nassar, Amman, Jordan, (9 July 2017); HE Khaldoun Khashman, Secretary General at Arab Countries Water Utilities Association, interview conducted by Lara Nassar, (19 July 2017); Anonymous, Swiss Cooperation Office – Jordan, interview conducted by Lara Nassar, (18 July 2017)

<sup>90</sup> Ministry of Water and Irrigation, *Jordan Water Sector Facts & Figures*, (Amman, 2016)

<sup>91</sup> "Disi Water Conveyance" Ministry of Water and Irrigation, accessed July 2017, [http://waterjo.mwi.gov.jo/En/Updates/Pages/Disi-Water-Conveyance-\(private-sector-project\).aspx](http://waterjo.mwi.gov.jo/En/Updates/Pages/Disi-Water-Conveyance-(private-sector-project).aspx)

<sup>92</sup> Anonymous, Senior Official at Ministry of Water and Irrigation, interview conducted by Lara Nassar, Amman, Jordan (11 July 2017)

stakeholders<sup>93</sup> still feel that the resulted savings are modest. Another major concern is that water meters are outdated, which may yield wrong readings, further adding to unaccounted water amounts. Also, the infrastructure in Jordan lacks a leakage monitoring system, which may further add to unknown quantities of water loss in the future.

### ***Data availability and accuracy***

In order to set nationally adopted targets and indicators, Jordan must have accurate and nationally approved water baseline data. This water baseline would include information about water supply and demand, WASH, agricultural and other needs, and opportunities for mitigation measures to increase water use efficiency. Unfortunately, Jordan does still not have a database with accurate information about the water sector.<sup>94</sup>

Globally set indicators for water quality and quantity need specific methods for assessment and data collection. Yet, some stakeholders feel that MWI and Ministry of Agriculture (MOA) may not have the skills that are needed to produce methodology for collecting information on water quality and quantity.<sup>95</sup> Other various anonymous sources have doubts about the accuracy of the currently available national water data.

### ***Social challenges***

The main challenge in improving water security in Jordan is the implementation of a scientifically informed water use policy on the ground in a coherent and socially sensitive manner. Change in water consumer behavior has been a challenge in the past decade. Even with programmes dedicated to increase awareness about water scarcity in Jordan, the civil society's water consumption patterns have not shown significant change.<sup>96</sup> On the contrary, efforts to decrease water wastage and theft have been met with resistance, in some cases violently.<sup>97</sup>

These breaches include using illegal wells, which were either previously licensed but not updated or illegally dug and used for domestic purposes. Some other illegal activities include selling illegally pumped water for local domestic use in drought seasons.<sup>98</sup> Local communities lack

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<sup>93</sup> Anonymous, Senior Official at Ministry of Water and Irrigation, interview conducted by Lara Nassar, Amman, Jordan (11 July 2017); Ghazi Khalil, CEO, Muhammad Ouran, Customer Service Director and Mohammad Kharbsheh, Senior Engineer at Miyahuna, Interview conducted by Lara Nassar, Amman, Jordan (9 July 2017)

<sup>94</sup> Anonymous, Swiss Cooperation Office – Jordan, interview conducted by Lara Nassar, (18 July 2017), and HE Ms Constanza Farina, UNESCO Representative, interview conducted by Lara Nassar, (17 July 2017)

<sup>95</sup> Anonymous, Swiss Cooperation Office – Jordan, interview conducted by Lara Nassar, (18 July 2017), HE Khaldoun Khashman, Secretary General at Arab Countries Water Utilities Association, interview conducted by Lara Nassar, (19 July 2017)

<sup>96</sup> Anonymous, Senior Official at Ministry of Water and Irrigation, interview conducted by Lara Nassar, Amman, Jordan (11 July 2017)

<sup>97</sup> "Three Water Authority of Jordan (WAJ) employees were hospitalised on Sunday when they were shot at and assaulted after preventing the drilling of an illegal water well in the northern Ramtha district in Irbid Governorate, according to a government official." – see Jordan Time article <http://www.jordantimes.com/news/local/water-authority-employees-shot-car-rammed-illegal-drilling-well-site>

<sup>98</sup> Anonymous, Senior Official at Ministry of Water and Irrigation, interview conducted by Lara Nassar, Amman, Jordan (11 July 2017); Ghazi Khalil, CEO, Muhammad Ouran, Customer Service Director and Mohammad Kharbsheh, Senior Engineer at Miyahuna, Interview conducted by Lara Nassar, Amman, Jordan, (9 July 2017)

accountability and ownership towards their natural resources, which may be one of the reasons behind the resistance to change water consumption behavior and the attempted illegal activities.<sup>99</sup>

### ***Institutional challenges***

The MWI, MOA and the Ministry of Environment (MOEnv) all have directorates working on water related issues. This results in overlap related to responsibilities, institutional regulations, and policies. Overlapping regulation and policy creates institutional gaps. One example is the jurisdiction of MWI in the agricultural sector. As stated above, MWI controls water supply nationally, and allocates a certain amount to the agricultural sector. However, MWI is only responsible for supplying the water per season, not for controlling water usage within the perimeter of the farms. Farmers therefore have the freedom to cultivate any crop they wish at any season. MOA can only suggest the types of crops<sup>100</sup> to cultivate per season yet does not have the authority to control crop allocation. This poor coordination between the two ministries results in either a surplus or shortage of water allocated for farmers, depending on the season and the crop. Therefore, farmers are driven to either sell their extra water illegally, over-pump for water shortages illegally, and/or use water unfit for irrigation.<sup>101</sup>

Another institutional concern, as voiced by anonymous sources, is the lack of meritocracy in the appointment of ministry staff, which may lead to positions being filled by staff that do not have the needed qualifications for the proper fulfillment of the job. Furthermore, there is currently no system in place which allows for civil society to hold ministries accountable for their natural resource (mis)management.

Needless to say, that all above mentioned challenges in implementing SDG 6 will become an even greater problem over the next two decades as it is anticipated that the population will double and precipitation will become more uncertain and variable due to climate change.

## **6.4 Jordan's Energy Situation**

Based on the Master Strategy for the Energy Sector in Jordan for the period (2007-2020), Jordan's energy consumption – a total of 16,177.6 GWh per year in 2015<sup>102</sup> - is expected to rise by 6.2 per cent per year. In recent years, Jordan has been importing almost 97 per cent of its total energy needs, causing a huge burden on the economy and consuming 52.8 per cent of Jordan's revenues made from exports.<sup>103</sup> With increasing natural gas and petroleum prices, coupled with a high transmission and distribution electricity loss rate, Jordan's debt levels have increased. In 2013, the transmission and distribution loss rate reached 14 per cent of the generated electricity that year – the international average is 8.1 per cent - accounting to

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<sup>99</sup> Anonymous, Swiss Cooperation Office – Jordan, interview conducted by Lara Nassar, (18 July 2017)

<sup>100</sup> Different crops need different amounts of water to survive, therefore cultivating them in areas with higher temperatures can push farmers to use more water to irrigate them.

<sup>101</sup> Anonymous, Senior Official at Ministry of Water and Irrigation, interview conducted by Lara Nassar, Amman, Jordan (11 July 2017) and Amer Maadat, Senior Field Officer at International Union for Conservation of Nature, interview conducted by Lara Nassar, Amman, Jordan (15 August 2017)

<sup>102</sup> "Consumption by Sector", Ministry of Energy and Mineral Resources, accessed October, 2017, available from <http://eis.memr.gov.jo/2016-04-03-07-04-42/2016-04-03-07-10-16/consumption-by-sector>

<sup>103</sup> EDAMA, Jordan Clean Technology Sector – Report 2016, (USAID: 2016)

343.8 million JD in deficit.<sup>104</sup> The Jordan Independent Economy Watch<sup>105</sup> has further investigated and pointed out that a large portion of that loss could be electricity theft.

Hence, adding the energy demand to an already challenged energy situation urges the country to invest in renewable and energy efficient technologies. Energy security, diversification, and the deployment of energy efficiency has become a top priority for Jordan.

Therefore, the energy sector is planned to be an integral part of growing Jordan's economy, and is already witnessing an outstanding momentum in the generation of renewable energy (6 per cent of total national energy production). The main contributor to the energy mix in 2017 is petroleum followed by natural gas, coal and renewable energy. It is expected that by 2025, Jordan will add oil shale and nuclear energy to its energy mix, together accounting for 28 per cent.<sup>106</sup>

#### 6.4.1 SDG 7 Implementation in Jordan

The Ministry of Energy and Mineral Resources (MOE) currently lacks a specific strategy aimed towards achieving SDG 7 targets, and did not internalise the SDG 7 targets and indicators. Also, there is no set directorate or department directly working on achieving SDG 7 targets. Some targets may happen to be achieved however, yet as a result of projects being implemented in renewable energy and energy efficiency, and not as a conscious effort towards achieving SDG 7.

Jordan is one of the countries with a high total abundance in solar radiation, between 1600–2300 kWh/m<sup>2</sup> year on horizontal surfaces.<sup>107</sup> According to the wind atlas, the annual average wind speed in Jordan ranges from 4 - 6.5 meter per second which also has huge renewable energy potentials.<sup>108</sup> Using that advantage, Jordan has embarked on creating action plans which will help increase renewable energy and energy efficiency in Jordan.<sup>109</sup> A binding law - The Renewable Energy and Energy Efficiency Law in 2012 – has further helped increasing renewable energy and energy efficiency initiatives.<sup>110</sup> Related to the latter, NGOs and international Organisations have introduced initiatives to change consumer behaviour, resulting in decreased power usage with direct benefits such as a reduced energy bill. As for renewable energy, one of the major aims is to increase its contribution to the energy mix to 10 per cent rather than 6 per cent by 2020.<sup>111</sup> In order to do so, stakeholders around Jordan are working to increase renewable energy through small-scale and utility-scale projects. The two biggest governorates holding wind renewable energy projects operating in Jordan are; Ma'an with a total of generated energy 133 MW and a

<sup>104</sup> Jordan Independent Economy Watch, *Energy Sector in Jordan 1 (Gas and Electricity)*, (June, 2015) available from <http://identity-center.org/sites/default/files/Energy%20Sector%20in%20Jordan%20-%20Gas%20and%20Electricity.pdf>

<sup>105</sup> *ibid*

<sup>106</sup> EDAMA, *Jordan Clean Technology Sector – Report 2016*, (USAID: 2016)

<sup>107</sup> Al-Salaymeh, A. "Modelling of Global Daily Solar Radiation on Horizontal Surfaces for Amman City." [Http://www.Eng.Uaeu.Ac.Ae/En/Research/Journal/Issues/V11/Pdf\\_Iss1\\_11/P5.Pdf](Http://www.Eng.Uaeu.Ac.Ae/En/Research/Journal/Issues/V11/Pdf_Iss1_11/P5.Pdf).

<sup>108</sup> Ali M Baniyounes, "Renewable Energy Potential in Jordan," *Renewable Energy Potential in Jordan*, 12, no 19, (2017) available from [https://www.ripublication.com/ijaer17/ijaerv12n19\\_44.pdf](https://www.ripublication.com/ijaer17/ijaerv12n19_44.pdf)

<sup>109</sup> Jordan Energy Efficiency Action Plan 2013, The national strategy of Jordan (2015-2025) and the master strategy of energy sector in Jordan (2007-2020).

<sup>110</sup> "Jordan's Energy Sector." Energy Sector Capacity Building Activity. Accessed May 22, 2017. <http://escb-jordan.org/jordan-energy-sector/>.

<sup>111</sup> 2025-2015 للفترة الطاقة قطاع استراتيجية available from <http://www.memr.gov.jo/EchoBusV3.0/SystemAssets/PDFs/AR/General/new%20strategy.pdf>



total generated energy of 216 MW Tafileh. Ma'an and Mafrqa also hold the highest generated solar energy of 197 MW and 1,260 MW respectively.<sup>112</sup>

One of the leading stakeholders in achieving progress in the renewable energy and energy efficiency field in Jordan is The Jordan Renewable Energy and Energy Efficiency Fund (JREEEF)<sup>113</sup>. This fund was created by MOE and was founded in 2012, with a mission to provide technical and financial support to facilitate scaling up renewable energy. JREEEF works with donor agencies, non-governmental Organisations, private sector, public sector, scientific societies, research centres, and academic institutions and individuals. Each of them can apply and be a key beneficiary of the fund and take part in enabling the implementation of renewable projects. The main goal of this fund is to increase awareness to all its stakeholders both the civil society and private sector on the ability of renewable energy to decrease economic and financial burdens on the government and, more importantly, to indirectly achieve some SDG 7 targets in Jordan.<sup>114</sup>

Aiding in decreasing the energy losses in the system, The Energy & Mineral Resource Authority (EMRC)<sup>115</sup> plans to reduce the distributional loss rate to 10 per cent by 2020, working in cooperation with distribution companies. This includes detecting both electricity transmission losses and theft.<sup>116</sup>

#### 6.4.2 Challenges in Implementing SDG 7

When it comes to implementing SDG 7, Jordan is facing a number of challenges, which can mainly be attributed to social issues and institutional challenges.

##### ***Social challenges***

One of the major challenges with implementing small scale solar energy and energy efficiency is the lack of knowledge within the civil society and by non-practitioners about the different regulations regarding its installation. First, the difference between renewable energy and energy efficiency is still vague, which hinders both individuals and institutions to make decisions about the most appropriate technology for their institution or home. In some cases, energy efficiency will be more feasible and cost-efficient than installing renewable energy, or vice versa.<sup>117</sup>

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<sup>112</sup> data gathered from different sources that include; JREEEF, MOE and the Jordan Times. They represent total generated energy production in each governorate based on data from 2016.

<sup>113</sup> See <http://www.memr.gov.jo/Pages/viewpage.aspx?pageID=264>

<sup>114</sup> "Jordan Renewable Energy and Energy Efficiency Fund - JREEEF." Facebook . Accessed May 22, 2017. [https://www.facebook.com/pg/JREEEF/about/?tab=page\\_info](https://www.facebook.com/pg/JREEEF/about/?tab=page_info).

<sup>115</sup> Energy and Minerals Regulatory Commission (EMRC) is a governmental body that possess a legal personality with financial and administrative independence and is considered the legal successor of the Electricity Regulatory Commission (ERC) and the Jordan Nuclear Regulatory Commission (JNRC) and the Natural Resources Authority (NRA) in relation to its regulatory tasks according to law No. (17) for the year (2014) regarding the restructuring of institutions and governmental organisations.

<sup>116</sup> Jordan Independent Economy Watch, *Energy Sector in Jordan 1 (Gas and Electricity)*, (June, 2015) available from <http://identity-center.org/sites/default/files/Energy%20Sector%20in%20Jordan%20-%20Gas%20and%20Electricity.pdf>

<sup>117</sup> Safaa Jayousi, Director at IndyAct – Jordan, interview conducted by Lara Nassar, Amman, Jordan (14 August 2017), Ramzi Sabella, USAID in Jordan, interview conducted by Lara Nassar, Amman, Jordan (14 August 2017), Ramzi Sabella, USAID in Jordan, interview conducted by Lara Nassar, Amman, Jordan (8 August 2017), Annonymous, Project Manager at NERC interview conducted by Lara Nassar, Amman, Jordan (9 August 2017) and Dr Nidal Oaran, Environmental Analyst at UNDP, interview conducted by Lara Nassar, Amman, Jordan (14 August 2017).

The change in policy and the great push Jordan has made to increasing energy efficiency resulted in changed consumer behaviour. Despite this, Jordan still witnesses energy violations including electricity theft. The Jordan Times has documented 17,289 electricity theft violations cases between January - July 2017.<sup>118</sup> In one single case, theft included illegal installation of invertors and connections estimating the cost at more than 300,000 JD, not including the cost of the stolen electricity.<sup>119</sup> This may point out the absence of local community accountability and sense of ownership towards energy resources, which could be one of the reasons behind driving the civil society to perform illegal acts.<sup>120</sup>

### ***Institutional challenges***

One of the major concerns in the energy sector is enforcing energy regulations and laws such as enforcing energy audits on public and private buildings. Other concerns span out of the fact that Jordan has conflicting energy strategies. An example is electricity tariffs. Energy is highly subsidised in Jordan and most of the subsidies are granted to the social category with the lowest energy consumption, which covers over 50 per cent of the population. This therefore creates a false energy value, which discourages people from moving towards energy efficiency because doing so saves so little money that it is not considered as financially feasible under this reduced energy tariff. These subsidy strategies therefore do not follow the overall national strategy on increasing energy efficiency among the civil society.<sup>121</sup>

The investment in renewable energy has become a major opportunity for Jordan. However, investing and accepting such opportunities without a thorough investigation on its practical effects on the energy sector can jeopardise renewable energy production in the future. Huge amounts of renewable energy can affect the grid if it is not ready to cope with such a huge energy load.<sup>122</sup>

Another institutional challenge is the lack of monitoring and evaluation of renewable energy projects – not having a database with all renewable energy initiatives in Jordan and how much each of them contributes to the goals – which could affect effective implementation of the set strategy and reaching its targets.<sup>123</sup> Anonymous sources have also expressed their concern over bureaucratic and time-consuming procedures needed to implement projects even after government approval.

Similar to challenges on SDG 6 implementation, anonymous sources have equally voiced their concern over the lack of meritocracy in the appointment of ministry staff, which may lead to positions being filled by staff that do not have the needed qualifications for the proper

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<sup>118</sup> Jordan Times, "17,289 electricity theft cases recorded since January," *Jordan Times*, October, 2017, <http://www.jordantimes.com/news/local/17289-electricity-theft-cases-recorded-january>

<sup>119</sup> Jordan Times, "historic electricity theft discovered eastern desert," *Jordan Times*, October, 2017, <http://www.jordantimes.com/news/local/historic-electricity-theft-discovered-eastern-desert>

<sup>120</sup> anonymous sources have suggested that the lack of local community ownership largely contributes to natural resource mis-management and abuse

<sup>121</sup> Ruba al Zubi, Energy Expert, interview conducted by Lara Nassar, Amman, Jordan (14 August 2017), Dr Nidal Oaran, Environmental Analyst at UNDP, interview conducted by Lara Nassar, Amman, Jordan (14 August 2017) and HE Malik Kabariti, Energy Expert and former Minister of Energy in Jordan, interview conducted by Lara Nassar, Amman, Jordan (24 August 2017).

<sup>122</sup> *ibid*

<sup>123</sup> *ibid*

fulfillment of the job. Furthermore, there is currently no system in place which allows the civil society to hold ministries accountable for their natural resource (mis)management.

## 6.5 Climate Change in Jordan

Jordan's climate is changing with increasing average temperatures and declining average precipitation. These trends are projected to worsen, and will not be limited to progressive changes such as longer dryer seasons and more intense heat waves, but will likely also come with more flash floods and unexpected frosts.<sup>124</sup> Scenarios (2011 – 2099) forecast that Jordan will witness up to 60 per cent decrease in precipitation and a 1 to 4-degree Celsius increase in temperatures during the next century.<sup>125</sup> Different groundwater and surface bodies in Jordan are also affected. Studies conducted by the MOEnv use one of these important water bodies, the Zarqa River Basin (ZRB), as a case to better demonstrate climate change effects on basins around Jordan. Modelling scenarios running to 2099, using 2007 as base year shows that an increase of only 1 Degree Celsius will reduce the total agricultural production by 3.5 per cent, increase water costs by 4.3 per cent and reduce the agricultural GDP in the ZRB by 5 per cent.<sup>126</sup>

With lower GDP and lower income, local communities no longer have the ability to adapt to these impacts. Families are unable to respond to pressing needs to replace water and agricultural supplies with new methods that require more spending, like purchasing drip irrigation or buying supplementary water tanks.

In regards to GHG, Jordan's projected scenario for 2025 forecasts the production of a total of 39,343.27 CO<sub>2</sub>eq (Gg).<sup>127</sup>

### 6.5.1 SDG 13 Implementation in Jordan

Jordan did not internalise the SDG 13 targets and indicators. The MOEnv currently lacks a specific strategy aimed towards achieving these targets and there is no set directorate or department directly working on achieving them. However, some targets are still being achieved as a result of implementing some defined policies and strategies, even if these are not a conscious effort towards implementing SDG 13.

In 1997, before any other country in the WANA Region, Jordan submitted its first national communication report to the UNFCCC. Since then, several other national communication reports were submitted by Jordan to the United Nations, with the most recent one being the Third National Report in 2014.<sup>128</sup>

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<sup>124</sup> Lara Nassar and Kamal Kakish, *Climate Change Adaptation in Jordanian Communities: limitations and opportunities, (WANA: 2016)* available <http://wanainstitute.org/en/publication/climate-change-adaptation-jordanian-communities-limitations-opportunities-and>

<sup>125</sup> Ministry of Environment, *2013-2020 National Climate Change Policy of Jordan*, (MOEnv: 2013) available from [http://www.moenv.gov.jo/AR/PDFs/Climate%20change%20policy\\_PDF.pdf](http://www.moenv.gov.jo/AR/PDFs/Climate%20change%20policy_PDF.pdf)

<sup>126</sup> Ministry of Environment, *Assessment of direct and Indirect Impacts of Climate Change scenarios (socio-economic study : VOI II)*, (MOEnv: 2013)

<sup>127</sup> Ministry of Environment and UNDP, *Jordan's Third National Communication on Climate Change*, (MOEnv: 2015) available from <http://unfccc.int/resource/docs/natc/jornc3.pdf>.

<sup>128</sup> *ibid*

In addition to this, Jordan launched its first National Policy on Climate Change (2013-2020), and was the first country in the region to do so. This Policy accommodates all national priorities for climate change action and provides a policy reference point for future strategies.<sup>129</sup> Subsequently, the MOEnv produced a Climate Change Strategic Plan (2014-2016) and created a National Committee on Climate Change headed by the ministry itself and includes other ministries such as MOE, MOPIC and MWI. This committee advises on the work conducted by the ministry's Climate Change Unit.

Even though Jordan contributes to about 0.06 per cent of the worldwide GHG, Jordan already took the appropriate action plan to combat climate change effects.<sup>130</sup> These actions are driven by institutions, NGOs and different programmes that are mostly guided by the MOEnv Unit on Climate Change. Most interventions fall under two main themes: mitigation and adaptation.

As for climate change mitigation, Jordan submitted its Intended Nationally Determined Contributions (INDCs) to the UNFCCC in 2015. These represent Jordan's political and technical pledge towards mitigating climate change and a reference point to reducing GHG. Jordan is determined and committed to reduce its GHG emissions by 14 per cent by 2030. An additional 12.5 per cent is pledged subject to the availability of international funds and support of implementation.<sup>131</sup> Achieving the 14 per cent target will cost an estimated 5.7 billion US dollars from which the Jordanian government has already secured over 542 million US dollars in 2015.<sup>132</sup>

The two above mentioned targets are planned to be achieved by implementing over 70 projects, of which installing renewable energy and implementing energy efficiency will be a considerable part (see chapter 6.4.1). Another measure was to increase the cost of fuel through abolishing fuel subsidies, and thus discourage the transportation sector, that was identified as the second largest source of GHG in 2006. This created an additional incentive for energy efficient transport in Jordan. The intended results can however not be verified yet since up-to-date data on activity and emission from the transport sector are not available.<sup>133</sup>

As for climate change adaptation, the Ministry is currently working on the National Climate Change Adaptation Plan (NAP). As part of the process, an appropriate coordination structure for stakeholder consultations is being created, and a methodology to integrate adaptation into planning procedures is being tailored. Other schemes are directly aimed at assisting water governance and management.<sup>134</sup>

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<sup>129</sup> Ministry of Environment, *2013-2020 National Climate Change Policy of Jordan*, (MOEnv: 2013) available from [http://www.moenv.gov.jo/AR/PDFs/Climate%20change%20policy\\_PDF.pdf](http://www.moenv.gov.jo/AR/PDFs/Climate%20change%20policy_PDF.pdf)

<sup>130</sup> GIZ and The Ministry of Environment, *Policy Brief 2: Climate change mitigation plans in Jordan*, 2015

<sup>131</sup> *ibid*

<sup>132</sup> *ibid*

<sup>133</sup> GIZ and The Ministry of Environment, *Mitigation 2: Transport and climate change*, 2015

<sup>134</sup> Within the time frame of this guiding note, an interview with the Ministry of Environment – Climate Change Unit could not be performed due to their unavailability during that time.

## 6.5.2 Challenges in Implementing SDG 13

Challenges for the climate change sector in Jordan are highly interlinked with the water and energy sectors. It was significant that during the interviews, stakeholders could only give one or two major key points specifically related to the climate change sector whereas all other climate change related points were reiterated for the water and energy sectors. For that reason, please also refer to section 6.4.2 for energy related (climate change mitigation) challenges and to section 6.3.2 for water related (climate change adaptation) challenges.

There are however some challenges that can be specifically appended to implementation of SDG 13 in Jordan, mainly related to the socio-economic and institutional context.

### *Socio-economic challenges*

The Jordanian government has been reforming subsidies and making tax reforms on different sectors that include energy subsidies, income tax and sales tax. However, the country faces important challenges regarding macroeconomic vulnerabilities that persist because of its energy import dependency. Regional tensions are affecting the Jordanian economy through widened trade deficit and weaker investor confidence which has resulted in high unemployment.<sup>135</sup> This current situation, which highly affects lower income families in Jordan, makes it hard to implement any climate change adaptation or mitigation schemes. Climate change mitigation and adaptation are therefore not a priority.<sup>136</sup>

### *Institutional challenges*

Since the climate change sector is highly interlinked with other sectors like water, energy, and agriculture, governmental institutions are highly fragmented in this regard. The MOEnv Climate Change Unit is taking the lead on climate change internationally and nationally, with little to no cooperation with other ministries. The MOEnv is seen to be a weak ministry in the cabinet and is not taken seriously in regards to achieving climate change goals.<sup>137</sup> For example, during UNFCCC negotiations, more than one ministry from Jordan attends with no clear goal or mission. The MOEnv leads the main negotiations at the general meeting, however other ministries like the MOE only attend side events with no actual contribution. Other ministries and civil society Organisations do not have a clear common stand point and do not fall under the leadership of MOEnv. This therefore weakens Jordan's position and creates gaps in implementation.<sup>138</sup>

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<sup>135</sup> UNDP and UNICEF, *Socio-economic Inequality in Jordan*, (Amman: 2015) available from <http://www.jo.undp.org/content/dam/jordan/docs/Poverty/UNDP%20Socio%20economic%20Inequality%20in%20Jordan%20English.pdf>

<sup>136</sup> Safaa Jayousi, Director at IndyAct – Jordan, interview conducted by Lara Nassar, Amman, Jordan (13 August 2017)

<sup>137</sup> *ibid*

<sup>138</sup> *ibid*

## 7. Policy Recommendations for Enhanced Implementation of SDGs 6, 7, and 13 in Jordan

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From the different interactions with the selected stakeholders, operationalising the SDGs has proven to present considerable challenges for the different sectors in Jordan. Acknowledging that the process of nationalising and implementing the SDGs has started only two years ago, it is interesting to observe that many challenges already surface and that there is willingness to tackle them.

Many reports<sup>139</sup> discuss the urgent need to implement the SDGs and provide concrete steps for their mobilisation. One of these reports distinguishes five main steps to guide governments in their responsibility of implementing the 2030 Agenda: 1) nationalising the SDGs into plans, budgets and strategies, 2) creating institutional and coordination mechanisms, 3) ensuring “no one is left behind”, 4) strengthening data systems, and 5) creating accountability.<sup>140</sup>

The policy recommendations below are therefore grouped under these major steps. They concern all sectors that are related to the three selected SDGs (water, energy and climate change) in Jordan and as such, can be thought of as interchangeable between sectors. They were either directly voiced by the stakeholders or derived from the challenges that emerged from the interviews. They are directed towards any stakeholder working in policy and decision-making in these sectors. They aim to identify actions that need to be taken at short and middle term to better achieve the 2030 Agenda.

### 7.1 Nationalising the SDGs into Plans, Budgets and Strategies

Integrating the goals and targets of the three SDGs into national priorities, actions, plans and budgets is a critical first step towards creating national ownership for implementation. Learning from the experience of the MDGs, it was clear that goals gain more traction in implementation when they are incorporated into national plans and aligned with already set national priorities.<sup>141</sup> For Jordan, suggestions related to this step, were phrased as following:

- Use the SDGs as a means to adapt and internalise water, energy and climate change SDG targets with national priorities that also address civil society needs. This could be done through aligning and monitoring the SDG targets within each ministerial strategy according to nationalised indicators.
- Re-examine *current* policies and regulations from MOA, MWI and MOEnv regarding water productivity and energy efficiency, in particular related to overlapping regulations and gaps in regards to water and energy usage.

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<sup>139</sup> E.g., Róisín Hinds, *From agreement to action: delivering the SDGs*, (Save the Children: 2016), available from <https://www.savethechildren.org.uk/content/dam/global/reports/advocacy/from-agreement-to-action.pdf>; Sustainable Development Solutions Network, *Getting started with the SDGs*, (UNSDSN: 2015) available from <http://unsdsn.org/wp-content/uploads/2015/12/151211-getting-started-guide-FINAL-PDF-.pdf>

<sup>140</sup> Róisín Hinds, “5 steps towards implementing the SDGs,” *Deliver 2030.org*, accessed October 2017, <http://deliver2030.org/?p=6833>

<sup>141</sup> Róisín Hinds, *From agreement to action: delivering the SDGs*, (Save the Children: 2016), available from <https://www.savethechildren.org.uk/content/dam/global/reports/advocacy/from-agreement-to-action.pdf>



- Strengthen *future* implementation policies.
- Set up action plans for new research. Science can bridge the gap between policy and practice.
- Encourage and engage with local municipal councils in rolling out the SDGs in coordination with MOPIC.

## 7.2 Creating Institutional and Coordination Mechanisms

Nationalising the SDGs is a first step towards their implementation. However, their success and credibility only depends on their translation to actual progress. Institutions play a critical role in delivering services needed to create space for ambitious implementation. Strong institutions and coordination mechanisms are essential, and they should have the necessary resources - both financial and human – to be able to roll out the SDGs. Coordination mechanisms are particularly important to bridge the gap and at the same time avoid overlap between key ministries that help drive change.

For Jordan, suggestions related to this step, were phrased as following:

Strengthening within institutions:

- Assess MOEnv, MOPIC, MOE, MOA and MWI capacities, readiness and existing internal and external relationship channels. This assessment could identify gaps and overlapping channels hindering the implementation of the SDGs.
- Strengthen ministerial capacities by creating incentives that improve staff willingness to address and communicate co-benefits and contribute in open transparent debates.
- Provide more thematic training courses and workshops to ministerial staff in general about the connection between water, energy and climate change, but particularly on implementing socially and culturally sensitive projects in this regard.
- Establish links and means of communication between the public and private sector that go beyond financial dependence, introducing a partnership based on trust and mutual understanding of roles, mandates and competences.

Better coordination amongst institutions:

- Invest in studying the national and local interlinkages of implementing the SDGs, to help determine how each SDG can interact with the other during implementation.
- Introduce coordination between MOPIC, MOEnv, MWI, MOE and MOA to better address gaps in policy and regulation with regards to water, energy, food security and climate change.
- Combine the SDG ministerial committees regarding water, energy and climate change to one committee with an SDG environmental goal.
- Introduce new SDG focal points within the ministries to better coordinate ministerial activities and plans.

### 7.3 Ensuring “No One Is Left Behind”

Even with the right planning mechanism and institutional reform, there is little guarantee that the entire civil society will benefit from SDG implementation. In the past, the MDGs were criticised for failing to address social inclusion and inequality, which therefore increases the need to address the 2030 Agenda commitment to “leave no one behind” and have the goals targeting all segments of the society. Also in Jordan, this will demand targeted approaches aimed at strengthening and empowering the civil society, and related challenges were voiced as following:

- Consider the current socio-economic situation as an integral factor in decision-making and policy formation, and ensure that these policies are socially practical and can be implemented.
- Provide more capacity building courses on renewable energy and energy efficiency regulations and fit-for-purpose technologies targeting the local community and small business owners.
- Reform educational curricula in schools and universities to include water, energy and climate-related change challenges and to demonstrate their interconnectedness.
- Add components to implementation projects to also target social marketing and behaviour change beyond just awareness and education, specifically about water and energy efficiency.
- Enhance the roles of NGOs and the civil society in the decision-making process and specifically within ministerial committees who have the mandate to set sector plans.
- Instil values of active citizenship and the sense of belonging to develop an understanding of shared national resources to minimise and eradicate water/electricity theft and violations.

### 7.4 Strengthening Data Systems

Good data are a must for adequate planning and implementation as well as for monitoring progress and accountability (see also chapter 7.5). Revolutionising the water, energy and climate change sector in Jordan will only be possible if we know who is affected the most, where they currently reside, what specific problems they experience and more importantly where we aim to accomplish nationally. Strengthening data systems in Jordan is therefore essential to build a baseline of information, create transparency in SDG implementation, and more importantly build a base for accountability. Recommendations related to this can be phrased as following:

- Monitoring and Evaluation plans should be created to help monitor progress per nationalised indicators. This will provide qualitative indices used for reporting both nationally and internationally.
- Speed up the process of creating the dashboard which MOPIC is planning to produce to encourage transparency and credibility of SDG implementation nationally. The electronic dashboard should act as a unified data acquisition platform to help share accurate national data on water, energy and climate change.

## 7.5 Creating Accountability

The successful implementation of the 2030 Agenda finally depends on holding both the Jordanian government accountable for SDG goal implementation progress, and the civil societies for their participation in meaningful engagement. Stakeholders in Jordan have asked for enhanced transparency to educate the public about the government's efforts to achieve the SDGs and Jordan's plans in regards to SDG 6, 7 and 13 implementations. Most of the recommendations phrased above in chapter 7.3 and 7.4 also relate to this step.

## 8. Conclusion

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While the research conducted for this guiding note was time and resource-limited, and mainly focused on the SDG implementation by policy and decision makers, the outcomes demonstrate that there are many direct and indirect benefits associated with the implementation of SDG 6, 7 and 13 in Jordan. Advancing in their implementation is directly linked to mitigating climate change and increasing sustainable and inclusive social development.

Several of these benefits are already being achieved. Some of them are the fruits of deliberately designed strategies. Others are the results of unconscious efforts through implementing old strategies and/or ad hoc donor funded projects.

During the process of this study, stakeholders voiced many concerns about issues that hamper the SDG implementation process in Jordan, mainly related to social and institutional challenges. They raised the lack of specific strategies or directorates within the ministries that are specifically dedicated to achieving the SDG targets. They observe both overlap and gaps between sectors and ministries' mandates, whereas social inclusion, accountability and ownership by society and institutions are still missing.

While MOPIC has taken the lead in achieving the SDGs in Jordan through developing a “road map for implementation”, more institutional courage will be needed to fulfill the Agenda 2030 commitments. It is not enough just to enthusiastically produce a VNR, if practical considerations are not taken into account, e.g. the financial viability of its intended vision.

A stronger national policy will be crucial. If integrated correctly, the SDGs can be a tool that complements international and national law. A stronger policy should also include services that reach those citizens furthest behind or “forgotten”. Related to this, there is a great need to help guide the public's understanding of the complexity of the SDGs, and invest in inspiring the public and private sector to promote integrated thinking that furnish accountability. Working on a continuous participatory approach with the civil society will be key to harmonise existing approaches and build new implementation opportunities while targeting social needs. This should be complemented by a mechanism which strengthens the inter- and cross-sectorial work.

The environmental and social challenges that Jordan is facing today are unprecedented and inter-sectorial. While setting the stage for SDG implementation in Jordan, it needs to be kept in mind that the SDGs are a remarkable opportunity to address these challenges as they take into account different national realities, policies and priorities.



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