UNEP FI

Draft for Consultation

Promoting Sustainable Finance & Climate Finance in the Arab Region

October 2020

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Executive Summary

In 2015, world leaders adopted the United Nations UN 2030 sustainable development agenda that embraces an integrated approach to development through three dimensions of sustainability: economic, social & environmental to be achieved through 17 Sustainable Development Goals (SDGs). These aim at ending poverty, fighting inequality, improving access to education & health services as well as addressing climate change, among others, while protecting the environment & securing sustainable economic development path worldwide.

The global financing gap for the achievement of the UN 2030 SDGs is estimated at USD $ 5-7 trillion annually, whereas the developing world faces a financing shortfall estimated at USD $ 2.5 trillion per year until 2030.[1] The financial industry is expected to play an instrumental role in financing the 2030 sustainable development agenda, namely, the transition to a more resilient, inclusive & green economy. Financial institutions & markets would support the ongoing global structural transformation towards sustainable development by efficiently re-directing public & private resources towards more socially, environmentally & economically sustainable activities.[2]

In spite of increased awareness about the importance of sustainability & climate change and their impact on the economy, these issues continue to be perceived as marginal and not central to policymakers' core mandate in most countries around the globe. In the financial sector, governance bodies mainly focus on conventional soundness indicators, such as, capital adequacy ratios, without paying sufficient attention to the risks associated with financing increasing social & environmental needs. [3]

In Arab countries, the financing gap for achieving the UN 2030 SDGs is estimated to be around a minimum of USD $ 230 billion annually.[4] That's why, it is important to enhance the role of the financial system in Arab countries to support their transition towards sustainable development by bridging the green financing gap, mobilizing the necessary resources, and re- directing financial flows towards more sustainable & responsible investment.

Sustainable finance is a new concept whose meaning is still evolving. For the purpose of this work, the UN Environment's working definition is used as follows: "A sustainable financial system is stable and creates, values and transacts financial assets in ways that shape real wealth to serve the long- term needs of a sustainable and inclusive economy along all dimensions relevant to achieving those needs including: economic, social & environmental issues". [5]

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[1] AFED (2018)
[2] UNEP (2017)
[3] UNEP (2019a)
[4] AFED (2018)
[5] UNEP (2017)

Climate Finance is a subset of sustainable finance, and is defined according to the United Nations Framework Convention on Climate Change (UNFCC), as "local, national or transnational financing, which may be drawn from public, private and alternative sources of financing… to significantly reduce emissions, notably in sectors that emit large quantities of greenhouse gases. and to adapt to the adverse effects and reduce the impacts of climate change". [6] It is estimated that the implementation of the 2015 Intended Nationally Determined Contributions (INDCs) would require the allocation of more than USD $ 20 trillion, over the 2016- 2030 period, in a number of developing countries that represent almost 50% of global greenhouse gas emissions. [7]

Climate change is expected to lead to a transformation in the way economies have been operating worldwide through its impact on financial stability, hence on economic growth & sustainable development. It may have destabilizing effects on the financial sector as a result of climate hazards leading to physical & transitional risks, hence threatening the sector's stability & resilience. This mandates a systemic change in the financial sector to incorporate climate associated risks & opportunities into financial institutions' business decision making processes. In other words, the financing model needs to gradually change from being conventional into being sustainable to smooth the green growth transition process. [8]

The Arab region is highly vulnerable to climate change, and there are pressing mitigation & adaptation needs related to water scarcity, rising sea level, drought and land degradation & desertification, among others. Climate change is expected to have serious repercussions on the region's food, energy & water security through its negative impact on a number of vital sectors including but not limited to water, health, coastlines, tourism & agriculture in a region where more than 50% of its food needs is imported and most of its vulnerable population is still rural and depends in its livelihood on agriculture. This increases Arab countries' persistent development challenges and puts additional fiscal pressures on their already constrained budgets.[9]

[6] UNEP (2017)
[7] UNEP (2017)
[8] UNEP (2019a)
[9] Watson, ODI, Schalatek & HBS (2019)

This work aims at providing an assessment of the readiness of the Arab region's financial sector framework to integrate and promote sustainable finance in general and climate finance in particular in order to enhance its role in financing the transition to greener & more inclusive economies while safeguarding the stability of the financial system. In doing so, it underlines the most prevalent sustainable finance and climate finance practices in a number of countries in the region. The report provides a SWOT analysis of the region's financial system, and presents a list of the immediate needs to be addressed in order to enable the sector to play its role in financing the green transition process. It also discusses the barriers to scaling up both sustainable finance & climate finance, and provides policy recommendations for addressing these barriers.

Over the past two decades, Arab countries have undergone financial sector reforms that focused on restructuring the sector through mergers & acquisitions, injecting capital to raise financial institutions FIs' capital adequacy ratios and cleaning their balance sheets through debt settlement & rescheduling. Reforms also aimed at strengthening the role of supervisory & regulatory authorities particularly in the wake of the 2008 global financial crisis. They have awarded special attention to financial inclusion aiming at improving access to finance especially among their most vulnerable groups including the rural poor, women, youth as well as micro, small & medium enterprise. They have also made progress working on the development of their financial systems' technological infrastructure to ensure efficient & secure digital transformation offering new sets of alternative financial instruments catering to the needs of the marginalized.

Promoting sustainable finance and climate finance in the region has been advancing at a slower pace. Arab countries have been at different levels of progress in aligning their national financial systems with sustainability considerations to finance their development needs & goals. Barriers to promoting both sustainable finance & climate finance in the region include inadequate legislative support, lack of awareness of the merits of sustainable finance, lack or absence of incentives to finance the transition to green climate resilient economies as well as market barriers associated with the limited pool of bankable green projects. This is in addition to challenges related to accessing finance from dedicated climate funds, implementing agencies' limited institutional capacity as well as absence of data, standards & definitions.

Moving forward with sustainable finance & climate finance agenda in the region requires the adoption of policy measures & interventions by financial sector governance bodies to address the sector's immediate needs. These include the establishment of sustainable finance framework to provide stakeholders with a national roadmap for aligning the financial sector with sustainable development & responsible investment by integrating sustainability into FIs' business models & core strategies. This is in addition to issuance of green finance rules & regulations providing FIs with reference guidance framework, aligning FIs' incentive system with sustainable finance & climate finance, development of financial sector infrastructure to enable the integration of environmental and social (E & S) considerations as well as strengthening the capacity of financial sector's stakeholders.

Chapter One- Introduction

1.1 - Background

In September 2015, world leaders formally adopted the United Nations UN 2030 agenda for sustainable development, described as the most inclusive development agenda the world has ever seen, as noted by the former UN Secretary General Ban Ki- moon. The agenda embraces an integrated approach to development through three dimensions of sustainability: economic, social & environmental to be achieved through 17 Sustainable Development Goals (SDGs). These aim at ending poverty, fighting inequality, improving access to education & health services as well as addressing climate change, among others, while protecting the environment & securing sustainable economic development path worldwide.

The global financing gap for the achievement of the UN 2030 SDGs is estimated at USD $ 5-7 trillion annually, whereas the developing world faces a financing shortfall estimated at USD $ 2.5 trillion per year until 2030.[10] The financial industry is expected to play an instrumental role in financing the UN 2030 sustainable development agenda, namely, the transition to a more resilient, inclusive & green economy. Financial institutions & markets would support the ongoing global structural transformation process towards sustainable development, in both developed & developing countries, by efficiently re-directing public & private resources towards more socially, environmentally & economically sustainable activities.[11]

This can be undertaken by aligning the financial system's mandate with the current paradigm shift towards more sustainable & responsible investment worldwide, hence strengthening its role in supporting national economies in the achievement of the UN 2030 SDGs by enhancing the supply of sustainable finance. To that end, sustainability considerations should be mainstreamed into the financial sector's core strategies, thus reshaping its investment & financing decision making process. Specifically, social & environmental factors should be integrated into the financial system's business models, approaches & operations.[12]

In Arab countries, the financing gap for achieving the UN 2030 Sustainable Development Goals SDGs is estimated to be around a minimum of USD $ 230 billion annually, whereas the gap for Arab countries in deficit is estimated at USD $ 100 billion annually, thus reaching a cumulative total of more than USD $ 1.5 trillion through 2030. [13] That's why, it is important to enhance the role of the financial system in Arab countries to support their transition towards sustainable development by bridging the financing gap, mobilizing the necessary public & private resources, and re- directing financial flows towards more sustainable & responsible investment.

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[10] AFED (2018)
[11] UNEP (2017)
[12] UNEP (2017)
[13] AFED (2018)

Sustainable finance is a new broad concept whose meaning is still evolving, and for which there exists no universal definition. For the purpose of this work, the UN Environment's working definition is used as follows: "A sustainable financial system is stable and creates, values and transacts financial assets in ways that shape real wealth to serve the long- term needs of a sustainable and inclusive economy along all dimensions relevant to achieving those needs including: economic, social & environmental issues". A similar definition is adopted by the EU High- Level Expert Group on Sustainable Finance where it is defined as "finance fostering sustainable economic, social & environmental development".[14]

Climate Finance is a subset of sustainable finance for which there is no single definition, and generally refers to financial resources mobilized to fund actions directed towards mitigating and adapting the impacts of climate change. According to the United Nations Framework Convention on Climate Change (UNFCCC), climate finance is defined as "local, national or transnational financing, which may be drawn from public, private and alternative sources of financing … to significantly reduce emissions, notably in sectors that emit large quantities of greenhouse gases…. and to adapt to the adverse effects and reduce the impacts of climate change". [15]

The UN 2030 sustainable development agenda emphasizes the need for the adoption of integrated national financing frameworks to achieve the 17 SDGs, and to implement the 2015 Paris Agreement on climate change which stipulates global transition to low carbon climate resilient future. Specifically, it is estimated that the implementation of the 2015 Intended Nationally Determined Contributions (INDCs) would require the allocation of more than USD $ 20 trillion, over the 2016- 2030 period, in a number of developing countries that represent almost 50% of global greenhouse gas (GHG) emissions. [16]

In spite of increased awareness about the importance of sustainability & climate change and their impact on the economy, these issues continue to be perceived as marginal and not central to policymakers' core mandate in most countries around the globe. In the financial sector, governance bodies mainly focus on conventional soundness & development indicators, such as, capital adequacy, liquidity & leverage ratios, without paying sufficient attention to the risks associated with financing increasing social & environmental needs. [17]

[14] UNEP (2017)
[15] UNEP (2017)
[16] UNEP (2017)
[17] UNEP (2019a)

The Arab region is highly vulnerable to climate change, and there are pressing mitigation & adaptation needs related to water conservation, rising sea level, land degradation, land desertification & drought, among others. Countries in the region are water stressed, and it is expected that climate change would further worsen the situation, leading to water scarcity by 2025. These concerns have important implications for water availability, health issues, agriculture production & productivity, food security & social welfare, in the region where more than 50% of its food needs is imported and most of its vulnerable population is still rural and depends in its livelihood on agriculture. [18]

Climate change is expected to lead to a transformation in the way economies have been operating worldwide through its impact on financial stability, hence on economic growth & sustainable development. It may have destabilizing effects on the financial sector as a result of climate hazards leading to physical & transitional risks, hence threatening the financial sector's stability & resilience. This mandates a systemic change in the financial sector to incorporate climate associated risks & opportunities into financial institutions FIs' business decision making processes in order to identify their implications at the transaction, portfolio, institutional & economy levels. In other words, the financing model needs to gradually change from being conventional into being sustainable to smooth the green growth transition process. [19]

1.2 - Purpose & Scope of Work

This work aims at providing an assessment of the readiness of the Arab region's financial sector framework to fully integrate and promote sustainable finance in general and climate finance in particular in order to enhance its role in financing the transition to greener & more inclusive economies while safeguarding the stability & soundness of the financial system. This is important to reduce the vulnerability of Arab economies to risks associated with both climate change and increasing needs to finance their social demands while promoting responsible investment.

[18] Watson, C., ODI, L. Schalatek & HBS (2019)

[19] UNEP (2019a), physical risks may lead to direct damage of a corporate's assets, disruption of its supply chains, its operations, transport & delivery systems and water & energy supply, among others. These disruptions negatively affect the operational & financial performance of any corporation, resulting in an increase in its insurance costs and changes in demand for its goods & services. Transitional risks are associated with low carbon economy transition that entails changes at different levels including policy, institutional, legal, market & technology levels. These changes expose organizations to varying degrees of financial, operational & reputational risks, among others.

The work is undertaken within the context of Arab countries' adoption to the United Nations UN 2030 sustainable development agenda and their commitment to the Paris Agreement. The study starts by an introductory chapter one explaining the purpose & scope of the report as well as the methodology used throughout the work, as further explained below. Chapter two presents a discussion of the most prevalent sustainable finance practices in a number of selected countries in the Arab region. These include Egypt, Jordan, Morocco, Bahrain, the United Arab Emirates (UAE) and the Kingdom of Saudi Arabia (KSA).

In doing so, it highlights the various national reforms & initiatives undertaken, in each of the countries under study, to strengthen the role of the financial sector in supporting the transition to sustainable development while aligning the role of financial institutions & markets with sustainability by incorporating environmental & social considerations into the business model governing their financing & investment decisions. The chapter starts by an overview discussion highlighting the various reform pillars underlining these countries' progress in supporting the promotion of sustainable finance.

Chapter three presents an assessment of the status of climate finance in a number of selected countries in the Arab region. These countries include Egypt, Jordan, Iraq & Tunisia. The chapter starts by an overview of the current status of climate finance in the region. This is followed by an examination of the current practices of climate finance in each country under study. This is undertaken by investigating the institutional framework and whether the national policy framework has been adjusted to mainstream sustainability in general and climate change in particular. Specifically, this involves the examination of national strategies & plans including but not limited the national development plans, national environment strategy, national climate change policy, national adaptation policy and national energy strategy, whenever possible.

This is in addition to the examining each country's Intended Nationally Determined Contributions (INDCs) submitted to the UNFCC in 2015, emphasizing its commitment to addressing climate change impact through adaptation & mitigation targets while highlighting the cost estimates needed for the implementation of its INDCs. This is followed by a discussion of climate finance flows into each of the countries under study as well as priority sectors & funds needed to undertake mitigation & adaptation actions. This is in addition to presenting an overview of some of the climate change mitigation & adaptation projects financed by dedicated climate funds in each of these countries.

Chapter four starts by a discussion of the barriers to scaling up sustainable finance in general & climate finance in particular in the Arab region. It then provides a SWOT analysis for the region to underline the strengths, weaknesses, opportunities as well as threats associated with the readiness of Arab financial system to support the transition to greener economies. In doing so, it also presents a list of the financial system's immediate needs to enhance its readiness to play its potential role in funding the green growth process in the region.

This is followed by a discussion of good practices financing the transition to green climate resilient economies. The chapter concludes with policy recommendations for enhancing the readiness of the region's financial sector to fully integrate both sustainable & climate finance in order to efficiently channel scarce financial resources to their optimal use in green responsible investment.

This work involves intensive research, analysis & review of the various reforms, initiatives, policy documents & reports as well as databases developed by the national authorities in each of the countries under study. These include but are not limited to: Ministry of Finance, Ministry of Planning, Ministry of Environment, Central Banks, regulators for non- banking financial institutions (NBFIs) as well as national banking associations. Technical papers & expert reports developed by regional entities on sustainable development, environment & finance in the Arab world are also examined. These include work by entities, such as, the Arab Monetary Fund, the Arab Forum for Environment & Development (AEFD) and the League of Arab States (LAS), tracking & documenting Arab countries' progress in the implementation of the UN 2030 agenda, while highlighting the main impediments to fully achieve the UN SDGs.

This is in addition to investigating the various programs, publications & databases developed by international organizations, such as, the United Nations Framework Convention on Climate Change (UNFCC), the United Nations Development Program (UNDP), the Economic & Social Commission for Western Africa (ESCWA), the United Nations Environment Program Finance Initiative (UNEP FI), the United Nations Environment (UNE), the International Finance Corporation (IFC), the World Bank, the Global Green Growth Institute (GGGI), the International Renewable Energy Agency (IRENA), the United States Agency for International Development (USAID) and GIZ. This is in addition to examining Climate Funds' databases, such as, the Global Environment Facility (GEF), the Adaptation Fund (AF) & the Green Climate Fund (GCF), among others, for projects & programs implemented in the countries under study.

The main findings of this report are shared with a number of stakeholders in a consultative process for their review & feedback. Stakeholders include representatives of financial governance bodies in addition to representatives from the Governments and national banking associations. Annex (I) provides a list of the various stakeholders who participated in the consultative process.

Chapter Two- Sustainable Finance Practices in the Arab Region: Selected Countries

2.1– Introduction

This chapter provides an overview of the most prevalent sustainable finance practices in a number of countries under study in the Arab region, namely, Egypt, Jordan, Morocco, Bahrain, the United Arab of Emirates (UAE) and the Kingdom of Saudi Arabia (KSA). These practices underline the six countries' ongoing efforts to integrate environmental & social considerations into their financial sector framework in order to scale up sustainable finance to enable their financial systems to promote responsible investment and to finance the transition to more inclusive, resilient & greener economies in accordance with the United Nations UN 2030 sustainable development agenda.

The chapter starts by an overview discussion highlighting the various pillars presenting these countries' progress in supporting the promotion of sustainable finance practices, as per table (1) below. The table provides a summary overview of whether each of the countries under study has developed a green growth strategy/ sustainable development agenda, developed a national sustainable finance framework/ strategy, issued environmental, social & governance (ESG) guidelines, published sustainability reports and conducted related awareness- raising & education programs/ initiatives. This is in addition to outlining whether each country has promoted the development of financial market innovations which include but are not limited to instruments, such as, green bonds & green *sukuks*,[20] as well as enacted regulatory reforms made in support of enabling the green growth transition process.

Over the past two decades, all countries under study have adopted green growth strategies. It should be noted, however, that these countries have been at varying stages of progress in aligning their national financial systems with sustainable development needs & goals, as further elaborated in the chapter. The United Arab of Emirates has been leading sustainable finance practices in the region, whereas Morocco has been at an advanced stage and Egypt has been in the preparation phase working on the development of its national sustainable finance framework. Jordan & Bahrain have been committed to aligning their financial systems to finance their sustainable development agenda. [21]

[20] *Sukuks* are bonds issued in compliance with Islamic Law *Shariah's* principles.

[21] This is based on Sustainable Banking Network SBN Country & Global Progress Reports produced by the International Finance Corporation IFC

Meanwhile, other countries' national policy framework has been mainly driven by economic diversification reforms to reduce their oil dependence and increase the contribution of their non-oil sectors in GDP while increasing private sector participation as in the case of the Kingdom of Saudi Arabia (KSA). All countries under study have developed ESG guidelines, engaged in sustainability reporting, and worked on promoting sustainable finance through awareness campaigns and education initiatives. This is the case except for the KSA where no ESG reporting guidelines have been issued as of yet.[22]

As for financial market innovations, only three countries in the region, namely, the United Arab of Emirates, Morocco & Egypt have issued green bonds whereas all countries under study have been engaged in issuing conventional Islamic bonds "s*ukuks*". In that respect, it should be noted that *sukuks* may be used as a vehicle for promoting sustainable finance in the region as sustainability is mainstreamed into Islamic finance's main principles which intrinsically take into account environmental & social considerations in accordance with Islamic law. These principles aim at poverty alleviation, wealth distribution, social & financial inclusion, environmental preservation, financial stability and economic growth, hence sharing sustainable finance's main objectives. [23] [24]

At the regulatory front, the countries under study have enacted public- private partnership (PPP) legislations to increase the share of the private sector in the economy hence enabling it to play a bigger role in supporting the transition to more resilient economy by increasing its investment in green & low carbon ventures.[25] [26] This has been the case except for Bahrain which has not developed a specific legislation dedicated to the implementation of PPPs that are carried out within the legal framework of existing commercial, civil & administrative laws.[27] [28]

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[22] This is based on Sustainable Stock Exchange Initiative SSEI website https://sseinitiative.org/stock-exchange/tadawul/

[23] Sekuriti (2019), the Islamic finance industry has been rapidly growing with *Shariah* – compliant assets reaching USD $ 2 trillion worldwide

[24] The four main principles governing Islamic finance based on Islamic law *Shariah* are: risk- sharing, no financing of "*haram*", i.e, prohibitive activities, no exploitation of any of the involved parties as well as materiality which means that any financial transaction should be backed up by real economic activity, El-Hawary, Grais & Iqbal (2004)

[25] Public private partnership (PPP) laws have been issued in the following countries as follows: the Jordanian law no. 31/ 2014, the Egyptian law no.67/ 2010 and the Dubai Emirati law no. 22/ 2015.

[26] White & Case (2015), Morocco issued PPP law no. 86- 12/ 2014

[27] Del Novo (2016), https://www.bizbahrain.com/the-case-for-a-comprehensive-legislation-on-ppp/

[28] The National Center for Privatization (2018) & the National (2019), Saudi Arabia has recently drafted a PPP law in 2019 https://www.thenational.ae/business/property/draft-private-sector-law-will-drive-investment-in-saudi-projects-1.911486

It should be also noted that all countries under study have awarded special attention to financial inclusion aiming at improving access to finance especially among the most vulnerable groups including but not limited to the rural poor, women, youth as well as micro, small & medium enterprises MSMEs. To that end, they have made remarkable progress working on the development of their financial systems' technological infrastructure to ensure speedy, efficient & secure digital transformation offering new sets of alternative financial instruments catering to the needs of the marginalized, as will be further developed in the chapter.

Table (1)- Sustainable Finance Practices Overview Matrix in the Arab Region: Selected Countries

	Sustainable Development/ Green Growth Agenda	**Sustainable Finance Framework**	**ESG Guidelines**	**Sustainability / ESG Reporting**	**Financial Market Innovations**		**Sustainable Finance Awareness & Education Initiatives**	**Supportive Regulatory Framework**
					Green Bonds	**Islamic Bonds** *(*Conventional *Sukuks)*		**PPP Laws**
UAE	√	√	√	√	√	√	√	√
Egypt	√	√	√	√	√	√	√	√
Jordan	√	√	√	√	×	√	√	√
Morocco	√	√	√	√	√	√	√	√
Bahrain	√	√	√	√	×	√	√	×
KSA	√	×	×	×	×	√	×	√

2.2- Egypt

2.2.1- Egypt's National Policy Framework & Sustainable Development

Egypt's Sustainable Development Strategy Vision 2030 was launched in February 2016 ensuring the alignment of the national development policy framework with the UN 2030 sustainable development agenda & the African Agenda 2063 as well as the localization of SDGs at both sectoral & geographic levels. Egypt's vision has been achieved through the development of medium & long term strategies; such as, the Strategy for Science & Technology for Sustainable Development (2030), the Industry & Trade Development Strategy (2020), Egypt's Education Transformation Program (2030) and Egypt's Integrated Sustainable Energy Strategy (2035).[29]

Egypt's Vision 2030 aims at the establishment of well diversified, competitive and knowledge-based economy that is characterized by social justice, prosperity & balanced growth. It aims at achieving sustainable inclusive growth and includes the three dimensions of sustainable development as follow:[30]

1- Economic dimension: economic development, energy, knowledge, innovation & scientific research as well as transparency & efficiency of government institutions,

2- Social dimension: social justice, health, education & training as well as culture

3- Environment dimension: urban development & environment

Climate change related pressures have been increasing over time and exacerbated by rising temperatures & sea levels as well as precipitation changes affecting the Nile Delta and the northern coastline, and vital productive sectors; such as, agriculture consuming about two thirds of Egypt's fresh water supply. Therefore, sustainable & green growth has become central to Egypt's national development strategy in order to address its growing population increasing demands, global warming, climate change and their challenging impact on water, food & energy security.[31]

Egypt's Integrated Sustainable Energy Strategy ISES (2035) aims at diversifying the national energy sources to ensure stable & secure energy supply by raising energy efficiency as well as increasing the share of renewables out of the total energy mix. It aims at generating 20% of the country's electricity needs from renewable sources by 2022, and raised the share of renewables in generating power to reach 42% by 2035. [32]

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[29] MOP (2018)
[30] Egypt Vision 2030
[31] MOP (2018)
[32] IRENA (2018)

2.2.2- Egypt's Sustainable Finance Practices

The Central Bank of Egypt (CBE) has been working on the development of new guidelines & principles to promote sustainable finance practice in the whole banking sector, based on best international practices. To that end, a whole new section on sustainable finance will be added to the National Sustainable Development Strategy document "Egypt Vision 2030', as prepared by representatives of the Egyptian banking institutions. According to the Sustainable Banking Network (SBN), Egypt is currently in the preparation phase still working on formulating the financial sector's framework to promote its readiness to scale up sustainable finance. [33]

Banks Sustainable Finance Practices

The United Nations Environment Program Finance Initiative UNEP FI's six principles for Responsible Banking have been adopted as the main components of Egypt's future financial sector's sustainability framework. These include alignment, impact, clients & customers, stakeholders, governance & targets setting as well as transparency & accountability. Two major Egyptian banks, namely, the Arab African International Bank (AAIB) and the Commercial International Bank (CIB) have been involved in the development of the National Financial Sector's Framework on Sustainable Finance. These banks have adopted the UNEP FI's principles for Responsible Banking, and have been working on promoting best international practices in sustainable Finance. [34]

Green finance initiatives have topped both banks' priorities as they have been committed to integrating sustainability into their business models. For instance, the CIB has developed green finance products that aim at promoting energy efficiency and renewable energy technologies by offering its clients financing packages supplemented by technical support, energy audits and list of trusted suppliers. The CIB also established a sustainability governance structure since 2013, and which compromises of sustainability advisory board, sustainable development steering committee & department and green teams all of which are responsible for the development & implementation of the Bank's sustainability framework, strategies & initiatives. [35] As for AAIB, it has been the first bank to finance solar energy, financing Benban project in Aswan, considered the largest solar park.[36]

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[33] IFC (2019a)
[34] IFC (2019a)
[35] CIB Website. https://www.cibeg.com/English/CIBCommunity/Corporate%20Sustainability/Pages/Sustainabilty-Corporate-Governance.aspx
[36] Daily News (2018a)

The AIIB established a program to raise awareness about the importance of sustainable finance, "MOSTADAM" program as the first platform in Egypt and the MENA region for the development of sustainable finance products & services in 2014. MOSTADAM also focusses on advocacy & capacity building through educational & training sustainable finance programs tailored to finance providers.[37] This is in addition to training programs on environmental & social risk assessment offered by the Egyptian Banking Institute (EBI), the training arm of the Central Bank of Egypt.

CIB and AIIB both banks, have been pioneers in calculating their organizations' own carbon footprints to minimize their negative impacts on the environment and regulating greenhouse gas emissions & waste management. [38] Both banks have been issuing Carbon Footprint & Sustainability Reports on a regular basis.

Central Bank Sustainable Finance Practices

More recently, the Central Bank of Egypt in close coordination with the Union of Arab Banks (UAB) and the Federation of Egyptian Banks (FEB) have held a green banking forum during the second half of 2018 to highlight the importance of aligning the financial sector with the ESG considerations in order to enable the Arab countries to address societal & environmental challenges and to achieve the UN sustainable development goals SDGs. [39]

In an interview with Mohamed El-Etreby, the Chairperson of Banque Misr and UAB's Deputy Director, he explained that the FEB has established the Sustainable Development Committee in 2014 to develop and implement its green banking vision in Egypt by promoting the financing of environmentally friendly projects as well as socially responsible ones. [40] In November 2018, FEB's Sustainable Development Committee asked Egyptian banks to adopt the UNEP FI's Principles for Responsible Banking to enhance their role in promoting financing inclusion, green financing and the implementation of the national sustainable development strategy. The banking sector is in the process of setting standards & regulations for implementing the UNEP FI's six principles, embedding them within each bank's strategy, while educating and training banks' employees about these principles.[41]

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[37]AAIB (2019), This has been undertaken in close coordination with the UNDP & the Egyptian Corporate Social Responsibility Center

[38] CIB Website. This green finance product has been developed in partnership with the Ministry of Electricity & Renewable Energy and the United Nations Development Program (UNDP). https://www.cibeg.com/English/News/Pages/CIB-continues-to-be-a-model-of-sustainability.aspx

[39] Daily News (2018b)

[40] Daily News (2018a), under this initiative and in coordination with the Ministry of Environment, Egyptian Banks in 2014 allocated over LE 300 million for the rehabilitation of slums in Helwan & Giza with a LE 100 million directed to health & education services. This is in addition to financing clean energy and supporting entrepreneurship & microenterprises in these areas.

[41] Daily News (2019a)

Financial inclusion has been a priority on the Central Bank of Egypt (CBE)'s policy reform agenda in line with the national sustainable development strategy Vision 2030. [42] To that end, the CBE has established an in-house financial inclusion department in 2016, and has been working on strengthening the banking sector's legal & regulatory framework to ensure the protection of bank customers' rights and fostering digital transformation by establishing the technological infrastructure necessary to support the transformation into a cashless economy and the development of a Fin Tech hub.[43]

This is in addition to promoting entrepreneurship through the CBE's numerous initiatives offering the micro, small & medium enterprise sector (MSMEs) loans at preferential rates and directing banks to allocate 20% of their total lending portfolios to this sector, and to establish specialized SME units to provide services to these enterprises. The "Nile Pioneers" is another CBE's initiative, developed in coordination with a number of universities & ministries, to support the MSME sector in Egypt. [44]

In early 2020, the CBE instructed banks to establish financial inclusion departments and to submit their 3 to 5 year financial inclusion strategies. These specifically aim at increasing outreach in the governorates & remote areas, fostering new financial services & products catering to the needs of the unbanked, particularly, women & the youth, promoting financial literacy, developing digital expansion plans for instruments such as pre-paid cards & e-wallets as well as coordinating the various inclusion initiatives among stakeholders.[45]

Government Sustainable Finance Practices

To speed up the transition to green economy, the Ministry of Finance has recently issued the first sovereign green bonds in Egypt and in the MENA region, in a debut to provide Egypt with an innovative funding vehicle for its eco- friendly and green projects, namely, clean transportation, renewable energy, energy efficiency, pollution reduction & control, sustainable water & wastewater management and climate change adaptation. The size of Egypt's first green bond issuance has reached USD $ 750 million for five year maturity. [46] The Ministry has also noted its plan to issue, *sukuks*, Islamic bonds, to cover its funding needs. [47]

[42] According to the World Bank Global FINDEX, only 33% of Egyptian adults have bank accounts
[43] AFI & CBE (2018)
[44] CBE (2018)
[45] CBE Circular, May (2020)
[46] MOF (2020)
[47] Waheesh (2020)

In 2020, the Financial Regulatory Authority (FRA), the national regulator for non- banking financial institutions (NBFIs), approved the issuance of the first corporate *sukuks* in Egypt for Talaat Mostafa Group (TMG), real estate development group, with issuance reaching USD $ 127 million.[48] In 2018, FRA approved the legal framework for green bond issuance in order to promote sustainable funding tools for environmentally friendly projects in different fields including renewable energy, energy efficiency, clean transport, construction & climate adaptation. [49] Green bond guidelines were also developed in coordination with the International Finance Cooperation IFC based on the International Capital Market Association (ICMA)'s Green Bond Principles. [50]

To enhance the role of non- banking financial institutions (NBFIs) in promoting sustainable finance and in funding Egypt's Sustainable Development Goals, FRA has issued a comprehensive strategy for the non- banking financial sector (2018- 2022) in 2017. The strategy mainly aims at enhancing good governance, transparency & combatting corruption, strengthening the legal & regulatory framework as well as developing new products & services to finance Egypt' SDGs. This is in addition to improving financial literacy and promoting financial inclusion by increasing access to finance particularly for marginalized groups: the youth, women & MSMEs. [51]

FRA has also established a new sustainable development department whose mandate is to promote sustainable finance & development practices among NBFI market participants.[52] FRA also plans to establish a regional Center for sustainable finance to accelerate the shift towards green economy by setting up research & information database to enable the various stakeholders to make better decisions on sustainability- related issues. The center is expected to enable Arab & African countries to develop new solutions to bridge the current funding gaps. [53]

In May 2019, FRA and the Insurance Federation of Egypt decided to develop the National Sustainable Insurance Roadmap, Strategy & Action Plan by 2020 in cooperation with the UN Environment's Principle for Sustainable Insurance PSI. The roadmap aims at developing the sector's resilience & strengthening its ability to achieve the UN SDGs.[54]The Financial Regulatory Authority FRA has joined the United Nations Environment Principles for Sustainable Insurance UNE PSI in 2018.[55]

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[48] Ahram Online (2020)

[49] FRA (2018a)
[50] FRA: Concept Paper Green Bonds Guidelines
[51] FRA (2017)
[52] FRA (2018a)
[53] Daily News (2019b)
[54] IFC (2019a)
[55] FRA (2018b)

Stock Exchange

In November 2016, the Egyptian Stock Exchange (EGX) issued the first Model Stock Exchange Guide in the MENA region for disclosure of listed companies on sustainability performance. The guide aims at enabling listed firms to incorporate environmental, social & governance (ESG) factors into their business plans & strategies as well as into their capital market communication. It specifically aims at promoting transparency into listed firms' reporting & disclosure practices on sustainability- related issues. The voluntary guide "Model Guidance for Reporting on ESG performance & SDGs" has been updated in 2019, and provides a number of recommended key performance indicators (KPIs) to guide listed firms in their ESG disclosure & issuance of sustainability reports. The guide complements existing standards, and is not a substitute for EGX mandatory disclosure requirements imposed by its listing rules. [56]

EGX has been the first Stock Exchange in the MENA region and the second worldwide to launch its sustainability S&P/EGX ESG index in collaboration with the Egyptian Institute of Directors and Standards & Poor's institution in March 2010.[57] The Financial Regulatory Authority FRA & EGX have been holding annual events to announce top rated listed companies based on the ESG index criteria to promote sustainability practices among market participants.[58] EGX has been one of four pioneer exchanges that established the United Nations Stock Exchange SSE Initiative in 2012 to enhance listed firms' transparency & commitment to ESG issues worldwide.[59]

[56] EGX (2019)
[57] S&P (2016), the S&P EGX ESG index is based on a number of indicators that quantify ESG factors and translate them into scores to rank participating firms based on their sustainability performance as well as size & liquidity.
[58] EGX (2015)
[59] EGX (2016)

EGX has been committed to the Financial Stability Board FSB's recommendations of the Task Force on Climate Related Disclosures (TFCD) promoting consistent climate- related financial risk disclosures as part of firms' reporting on environmental performance. [60] EGX also developed a sustainability committee[61] & strategy that aims at improving its competitiveness by raising awareness about the importance of sustainability related issues among market participants, engaging in regional & international sustainability initiatives as well as developing sustainability related products.[62]

[60] EGX (2019), EGX joined the UN Sustainable Stock Exchanges Consultative Working Group in 2015 to develop Model guidance for reporting ESG information for investors. It also participated in the preparation of the World Federation of Exchanges (WFE) ESG Recommendation Guidance & Metrics, issued by the WFE Sustainability Working Group in 2016.

[61]EGX Website https://www.egx.com.eg/en/Sustainability-Committee.aspx In 2016, EGX has established an in-house sustainability committee to regularly provide guidance on sustainability related issues, to develop ESG training programs for listed companies, to raise awareness of the importance of ESG in the capital market and to propose recommendations for updating the guidance on ESG disclosure & transparency based on best international practices.

[62] EGX (2017)

2.3- Jordan

2.3.1– Jordan's National Policy Framework & Sustainable development

Launched in 2015, Jordan 2025 presents the national vision & strategy document aiming at establishing a prosperous, resilient & more inclusive economy in alignment with the UN 2030 sustainable development goals SDGS. It is a ten-year blueprint that addresses the country's economic, social & environmental dimensions of sustainable development.[63] Jordan 2025 is supported by a number of Executive Development Programs (EDP)s at the national, sub-national & sectoral levels as well as a number of enabling strategies for the implementation of the 2030 sustainable development agenda: [64]

These include but are not limited to the National Climate Change Policy (2013- 2020), the National Strategy & Action Plan for Sustainable Consumption & Sustainable Production (2017-2025), Jordan Economic Growth Plan (2018- 2022), the National Energy Strategy (2015 – 2025) ,the National Water Strategy (2016- 2025) [65] and The National Plan for Green Growth (NGGP) (2017- 2025) . The NGGP presents Jordan's roadmap for the transition to a higher, sustainable & greener growth path. The NGGP was developed in 2017 by the Ministry of Environment in consultation with the various stakeholders to serve as reference guide for the development of green growth projects in alignment with green investment policies, planning & implementation.[66]

Climate change, combined with population growth & refugee migration, presents a development challenge to the Jordanian economy as its puts additional pressure on its limited natural resources, such as, land and water, creating a water- climate- food security nexus increasing the nation's vulnerability to shocks.[67] Global warming has had its harmful repercussions on agricultural production, food security and hence on inclusion & social protection. This has been the case through temperature rise, drought in some areas, loss of some natural eco- systems, deforestation, rise in forest fire incidences, fluctuation of rainfall as well as decrease in water availability, both ground & surface. [68]

[63] The Hashemite Kingdom of Jordan (2015)
[64] Jordan Ministry of Planning & International Cooperation (2017)
[65] Jordan Ministry of Planning & International Cooperation (2017)
[66] Jordan Ministry of Environment (2017)
[67] World Food Program (2019)
[68] The Hashemite Kingdom of Jordan (2015b)

Given its limited primary energy sources, the rising demand for energy and its dependence on imports, Jordan has worked on the development of a reliable renewable energy market to safeguard the long-term security of its energy supply. Specifically, the National Energy Strategy & National Energy Action Plan aim at increasing the share of renewable energy out of its total energy mix to 6% in 2017, 8% in 2020 and 9% in 2025. [69] It also aims at increasing its reliance on domestic energy sources to 25% by 2015 and up to 39% by 2020. [70]

2.3.2- Jordan's Sustainable Finance Practices

According to the Sustainable Banking Network (SBN) Global Progress Report of 2019, Jordan is in the commitment phase toward developing a national framework for aligning its financial sector with sustainable finance practices formally introducing Environmental, Social & Governance ESG factors into the system's business model. [71]

Banks Sustainable Finance Practices

The Association of Banks in Jordan (ABJ) has launched its Sustainability Strategy to enable banks during their transition from providing mere social responsibility function towards playing a bigger role in financing the country's sustainable development goals.[72] ABJ's strategy is based on four main pillars, namely, promoting sustainability practices within the banking sector, developing a sector's strategy for financing national sustainable development, enhancing non-financial performance transparency & reporting as well as increasing awareness of sustainability within the sector. [73]

[69] Renewable Energy Solution for the Mediterranean RES4Med (2019)
[70] The Hashemite Kingdom of Jordan (2016)
[71] IFC (2019b)
[72] ABJ's strategy has been in line with the recommendation of the First National Sustainability Report for Jordanian Banking sector.
[73] Kandah (2017), in 2016, the ABJ joined the UNEP FI as a supporting institution to promote sustainable finance concept & practices in the financial industry in Jordan. ABJ has been the second banking association in the region joining this global initiative.

The ABJ launched Jordan's first industry wide Sustainability Report for the Banking Sector in 2016 in order to review Jordanian banks' sustainability practices, such as, socially responsible investment & banking services, and to assess the level of banks' awareness of the importance of integrating ESG factors into their operations & strategies. The report shows that 90% of surveyed banks have established sustainability targets, and that there exist variations within the sector in adopting sustainability practices. Specifically, it shows that while 76.5% of surveyed banks have integrated sustainability goals into their strategies, the remaining 23.5% have only partially done so.[74]

The report has also shown improvement in non- financial reporting & sustainability disclosure with the number of surveyed banks voluntarily issuing sustainability reports increasing from 28.5% in 2012 to 38.5% in 2015. While the report underlines an improvement in banks' tendency to develop new sustainable financing tools to attract new segments of the society, it also shows that sustainability is still perceived within the financial sector as philanthropic practice rather than an integrated strategic consideration in the business model. [75]

Financial Institutions Sustainable Finance Practices

Scaling up green finance in Jordan has been supported by the role international financing institutions in providing new sources of green funding to support the Government's efforts in promoting sustainable growth by increasing investment in energy efficiency & renewable energy as well as environment friendly & socially responsible projects. For instance, the Agence Francaise de Development AFD has extended a soft credit line valued at $ USD 53 million to two local banks, Cairo Amman Bank & Capital Bank of Jordan, for onward lending to businesses & households. This has been undertaken under AFD's Program -Sustainable Use of Natural Resources & Energy Finance (SUNREF)- whose main objective is to improve access to affordable sustainable energy.[76] Similarly, the European Investment Bank has signed a loan agreement in 2019, valued at EUR 45 million, with the Cities & Villages Development Bank (CDVB) to finance energy efficiency projects targeting municipal, building and lighting infrastructure in Jordan.[77]

[74] ABJ (2016)
[75] ABJ (2016)
[76] SUNREF (2020), This led to the implementation of 8 renewable energy projects, namely, solar PV systems, and to the integration of energy efficiency in the two banks' strategies & operations
[77] EIB (2019)

Central Bank Sustainable Finance Practices

In line with Jordan 2025 Vision & Strategy and Jordan National Economic Growth Plan, the Central Bank of Jordan CBJ launched the National Financial Inclusion Strategy (NFIS) (2018-2020) in 2017 to reduce socio- economic inequalities and to enhance the formal financial inclusion of the entire population with special focus on underserved population: women, refugees, low income groups, the youth and micro, small & medium enterprises (MSMEs). [78] The NFIS specifically aims at increasing the level of financial inclusion from 24.6% to 36.6% for the adult population by 2020 and to reduce the gender funding gap from 53% to 35% over the same time period. It also aims at increasing the share of financing extended by banks & microfinance institutions MFIs, as percentage of total lending portfolio, from 8.5% to 15% by 2020.[79]

The NFIS strengthens the link between financial inclusion and 2030 sustainable development goals SDGs The strategy is based on a set of policy areas, three of which are core financial industry pillars: microfinance, digital financial services and Small & Medium SME Finance. The remaining areas are considered supporting enablers, such as, financial education, financial technology, data & research and financial consumer protection.[80]

To enhance digital financial inclusion & to promote the development of digital financial services, the CBJ established FinTech Regulatory Sandbox in 2018 to provide incubation & support for pioneer entrepreneurs in financial technology sector to test their innovative business models without jeopardizing the stability or integrity of the financial system.[81]

Stock Exchange and Islamic Bonds "*sukuks*"

The Amman Stock Exchange ASE has been a member of the Sustainable Stock Exchange (SSE) Initiative since 2016. The ASE published its "Guidance on Sustainability Reporting" in 2018 to promote sustainability practices in the Jordanian capital market by encouraging listed firms to periodically report their sustainability performance. [82] The voluntary guide specifically aims at raising awareness among all stakeholders: regulators, investors & companies about the benefits of socially & environmentally responsible investment. It outlines the various steps needed to prepare sustainability reports as well as the recommended sustainability metrics & indicators

[78] Over 90% of Jordan's businesses are classified as MSMEs. In 2016, the CBJ established the first private credit bureau to improve access to actual & potential borrowers' credit information, hence reduce their financing constraints.
[79] Central Bank of Jordan CBJ (2017a)
[80] Central Bank of Jordan (2017a)
[81] Central Bank of Jordan CBJ (2018)
[82] Amman Stock Exchange ASE (2018a)

used for disclosure based on best international practices, the Global Reporting Initiative's Sustainability Reporting Guidelines.[83]

To that end, the ASE issued two introductory brochures in 2018 to explain the benefits associated with sustainability reporting at the firm level as related to increasing its transparency, improving its ability to better manager risks and enhancing its competitive edge relative to its peers that do not disclose their sustainability performance. The first brochure "Sustainability 1" explains the concept of sustainable development, its definition & history as well as the UN 17 Sustainable Development Goals SDGs.[84] This is in addition to providing firms with some information on sustainability reporting & business practices. The second "Sustainability 2" further explains the various forms of sustainability reports & their basic principles, and provides an overview of global reporting frameworks addressing social, environment & economic aspects.[85]

Islamic bonds, *Sukuks*, provide an innovative instrument to finance Jordan's national projects supporting its economic expansion & infrastructure development. Specifically, green energy projects have been financed through sovereign *sukuks*, as the case with the 2016 five- year bond issuance worth $USD 48 million, supported by the Islamic Development Bank & the Japan International Cooperation Agency.

Similarly, the National Electric Power Company issued a $USD 105.8 million worth *sukuks* priced at 3.5% in 2016, and a second equal value tranche in 2017 priced at 4.1% under a *murabaha* framework. [86] It is worth noting that the Islamic Finance *Sukuk* Law was enacted in 2012 to enable Islamic banks to mobilize their significant capital base using *Shariah* compliant funding options. [87]

[83] Amman Stock Exchange ASE (2018b)
[84] Amman Stock Exchange ASE (2018c)
[85] Amman Stock Exchange ASE (2018d), In 2017, ASE signed an MOU with a management consultancy firm to provide research & training programs on the principles of sustainability & their business practices ASE (2017)
[86] Oxford Business Group OBG (2018), This was developed using amortized *ijara* structure and was more than three-times oversubscribed, with an expected profit rate of 3.01%.
[87] Central Bank of Jordan CBJ (2017b)

2.4- Morocco

2.4.1- Morocco's National Policy Framework & Sustainability

Sustainability has been embedded in the Moroccan Kingdom's 2011 Constitution which describes both sustainable development & environment protection as fundamental rights to every citizen, among others such as health care & social protection. Morocco adopted the National Charter for Environment as part of its National Sustainable Development Strategy which is based on seven interlinked pillars. These include the transition towards a green economy, promoting sustainable development culture, the consolidation of sustainable development governance, improving natural resource management, promoting human development & reducing social inequalities, granting vigilance to vulnerable territories as well as accelerating the implementation of climate change policy. [88]

Climate Change has presented a development challenge due to its harmful effects on the Moroccan economy as it increases the vulnerability of its primary sectors to environmental factors, such as rising temperature, sea level rise and rainfall decline, among others. Specifically, the agriculture sector, contributing 15% of GDP, has been hard hit by the 2016 regional droughts leading to a sharp decrease in cereal production and ultimately reducing GDP growth to 1.1%. [89]

Morocco's National 2030 Climate Plan has been recently adopted in 2019. It aims at ensuring the adaptability of the most vulnerable sectors including water, agriculture and fisheries as well as the mitigation of greenhouse gas emission effects caused by sectors; such as, power generation & transport.[90] It is estimated that the implementation of such plan requires considerable investment reaching about USD $ 50 billion for mitigation programs in addition to another USD $ 35 billion for adaptation projects by 2030.[91]

Promoting energy efficiency has also been a national policy priority in initially targeting energy savings of 12% by 2020 and 15% by 2030, a target that has been further scaled up to 20% by 2030.[92] Morocco's National Energy Strategy was adopted in 2009 as a roadmap for the transition to a low carbon energy system reconciling economic development with social & environmental objectives. The strategy is based on a number of priorities including the development of a well-diversified & optimized energy mix, enhancing its energy supply security, fostering the development of its renewable energy & energy efficiency industries, promoting the development of domestic energy resources as well as integrating with regional & international energy markets, particularly in Africa & Europe. [93]

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[88] Morocco's National Sustainable Development Strategy
[89] Morocco's NDC (2017)
[90] Speech by BAM's Governor at BAM - AFI Global Conference on Green Finance in October 2019
[91] Oxford Business Group (2020a)
[92] International Energy Agency IEA (2019)
[93] International Energy Agency IEA (2019)

The strategy established a 42% renewable energy target, of the total installed power capacity, to be achieved by 2020. The target was further revised upward in 2015 to become 52% by 2030, distributed between solar, wind and hydropower resources. It is estimated that Morocco would need substantial investment of USD $ 30 billion to reach its 2030 renewable energy target. [94]

2.4.2- Morocco's Sustainable Finance Practices

Government Sustainable Finance Practices

Morocco launched its national roadmap for aligning the financial sector, including the banking, insurance & capital market activities, with sustainable development as well as its climate change commitments in November 2016 at the occasion of the COP22 held in Marrakech. The roadmap aims at promoting higher investment flows into sustainable & climate change related projects in order to address the mounting social & environmental challenges the kingdom has been facing over the past years. The roadmap aims at enabling the financial sector to play an instrumental role in closing the green investment gap estimated at USD $ 24 billion to smooth the transition to green economy.[95] In line with its commitment to enhance South-South cooperation, the roadmap also includes a regional part that aims at integrating green finance in the African continent.[96]

The guiding framework reflects a comprehensive unified vision for the financial sector's commitment to support national efforts by mainstreaming sustainability through five main pillars:[97]

- Extending risk- based governance to socio-environmental risks;
- Developing sustainable financial instruments & products;
- Promoting financial inclusion as a vehicle for sustainable finance;
- Training & capacity building in the field of sustainable finance; and
- Enhancing transparency & market discipline.

[94] International Energy Agency IEA (2019)

[95] Green Climate Fund (2019a)

[96] The roadmap has been developed in strong coordination with the various stakeholders including: the Ministry of Economy & Finance, the Moroccan Capital Market Authority, the Supervisory Authority of Insurance & Social Welfare, Casablanca Finance City Authority, Casablanca Stock Exchange, the Moroccan Bankers' Association; and the Moroccan Federation of Insurance & Reinsurance Companies, among others, such as civil society representatives all showing commitment to scaling up sustainable finance practices.

[97] Roadmap for Aligning the Moroccan Financial Sector with Sustainable Development (2016), the roadmap was developed in accordance with the National Charter for Environment & Sustainable Development as well as the National Strategy for Sustainable Development. The document is meant to be dynamic and subject to periodical reviews for necessary adjustments.

The roadmap requires the development of sustainable finance charter integrating environmental, social & governance (ESG) factors into financial institutions (FIs)' core operations, business strategies, investment decision-making process and governance structures. This is in addition to the adoption of a shared definition for green assets, projects & instruments, the identification of FIs' businesses' carbon footprint as well as the assessment of climate change related risks & opportunities. It also requires publishing guidelines to promote transparency & market discipline among FIs as well as communicating environmental concerns & sustainable finance's merits through training & financial education programs. The roadmap has allocated 6 billion MAD to be invested in green assets over a five-year time period. [98]

The roadmap also enhances transparency by encouraging FIs to report their activities on green investment flows and to disclose their environmental & social (E&S) policy and governance. It also recommends monitoring FIs' exposure to climate risks at the transaction & portfolio levels as well as the assessment of their E&S risks and opportunities to undertake the necessary mitigation measures and to incorporate adequate provisions into their financing agreements.

According to the Sustainable Banking Network Country Report (2019), Morocco's progress in aligning its national financial sector with sustainable development has been categorized at an "advancing' stage. It has been based on best international practices and reflects NDCs, national as well as regional climate change targets. The roadmap aims at promoting the development of green financing products & services, such as, green bonds, through the issuance of guidelines, standards & definitions to be implemented / understood by FIs.[99]

Central Bank Sustainable Finance Practices

The Central Bank of Morocco, Bank Al- Maghrib (BAM), has been committed to the achievement of sustainable development goals and the transition to low- carbon & more resilient economy. BAM has participated in the development of the national road map for aligning the banking sector with sustainable development priorities. This participation addresses both climate change challenges as well as financial exclusion issues to eradicate poverty by 2030 through a number of reform initiatives. These include but are not limited to the adoption of the National Financial Inclusion Strategy in 2019, and which targets the development of alternative finance mechanisms; such as, mobile payment, microfinance and inclusive insurance. [100]

[98] Roadmap for Aligning the Moroccan Financial Sector with Sustainable Development (2016)
[99] IFC (2019c)
[100] Oxford Business Group (2020b), the strategy is developed in coordination with the Ministry of Economy & Finance.

The National Financial Inclusion Strategy mainly aims at improving access to finance, particularly among the youth, women & the rural population while promoting green financing solutions that are still limited in scope and need to be further strengthened. For instance, a public credit guarantee institution is offering incentives for extending green loans to micro, small & medium enterprises (MSMEs). This is in addition to the Solidarity Fund, an insurance scheme, deployed to cover small farmers' losses associated with climate related- incidents.[101] it also aims at closing the gender- gaps in terms of access to formal financial services by encouraging finance providers to mainstream the gender dimension while developing their financial services & products to cater to women's needs.[102]

BAM has been one of the first members to join the Network for Greening Financial Systems (NFGS), established in December 2017, as a global platform to share financial institutions' experiences to achieving the Paris Agreement 2015's objectives by disseminating green finance practices. BAM also established a working group on green finance to discuss regulatory options with the various stakeholders, including commercial banks, some of which has already integrated Environmental, Social & Governance (ESG) factors into their business operations & strategies.[103]

Financial Institutions Sustainable Finance Practices

Morocco's Insurance Regulatory & Supervisory Authority (ACAPS) has worked with the UN Environment on the development of Sustainable Insurance Strategy to promote sustainable finance practices in the Moroccan sector, based on best international practices. ACAPS also signed the Principles for Sustainable Insurance with the UN Environment during its first- ever held Sustainable Insurance day in Rabat in late 2017.[104]

Over the past few years, the Insurance sector has introduced "multi-risk" insurance products to protect investments undertaken in major crops to hedge against climate related damages associated with droughts, sand storms & frost, among others. This has been further reinforced in the national roadmap recommending to extend the insurance coverage against climate related risks and to develop innovative insurance solutions for environmental challenges. The roadmap also encourages the deployment of green saving products, such as retirement savings, into green assets.

[101] Speech by BAM's Governor at BAM - AFI Global Conference on Green Finance in October 2019 BAM is currently working on conducting a national study on climate risks in Morocco

[102] Roadmap for Aligning the Moroccan Financial Sector with Sustainable Development (2016)

[103] Fosse, J., K. Petrick, F. Fiorucci, M. Moulet, J. Albaraccin (2018)

[104] UN Environment (2017)

Stock exchange and Green Bonds

To promote the development of green bonds and their instrumental role in financing Morocco's transition to a more sustainable economy, the Moroccan Capital Market Authority (AMMC), in partnership with the International Finance Corporation (IFC), published its first guidelines in 2016 setting the regulatory framework & operational rules for issuing green bonds. The AMMC guidelines aim at enabling both issuers & investors to identify, evaluate & select eligible projects. This is in addition to providing them with guidance with respect to regulatory requirements needed for issuance, the use & management of green bonds' proceeds, independent external reviews as well as the reporting & disclosure requirements.[105]

These guidelines were followed by issuance of Corporate Social Responsibility and Environmental, Social & Governance, CSR - ESG Reporting Guide, by the AMMC in cooperation with the Casablanca Stock Exchange (CSE). The objective is to promote CSR culture among publicly traded firms and to provide a practical guide for ESG reporting.[106]

In 2018, the AMMC published a new set of guidelines on Green, Social & Sustainability bonds, to update its earlier version on green bonds issued in 2016, and to expand the market for financing opportunities available by introducing new funding mechanisms, namely, social and sustainability bonds.[107]

CSE, in coordination with ESG Vigeo Eiris, an independent international research & services agency, have set up "Casablanca ESG-10", an environmental, social & governance benchmark index. ESG-10 is expected to contribute to the development of socially responsible investments (SRI) and to promote the adoption of ESG best practices among publicly traded firms. The index includes the best ten performing listed stocks based on their ESG ratings, in accordance with their ESG compliance based on 38 criteria and more than 300 ESG indicators. These underline firms' commitments to ESG practices, risk- management efficiency as well as performance improvement capacity.[108]

[105] AMMC (2017)
[106] AMMC & Casablanca Stock Exchange CSE (2017)
[107] AMMC (2018)
[108] Casablanca Stock Exchange (2018)

Morocco's first green bonds, valued at USD $ 125 million, were issued in November 2016 by the Moroccan Agency for Sustainable Energy to raise finance for the establishment of the 60-MW Noor (I) concentrated solar power plant.[109] In October 2018, Morocco launched its first *Shariah* – compliant sovereign bonds, *sukuks* valued at USD $ 104.2 million, that were well received by the market as they were 3.6 times oversubscribed.[110] Five green bonds, valued at USD $ 416.7 million, have been issued in Morocco as of early 2020 to fund projects such as solar power plants, energy efficiency, renewable energy and sustainable buildings.[111]

Capitalizing on its vision to establish Casablanca as a green finance hub in Africa, the Casablanca Statement for Financial Centers Sustainability was issued in 2017 to promote strategic action for scaling up green & sustainable finance to increase capital flows into clean energy & sustainable agriculture by harnessing international expertise in climate change & sustainable development.[112]

[109] Oxford Business Group (2020 c)
[110] Oxford Business Group (2020 d)
[111] Oxford Business Group (2020 c)
[112] Marrakech Pledge (2017)

2.5- Bahrain

2.5.1- Bahrain's National Policy Framework & Sustainable Development

Sustainability has been at the heart of the Kingdom of Bahrain's national policy framework as it is one of the main guiding principles of its Economic Vision 2030, launched in 2008, along with other principles, namely, competitiveness & fairness. It provides a comprehensive strategy to support sustainable development through the achievement of both financial & economic sustainability in order to ensure smooth transition to greener economy. Vision 2030 specifically aims at capitalizing on the kingdom's natural resources by increasing investments in technologies that reduce carbon emissions & pollution, improving energy efficiency, promoting renewable energy use & production, supporting green infrastructure as well as encouraging the optimal use of water resources. [113]

Climate Change has been mainstreamed into national policies as it has been considered one of Bahrain's main development challenges due to its adverse effects associated with rising sea levels, droughts and extreme temperatures threatening public health, water & agriculture resources, and hence food security. Climate change has highlighted the urgent need to allocate the necessary funds needed for building national capacities, adopting green technologies, increasing energy efficiency and raising the share of renewable energy in the energy mix while promoting awareness about sustainable consumption & production patterns.[114]

In alignment with its regional & international commitments: The League of Arab States Energy Framework, the UN 2030 Sustainable Development Agenda and the Paris Agreement (2015), Bahrain endorsed both the National Energy Efficiency Action Plan (NEEAP) & the National Renewable Energy Action Plan (NREAP) in 2017. The former adopts a 6% energy efficiency target by 2025,[115] whereas the latter aims at achieving renewable energy mix of solar, wind & waste to energy technologies, setting targets of 5% by 2025 and 10% by 2035.[116] These are expected to result in energy & fiscal savings as well as reducing greenhouse gas emissions.

[113] Bahrain (2008), Bahrain Economic Vision 2030
[114] Bahrain (2018), First Voluntary National Review on the implementation of the 2030 Sustainable Development Agenda and the Sustainable Development Goals
[115] Bahrain (2017), National Energy Efficiency Action Plan NEEAP
[116] Bahrain (2017), National Renewable Energy Action Plan NREAP

Economic diversification has been embedded in Government' reform efforts, Programs & Action Plans: (2015 – 2018)[117] & (2019- 2022) which aim at reducing Bahrain's dependence on oil & gas revenues while supporting the growth of non- oil sectors as well as their contribution to GDP, reaching over 80% in 2017, by increasing foreign investments, strengthening public-private partnerships as well as promoting innovation & entrepreneurship.[118]

Contributing to more than 15% of GDP, the second largest contributor to the economy after the hydrocarbon sector & the nation's largest employer, the financial sector is expected to be the main growth engine supporting Bahrain's economic diversification reforms as well as the transition to more resilient & greener economy. [119]

2.5.2- Bahrain's Sustainable Finance Practices

Central Bank Sustainable Finance Practices

Bahrain has established itself as a regional hub for financial services industry as well as a global center for Islamic finance as it is home for more than 400 domestic, regional & international licensed financial institutions. Over the past few years, the financial sector landscape has undergone strategic transformation through innovation, modernization & digitalization in order to expand its outreach & accessibility. [120]

These led to the development of Bahrain's Fin- Tech Bay (BFB) in 2018,[121] a major step towards an innovative driven economy. [122] BFB has been enabled through the Central Bank of Bahrain's adoption of an innovative regulatory framework and the use of Fourth Industrial Revolution-relevant technology, thus creating the basis for a sustainable domestic Fin- Tech Industry.[123]

[117] Bahrain Government Action Plan (2015- 2018)
[118] Bahrain Government Action Plan (2019- 2022)
[119] Lopez, Bendix & Servin (2020)
[120] Economic Development Board (2019)
[121] This is established as public private partnership between Bahrain's Economic Development Board EDB & Singapore Fintech Consortium. This is in line with the Government Action Plan (2015- 2018) focusing on both innovation & technology
[122] Economic Development Board (2019), Bahrain Fintech Bay aims at offering Fintech- focused firms with support through incubation, acceleration, education & training.
[123] Lopez, Bendix & Servin (2020)

Banks Sustainable Finance Practices

To enhance the role of the banking sector and its contribution to sustainable development & economic growth in line with the UN 2030 Sustainable Development Agenda, the Bahrain Association of Banks (BAB) established a permanent sustainable development committee in 2018. [124] The committee aims at promoting sustainable finance practices by increasing financial & investment flows to a number of sectors including but not limited to: education & healthcare, agricultural development, sustainable energy, infrastructure, transport & green financing. [125]

In doing so, BAB's sustainable development committee is focused on the establishment of a sustainable financing framework as well as the adoption of best international practices for financing environmentally friendly & socially sustainable projects.[126] BAB also signed a Memorandum of Understanding with the United Nations Development Program UNDP in 2018 to promote sustainable finance practices in the Kingdom by encouraging financial institutions to finance sustainable development projects in alignment with the UN 2030 SDGs.[127]

BAB's sustainable development committee has recently issued a policy paper for the development of a national sustainable financial system while focusing on two main areas: establishing sustainable & green finance framework as well as financing sustainable infrastructure. To that end, the paper provides a set of policy actions & recommendations based on best international practices. [128]

These specifically aim at internalizing sustainability into banks' operations & strategies through the development of green innovative financing tools as well as disclosure & reporting of green activities, among others. This is in addition to establishing Bahrain Green Fund aiming at providing credit enhancement & risk management support to green sustainable projects. It also aim at developing national sustainable & green finance support mechanisms including the development of green finance policy framework, incentives, regulations as well as training & awareness programs & institutions. [129]

[124] Bahrain Association of Banks BAB (2018), Sustainable Development Committee Terms of Reference
[125] Bahrain (2018), First Voluntary National Review on the implementation of the 2030 Sustainable Development Agenda and the Sustainable Development Goals
[126] N Business, March 5th, 2018
[127] DT Business, April 29th, 2018
[128] Bahrain Association of Banks BAB (2020)
[129] Bahrain Association of Banks BAB (2020)

Government Sustainable Finance Practices

Bahrain promoted sustainable growth through existing national program. TAMKEEN, Bahrain's national Development Finance institution & Labor Fund, has been promoting entrepreneurship & innovations particularly in renewable energy & sustainable development solutions. To promote banks' extension of "green loans" and to increase the financing of environmentally friendly projects, TAMKEEN recently signed partnership agreement with a number of leading banks for an Islamic *Shariah*- compliant Solar Financing Scheme. This would encourage small, medium & large enterprises to use renewable & clean sources of energy by purchasing & installing solar panels for power generation hence reducing their energy costs & carbon footprints.[130]

Stock Exchange and Green Bonds

In recognition of the importance of sustainability, the Bahrain Stock Exchange, Bahrain Bourse (BHB), joined the United Nations Sustainable Stock Exchange (SSE) Initiative in 2019 to demonstrate its commitment to supporting sustainable & transparent capital markets by promoting Environment, Social & Governance (ESG) practices among BHB's listed firms and investors.[131]

To that end, the BHB has signed in January 2020 a Memorandum of Understanding (MOU) with an advisory services group to set a comprehensive action plan using a series of sustainability-related initiatives including awareness workshops & the development of a research report on the status of sustainability in the national capital market. These aim at enhancing transparency as well as the disclosure & reporting of ESG data & information. [132] BHB action plan aims at promoting ESG research as well as the development of new financial products such as ESG indices as well as green, social & sustainable bonds. [133] It has been offering trading in bonds & *sukuks* whose total value reached BD 2.68 billion in 2019.[134]

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[130] Globally Today Clean News, March 2nd, 2020
[131] Bahrain Bourse (2020a)
[132] Bahrain Bourse (2020b)
[133] Bahrain Bourse (2020c)
[134] Bahrain Bourse (2019)

In June 2020, the Bahrain Bourse has launched its voluntary Environment, Social & Governance (BB ESG) reporting guidelines supporting sustainable capital markets through enhanced disclosure. The guide aims at providing the various stakeholders with a roadmap for integrating ESG considerations into firms' business decisions, reporting processes & strategies in order to meet institutional investors' demand for ESG information to make better informed decisions with respect to identifying opportunities & hedging risks. The BHB ESG reporting guide is based on the voluntary disclosure of a set of 32 key performance indicators (KPIs) developed based on the recommendations of the Sustainable Stock Exchange Initiative SSE and the World Federation of Exchanges WFE.[135]

[135] Bahrain Bourse (2020c), Leading by example, BHB has also integrated ESG information on its own performance & impact in its 2019 annual report covering issues; such as, BHB capacity development, efforts towards gender equality at market place, among others.

2.6- The United Arab Emirates (UAE)

2.6.1- The UAE's National Policy Framework & Sustainable Development

Based on its 2021 Vision, aiming at mainstreaming "green growth" into national strategies, positioning the nation as a model for low carbon green economy and becoming a global hub for sustainable development, the UAE has launched the "Green Economy for Sustainable Development Initiative" in 2012, and whose implementation plan was fully endorsed in 2015. Specifically, the UAE Green Agenda (2015– 2030), a joint effort between federal & local authorities, is mainly based on five strategic objectives which cover the various aspects of the transition to greener economy, namely, a) competitive knowledge economy, b) social development & quality of life, c) sustainable environment & valued natural resources, d)clean energy & climate action and e) green life & sustainable use of resources[136].

The UAE Green Agenda is supported by 12 programs including the Green Diversification Program that consists of a number of sub programs, such as, the Green Finance & Investment Support Scheme. This aims at enhancing the role of the financial sector to increase investment in green & clean energy projects and to innovate a new set of green financing instruments. This entails the development of domestic green finance models & products including energy performance contracts and green sukuks. The scheme also aims at providing capacity building, policy support and match – making between entrepreneurs & potential funders. [137]

To that end, the Dubai Green Fund was established in 2015 as a strategic move to support the implementation of viable green economy projects & programs through the deployment of about USD $ 27 billion. The Fund serves as seed capital to encourage the private sector to increase its investment flows allocated to financing environment friendly ventures, such as climate & energy related activities[138]. The Fund's green financing activities include energy efficiency and green energy power generation in Dubai International Airport and Mohamed Bin Rashid Al Maktoum Solar Park – phase 4, respectively. [139]

The UAE national Energy Strategy 2050 aims at the achievement of an energy mix made up of 44% clean energy, 38% natural gas, 12% coal & 6% nuclear. The UAE has also set a 7% renewables generation target from its total energy capacity by 2020. [140] Abu Dhabi aims at reducing its oil dependency and achieving a 65% contribution to GDP from non-oil sectors by 2030.

[136] The UAE vision 2021 is considered to be the national blueprint for social, economic & environmental development. MOCCAE (2017)
[137] MOCCAE (2017)
[138] MOCCAE (2017)
[139] Dubai Green Fund website https://www.dgf.ae/sample-investments
[140] MOCCAE (2017)

Similarly, Dubai plans to increase the share of clean energy to 75% of its total generation mix by 2050. [141]

2.6.2- Sustainable Finance Practices in the UAE

Dubai Sustainable Finance Declaration

In line with the UAE Vision 2021, the UAE Green Agenda and the Paris Climate Change Agreement and in close coordination with the Ministry of Climate Change and Environment (MOCCAE), a number of leading banks & financial institutions launched the Dubai Declaration on Sustainable Finance in 2016[1]. This marked the UAE financial sector's recognition & commitment to enabling the transition towards a more inclusive, greener & climate– resilient economy. This can be achieved by integrating sustainability into their business practices as well as stepping up finance & investment flows into greener & responsible ventures.

Abu Dhabi Sustainable Finance Declaration

In collaboration with the UAE Central Bank, the Securities & Commodities Authority (SCA) and the Ministry of Climate Change and Environment (MOCCAE), the Abu Dhabi Sustainable Finance Declaration was launched at by the Abu Dhabi Global Market (ADGM) at the inaugural of the Abu Dhabi Sustainable Finance Forum (ADSFF) in 2019. This confirmed the financial sector's commitment to addressing climate change and mainstreaming sustainability by integrating ESG considerations into their business conduct, core strategies & operations at the local, national & regional levels.

Sources: The Dubai Declaration for Sustainable Finance (2016) & Abu Dhabi Securities Exchange ADX (2019)

[141] S&P GLOBAL RATINGS,FEB. 18TH, 2019

The UAE Sustainable Finance Guiding Principles[142]

In January 2020, the UAE has published its first guiding principles on sustainable finance, a great milestone in the nation's continuous efforts to ensure frictionless transition to sustainable economy by developing a strong sustainable financial sector that can play an instrumental role in supporting the Emirates' efforts to advance both social progress and environmental mitigation. They represent the Arab region's first sustainable finance guiding principles, and they are compliant with Islamic *Shariah* Law requirements & principles.

The three guiding principles have been based in accordance with best international practices and are mainly concerned with the integration of Environmental, Social & Governance (ESG) factors into financial entities' governance, strategy & risk management frameworks to better align their businesses with sustainable development, the adoption of minimum eligibility requirements of what constitutes sustainable financial products as well as the promotion of appropriate ESG related reporting & disclosure. These principles are voluntary, and are expected to be implemented in a gradual manner as the concerned authorities recognize the fact that financial entities differ in their capacities to publish ESG data and to develop timely & appropriate sustainability strategies & reports.

The principles aim at supporting the transition of the UAE into a more sustainable & well diversified economy, to mitigate the risks associated with reduced global oil demand and to adapt to climate change related physical & transitional risks**.** The aim is to encourage financial firms to incorporate sustainable practices by integrating ESG considerations into their business decision making process, risk management framework & investment strategies in order to help mitigate the risks associated with climate change as well as those associated with anticipated reduced global demand for oil.

These guiding principles have been developed in a consultative manner based on the cooperative efforts between a number of financial services regulatory authorities, namely, the UAE Central Bank, the Ministry of Climate Change and Environment (MOCCAE), the UAE Insurance Authority, the Securities & Commodities Authority (SCA), Dubai Financial Services Authority (DFSA), the Financial Services Regulatory Authority of Abu Dhabi Global Market, the Dubai Islamic Economy Development Centre, the Dubai Financial Market (DFM), Nasdaq Dubai, and the Abu Dhabi Securities Exchange.

[142] Guiding Principles on Sustainable Finance in the UAE (2020)

UAE Banks & Green Finance

Over the past few years, UAE banks have made progress in integrating ESG considerations into their business framework. 25 UAE public & private entities signed the Abu Dhabi Sustainable Finance Declaration at the 2019 Abu Dhabi Sustainable Finance Forum (ADSFF)'s inaugural while 11 other entities followed suit in ADSFF's second edition in 2020. Signatories include First Abu Dhabi Bank PJSC, Abu Dhabi Commercial Bank and Abu Dhabi Islamic Bank. [143]

The UAE sustainable finance guiding principles are expected to assist national banks to integrate environmental, social & governance (ESG) into their core businesses & strategies hence enabling them to better manage ESG related risks that affect their credit profiles. In a survey about green finance's practices in the UAE, financial institutions' response has demonstrated their positive attitudes towards integrating ESG considerations into their business decision making processes as sustainability makes business sense. This is mainly because they believe that integrating ESG factors lead to higher cost savings & efficiency, to additional revenues, to enhancing their market reputation, and improving their competitive edge.[144]

Climate Change & extreme weather conditions are expected to affect UAE banks' businesses. Indeed, UAE banks are highly exposed to environmental risks because of their exposures to climate change and to hydrocarbon sector which accounts for about 26% of the country's nominal GDP and for 50% of the government's total revenues, as of 2018. The UAE is one of the world's most arid states where most of its water is produced by desalination plants that are highly energy intensive. Water sustainability challenges have been exacerbated by rapid economic & population growth in recent decades**.** [145]

Environmental risks' transmission channels to the UAE banks include but are not limited to the expected increase in pressure by both domestic & global investors on banks to demonstrate strong ESG credentials as a result of the ongoing shift in sentiment towards more sustainable investment. This is in addition to banks' exposure to borrowers with stranded hydrocarbon assets or those constrained by water sustainability/ consumption efficiency issues.

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[143] Saudi Gazette Jan. 26th, 2020. First Abu Dhabi Bank raised the first green bond of the GCC region in March 2017, and the bank publishes annual sustainability reports including a corporate ESG report, an Equator Principles report and a green bond report. Emirates NBD PJS offers interest rate discounts on auto financing of selected electric and hybrid cars, as part of its "green auto loan" scheme. ENBD also publishes an annual sustainability report.

[144] MOEW (2016), some respondents have perceived that additional benefits, associated with ESG integration, could reach up to 2% of their total profits.

[145] Saudi Gazette Jan. 26th , 2020

As in most GCC countries, UAE Banks have been exposed to governance risks associated with related party lending as well as to concentration risks as government & its related entities have constituted banks' largest shareholders, depositors & borrowers. Lending to both government & public sector entities reached over 25% of total domestic credit in 2019. [146]

The Securities & Commodities Authority Master Plan for Sustainable Capital Markets[147]

In early 2019, the UAE Securities & Commodities Authority (SCA) launched its Capital Markets' Sustainability Plan that serves as a comprehensive roadmap driving SCA's sustainability agenda by promoting green & responsible investment while ensuring the national financial markets' stability as well as its development. The plan is meant to enable regulatory authorities to shift to sustainability- driven investment, to limit risks, to enhance market liquidity and to create a market system that stimulates sustainable investment & finance.

According to the SCA, the master plan's main objectives are summarized as follows: "providing new cost-effective means for obtaining finance for sustainable projects & ventures, enhancing corporate governance practices in companies that incorporate sustainability in their strategic decision making, promoting high quality disclosure of sustainability related matters, encouraging investors and those who act on their behalf to become strong advocates of sustainable investing and providing them with the information, tools, channels & instruments to do so, and incorporating the concepts of sustainability into its regulatory policies wherever possible & relevant".

The plan is based on seven key pillars: classification & standard setting, legal & regulatory framework, market platforms & investment tools, corporate governance, transparency & disclosure, education & awareness as well as awards & incentives. These pillars are interlinked and share a number of common themes including: responsible investment, transparency, awareness, effective governance, incentives, guiding standards & principles, innovation, engaging stakeholders and cooperation.

The SCA master plan has been developed in consultation with key stakeholders based on best international practices. SCA intends to complete the Sustainable Capital Markets Master Plan by mid- 2020 in strong coordination with all relevant parties to improve the UAE financial markets and to ensure smooth transition towards sustainability.

[146] Saudi Gazette Jan. 26th , 2020
[147] The Securities & Commodities Authority (2019)

DFSA's First Green Bond Best Practice Guidelines [148]

The Dubai Financial Services Authority (DFSA) issued the first Green Bond Best Practice Guidelines in 2018 to provide market practitioners with reference framework for issuing & listing green bonds & *sukuks*. These voluntary guidelines ultimately led to the listing of high profile green financial instruments on Nasdaq Dubai in 2019. These include the listing of two sovereign green *sukuks* by the Government of Indonesia reaching a total of USD $ 2 billion as well as the world's first corporate green *sukuks* by Majid Al Futtaim (MAF) Holding valued at USD $ 600 million.

This is in addition to the one billion euros listing by the Islamic Development Bank IsDB's first green *sukuk* on Nasdaq Dubai in late 2019. Both sovereign & corporate green issuances have highlighted the global shift in sentiment towards investments that take into considerations environmental, social and governance (ESG) factors. Proceeds will be used to finance & refinance green sustainable development activities that target the construction of energy-efficient buildings, renewable energy, sustainable water management, energy efficiency projects and sustainable agriculture, among others. [149]

Abu Dhabi Securities Exchange's ESG Disclosure Guidance[150]

In 2019, the Abu Dhabi Securities Exchange (ADX) issued its Environmental, Social & Governance (ESG) Disclosure Guidance in order to promote its competitiveness and to attract more responsible investments into the UAE. These have been developed based on the recommendations of the United Nations Sustainable Stock Exchanges Initiative (SSE), the World Federation of Exchanges (WFE), the Global Reporting Initiative (GRI) and the International Integrated Reporting Framework.

The ADX's guidelines aim at supporting listed companies with an enabling trading environment as well as encouraging their adoption of sustainability practices. Specifically, they provide listed companies with a sustainability reporting framework made up of a set of more than thirty key performance indicators (KPIs) to support their voluntary disclosure of ESG information[151].

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[148] Dubai Financial Services Authority DFSA (2019)

[149] Dubai is considered to be the world's largest center for *sukuk* listings reaching USD $ 51.21 billion with NASDAQ Dubai's *sukuk* listing reaching USD $ 49 billion, Dubai NASDAQ website https://www.nasdaqdubai.com/products/islamic-securities

[150] Abu Dhabi Securities Exchange (2019)

[151] These guidelines complement the UAE Securities & Commodities Authority SCA's Corporate Governance Code, updated in 2016

According to the newly issued guidelines, the ADX has adopted a number of key initiatives to encourage listed firms and investors to adopt ESG factors into their business conduct, strategies & decision-making process. These initiatives mainly aim at developing sustainable financial products, such as, green bonds & ESG indices, promoting responsible investment practices and encouraging sustainability reporting through market education & issuance of ESG guidelines.

Abu Dhabi Stock Exchange's First Sustainability Report[152]

Following the issuance of its first ESG Disclosure Guidance, the Abu Dhabi Securities Exchange (ADX) has recently announced its plan to issue its first Environmental, Social & Governance (ESG) Sustainability report during the first half of year 2020, the first of its kind report in the Arab region. The report is expected to play a pivotal role in advancing UAE's Sustainable Finance Agenda and in attracting higher investment flows. It would be published on an annual basis, and aims at encouraging listed companies to issue their own sustainability reports in an attempt to deepen sustainability practices into the financial markets.

Dubai Financial ESG Reporting & Disclosure Guide[153]

The Dubai Financial Markets (DFM), the world's first Islamic *Shariah* compliant capital market since 2007, has published its Environmental, Social & Governance (ESG) Reporting Guide: "Value Enhancement through Voluntary Sustainability Disclosures" in 2019. This guide aims at promoting sustainability practices among listed companies and enabling them to integrate ESG information into their reporting processes by voluntarily disclosing a set of 32 ESG metrics & indicators based on the recommendations of both the World Federation of Exchanges (WFE) and the Sustainable Stock Exchanges (SSE) Initiative.

In doing so, the DFM has updated its *Shariah* standards to promote the development of innovative financial sustainable products; such as, green *sukuks*, social & sustainable bonds as well as their listing and reporting frameworks. It has also established a sustainability committee to ensure the alignment of its core strategies & operations with sustainability principles.

Dubai Financial Markets' Sustainability Plan 2025 [154]

DFM has issued its Sustainability Strategic Plan 2025 to position itself as the region's leading sustainable financial exchange by the year 2025. The strategy is mainly based on four key pillars: Sustainability Reporting & Disclosures, Sustainable Investment Education, Green Products & Listings, and Gender Balance & Empowering People. To that end, DFM has established a

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[152] Business Wire, Jan. 14th, 2020
https://kommunikasjon.ntb.no/pressemelding/abu-dhabi-securities-exchange-adx-announces-issuing-the-first-sustainability-report-during-the-first-half-of-2020?publisherId=90063&releaseId=17877831

[153] Dubai Financial Markets (2019)

[154] Dubai Financial Markets (2019)

Sustainability Committee whose mandate is to integrate sustainability into its core strategy & operations and to work on a number of initiatives to raise awareness among the various stakeholders, including market participants, listed firms and investors, to deepen sustainability practices, in accordance with the UAE's sustainable development agenda, in order to enhance its ability to attract more investments.

Dubai Financial Markets' First ESG Index in MENA[155]

In partnership with the International Finance Corporation (IFC) and Standards & Poor's Financial Services, *Hawkamah:* the Institute for Corporate Governance for the MENA region, has developed the first of its kind ESG index for the region's equity markets in 2011. The *S&P/ Hawkamah Pan Arab ESG* Index is used as a benchmarking tool for investors interested in sustainability issues as it ranks and tracks the ESG's performance, transparency and disclosure of regional companies listed in a number of Arab exchange markets. These include Egypt, Bahrain, Jordan, Morocco, Lebanon, Kuwait, Oman, Qatar, Saudi Arabia, Tunisia & the UAE. This is done using an ESG score– weighting scheme based on almost 200 ESG metrics & standards.

Other Sustainable Finance Initiatives in the UAE

A number of sustainable finance initiatives have been announced during the Abu Dhabi Sustainable Finance Forum (ADSFF) held in early 2020. ADSFF brought together leading organizations, specialists & various market participants to discuss possible ways to advance the agenda on sustainable finance practices at the national & regional levels. These initiatives include the following:[156]

MENA First Social Bond Project

The issuance of the Arab region's first social impact bond was announced during the ADSFF 2020. Social Bonds are defined as bonds whose proceeds are used to finance or re-finance projects with positive social outcomes. The main objective is to increase capital allocation & investment flows to social projects which include but are not limited to: employment generation, SME financing and socioeconomic advancement & empowerment. This project's details will be further announced during the year 2020.

[155] Hawkamah: The Institute for Corporate Governance and Ernest & Young (2014)
[156] BNP Paribas (2020), https://cib.bnpparibas.com/sustain/what-we-learnt-at-the-abu-dhabi-sustainable-finance-forum-2020_a-3-3347.html

ADX Green Bond Accelerator Program[157]

In collaboration with the Abu Dhabi Global Market (ADGM) and the Abu Dhabi Securities Exchange (ADX), the Abu Dhabi Energy Department announced the launch of the Green Bond Accelerator Initiative which aims at positioning Abu Dhabi as the region's hub for sustainable finance & investment, with special focus on issuance of green bonds & green *sukuks* at the national, regional & global levels.[158] To that end, Abu Dhabi Department of Energy (DoE) plans on issuing a consultation paper on its Green Bonds Policy Framework that may also address the inclusion of both Blue & Transition Bonds. The Green Bonds Policy will cover environmentally friendly green projects including but not limited to energy and water efficiency schemes, green buildings, new electric vehicle charging infrastructure, carbon capture and efficient technologies for water, wastewater and recycled water management.

ADGM Sustainable Finance Certification

In recognition of the importance of sustainable finance in the region and worldwide for the various stakeholders, and in cooperation with the London Institute of Banking and Finance, the Abu Dhabi Global Market ADGM Academy launched an education program leading to "Certificate in Sustainable Finance". The ADGM Academy is responsible for the education, training programs & awareness initiatives at ADGM.

[157] Emirates News agency, Jan. 1th, 2020 https://wam.ae/en/details/1395302816528

[158] The first green bond in the region was issued in 2017 by the National Bank of Abu Dhabi (now First Abu Dhabi Bank, after its merger with First Gulf Bank) for a total of $587m, S&P Global Ratings (2019)

2.7-The Kingdom of Saudi Arabia (KSA)

2.7.1- KSA's National Policy Framework & Sustainable Development

The Kingdom of Saudi Arabia launched its ambitious Vision 2030 in 2016 based on three main pillars that aim at the development of a vibrant society, thriving economy and ambitious nation transforming the Kingdom into a more balanced & sustainable economy through structural change enhancing economic development, social cohesion & environmental protection. In 2018, the kingdom published its first Voluntary National Review at the UN High-Level Political Forum on sustainable development affirming its commitment to the achievement of the global SDGs in line with its national Vision 2030.[159]

To that end, the Council of Economic & Development Affairs (CEDA) launched 12 Vision Realization Programs (VRPs) mandated to translate the Vision's objectives into measurable delivery plans that aim at enhancing economic growth & diversity, increasing employment, promoting government effectiveness and advancing social responsibility.[160] These programs include but are not limited to the Public Investment Fund Program, the National Transformation Program, the Financial Sector Development Program and the Fiscal Balance Program, among others. In that respect, Saudi Arabia has been working on promoting sustainable development by reducing its dependence on oil as well as its contribution to global carbon emissions while diversifying its economy by boosting the development of non-oil sectors such as tourism, manufacturing and renewable energy.[161]

The kingdom launched a public investment fund to develop a sustainable economy in order to achieve the 2030 Vision. The Public Investment Fund (PIF) Program acts as the main driving force behind the kingdom's economic diversification reform efforts increasing private sector participation in the economy, maximizing the energy sector's value & investment returns as well as unlocking the growth potential of non- oil sectors. The PIF is set to become one of the largest sovereign wealth funds globally, enabling the development and funding of new strategic sectors through equity & debt finance. [162] The fund will include returns from the sales of Aramco shares estimated at $ USD 30 billion, hence boosting investment in new industries including: manufacturing, defense & technology.[163] The PIF Program specifically aims at reducing the kingdom's dependence on oil revenues that averaged more than 75% of its total budget revenues and more than 25% of its GDP since 1985.[164]

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[159] Kingdom of Saudi Arabia Vison 2030 (2018)
[160] Kingdom of Saudi Arabia (2017)
[161] Kingdom of Saudi Arabia Vision 2030, Invest Saudi
[162] Kingdom of Saudi Arabia (2017)
[163] Reuters (2020)
[164] International Monetary Fund IMF (2018)

The National Transformation Program (NTP) also aims at strengthening the national efforts to diversify the economy by enhancing economic enablers to increase the share of the private sector contribution to GDP from around 40% to 65%, the share of non- oil exports in total non- oil GDP from 16% to 50%, women economic participation rate from 17% to 25%, and SME contribution to GDP from 20% to 35% of GDP [165] and that of the digital economy to non- oil GDP to 3% by 2030. This is in addition to ensuring the sustainability of the Kingdom's vital resources through environment protection, enhancing food security, promoting social development as well as ensuring sustainable access to water resources as well as improving the quality of the national health care system, among other objectives.[166]

To promote private investment, a new Private Sector Participation Law has been drafted in 2019 to strengthen public private partnerships (PPPs) and to regulate the national Privatization Program by establishing a more transparent legislative framework. This law is expected to boost private investment in sectors such as water, infrastructure, real estate, power and renewable energy.[167] The Fiscal Balance Program is set out to improve energy efficiency, to boost energy productivity and to undertake energy price reforms to increase domestic price levels to reach international benchmarks by 2020. These reforms play a catalyst role in shaping the Kingdom's future energy efficiency and industrial development.[168]

Climate Change poses great threat to Saudi Arabia as the country is at risk of several natural hazards including floods, rought and sand & dust storms. The impact of climate change is expected to affect all aspects of life in Saudi including water resources, health, fishery, agricultural production and biodiversity.[169] The kingdom's ongoing demographic growth coupled with the rising living standards all led to a continuous increase in the energy demand, consumption and carbon emissions. Specifically, Saudi's carbon emissions have grown by 75% between 1990 & 2013 to become the second largest carbon emissions per capita among the G20 countries[170] and the eighteenth country in terms of global ranking.[171]

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[165] Saudi Arabian Monetary Authority SAMA (2019)
[166] Kingdom of Saudi Arabia Vision 2030, National Transformation Program NTP https://vision2030.gov.sa/en/programs/NTP
[167] The National (2019)
[168] King Abdullah Petroleum Studies and Research Center KAPSARC (2017)
[169] World Bank Group- Climate Change Knowledge Portal (2020a)
[170] Climate Transparency Report (2016)
[171] Petroleum Economist (2019)

In recognition of its harmful impact, the kingdom committed to reducing domestic greenhouse gas emissions, and submitted its Intended Nationally Determined Contribution (INDCs) in 2015 during the UN Climate Change Conference (COP 21) in Paris. It pledged to avoid up to the equivalent of 130 million tons of CO2 per year by 2030 while diversifying its economic activity towards the non-oil sector, and developing its energy efficiency & renewable energy programs.[172]

The National Renewable Energy Program (NREP) was launched in 2016, as part of Saudi Vision 2030's National Transformation Program, establishing renewable energy as a sector with great potential to generate employment opportunities and to move the country into more service & knowledge-based industries. Specifically, the Kingdom's energy mix strategy aims at producing 70% of its power generating capacity from natural gas & 30% from renewables by 2030. It plans to invest between USD $ 30 - 50 billion in renewable energy by 2023, attracting private investment to the sector. [173] In 2019, Saudi Arabia raised its renewable energy target from 9.5 GW by 2023 to 58.7 GW installed capacity by 2030.[174]

In 2019, the Ministry of Environment, Water & Agriculture signed a cooperation agreement with the UN Environment in order to ensure the sustainability of its natural resource use as well as environment protection. The UN Environment will support the Kingdom in the implementation of its National Environment Strategy and National Transformation Program through technical assistance to develop its human capacities, institutional structure and regulatory framework. [175]

2.7.2- Kingdom of Saudi Arabia's Sustainable Finance Practices

KSA's Financial Sector Development Program

The Kingdom's Financial Sector Development Program (FSDP), launched in 2017, aims at the establishment of a vibrant financial sector that supports the achievement of Vision 2030 objectives by enhancing financial development, inclusion, digitalization and stability. This can be achieved by creating an effective well diversified financial service industry capable of supporting the development of the economy, diversifying its sources of income, stimulating private sector growth and promoting investment. [176]

[172] Saudi Arabia INDC (2015)
[173] International Renewable Energy Agency IRENA (2019)
[174] Climate Transparency Report (2019)
[175] UN Environment Program (2019)
[176] Kingdom of Saudi Arabia Vision 2030: Financial Sector Development Program Delivery Plan 2020

Financial inclusion is at the heart of the FSDP which aims at improving access to finance, among the excluded marginalized groups, and increasing financial penetration by increasing the number of adults with bank accounts from 74% in 2016 to 80% in 2020.[177] The FSDP also commits to raising small & medium enterprises SMEs' contribution to the economy by increasing the share of their financing at the banking sector from the current 2% level to 5% by 2020.[178] The General Authority for Small & Medium Enterprises "MONSHAAT" was established in 2016 to support the SME sector and increase their productivity to become the kingdom's main growth engine.[179]

In partnership with ELITE of the London Stock Exchange Group, MONSHAAT launched "TOMOUH Elite" program to promote the development of promising firms in the KSA.[180]The authority also established an SME support center in 2018 to enhance startups' growth. Moreover, the kingdom's national insurance company TAWUNIYA created an SME Integrated Insurance Program offering them all their insurance needs. [181]

Digital Transformation Agenda

The Kingdom's Vision 2030 aims at establishing a supporting ecosystem to boost Saudi's digital transformation agenda by investing in technology: artificial intelligence AI, data mining & cloud technology. It also targets the development of digitalized financial infrastructure to promote digital payment services to move towards a cashless society, increasing the share of non-cash transactions from 18% in 2016 to 28% by 2020. [182] The Saudi Arabian Monetary Authority (SAMA) launched the "Fintech Saudi Initiative" to support the development of financial services technology ecosystem to transform the kingdom into a Fintech hub to promote financial e-transactions, support entrepreneurship and stimulate innovation among financial institutions, firms, investors, universities and government institutions. It also launched a regulatory sandbox to enable innovative firms to test their new digital financial solutions which aimi at achieving a number of strategic objectives including, but not limited to, enhancing financial inclusion, promoting investment & supporting the transition to cashless economy. Financial products & services that are being tested in SAMA's sandbox include e-wallets services, e-wallets transfers and direct international transfers [183] [184]

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[177] King Khalid Foundation (2018), women represent about 60% of the unbanked adults
[178] Kingdom of Saudi Arabia Vision 2030: Financial Sector Development Program Delivery Plan 2020
[179] MONSHAAT Website https://www.monshaat.gov.sa/en/about
[180] Kingdom of Saudi Arabia Vision 2030: Progress https://vision2030.gov.sa/en/vision-progress
[181] World Finance (2019)
[182] Kingdom of Saudi Arabia Vision 2030: Financial Sector Development Program Delivery Plan 2020
[183] Saudi Arabian Monetary Authority SAMA (2019)
[184] Saudi Arabian Monetary Authority (2020), SAMA recently launched licenses for two non-bank financial technology institutions for the establishment of an Electronic Wallet Company and a Payment Services Company.

Renewable Energy Program: MUTAJADEDA Program

In order to promote the development of environmentally friendly projects and to attract investment into the renewable energy sector, the kingdom has recently launched the MUTAJADEDA program providing financial support through the USD $ 28 billion government financing "Saudi Industrial Development Fund" (SIDF). Under this program, the Fund grants loans up to USD $ 310 million and finances up to 75% of the total project cost with loan repayment period up to 20 years & 36-month grace period for all sectors interested to deploy renewable energy in order to reduce oil dependence, while bolstering new sources of energy.[185]

Saudi Stock Exchange – TADAWUL

Saudi Arabia's stock exchange TADAWUL has become a member of the United Nation Sustainable Stock Exchange (SSE) Initiative in December 2018, promoting sustainable and transparent capital markets. According to the initiative's report on TADAWUL, the Saudi stock exchange has not published annual sustainability reports as of yet; and has not established ESG reporting requirements, However, it has committed to publish a few rules on ESG reporting. TADAWUL has a listing platform for SMEs and has created a parallel equity market (NOMU) with lighter listing requirements, serving as an alternative platform for companies to go public.[186]

Corporate Governance Regulations

In 2019, the Capital Market Authority (CMA) amended its 2017 Corporate Governance Regulations for companies listed on the Saudi Arabia Exchange TADAWUL in order to promote governance & transparency. The amended regulations provide shareholders with better rights and more clarity on their duties, paving the way for the kingdom's financial market to compete internationally.[187]

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[185] Oxford Business Group (2020e)
[186] Sustainable Stock Exchange Initiative (2018)
[187] Kingdom of Saudi Arabia KSA Capital Market Authority (2019)

Islamic Bonds - *Sukuks*

Saudi Arabia is considered the largest *Sukuk* issuer among the Gulf Cooperation Council GCC countries since 2017, raising about USD $9.5 billion during the first seven months of 2018, accounting for about 55% of the gulf region's issuance over the same time period. The KSA has been issuing Islamic bonds since the early 2000s with infrequent issuances in initial years. As part of the kingdom's efforts to promote investment & to develop the capital market, the Ministry of Finance established a Saudi riyal - denominated issuance program in 2017 with the aim to diversify its funding base. Since then, the kingdom has become a regular issuer of Islamic bonds with more than USD $20 billion of local currency denominated *sukuks* issued since July 2017.[188] The Ministry of Finance has recently issued a new information memorandum for its *Sukuk* Issuance Program to facilitate capital raising by both the government & the private sector to provide finance for its development projects. [189]

[188] Saudi Gazette (2018)

[189] Kingdom of Saudi Arabia KSA Ministry of Finance (2020)

Chapter Three– Climate Finance in the Arab Region: Selected Countries

3.1- Introduction

Climate change is expected to have serious repercussions on the Arab region's food, energy & water security through its negative impact on a number of vital sectors including but not limited to: agriculture, water, health, coastlines & tourism, among others, thus increasing Arab countries' persistent development challenges and putting additional fiscal pressures on their already constrained budgets. Financing climate change requires the allocation of significant financial resources to be directed towards climate mitigation & adaptation actions in the region.[190]

The Paris Agreement calls for maintaining a balance between adaptation & mitigation while taking into considerations national needs & priorities.[191] Adaptation refers to increasing resilience to environmental & social shocks associated with climate change whereas mitigation focusses on the transition to low carbon energy economy and reducing greenhouse gas (GHG) emissions.[192] It is roughly estimated that the annual cost for global climate adaptation would reach between USD $ 140 – USD $ 300 billion by year 2030, [193] whereas the annual adaptation cost in developing countries is estimated to exceed USD $ 70 – USD $ 100 billion.[194]

Over the past few years, climate change action has mainly focused on addressing mitigation rather than adaptation in both developed & developing countries. Adaptation action has been slower due to a number of factors including the prevailing presumption that governments will intervene to provide public support after climate disasters, such as, extreme storms & floods.[195] This is in addition to the higher share of bankable mitigation projects providing investors with a business deal flow, particularly in renewable energy & energy efficiency sectors.[196] This may also be coupled by the perception that adaptation is a public good addressing a public problem whose transaction costs are huge and where market returns are lacking as it may be difficult for governments to align private incentives with public interest. [197]

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[190] ESCWA (2019)
[191] ESCWA (2019)
[192] UNEP (2019)
[193] UNEP (2019)
[194] UNEP (2019)
[195] UNEP (2019)
[196] ESCWA (2019)
[197] UNEP (2019)

According to the Economic & Social Commission for Western Africa ESCWA Report "Climate Finance in the Arab Region" (2019), the United Nations Framework Convention for Climate Change (UNFCCC) dataset shows that bilateral, regional & international public climate support to the region has reached about USD $ 4.6 billion as of 2016,[198] and that it is mostly directed to financing mitigation rather than adaptation projects, where the former exceeds the latter by a factor of 5 to 1. It also shows that more than 75% of these financial flows have been used for energy, transport & infrastructure whereas less than 15% of these flows have been used for water & sanitation projects. [199]

Multilateral Development Banks MDBs' adaptation climate finance flows to the region have been declining from about 10% of global flows in 2015 to only 6% in 2018 whereas mitigation flows have been increasing from 8% to 12%, over the same time period, with the latter mostly financing the energy, transport & infrastructure sectors. The UNFCCC 2018 Biennial Assessment of Climate Finance Flows estimates that global private climate- specific finance has exceeded USD $ 455 billion in 2016, reaching more than double the reported public flows. The UNFCCC also notes that estimating private sector climate finance flows is challenging as it is subject to data gaps & uncertainty associated with stakeholders' diversity, double counting, lack of standardized reporting format and absence of mandated reporting. [200]

This chapter presents an assessment of the status of climate finance in four countries in the Arab region: Egypt, Jordan, Iraq & Tunisia. This is undertaken by investigating the climate finance institutional framework in each country under study: its national strategies & plans including but not limited the national development plans, national environment strategy, national climate change policy, national adaptation policy and national energy strategy, whenever possible.

This is in addition to the examining each country's Intended Nationally Determined Contributions (INDCs) submitted to the UNFCCC in 2015, highlighting its adaptation & mitigation targets' cost estimates & priority sectors. This is followed by presenting an overview of some of the climate change mitigation & adaptation projects financed by dedicated climate funds in each of these countries.

[198] ESCWA (209), this amount does not include climate specific financial flows from multilateral climate funds or Multilateral Development Banks (MDBs)
[199] ESCWA (2019)
[200] ESCWA (2019)

3.2- Climate Finance in Egypt

3.2.1- Egypt's Climate Finance Policy & Institutional Landscape

Egypt has been vulnerable to climate change which has had adverse effects on a number of vital sectors, such as, water, agriculture, health, fisheries, coastal zones, tourism & energy through a number of factors including but not limited to: elevated heat, increased soil salinization, groundwater contamination, sand storms, fresh water deficiency and sea level rise. These have led to beach erosion, coral reef loss, reduced crop yields & quality, livestock losses as well as heightened food insecurity.[201] To address climate change and its harmful impact on the economy, Egypt has undertaken a number of policy actions & regulatory reforms.[202]

Egypt Intended Nationally Determined Contributions (INDCs)

In November 2015, Egypt submitted its intended nationally determined contributions highlighting its national plans to promote resilience, to address climate change impact through adaptation and to reduce its greenhouse gas (GHG) emissions through mitigation. In its INDCs, Egypt noted that climate change adaptation & mitigation actions would require a total estimated cost of about USD $ 73 billion over the 2020- 2030 period, but it did not provide categorization for the adaptation & mitigation costs on a separate basis. It also emphasized the importance of mobilizing international financial support and technical assistance for technology transfer & capacity building all needed for INDCs' implementation. [203]

National Council for Climate Change

In 2019, the Prime Minister issued PM Decree No. 1129, amending the PM Decree No. 1912/ 2015 concerning the establishment of Egypt's National Council for Climate Change. To ensure close coordination among the various stakeholders, the Council includes representatives from the Ministries of Environment, Planning, International Cooperation & Investment, Finance, Water Resources & Irrigation, Agriculture & Land Reclamation, Scientific Research, Industry & Trade, and Foreign Affairs, among others, as well as representative from the General Union for civil society associations.

[201] Abdallah (2020)

[202] Egyptian Environmental Affairs Agency EEAA (2018), The Ministry of Environment was established in 1997, and the Egyptian Environmental Affairs Agency EEAA has acted as its executive arm. The Climate Change Unit was established at EEAA in 1996 and was later changed to become a Central Department to enhance the Climate Change institutional structure at the national level.

[203] Arab Republic of Egypt (2015)

The Council is responsible for developing & updating a comprehensive national strategy for climate change as well as sectoral plans & policies while ensuring their compatibility with the national sustainable development strategy: Egypt Vision 2030. This is in addition to undertaking research on climate change, improving data collection, management & knowledge dissemination, implementing projects to reduce greenhouse gas emissions and to adapt to climate change risks, as well as approving projects submitted to the Green Climate Fund GCF. [204]

The Council is also in charge of proposing the integration of climate- related financial provisions into each of the concerned Ministries' budgetary lines on an annual basis gradually, allocating needed finance from the national budget and/ or from regional & international sources, as well as building institutional & individual capacities for dealing with climate change, its mitigation & adaptation. This is in addition to following up on all negotiations concerning climate change and any related protocols or agreements.[205]

The National Committee for Climate Change

The National Committee for Climate Change was established in 1997, and has been restructured in 2007 based on PM Decree 272/ 2007. It is responsible for developing mitigation & adaptation strategies, plans & programs to address climate change risks in Egypt over the short & long runs. The Committee includes representatives from the Ministries of Foreign Affairs, Water Resources & Irrigation, Agriculture & Land Reclamation, Electricity & Energy, Petroleum, Trade & Industry, Economic Development and Defense, besides experts from national & relevant agencies.[206]

The National Strategy for Adaptation to Climate Change & Disaster Risk Reduction

The National Strategy for Adaptation to Climate Change & Disaster Risk Reduction was issued in 2011 to strengthen the national capacities to adapt to climate change in sectors that are severely affected, namely, coastal zones, water resources & irrigation, agriculture, housing, roads, tourism, among others. The Strategy's three main objectives are as follows:[207]

- Increasing the Egyptian community's resilience to deal with risks and disasters resulting from climate change and its impact on different sectors,
- Developing the capacities needed to contain climate change risks and disasters through plans and programs aiming to respond to the need of local communities, and

[204] Prime Minister PM Decree No. 1912 for year 2015
[205] Prime Minister PM Decree No. 1129 for year 2019, the National Council for Climate Change in Egypt is chaired by the Prime Minister, and consists of higher committee, executive office and technical group.
[206] Ministry of State for Environmental Affairs & Egyptian Environmental Agency (2016) & Egyptian Environmental Affairs Agency EEAA (2018)
[207] Egyptian Cabinet Information & Decision Support Center IDSC (2011)

- Reducing climate change risks through the development of early warning mechanisms based on accurate scientific analysis & calculations in different sectors and the implementation of appropriate projects which help to reduce risks resulting from climate change.

National Energy Strategy & Regulatory Framework

In 2014, the Government has undertaken a number of reform measures within the framework of its Strategy for Integrated Sustainable Energy 2035, issued in 2015, to improve energy efficiency & security, increase the contribution of renewable energy to 37% of the electricity mix by 2035 and to encourage private investment through feed in tariffs, net metering and other schemes. Specifically, in September 2014, the Prime Minister issued Decree No. 1947 of 2014 to impose Feed-in Tariff (FITs) for solar PV & wind projects with fixed tariffs over 25 years for PV and over 20 years for wind. FITs aim at promoting the development of renewables by guaranteeing that the government would pay a set price for privately produced clean power and encourage private investment in renewables.

By the end of 2014, Law No. 203/ 2014 was issued to scale up electricity generation from renewable energy sources through a number of mechanisms including the Build, Own & Operate (BOO) system for projects tendered by the Egyptian Electricity Transmission Company (EETC). This is in addition to issuance of Electricity Law no. 87/ 2015 considered a milestone in the liberalization of the energy market.[208]

Environment Protection Fund

The Government of Egypt has earlier established the Environmental Protection Fund (EPF), established as an affiliate to the Ministry of Environment by Law 4/ 1994 & its amendment Law No. 9/ 2009, to promote investment supporting the national efforts for undertaking the social, economic & environmental priorities. The EPF is specifically tailored to extend financial support to projects that benefit the environment through different mechanisms based on the Fund's policies and each project's needs.[209]

[208] Egyptian Environmental Affairs Agency EEAA (2018)
[209] Ministry of Environment & Egyptian Environmental Affairs Agency Website http://www.eeaa.gov.eg/en-us/aboutus/epf.aspx#:~:text=The%20Environmental%20Protection%20Fund%20(EPF,environmental%20social%20and%20economic%20policies.

3.2.2 - Financial Flows into Egypt's Climate Mitigation & Adaptation

The Egyptian Government has received international public climate finance in support of its mitigation & adaptation efforts from a number of players: climate funds, development financial institutions, as well as international & regional organizations. These include, but are not limited, to the European Union (EU), the European Investment Bank (EIB), the European Bank for Reconstruction & Development (EBRD), the World Bank (WB), the United Nations Development Program (UNDP) and the United Nations Framework Convention on Climate Change (UNFCCC), among others.

According to the Egyptian Environmental Affairs Agency (2018), [210] the total amount of international support funding received by the Government of Egypt for the year 2005 and onwards for climate adaptation purposes has only been around USD $ 20 million and has been mostly allocated to coastal protection as well as the agriculture and waste water sectors as per table (1). This presents a small fraction of the funds allocated to mitigation activities in spite of Egypt's strong needs for adaptation. The total budget for future adaptation projects & programs planned by the Government of Egypt beyond 2015 and until the year 2035 for the three most vulnerable sectors to climate change has been estimated at more than USD $ 20 million accounting for technology, technical & capacity building support requirements. Specifically, future adaptation needs for the three sectors are estimated as follows: USD $ 9,328 million for the coastal zone protection, USD $ 7,974 million for the water resources & irrigation sector, and USD $ 3,455 million for the agriculture sector.

On the other hand, the financial support allocated to mitigation activities has been much higher than that assigned to adaptation, as presented in table (2). These have reached about USD 290 million and over Euro 150 million from various sources. This is in addition to more than USD $ 70 million allocated from national resources. It also shows that mitigation funds have been extended to renewable energy, energy efficiency & electricity generation sectors as well as pollution abatement, solid waste management & sustainable transport programs, among others. Table (3) shows the total funding, of USD $ 5 million, allocated to cross – cutting projects across multiple sectors: namely, the climate risk management program and the low emission capacity building project, as per table (3). [211]

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[210] This is based on "Egypt's First Biennial Update Report" to the United Nations Framework Convention on Climate Change UNFCC, developed by EEAA and issued in 2018 in coordination with the UNDP & the Global Environment Facility GEF

[211] EEAA (2018)

Table (1): **Egypt- International support received for adaptation programs from 2005 and onwards**

Program	Sector	Measures achieved	Donor	Total funding amount and type	Other support received			Timeframe (years)
					Technology	Capacity building	Technical support	
Mainstreaming global environment in national plans and policies by strengthening the monitoring and reporting systems for Multilateral Environmental Agreements in Egypt	Waste resource sector	▪ Capacity building for public participations in the area of climate change.	GEF	$475,000		√		2008-2011
Adaptation to climate change in the Nile Delta through Integrated Coastal Zone Management (ICZM)	Coastal protection	▪ Beach reinforcement and nourishment. ▪ Construction of seawalls and breakwaters. ▪ Vegetative buffers, sand placement and dune stabilization.	GEF/SCCF	$4,000,000		√	√	2009-2014
Building resilient food security systems to benefit the southern Egypt region	Agriculture	▪ Capacity development for farmers. ▪ Integrate on-farm water conservation solutions through small-scale low-cost technological solutions. ▪ Using drought tolerant crop varieties. ▪ Innovative irrigation tools. ▪ Early warning system for weather extreme events.	UNFCCC Adaptation Fund	$6,904,318	√	√		2013-2016
Integrated management and innovation in rural settlements	Agriculture	▪ Improve rain-harvesting techniques. ▪ Water recycling. ▪ Improving irrigation techniques. ▪ Improved long-term forecasting to enhance Egypt's ability to cope with prolonged drought.	GEF	$7,812,000	√	√	√	2015-present
Fifth operational phase of the GEF small grants program in Egypt	Cross-cutting		GEF	$825,600		√	√	2011-2015

Source: EEAA (2018) based on data from Global Environment Facility (GEF), UNFCCC Adaptation Fund Egypt, GIZ, and EU

<u>Table (2):</u> Egypt- International support received for mitigation programs from 2005 and onwards

Program	Sector	Measures achieved	Donor and total funding amount and type	Other support received			Timeframe (years)
				Technology	Capacity building	Technical support	
Electricity Sector Subsidy Reform Program	Electricity Generation	▪ Gradual removal of subsidies on electricity starting 2014 ▪ Re-pricing of electricity in a tier-based system ▪ Establishment of social safety nets in the context of energy sector reform ▪ Modeling National Energy Sector based on 4 comprehensive long-term strategic scenarios ▪ Development of Egypt's Strategy for Integrated Sustainable Energy 2035	Energy reform Policy Support Program European union (EU): 60 M Euro Technical Assistance to Support Reform of the Energy Sector: Social Safety Nets World Bank (WB): 6 M USD		√	√	2014-2015
Increase of energy contribution to national electricity generation	Energy, Renewable Energy	▪ Setting two targets for contribution of RE in national power generation (electricity): 20% by 2022 & 37% by 2035 ▪ Implementation of utility-scale wind, solar, and hydropower projects: Nagaa Hammadi hydropower station; Kureimat Hybrid Concentrated Solar Power (CSP) plant; & Small-scale photovoltaic solar with net metering system ▪ Issuance of feed-in tariff and net-metering schemes	Kureimat Hybrid Concentrated Solar Power (CSP) plant GEF/WB: 49.8 M USD	√	√	√	2013-2015
Energy Efficiency for Electricity Generation and End Users	Energy, Energy Efficiency	▪ Implementation of a package of energy efficiency measures accompanying subsidy reform and RE investments. ▪ Standards and Labeling program on home appliances for electricity rating. ▪ Promotion of LED lighting technology. ▪ Nationwide awareness campaign to reduce electricity consumption. ▪ Promulgation of Electricity Law 87/2015 (with specific articles 45-51 for Electricity Efficiency and Energy Management).	Energy Efficiency Improvement and Greenhouse Gas Reduction Project (1998 - 2010) GEF: 4.110 M USD Improving the Energy Efficiency of Lighting and Building Appliances (2010 - 2015)	√	√	√	2005-2015

Program	Sector	Measures achieved	Donor and total funding amount and type	Other support received			Timeframe (years)
				Technology	Capacity building	Technical support	
		▪ Implementation of a program for conversion of simple cycle power plants to Integrated Gasification Combined Cycle (IGCC).	GEF: 4.450 M USD Conversion of Shabab and West Damietta Power Plants from simple cycle to IGCC European Bank for Reconstruction and Development (EBRD): 190 M USD				
Sustainable Transport Program and Expansion of Cairo Metro Network	Energy, Transportation	▪ Egypt Sustainable Transport (STP) Program activities and pilot projects. ▪ Stage 5 of Cairo Metro Second Line. ▪ Stage 1 & Stage 2 of Cairo Metro Third Line.	STP: GEF/UNDP: 7 M USD National: 37 M USD	√	√	√	2009-2015
Industrial Energy Efficiency Project (IEE)	Energy, Industry	▪ National program to define energy benchmarks and energy efficiency policy. ▪ Awareness raising on industrial energy efficiency and management in industry. ▪ Capacity Building for Energy Efficiency Services. ▪ Access to finance for energy efficiency improvement projects. ▪ Implementation of energy management systems and system optimization.	GEF: 3.95 M USD National: 24.1 M USD		√	√	2012-2015
Egyptian Pollution Abatement Project (EPAP II)*	Energy, Environment, Industry	▪ Pollution abatement measures financed for cement, brickworks, petroleum, chemical, and steel industrial facilities in Greater Cairo and Alexandria. ▪ 6 Projects involving switching from heavy fuel oil to natural gas.	Finance: EIB: 40 M Euro AFD: 40 M Euro JBIC: 4.7 B Yen WB: 20 M USD Technical Assistance: EIB: 3 M Euro Government of Finland: 0.9 M Euro	√	√	√	2007-2015

Program	Sector	Measures achieved	Donor and total funding amount and type	Other support received			Timeframe (years)
				Technology	Capacity building	Technical support	
			National: 17.5 M LE				
Private Public Sector Industry Project (PPSI)*	Energy, Environment, Industry	▪ Pollution abatement measures financed for industrial facilities in Upper and lower Egypt (excluding Greater Cairo and Alexandria)	KfW: 7.26 M Euro (grant)	√	√	√	2008-2012
Egyptian National Solid Waste Management Program (NSWMP)	Waste, Environment	▪ Established National Waste Management Regulatory Authority (WMRA) ▪ Issued Strategic Directives on Integrated Solid Waste Management ▪ Holds an annual national forum on waste management for knowledge transfer and networking ▪ Established an internet platform for solid waste related issues ▪ Drafting a solid waste management law which addressed planning, finance, standards for implementing integrated solid waste management systems in the context of social inclusion, cost recovery, the Polluter Pays, Extended Producer Responsibility (EPR) principles ▪ Piloted operator models for primary collection and recycling of municipal solid in 4 governorates ▪ Supporting the implementation of holistic solid waste management systems in 4 governorates	KFW GIZ EU SECO	√	√	√	2012-2015
Bioenergy for Sustainable Rural Development	Energy, AFOLU, Waste		GEF: 3 M USD Co-financing: 12.4 M USD	√	√	√	2010-2015

*The climate change component was minor in this project.

<u>Source</u>: EEAA (2018)

Table (3): **Egypt- International support received for cross-cutting programs**

Program	Sector	Measures achieved	Donor and total funding amount and type	Other support received			Timeframe (years)
				Technology	Capacity building	Technical support	
Climate Change Risk Management Program	Multiple	▪ Established Clean Development Awareness and Promotion Unit ▪ Contributed to establishment of the Energy Efficiency Unit (EEU) to advise the Cabinet of Ministers on Energy Efficiency ▪ Supported development of a national Energy Efficiency roadmap ▪ Supported the modeling of various climate change scenarios in the water sector ▪ Provided resources to develop the forecasting capacity & long-term forecast analysis of climate change impact on water ▪ Supported the Ministry of Agriculture and Land Reclamation and its affiliated research centers to develop methodological approaches and planning tools, with particular emphasis on zoning and mapping tools ▪ Supported research activities (mainly concentrating on deficit irrigation) and simulation exercises on the impacts of climate change on key crops ▪ Supported the production and screening of a documentary film titled "The Future of Climate Change in Egypt" in the framework of public awareness and advocacy on climate change.	FAO, IFAD, UNDP, UNEP, UNESCO, UNIDO: 4 M USD		√	√	2008-2013
Low Emission Capacity Building Project (LECB)	Multiple	▪ The project aimed to strengthen national capacities to mainstream climate change policies into national development plans.	EU and co-finance: 1 M USD		√	√	2013-2018

Source: EEAA (2018)

Table (4): **Egypt- International support received for Renewable Energy Programs (agreements signed between 2005- 2015)**

Program / Project	Donor	Agreement Date	National Recipient	Currency	Amount (Millions)
Loans					
Zafarana wind farm- phase 3	Germany	2003	New and Renewable Energy Authority (NREA)	Euro	15
West Gulf of Suez wind farm	Spain	2008	MoERE	Euro	119
Gabal El-Zeit 220 MW wind farm	Japan	2010	NREA	Yen	388
Wind farm	World Bank (WB)	2010	EETC	USD	70
Wind Farm	Clean Technology Fund (CTF) - World Bank (WB)	2010	EETC	USD	150
Aswan 20 MW Photovoltaic Power Plant	Agence Française de Développement (AFD)	2015	NREA	Euro	40
Grants					
Wind farm	CTF-WB	2010	EETC	USD	0.25
Wind energy potential	Arab Fund for Economic and Social Development	2011	NREA	Kuwaiti Dinars	0.3
Feasibility study for a 20 MW PV power plant	AFD	2012	NREA	Euro	0.8

Source: EEAA (2018) based on data from Ministry of Investment and International Cooperation.

Climate Funds Operating in Egypt- Selected Projects

There exist a number of climate funds that have been providing Egypt with financial & technical assistance for climate change mitigation & adaptation over the past two decades. These include but are not limited to the following: Japan's Fast Start Finance Initiative (FSFI), the Green Climate Fund (GCF), the Clean Technology Fund (CTF), the Global Environment Facility (GEF) and the Adaptation Fund (AF).

In what follows, a brief overview is made to highlight some of the mitigation & adaptation activities for some of the climate funds operating in Egypt. For instance, Japan's FSFI focused on renewable energy projects to mitigate climate change, and provided Egypt with USD $ 338 million loan for the construction of the Gulf of El Zayt 220 MW Wind Power Plant Project in the Red Sea through the Japanese International Cooperation Agency (JICA).[212]

In 2017, Egypt received the largest single investment made by the Green Climate Fund GCF in the MENA region, supporting two projects with a total fund of $ USD 186.1 million,[213]one of which is for mitigation and aims at scaling up renewable energy investment and enhancing its policy framework development & planning.[214] The second project aims at enhancing climate change adaptation in the North Coast as well as defending the vulnerable Nile Delta region against coastal flooding damage risks as well as improving the resilience of rural communities.[215]

More recently, the Clean Technology Fund CTF, in cooperation with the World Bank, provided Egypt with technical & financial support to scale up wind power development & enhance the required transmission infrastructure capacity through the Bank's loan of USD $ 70 million and the CTF's loan of USD $ 149.75 million in addition to CTF's grant of USD $ 0.25 million.[216]

[212] Nakhooda, Caravani, Seth & Schalatek (2012); and the United Nations Framework Convention on Climate Change UNFCCC (2013)
[213] Watson & L. Schalatek (2019)
[214] Green Climate Fund GCF (2017a), this project uses debt financing totaling $ USD 507 million from EBRD & GCF, including $ USD 154.7 million from GCF ($ USD 150 million loan & $ USD 4.7 million grant). The remaining project cost is expected to be covered by other international financial institutions and commercial lenders at a later stage
[215] Green Climate Fund GCF (2017b), the GCF financed this project using a grant reaching $ USD 31.4 million whereas the Government of Egypt's co- finance component reached $ USD 73.8 million
[216] World Bank (2020b)

The Global Environment Facility GEF, in cooperation with the International Fund for Agriculture Development (IFAD), also developed the Sustainable Agriculture Investments and Livelihoods (SAIL) project for the 2014- 2023 period focusing on climate change adaptation by promoting sustainable agriculture, improving agriculture productivity and diversifying rural livelihoods in Egypt thus reducing poverty & increasing food security. The total project cost is about $ USD 95 million where IFAD provides $ USD 63.2 million in loan and $ USD 1.4 million in grant, while the GEF provides $ USD 7.8 million as a grant.[217]

The Adaptation Fund and the UN World Food Program (WFP) provided Egypt with $ USD 6.9 million in grant to implement "Building Resilient Food Security Systems to Benefit the Southern Egypt Region" project. This focusses on climate change adaptation through technology development & transfer to enhance resilience and to improve food security to serve about 45% of the population living in this region. This is in addition to capacity building needed for climate knowledge and adaptation replication to understand climate trends & impacts and to replicate necessary interventions. [218]

The Millennium Development Goal MDG Achievement Fund supported Egypt with the "Climate Change Risk Management" Joint Program (JP) during the 2008-2013 period providing a total budget of $ USD 4 million. The JP's main objective has been to enable Egypt to align its climate risk management & human development efforts while achieving millennium development goals. It specifically aimed at mainstreaming Greenhouse Gas mitigation into national policy & investment frameworks as well as strengthening the national capacity to adapt to climate change through the adaptation of both the water resources & agriculture sectors.[219]

[217] International Fund for Agriculture Development IFAD (2015), the Government of Egypt is co-financing this project
[218] Adaptation Fund (2012) ; Ghoniem (2015)
[219] Millennium Development Goal MDG Achievement MDG Fund (2013a)

3.3- Climate Finance in Jordan

3.3.1- Jordan's Climate Finance Policy & Institutional Landscape

Due to the significant climate change risks threatening the various sectors of its economy, Jordan has developed a number of climate change strategies & policies to mitigate and adapt to climate change and to control the risks associated with its GHG emissions. It has also worked on mainstreaming climate change into its national policy framework to ensure consistency and coordination among related parties. Specifically, climate change has been considered as one of the four pillars of the environment sector in Jordan's Government Executive Program (2013-2016) developed by the Ministry of Planning in 2013.[220]

Nationally Determined Contributions

In September 2015, Jordan has voluntarily submitted its Nationally Determined Contributions (NDCs) to the United Nations Framework Convention on Climate Change (UNFCCC) secretariat. Jordan has also ratified and signed the Paris agreement concluded by the end of 2015 at the COP21. The NDCs specifically aim at reducing GHGs emissions in Jordan by 14% by 2030.[221] It is worth noting that the energy sector has been the largest contributor to Jordan's GHG emissions, and its share is expected to decrease from 81% of total emissions in 2012 to 69% in 2040 as a result of Jordan's ongoing efforts to increase the share of renewables and nuclear power sources into the current energy mix. [222]

The 14% GHG emissions reduction target has been set based on the achievement of 1.5% GHG emission reduction by 2030 under the unconditional availability of local funding at a cost reaching about USD $ 0.5 billion that has been secured by the Government of Jordan. This is in addition to the conditional target of reducing GHGs emissions by 12.5% by 2030 subject to the availability of international support & funding estimated at an additional USD $ 5.2 billion. Accordingly, the total estimated cost to reach Jordan's 14% GHG emission reduction target by 2030 is USD $ 5.7 billion.[223]

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[220] Jordan's Ministry of Environment (2014)

[221] Hashemite Kingdom of Jordan (2016)

[222] Jordan's Ministry of Environment (2017b), the second largest contributor to GHG emissions in Jordan is the industrial sector with a 12% share in emissions, and its share is expected to increase modestly to 13% in 2040. The contribution of the waste sector is expected to increase from 6% in 2012 to 11% in 2040.

[223] Hashemite Kingdom of Jordan (2016) and Ministry of Environment (2017b)

National Green Growth Plan

Climate change has been integrated into Jordan's National Green Growth Plan (NGGP) developed by the Ministry of Environment in 2017 in consultation with the various stakeholders to serve as reference guide for the development of green growth projects in alignment with green investment policies, planning & implementation. The National Plan for Green Growth (2017-2025) presents Jordan' roadmap for the transition to a higher, sustainable & greener growth path. It has five interlinked green growth dimensions: sustained economic growth, social development, resilience, biodiversity & ecosystems services as well as GHG emission reductions & avoidance. The NGGP encourages both public and private sectors to invest in priority sectors such as energy, water, transport, agriculture, etc.[224]

Jordan Environment Fund

Jordan Environment Fund (JEF) was established in 2006 under the provisions of the Environment Protection Law of the Ministry of Environment to complement Jordan's environment expenditure by extending financial support to the implementation of environment protection and preservation related projects. JEF has focused on a number of sectors including but not limited to water, agriculture, irrigation and waste management. The JEF's financial support model has been mainly based on providing grants. [225]

The JEF is governed by Law No. (18) for year 2018, and its mandate includes the following:[226]

- Supporting environment protection & conservation activities and developing environmentally friendly practices,
- Enhancing sustainable development through resource efficiency initiatives,
- Raising awareness about the importance of environment preservation & clean technology, and
- Promoting cooperation & knowledge transfer with different concerned entities, nationally, regionally & globally to support environmental protection activities.

[224] Jordan's Ministry of Environment, (2017a)
[225] Jordan's Ministry of Environment (2017a)
[226] https://www.jordanewe.com/about-sector/ministry-environment

The Ministry of Environment is seeking to change JEF's financial support mechanism to be based on the provision of soft loans and revolving finance instead of grants & subsidies.[227] The Global Green Growth Institute (GGGI) has recently provided an overview of the role of the JEF as the national financing vehicle (NFV) to finance climate and green growth projects, and has underlined JEF's capitalization & staffing constraints limiting its future potential contribution to Jordan green growth needs.[228]

The National Climate Change Policy

In 2013, the Ministry of Environment adopted and launched its 2013- 2020 National Climate Change Policy (NCCP), the first of its kind in the country & in the region, providing a sector strategic guidance framework for Jordan. The Climate Change Policy' s long term objective is "to achieve a pro-active, climate risk-resilient Jordan, to remain with a low carbon but growing economy, with healthy, sustainable resilient communities, sustainable water and agricultural resources, and thriving and productive ecosystems in the path towards sustainable development".

The NCCP aims at providing the Government with guidance & assistance in achieving its national climate change objectives and priorities as related to adaptation and mitigation of climate change by addressing various issues including awareness, technology transfer, education & capacity building. [229]

The National Committee on Climate Change

The National Committee on Climate Change (NCCC)[230] is designated to be the owner of the National Climate Change Policy as it is responsible for the supervision of its implementation. It is specifically responsible for coordinating and facilitating proposal development submitted to donor agencies for raising finance for mitigation and adaptation projects. The NCCC is currently headed by the Ministry of Environment and represents the various stakeholders including the respective line ministers as well as representatives from the private, civil as well as research & academic sectors.[231]

[227] Jordan's Ministry of Environment (2017a)
[228] GGGI (2019)
[229] Jordan's Ministry of Environment (2013)
[230] Jordan's Ministry of Environment (2017b), the NCCC was established in 2001 based on a decision by the Prime Minister
[231] Jordan's Ministry of Environment (2013)

The Directorate on Climate Change

In 2014, the Ministry of Environment has established the Climate Change Directorate (CDD) considered as a milestone in strengthening the climate change institutional structure in Jordan. The CDD specifically acts as the official focal point for coordinating and developing all national climate change activities associated with the UNFCC as well as the global climate change governance structure & initiatives.[232] The CDD also aims at enhancing the Ministry of Environment's capacity to implement the National Climate Change Policy through the development & regular update of relevant climate change strategies, policies & programs as related to vulnerability, adaptation, mitigation, technology transfer and finance among others.[233]

Climate Change Policy for a Resilient Water Sector & the National Water Strategy

Jordan has been suffering from water scarcity that has been exacerbated by climate change & population growth. It could act as a major barrier to sustainable development efforts through its harmful impact across all sectors, such as, health, agriculture, livestock hence vulnerable groups' livelihood.[234] Jordan is one of the four most water constrained countries in the world where the water level per capita sharply declined from 3600 m3/year in 1946 to only 145 m3/ year in 2008. Water per capita share is expected to continue decreasing if no appropriate measures are undertaken to preserve existing water resources and generate additional ones.[235]

To address the detrimental impact of water scarcity on the economy, the Ministry of Water and Irrigation developed a number of policy documents including the National Water Strategy (2016-2025) and the Climate Change Policy for a Resilient Water Sector in 2016.

The first National Water Strategy "Jordan Water Strategy and Policies" was developed in 1998, and was followed by several strategies such as the "Water for Life: Jordan's Water Strategy (2008-2022)" developed in 2008 in alignment with the millennium development goals MDGs. More recently, the Ministry of Water and Irrigation developed the National Water Strategy (2016-2025) to ensure a sustainable future for the water sector in Jordan in alignment with the UN sustainable development goals SDGs.

[232] Jordan's Ministry of Environment (2017b)
[233] Jordan's Ministry of Environment (2014)
[234] Hashemite Kingdom of Jordan (2016)
[235] USAID (2017)

The strategy aims at the development of a resilient and well developed sector through an integrated approach to water resources management, sustainable water supply, sewage & sanitation services and water usage for the various sectors including agriculture, irrigation, industry & energy. It also aims at strengthening the sector's institutional structure & enhancing its capacity building. It also addresses issues associated with decentralization, commercialization as well as public- private participation.[236]

The Climate Change Policy for a Resilient Water Sector presents an integral part of the National Water Strategy and its policies & action plans. It provides a framework for strengthening the sectors' resilience used as the policy's main guiding principle for the development of the sector, and provides the concept, solutions & implementation mechanism detailed in its related action plan while addressing the three main levels of resilience: persistence, adaptability & transformability.[237]

National Energy Efficiency Strategy and Renewable Energy & Energy Efficiency Law 13/ 2012

Given its limited primary energy sources, the rising demand for energy and its dependence on imports, Jordan has issued the National Energy Strategy (2015-2025) which aim at raising the contribution of renewables in the energy supply mix. Specifically, the National Energy Strategy & National Energy Action Plan aim at increasing the share of renewable energy out of its total energy supply mix to 6% in 2017, 8% in 2020 and 9% in 2025. [238] It also aims at increasing its reliance on domestic energy sources to 25% by 2015 and up to 39% by 2020. [239]

The Government of Jordan has issued the Renewable Energy & Energy Efficiency Law No. (13) of year 2012, and its 2014 amendments, establishing a new regulatory framework for the energy sector ensuring cooperation among concerned entities working with Ministry of Energy & Mineral Resources (MEMR). The Law aims at supporting the achievement of National Energy Efficiency Strategy targets and promoting renewable energy utilization in Jordan. It specifically aims at exploiting new renewable sources to safeguard its national energy supply, raising energy efficiency & reducing consumption as well as contributing to environment protection.[240]

[236] Jordan's Ministry of Water and Irrigation (2016a)
[237] Jordan's Ministry of water and Irrigation (2016b)
[238] Renewable Energy Solution for the Mediterranean RES4Med (2019)
[239] The Hashemite Kingdom of Jordan (2016)
[240] Government of Jordan (2012)

Law 13/ 2012 promotes private sector participation & investment in the energy sector by allowing investors to identify and develop electricity related projects, providing a well-developed price list for the various renewable energy technologies as well as offering tax incentives granting exemptions for renewable energy & energy efficiency systems & technologies. [241]

Jordan Renewable Energy and Energy Efficiency Fund

Jordan Renewable Energy and Energy Efficiency Fund (JREEEF) was established by the Ministry of Energy & Mineral Resources (MEMR) under Law 13/ 2012' provisions. JREEEF has funding sources from the Government, grants, donor financing from development partners as well as support from banks. JREEEF's main purpose is to facilitate the promotion of both renewable energy RE & energy efficiency EE to meet the targets set in Jordan's national energy strategy & action plan by providing support through revolving credit structure, direct grants, equity financing & technical assistance directed mainly to the tourism & residential sectors, public entities as well as small & medium enterprises SMEs. [242]

The National Adaptation Plan (NAP)

In 2017, the NAP was launched by the Ministry of Environment's Climate Change Directorate CDD which has been acting as the Government's focal point for coordinating climate change & national adaptation planning in Jordan. The NAP approach aims at "achieving a climate risk – resilient Jordan with healthy, sustainable resilient communities, sustainable water & agriculture resources". The NAP resents a roadmap for implementing adaptation plans across all sectors in Jordan. It is based on a stocktaking exercise and is expected to provide a comprehensive overview of all national adaptation activities, estimated cost of all related financial needs as well as the establishment a monitoring & reporting system for evaluating progress at the national level.[243]

[241] Jordan's Ministry of Environment (2017b)
[242] Jordan's Ministry of Environment (2017a)
[243] NAP Global Network (2019)

3.3.2- Financial Flows into Jordan's Climate Adaptation & Mitigation

According to the National Climate Change Policy NCCP (2013- 2020), it is initially estimated that mitigation costs will reach about USD $ 3.5 billion until the year 2020 whereas a minimum of USD $ 1.5 billion is needed for adaptation purposes specifically for major projects in the water, industry and energy sectors.[244] According to Jordan's First Biennial Update Report, submitted to the United Nations Framework Convention on Climate Change UNFCC in 2017, only 0.5% of the public budget is allocated to funding projects in the environment sector, and that is distinct from infrastructure investment undertaken in both the energy & water sectors.[245]

The Government of Jordan has determined the important sectors which have been targeted for financing mitigation and adaptation projects. Based on the NDCs, mitigation actions focus on a number of sectors including: energy, transport, waste management, industry, water as well as agriculture & food security. It is estimated that the energy sector needs more than USD $ 5 million to meet the conditional mitigation target.[246] As for adaptation, focus is made on the four sectors: water, health, biodiversity, eco-systems & protected areas as well as agriculture & food security.[247]

Table (5) presents financial flows from national, international and private sources based on Jordan's First Biennial Report to the United Nations Framework Convention on Climate Change. These cover technical assistance, finance, technology transfer and capacity building. It should be noted that these funds include grants, budgetary contributions & concessional loans allocated to sustainable development purposes in general and not necessarily fully dedicated to climate finance.

Both mitigation & adaptation actions/programs require significant financial resources. The majority of funding sources for environmental sector in Jordan come from international donor agencies. This is in addition to national resources as follows. [248]

International funding sources include:

- Development banks including the Agence Française de Developpement (AFD), the KfW, the United Nations Development Program (UNDP), the European Bank for Reconstruction and Development (EBRD), the International Finance Corporation (IFC), the European Union (EU) and the Kuwait Fund for Arab Economic Development,

[244] Jordan's Ministry of Environment (2013)
[245] Jordan's Ministry of Environment (2017b)
[246] Jordan's Ministry of Environment (2017b)
[247] Hashemite Kingdom of Jordan (2016)
[248] Jordan's Ministry of Environment (2017b)

- Direct aids with specific purposes such as financial assistance from the Abu Dhabi Fund for Economic Development, from USAID with around USD $ 1 billion annual aid targeting the development of Jordan's water infrastructure, the Millennium Challenge Account extending about USD $ 275 million annually focusing on water efficiency & water treatment programs,
- Specialized climate finance such as the Jordan Sustainable Finance Facility (JorSEFF) that has been set up between the EBRD, European Investment Bank EIB and the KfW, and supported by the EU grants, with pilot funding of € 34.5 million,
- Commercial or private financing green projects have attracted debt finance from the commercial banking sector in Jordan particularly in the energy sector: energy efficiency & renewables, and
- Climate funds such as Green Climate Fund, Adaptation Fund, further discussed below

Local funding sources directed to green growth projects include budgetary contributions from line ministries; such as, the Ministry of Environment & Ministry of Finance, and supported by development partners. Other domestic sources include:

- Agriculture Credit Cooperation**:** it is a quasigovernmental lending facility, affiliated to Ministry of Agriculture, focused on supporting farmers, and
- Other local institutions include Jordan Loan Guarantee Corporation (JLGC), a loan guarantee scheme focused on SME lending, in addition to grant funding available through Jordan Enterprise Development Corporation and Amman Chamber of Industry, among others. This is in addition to loan granted through Governorates Development Fund and the Central Bank of Jordan (CBJ).

This is in addition to dedicated national funds such as Jordan Renewable Energy & Energy Efficiency Fund (JREEEF) and the Environment Protection Fund discussed earlier.

Climate Funds Operating in Jordan- Selected Projects

The Adaptation Fund has provided Jordan with grants up to USD $ 9.23 million to finance "Increasing the resilience of poor and vulnerable communities to climate change impacts in Jordan through Implementing Innovative projects in water and agriculture in support of adaptation to climate change." This project aims at adapting the agriculture sector to climate change related risks and problems associated with water scarcity and food security issues through a number of mechanisms including policy support, technology transfer, capacity building, training & knowledge management.[249]

The Adaptation Fund, in cooperation with the United Nations Human Settlements Program, has supported a project in both Jordan & Lebanon with a total grant amounting to USD $ 14 million. This project aims at increasing the resilience of displaced persons (DPs) & host communities to climate change-related water challenges in urban host settlements. This will be undertaken through:[250]

- Managing climate change risks & vulnerabilities in urban areas as related to water scarcity and urban population growth,
- Enhancing replicable techniques to expand unconventional water harvesting & supply,
- Improving awareness & enhancing capacities to respond to climate change to maintain and replicate resilient water harvesting, supply and irrigation systems, and
- Improving knowledge, policies & regulation to enhance urban resilience in the region.

The Partnership for Market Readiness (PMR), in a cooperation with the World Bank, provided Jordan with a USD $ 3 million grant to assist the government in establishing an integrated Monitoring, Reporting & Verification (MRV) framework in targeted sectors, as well as mitigating greenhouse gas emissions by enhancing the technical capacity of both public and private sector stakeholders. According to the PMR 2019 project, a climate change tag has been proposed to be included in the Ministry of Finance' s Public Investment Management System to facilitate the identification of climate related projects proposed by various government entities.

A "clean energy" digital finance platform is currently under preparation in close coordination with the Central Bank of Jordan, the Credit Information Bureau, development partners and financial sector representatives. The PMR has also supported the Ministry of Environment in drafting a Climate Change Bylaw, submitted to the Cabinet for approval, to support the Government's MRV efforts. [251]

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[249] Adaptation Fund (2015)
[250] Adaptation Fund (2020)
[251] PMR (2019), Partnership for Market Readiness (PMR) is a forum for collective innovation and action and a fund to support capacity building to scale up climate change mitigation.

The MDG Achievement Fund supported one joint program (JP) in Jordan during the 2009- 2013 period with a total budget of USD $ 4 million. The program's main objective has been to reduce water scarcity risks as well as other climate change threats to health, food security, productivity, among others, in order to maintain Jordan's human development achievements and growth by focusing on its long-term adaptation needs. The JP specifically aims at:[252]

- Establishing sustained access to improved water supply sources, and
- Enhancing adaptive capacity for health protection and food security

The Green Climate Fund (GCF) has supported two projects targeting both climate change mitigation and adaptation in a number of countries including Jordan. The first project "Green Cities Facility" is executed in 9 different countries: Georgia, Jordan, Republic of Moldova, Armenia, Tunisia, Mongolia, Serbia, North Macedonia and Albania. The project aims at enabling the transition of cities to low-carbon, climate-resilient urban development.

The second GCF project focusses on sustainable energy financing facilities, where EBRD and GCF co-financed a program to promote private sector climate finance through local financial institutions across a number of countries including four in the MENA region: Egypt, Morocco, Tunisia & Jordan along with Georgia, Armenia, Republic of Moldova, Mongolia, Tajikistan and Serbia. Both projects have used debt finance from the GCF reaching to USD $ 481.3 million with loans reaching USD $ 421.1 million and grants amounting to USD $ 60.2 million.[253]

In 2009, the Clean Technology Fund (CTF) proposed a project to accelerate global deployment of Concentrated Solar Power (CSP) by investing in the CSP expansion programs in five countries in the MENA region: Algeria, Egypt, Jordan, Morocco and Tunisia. According to the last update on CTF investment plan in 2014, the CTF initially allocated financing amounting to USD $ 750 million which then was reduced to reach only USD $ 543 million as a result of uncertainties amid political turmoil in the region. This includes the amount of finance dedicated to Jordan amounting to USD $ 50 million. [254]

[252] Millennium Development Goals Achievement MDGA Fund (2013b), this project has been jointly undertaken with a number of agencies including the UNESCO, UNDP, FAO & WHO
[253] GCF (2016) and GCF (2018)
[254] CTF (2014)

The International Fund for Agricultural Development (IFAD) aims at supporting national climate change mitigation and adaptation efforts in Jordan by focusing on rural development, improving access to financial services & markets, increasing agriculture's contribution to GDP, expanding job opportunities as well as empowering both women and youth to develop small enterprises to improve their livelihoods. The IFAD's overall country strategy program aims at raising rural communities' income and reducing their vulnerability to climate change risks by targeting small scale farmers, the unemployed and landless in rural areas. It has 9 projects operating in Jordan with a total IFAD financing amounting to USD $ 104 million and benefitting more than 90 thousand households. [255]

[255] https://www.ifad.org/en/web/operations/country/id/jordan

Table (5): Jordan- Mapping climate finance flows from international and national sources, among other purposes

Support Received						
Year	**Project**	**Donor/ Implementing Agency**	**Type of Support**			**Project Objectives**
			Financial Resources	**Capacity Building**	**Technical Support**	
2015-2019	Increasing the resilience of poor and vulnerable communities to climate change impacts in Jordan through implementing innovative projects in water and agriculture in support of adaptation to CC	Donor: Adaptation fund Implementing agency: MOPIC	Grant (USD 9,226,000)	x	x	The program seeks through its 1st component to support climate change adaptation in the agricultural and water sectors through technology transfer (the use of nonconventional water resources, rainwater harvesting, and permaculture). The 2nd component seeks to strengthen climate change adaptation capacities at the national and local community levels, respectively, knowledge dissemination, and policy and legislation mainstreaming.
2014-2018	Irrigation technology pilot project to adapt to climate change in Jordan	Donor: GEF Implementing agency: IFAD in cooperation with National Center for Agricultural Research and Extension (NCARE)	Grant (USD 2 million)	x	x	Reducing the vulnerability of the agricultural system to climate change in Jordan particularly from impacts on water resources by testing innovative and efficient water use technologies.
2009-2015	Mainstreaming sustainable land and water management practices in Jordan	Donor: GEF Implementing agency: IFAD in cooperation with Ministry of Agriculture	Grant (USD 6.44 million)	x	x	Reducing land degradation, promoting the integration of an ecosystem-based approach into public supported development activities, Designing and implementing community activities to improve the economic productivity of land and support the adoption of sustainable land management concept and the concept of integrated management of water resources at local levels.
2015-2018	Mainstreaming RIO Convention provisions into national sectorial policies	Donor: GEF Badia restoration program Implementing agency UNDP in cooperation with Ministry of Environment	Grant GEF (USD 1 million) (USD 777 thousand) Additional grant	x		RIO Convention mainstreaming in targeted strategies by developing roadmaps for each strategy and improving awareness and understanding of RIO Convention contribution to local sustainable development.
2015-2017	Preparation of first biennial update report (FBUR)	Donor: GEF Implementing agency: UNDP in cooperation with	Grant (USD 352 thousand)	x	x	Assisting Jordan in mainstreaming and integrating climate change consideration into national and sectoral development policies, assisting in the preparation and submission of Jordan's First Biennial Update Report

Support Received						
Year	Project	Donor/ Implementing Agency	Type of Support			Project Objectives
			Financial Resources	Capacity Building	Technical Support	
		Ministry of Environment and RSS				to UNFCCC.
	ICE	Donor: GIZ Implementing agency: Ministry of Environment	Grant (650 thousand Euro)	x	x	Increasing the cooperation between the respective ministries as well as between the public and private sectors, while agreeing on achievable and constructive targets to reduce the country's GHG emissions, combating climate change efficiently and in a participatory way.
	Partnership for Market Readiness (PMR) (phase 1)	Donor: World Bank Implementing agency: Ministry of Environment	Grant (USD 350 thousand)		x	Preparing the organizational framework for Jordan.
	Partnership for Market Readiness (PMR) (phase 2)	Donor: World Bank Implementing agency: Ministry of Environment	Grant (USD 3 million)	x	x	The Jordan Market Readiness Proposal (MRP) outlines a plan for the implementation of necessary market readiness components to support the development of appropriate market-based instruments. There are two phases. In the 1st phase, the objectives are: Developing a robust and transparent MRV framework that builds on and utilizes the existing information management systems managed by different ministries and funds, and Developing the pipeline of GHG mitigation activities through engagement, technical assistance, and capacity building of the private sector, increasing market participation through web-based registry for climate projects and financing sources.
	REIII	Donor: European union (EU) Implementing agency: Ministry of Energy	Grant (90 million Euro)	x	x	Replacing diesel-operated water pumps with 300 solar units, 200 in the Jordan Valley and 100 in the highlands.
	SNAP	Donor: CCAC Coalition Implementing agency: UNEP in cooperation with Ministry of Environment	Grant (USD 120 thousand)	x	x	Training and support of GHG emissions inventories (including BC), and mainstreaming short lived climate pollutants (SLCPs) in national plans.
	INDCs	Donor: GIZ Implementing agency:			x	Jordan has nationally determined to reduce its greenhouse gas emissions by 14% by 2030. This

Support Received						
Year	Project	Donor/ Implementing Agency	Type of Support			Project Objectives
			Financial Resources	Capacity Building	Technical Support	
		Ministry of Environment				contribution of GHG emissions reduction will be unconditionally fulfilled at, maximally, 1.5% by the country's own means compared to a business as usual scenario. However, Jordan, conditionally and subject to availability of international financial aid and support to means of implementation, commits to reduce its GHG emissions by at least 12.5% by 2030.
	Climate South Project	Donor: EU	Only Technical Assessment		x	Technical assistance task for Middle East developing countries.
2011-2019	Badia Rehabilitation Program: Monitoring and evaluation	Donor: Governing Council of the Badia Rehabilitation Program in the United Nations Implementing agency: Ministry of Environment in cooperation with University of Jordan	Grant (716 thousand JD)			Monitoring and evaluation of progress made in the project.
2014-2016	Ecosystems and livelihoods project in the Jordanian desert	Donor: Global Environment Facility (GEF) Implementing agency: Ministry of Environment in cooperation with the Royal Society for the Conservation of Nature	Grant (1,056 thousand JD)			Developing an eco-tourism program in the Eastern Badia region – Ruwaished.
2013-2017	Badia Rehabilitation Program: Training, guidance, and awareness raising for livestock breeders and the local community	Donor: Governing Council of the Badia Rehabilitation Program in the United Nations Implementing agency: Ministry of Environment in cooperation with Jordan Cooperative	Grant (737 thousand JD)	x		Publications, lectures, training, and awareness-raising courses.

Support Received						
Year	Project	Donor/ Implementing Agency	Type of Support			Project Objectives
			Financial Resources	Capacity Building	Technical Support	
		Corporation				
2011-2019	Badia Rehabilitatio Program: Implementation of rainwater harvesting in the small level of waterfalls (lines a semi-contour circles)	Donor: Governing Council of the Badia Rehabilitation Program in the United Nations Implementing agency: Ministry of Environment in cooperation with National Center for Agricultural Research and Extension	Grant (1,839 thousand JD)	x		Establishment of water harvesting techniques on 105 thousand acres of land using Valerian.
2011-2019	Badia Rehabilitation Program: Water diffusion and soil conservation technologies	Donor: Governing Council of the Badia Rehabilitation Program in the United Nations Implementing agency: Ministry of Environment in cooperation with National Center for Agricultural Research and Extension	Grant (140 thousand JD)	x		Implementation of 10 thousand meters of water diffusion technologies.
2011-2016	Badia Rehabilitation Program: Rehabilitation of artesian wells in Badia and improving water quality	Donor: Governing Council of the Badia Rehabilitation Program in the United Nations Implementing agency: Ministry of Environment in cooperation with the Water Authority of Jordan	Grant (2,866 thousand JD)	x	x	Rehabilitation of one well.
2011-2019	Badia Rehabilitation Program: Water harvesting technologies at a large level of waterfalls	Donor: Governing Council of the Badia Rehabilitation Program in the United Nations Implementing agency: Ministry of Environment	Grant (11,936 thousand JD)			Digging a total of 26 holes/ wells

Support Received						
Year	**Project**	**Donor/ Implementing Agency**	**Type of Support**			**Project Objectives**
			Financial Resources	**Capacity Building**	**Technical Support**	
		in cooperation with the Jordan Valley Authority				
2013-2019	Badia Rehabilitation Program: Sustainable production of irrigated feed Through rising height of AlWaleh Dam	Donor: Governing Council of the Badia Rehabilitation Program in the United Nations Implementing agency: Ministry of Environment in cooperation with the Jordan Valley Authority	Grant (27,878 thousand JD)			Cultivation of 16,000 dunum of barley using the Al Waleh dam water.
2016-2019	Completion of the national network of protected areas	Implementing agency: Ministry of Environment	General budget (55 thousand JD)			Increasing the size of protected areas to become 4% of the kingdom's area by 2025. Completing the addition of 9 new protected areas in addition to existing ones.
2013-2016	Development of a comprehensive database about the state of the environment in Zarqa River basin	Implementing agency: Ministry of Environment	General budget (30 thousand JD)			Developing and setting up a database about the state of the environment in the Zarqa River basin.
2013-2016	Development of the evaporative unit in Al-Hamra landfill for Zibar water treatment	Implementing agency: Ministry of Environment	General budget (260 thousand JD)			Treatment of Zibar produced from olive presses in Al Balqa'a.
2016-2019	Studying air pollutants concentrations from industries	Implementing agency: Ministry of Environment	General budget (1,156 thousand JD)			Monitoring the concentration of air pollutants in industrial areas.
2013-2018	Replacement of ozone depleting substances in the cooling and air conditioning maintenance sector	Donor: Montreal Fund Implementing agency: Ministry of Environment	Grant (3,540 thousand JD)	x		Reducing ozone depleting substances by 2025 by 40%.
2012-2016	Solar air conditioning and cooling project	Donor: Government of Germany Implementing agency: Ministry of Environment	Grant (2,720 thousand JD)	x		Installation of solar air conditioning and cooling systems
2016-2019	Central station for industrial wastewater treatment	Implementing agency: Ministry of Environment	General budget (75,000 thousand JD)			Establishing a central station for industrial wastewater treatment
2015-2016	Preparing the National Green Growth Plan	Donor: GGGI	Grant (797 thousand JD)		x	Preparing the National Green Growth Plan.

Support Received						
Year	Project	Donor/ Implementing Agency	Type of Support			Project Objectives
			Financial Resources	Capacity Building	Technical Support	
2016-2019	Setting up a solid waste recycling unit and waste-to-energy production unit	Implementing agency: Ministry of Environment	Private sector (15,000 thousand JD)			Setting up a solid waste recycling unit and waste-to energy production unit
2013-2019	Badia Rehabilitation Program: Environmental education for students in Al- Badia	Donor: Governing Council of the Badia Rehabilitation Program in the United Nations Implementing agency: Ministry of Education	Grant (1,416 thousand JD)	x		Reaching out to 300 schools in the Al-Badia.
2011-2019	Badia Rehabilitation Program: Cultivation of pastoral shrubs with water harvesting technologies	Donor: Governing Council of the Badia Rehabilitation Program in the United Nations Implementing agency: Ministry of Agriculture	Grant (3,909 thousand JD)	x		Cultivation of 5,250,000 plants.
2011-2019	Badia Rehabilitation Program: Protection of grassland and grazing and the application of the pastoral cycle	Donor: Governing Council of the Badia Rehabilitation Program in the United Nations Implementing agency: Ministry of Agriculture	Grant (3,093 thousand JD)	x		Protection of pasture.
2011-2019	Badia Rehabilitation Program: Raising the productivity of livestock in Badia and improving the income of targeted groups	Donor: Governing Council of the Badia Rehabilitation Program in the United Nations Implementing agency: Ministry of Agriculture	Grant (4,119 thousand JD)	x		Improving the productivity of livestock.
2015-2017	Badia Rehabilitation Program: Studies and surveys on land use in areas under rehabilitation	Donor: Governing Council of the Badia Rehabilitation Program in the United Nations Implementing agency: Ministry of Agriculture	Grant (60 thousand JD)		x	Reporting on the progress made in the project currently being implemented by the compensation program for Al-Badia.
2016-2018	Public-private partnership with 500,000 EUR funded by EIB to	Implementing agency: Ministry of Environment	Private sector (26,500 thousand			Construction of an industrial wastewater treatment plant in Halabat area

Support Received						
Year	Project	Donor/ Implementing Agency	Type of Support			Project Objectives
			Financial Resources	Capacity Building	Technical Support	
	conduct feasibility studies and tender documents.		JD)			
2016-2019	Development of Al-Ekeder landfill and construction of a Zibar landfill	Implementing agency: Ministry of Environment	General budget (2,004 thousand JD)			Treatment of Zibar produced from olive presses in northern Governorates.
2016-2020	Construction of a single landfill at the site of the Khirbet Al Samra wastewater treatment plant	Donor: WAJ and KFW	Grant and general budget			Construction of a single landfill at the site of the Khirbet Al Samra in order to bury the sludge in the landfill and to collect biogas according to international technical and environmental standards.
2016-2020	Treatment and management of sludge at the Central Irbid treatment plant and Wadi Al Arab plant	Donor: WAJ and KFW	Grant and general budget			Sludge treatment and management in Central Irbid treatment plant and Wadi Al Arab plant, according to international standards.
2015	Wind energy - Tafila, 117 MW	Jordan Wind project Company (JWPC)	Private sector (USD 290 million)			Diversification of energy sources. Generating clean energy. Reducing carbon emission. Raising awareness about energy rationalization, conservation of energy resources, and protection of environment.
2015	Solar energy - Mafraq, 10 MW	Philadelphia Company for Solar Energy	Private sector (USD 22.5 million)			Same as above.
2015	Solar energy – Azraq, 2.17 MW	Atersa	Spanish grant (USD 5 million)			Same as above.
2015	Solar energy – Azraq, 3 MW	Ennera	Spanish loan (USD 6 million)			Same as above.
2016-2017	Solar energy – round I, 200 MW	International and local companies	Private sector (USD 400 million)			Same as above.
2017	Wind energy – Ma'an, 80 MW	Elecnor	Private sector (USD 150 million)			Same as above.
2017	Solar energy – Zaatari	Belectric Gulf Ltd.	Kreditanstalt Fuer Wiederaufbau (KfW) (15 million Euro)			Same as above.
2017	Solar energy - Mafraq, 50 MW	Fotowatio Renewable Ventures	Private sector (USD 86 million)			Same as above.
2017	Solar energy - Mafraq, 50 MW	Hareon Swiss Holding	Private sector (USD 79 million)			Same as above.
2017	Solar energy - Mafraq, 50 MW	Sun Rise PV Systems	Private sector (USD 80 million)			Same as above.

Support Received						
Year	**Project**	**Donor/ Implementing Agency**	**Type of Support**			**Project Objectives**
			Financial Resources	**Capacity Building**	**Technical Support**	
2017	Solar energy - Alsafawi, 50 MW	Saudi Oger	Private sector (USD 80 million)			Same as above.
2018	Solar energy - Quwera, 103 MW	TSK and Environmena	Grant - Abu Dhabi Fund (USD 150 million)			Same as above.
2019	Wind energy - Fujij, Showbak, 90 MW	KEPCO	Private sector (USD 182 million)			Same as above.
2019	Wind energy -Tafila, 50 MW	Abour Energy Company (Xenel)	Private sector (USD 113 million)			Same as above.
2019	Wind energy - Tafila, 50 MW	KOSPO	Private sector (USD 113 million)			Same as above.
2019	Wind energy - Tafila, 100 MW	Mass Energy	Private sector (USD 201 million)			Same as above.
2019	Wind energy - Irbid, 45 MW	Hecate Energy	Private sector (USD 100 million)			Same as above.
2018	Solar energy - Muwaqer, 200 MW	Masdar	Private sector (USD 200 million)			Same as above.
2020	Solar energy – Round III, 200 MW	International and local companies	Private sector (USD 250 million)			Same as above.
2021	Wing energy – Round III, 100 MW	International and local companies	Private sector (USD 150 million)			Same as above.
2019	Solar energy - Risha, 50 MW	ACWA Power	Private sector			Same as above.
2019	Solar energy - East of Amman, 50 MW	AES/Mitsui	Private sector			Same as above.

Source: Ministry of Environment (2017a)

3.4- Climate Finance in Iraq

3.4.1– Iraq's Climate Finance Policy & Institutional Landscape

Over the past years, Iraq has significantly suffered from economic, political, environmental & security challenges. Climate change, associated with rising temperatures, reduced precipitation, increased water scarcity & salinization as well as prevailing dust & sand storms, has exacerbated these difficulties. Climate change is expected to have serious implication for the nation's future water, food, health & social security as a result of its adverse impact on a number of sectors including limited water resources and reduced agriculture production & productivity, the latter being an important source of livelihood for about 25% of the Iraqi population. [256]

Iraq has had clear vision of the importance of addressing the effects of climate change, and has been keen on joining the international environment community in spite of long years of political instability, wars & sanctions. In that respect, the Ministry of Environment (MOE) was established in 2003 to develop & to implement the State policy that aims at protecting and improving the quality of the environment, promoting environmental awareness as well as mitigating the negative impacts of climate change.[257]

The Ministry of Environment has taken important steps cooperating with international development partners and working on strengthening environmental management & protection, ensuring compliance with international treaties and raising national authorities' capacities for effective environmental governance, management of renewable & natural resources as well as addressing climate change challenges.[258]

Specifically, Iraq has accessed various multilateral environment agreements (MEAs) and joined the Vienna Convention and Montreal Protocol for the protection of the ozone layer in 2008.[259] In addition, Iraq became a member of the United Nations Framework Convention to Combat Desertification in 2009 and a member of the United Nations Framework Convention on Climate Change (UNFCCC). Iraq has also ratified the UN Framework Convention on Climate Change and the Kyoto Protocol in 2009.[260] In December 2016, Iraq signed the Paris Agreement on climate change, [261] while the ratification of the Paris Agreement is still progressing.[262]

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[256] Netherlands Ministry of Foreign Affairs (2018)
[257] Netherlands Ministry of Foreign Affairs (2018)
[258] UNDP (2016), the Ministry of Environment was later merged in 2015 with the Ministry of Health to become the Ministry of Health & Environment
[259] UNDP (2016)
[260] Iraq's Ministry of Environment & Health (2016)
[261] Netherlands Ministry of Foreign Affairs (2018)
[262] GCF (2019b)

The MOE has worked with the United Nations Development Program (UNDP) & the Global Environment Facility (GEF) for the preparation of Iraq's Intended Nationally Determined Contributions INDC to the UNFCC 2015 Agreement, endorsed & officially submitted by end of 2015. [263] It has also worked with the UNDP, the GEF and the UN Environment Program (UNEP) in the preparation and submission of Iraq's Initial National Communication (INC) to the UNFCCC in 2016.[264]

The MOE has been acting as a national liaison among national & international stakeholders including the Ministry of Water Resources & the Ministry of Agriculture, among other government entities, as well as development partners such as the UNDP, UNESCO, UNEP & FAO for conducting a number of studies on climate change related issues. These include but are not limited to studies on repeated dust storms phenomenon, drought risk management and desertification in order to examine their impact on vital sectors such as water, agriculture & health. [265]

Environmental Protection & Improvement Law

The Law of Environmental Protection & Improvement, no. 27 for the year 2009, provides the technical & legal framework for the Ministry of Environment's operations, duties & responsibilities. It also includes provisions for the protection of human, environment & biodiversity from air, water & soil pollution. This is in addition to other provisions related o environment control as well as sanctions for polluting activities. [266]

Climate Change National Committees & Permanent National Committee

To show its strong commitment to multilateral environment agreements (MEAs), the MOE has established a national committee for each of the ratified agreements to ensure proper follow up & fulfillment of its international obligations. [267] The MOE established a national climate change unit within its technical department to be in charge of overseeing climate related issues, ensuring coordination with stakeholders at the regional & international levels as well as undertaking capacity building & training. [268] In 2011, the Permanent National Committee on Climate Change was established to follow up on the development & implementation of national policies, strategies & action plans. The Permanent Committee is chaired by the Minister of Health & Environment and its members include representatives from the Prime Minister's advisory group, concerned ministries, municipalities & research institutions.[269]

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[263] UNDP (2016)
[264] Iraq's Ministry of Health & Environment (2016)
[265] Iraq's Ministry of Health & Environment (2016)
[266] Iraq's Ministry of Health & Environment (2016)
[267] UNDP (2016)
[268] Iraq's Ministry of Environment & Health (2016)
[269] GCF (2019b) & Iraq's Ministry of Environment & Health (2016)

National Development Plan NDP (2018- 2022)

Iraq's National Development Plan aims at achieving sustainable & balanced growth, social justice and an environment free from pollution. It is based on a number of pillars including laying foundations for good governance, promoting the role of the private sector in the economy, reducing poverty rates & unemployment as well as post crisis recovery & reconstruction of most affected areas. In doing so, the NDP is guided by sectoral policies & strategies that are primarily based on human capital development and establishment of a socially responsible economy that is capable of efficiently mobilizing & optimally using its scarce resources to improve the quality of life in a secure, stable & sustainable environment. The NDP (2018-2022) & earlier development plans have emphasized the importance of mainstreaming the environmental & socioeconomic dimensions into the nation's development planning framework. [270]

National Environmental Strategy and Action Plan (2013-2017)

In 2012, the Ministry of Environment developed the first National Environmental Strategy and Action Plan NESAP for Iraq (2013-2017), in coordination with the UNDP, UNEP & WHO in order to develop sustainable planning & implementation approaches for protecting the environment & managing its natural resources. It provides a strategic reference guide for the development and implementation of environmental policy, plans & action programs as well as the identification of priorities, problem areas & causes while sorting out potential short & long term policy interventions & solutions to address national climate change challenges. [271]

In doing so, the Strategy builds on the five pillars of environmental sustainability underlined in Iraq's National Development Plan NDP (2010- 2014), and which focus on reducing air pollution, water pollution, soil degradation, waste & solid waste and desertification. It also addresses a number of key objectives for the achievement of an integrated environment protection & management, and which include the following: [272]

1- Protect & improve air quality,
2- Protect & improve water quality,
3- Reduce land degradation & desertification,
4- Preserve coastal & marine environment,
5- Conserve sustainable use of marine biodiversity,
6- Development & improvement of waste management,
7- Reduction of oil pollution,
8- Integrated management of hazardous chemicals,
9- Reduction of radioactive contamination, and
10- Development of legal & institutional framework.

[270] Iraq's Ministry of Planning (2018)
[271] Iraq's Ministry of Environment (2012)
[272] Iraq's Ministry of Environment (2012)

The Strategy's Action Plan consists of the national environment protection & improvement (EPI) programs & & projects, estimated at more than 65 programs covering over 150 projects, developed in alignment with the National Development Plan NDP. It mainly aims at the implementation of each of the Strategy's ten key objectives in cooperation with relevant stakeholders including government & non- government entities as well as private institutions, under the supervision of the MOE that is responsible for the coordination, follow up & evaluation of the Plan's implementation. [273]

Iraq Intended Nationally Determined Contributions (INDCs)

In November 2015, Iraq submitted its INDC to the UNFCCC, and has set its greenhouse gas (GHG) emissions reduction targets at 90 million metric tons of CO2 that is equivalent to about 14% below its business-as-usual emission base between 2020 and 2035. The 14% reduction target is divided as follows: 13% to be achieved by executing 27 projects and is conditional on receiving international financial & technical support. This is in addition to 1% GHG emission reduction target to be achieved by executing 15 projects, and that is unconditional as it is to be financed from Iraq's own resources. [274]

It should be noted that Iraq's INDC does not include a total cost estimate for its national mitigation & adaptation needs except for some adaptation projects in water management, wastewater treatment & agriculture (irrigation) estimated at more than USD $ 11 billion, USD $ 80 billion and USD $ 45 billion respectively. No cost estimate has been specified for other adaptation measures in other sectors such as forestry & sustainable land management, climate smart agriculture, water conservation & reuse, tourism, health services and disease control. Similarly, no cost estimate has been made for needed mitigation action in the following sectors: renewable energy, energy efficiency, industry, oil & gas, public transport, aviation, rail, conservation & buildings. [275]

National Adaptation Plan (NAP)

In its intended nationally determined contribution (INDC), Iraq has noted its intentions to develop a National Climate Change Adaptation Strategy & Action Plan in addition to working on other national strategies for its most vulnerable sectors, namely, water & agriculture.[276] This would be developed by the Ministry of Environment, and would take into consideration the regional dimension of water scarcity among its neighboring countries.[277]

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[273] Iraq's Ministry of Environment (2012), the projects cover a number of sectors such as agriculture, industry, transport, & communication, buildings & services as well as education
[274] Iraq's Ministry of Environment (2015)
[275] Iraq's Ministry of Environment (2015) & Netherlands Ministry of Foreign Affairs (2018)
[276] Netherlands Ministry of Foreign Affairs & Iraq's Ministry of Environment (2015)
[277] Iraq's Ministry of Environment (2016)

Recently, Iraq has initiated the process of the preparation of a national adaptation plan to develop the nation's adaptive capacity to climate change adverse effects in order to strengthen the resilience of its most vulnerable sectors and to raise awareness & readiness among the most affected groups especially the rural poor, women & the youth. The process is undertaken in close cooperation with the United Nations Environment Program UNEP and will be funded through the Green Climate Fund GCF over a three year period project at an estimated cost of over USD $ 2.5 million. The project mainly aims at strengthening its national authorities' institutional, financial & technical capacities to address the nation's medium & long term adaptation needs while ensuring the integration of climate change adaptation into the national planning framework. [278]

Strategic Water and Land Resources for Iraq (SWLRI) Plan

In 2015, the Ministry of Water Resources developed the Strategic Water and Land Resources for Iraq (SWLRI) Plan setting objectives for achieving sustainable and optimal use of land & water supply as well as for ensuring integrated management of water resources. This is in addition to updating national priorities for investment in related sectors' infrastructure. The UNDP has worked on developing a strategic framework to provide Iraq with technical assistance for the development of its institutional capacity and for integrated water management. The SWLRI document builds on previous national water plans, such as, the National Water Plan developed in 2005 in cooperation with the United States Agency for International Development (USAID). [279]

Integrated National Energy Strategy (2013-2030)

The Integrated National Energy Strategy (INES) has been developed by a national committee, established by the Prime Minister's Advisory Commission, and which included representatives from relevant Ministries of Oil, Electricity, Planning, Finance, Environment and Mining & Industry. The main objective of the INES has been to set a plan for developing Iraq's energy resources as noted in the INES vision: "Develop the Energy sector in a coherent, sustainable and environment-friendly manner to meet domestic energy needs, foster the growth of a diversified national economy, improve the standard of living of Iraqi citizens, create employment, and position Iraq as a major player in regional and global energy markets."[280]

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[278] UN Environment Program Website- September 21st, 2020
https://www.unenvironment.org/news-and-stories/press-release/iraq-launches-national-adaptation-plan-process-climate-change#:~:text=Iraq%20launches%20National%20Adaptation%20Plan%20process%20for%20climate%20change%20resilience,-Pixabay&text=The%20NAP%20process%20aims%20to,projections%20of%20future%20climate

[279] Iraq's Ministry of Health & Environment (2016) and Iraq Energy Institute (2018)
[280] Iraq's Ministry of Health & Environment (2016) and World Bank (2013)

3.4.2- Financial Flows into Iraq' s Climate Mitigation & Adaptation [281]

There are three main dedicated climate funds supporting Iraq in its climate change mitigation and adaptation efforts. These are the Green Climate Fund, the Adaptation Fund and the Global Environment Facility, in addition to financial & technical support from the UNDP. The largest finance comes from the Adaptation Fund with total support reaching USD $ 10 million, followed by the UNDP which provided USD $ 6.5 million to the Government of Iraq. The Global Environment Facility has supported Iraq with two projects whose cost estimates totaled about USD $ 5.3 million, while the Green Climate Fund's financial flows reached USD $ 3.64 million to implement three projects in Iraq.[282]

Climate Funds Operating in Iraq- Selected Projects

The Adaptation Fund (AF), in cooperation with the International Fund for Agricultural Development (IFAD), has provided support to Iraq through its project "Building Resilience of the Agriculture Sector to Climate Change in Iraq (BRAC)" with total grant amounting to USD $ 10 million. This project addresses one of the main development constraints in Iraq and that is increased irrigation water scarcity. It specifically aims at strengthening the agro-ecological and social resilience to climate change in four governorates: Muthanna, Qadisiya, Missan & Thi Qar by enhancing water availability and use efficiency. This is in addition to promoting adaptive production systems & technologies in the agriculture sector to improve rural households' livelihoods & food security. The project is based on two main components: promoting climate – resilient investments as well as developing the national capacity to integrate climate change adaptation and risk reduction into the sector's planning & production frameworks. [283]

The Green Climate Fund (GCF) has supported Iraq with three projects with total funding costs estimated at about USD $ 3.6 million. The first GCF project is conducted in coordination with the UNEP, and provides financing up to USD $ 2.6 million. It aims at the development of Iraq's national capacity to advance the National Adaptation Plan (NAP) preparation process by extending institutional, financial & technical support. It also targets the integration of medium & long term adaptation needs into the country's planning framework. The project will enable the identification & planning for needed support activities as well as multi-sectoral cooperation in order to ensure proper coordination of both NAP formulation & implementation processes. This will be achieved through identifying resource mobilization areas & institutional capacity gaps while proposing solutions & follow up mechanisms. [284]

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[281] It should be noted that Iraq has not prepared a biennial report to be submitted to the UNFCC
[282] Adaptation Fund (2018a), GCF (2019a), GCF (2019b), GCF (2017c), UNDP (2018a) and GEF
[283] Adaptation Fund (2018a)
[284] GCF (2019b)

The second GCF project seeks to provide Iraq with both technical guidance & assistance to support the development of a comprehensive Technology Needs Assessment (TNA) and Action Plan to be conducted in cooperation with the Climate Technology Center & Network through the UNIDO. The TNA aims at categorizing and prioritizing national mitigation & adaptation technologies, in compliance with Iraq's 2015 intended nationally determined contributions (INDC), across a number of sectors including water, energy, agriculture and oil & gas. The total requested funding amount for this project is up to USD $ 373.5 thousands.[285]

The third GCF project aims at promoting Iraq's national readiness by strengthening its capacity to efficiently access, manage & track climate finance while abiding by the GCF funding rules & requirements. To that end, the project targets a number of key objectives including but not limited to the establishment of a National Designated Authority (NDA) under the Fund's leadership, strengthening stakeholders' engagement & participation as well as assessing & prioritizing national needs while following the GCF accreditation standards. The project cost is estimated at about USD $ 0.67 million.[286]

The Global Environment Facility (GEF), in cooperation with the UNDP, has supported two projects for mitigating the impacts of climate change mainly on the environment and energy sectors in Iraq. The total grants provided to the government of Iraq reached USD $ 5.3 million. The two projects aim at reducing greenhouse gas GHG emissions in Iraq by demonstrating and catalyzing the application of solar PV technology to meet all energy needs of offices, small businesses, residences and small town services as well as promoting the reduction of carbon emissions through using Energy Efficiency (EE) techniques in Baghdad City.[287]

The United Nations Development Program (UNDP) and the government of Iraq have been cooperating since 2009 for disaster risk management to provide technical support & to ensure multi- sectoral coordination among national stakeholders under the "Development of Disaster Risk Management Capacities" Project whose total cost is estimated at USD $ 6.5 million. The project focusses on developing early warning mechanisms, improving stakeholders' emergency response while raising vulnerable communities' awareness & preparedness to deal with risks & hazards. In addition, the project has provided Iraq with technical assistance for the preparation of related disaster risk management legislative framework. [288]

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[285] GCF (2019c)
[286] GCF (2017c)
[287] https://www.thegef.org/project/promoting-carbon-reduction-through-energy-efficiency-ee-techniques-baghdad-city & https://www.thegef.org/project/catalysing-use-solar-photovoltaic-energy
[288] UNDP (2018a) & Ministry of Foreign Affairs (2018)

3.5- Climate Finance in Tunisia

3.5.1- Tunisia's Climate Finance Policy & Institutional Landscape

Tunisia is considered to be one of the most vulnerable countries to climate change in the region as a result of increasing temperatures, rising sea levels, reduced precipitation and extreme weather conditions, such as, floods & droughts. These have all increased Tunisia's exposure to climate change risks and have had their adverse socio- economic & environmental impacts associated with water shortage, increasing evapotranspiration, reduced agricultural land, output & productivity, land salinization & coastal erosion, among others. [289]

In its newly adopted 2014 constitution, Tunisia has emphasized its determination to joining the global fight against climate change as it is noted in its article (44): the State will "provide the means necessary to guarantee a healthy and balanced environment and contribute to climate's integrity". [290] To show its strong commitment to the global efforts to combat climate change, Tunisia ratified the Paris agreement in 2017. It has also ratified the United Nations Framework Convention on Climate Change UNFCC in 1993, the United Nations Convention to Combat Desertification UNCCD in 1995 and the Convention on Biological Diversity CBD in 2003. [291]

Tunisia National Development Plan

Tunisia has adopted a new development model that is based on the transition to greener economy as stated in its National Development Plan (2016- 2020). The plan aims at promoting green economy & sustainable development, enhancing human development & social inclusion, reducing poverty as well as ensuring regional balanced development. The plan specifically aims at increasing the economic growth rate to an average 4% per year compared to less than a 2% average over the 2011- 2015 period, reducing poverty rates from 4.6% to 2% while creating 400,000 new employment opportunities. [292]

The NDP (2016- 2020) is in alignment with Tunisia's Sustainable Development Strategy (2014-2020) that emphasizes the importance of mainstreaming sustainability considerations into the national policy framework. This can be achieved through promoting sustainable production & consumption patterns, optimizing natural resource management, ensuring balanced regional development and enhancing capacity building for climate change adaptation, among others. [293]

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[289] Tunisia's Ministry of Environment & Sustainable Development (2015)
[290] Tunisia's Ministry of Environment (2019)
[291] Adaptation Fund (2019)
[292] Tunisia's Ministry of Environment (2019)
[293] UNECA (2014)

Tunisia Intended Nationally Determined Contributions (INDCs)

In September 2015, Tunisia submitted its Intended Nationally Determined Contribution (INDC) to the United Nations Framework Convention on Climate Change (UNFCCC). In its INDC, Tunisia plans on reducing its greenhouse gas (GHG) emissions across all sectors including: industry, energy, agriculture, forestry, land use, waste & wastewater treatment, in order to achieve its 41% carbon intensity reduction national target by year 2030 compared to year 2010.[294]

Climate change mitigation efforts in Tunisia focus on the energy sector as it is the largest contributor to GHG emissions, and aim at reducing 46% of the sector's carbon intensity by 2030.[295] Tunisia' s national adaptation efforts aim at reducing Tunisia's vulnerability to global warming and its adverse impacts on its vital sectors including water, agriculture, coastline, ecosystems, health & tourism.

Based on its INDCs, Tunisia is targeting a 13% carbon intensity reduction target to be achieved by 2030 relative to 2010, under unconditional contribution, namely, using its own domestic resources. An additional 28% reduction in its carbon intensity can be achieved under conditional contribution, and that is by relying on international support providing financial resources, capacity building & technology transfer. The total cost for achieving its climate change mitigation & adaptation 2030 targets is estimated at USD $ 20 billion, under both conditional & unconditional contributions.[296]

National Strategy on Climate Change

In 2012, Tunisia launched the National Strategy on Climate Change focusing on mitigating climate change impacts on the economy with special focus on the energy sector. Tunisia has been one of the pioneering countries in developing its nationally appropriate mitigation actions (NAMAs) targeting a number of sectors and supporting the transition to low carbon economy.[297] These include the following sectors: energy, cement, building, wastewater treatment as well as agriculture & forestry. [298]

[294] Tunisian Ministry of Environment & Sustainable Development (2015)
[295] Tunisia's Ministry of Environment & Sustainable Development (2015)
[296] Tunisia's Ministry of Environment & Sustainable Development (2015)
[297] Tunisia's Ministry of Environment & Sustainable Development (2015)
[298] Fadhel (2012)

The strategy aims at achieving the following mitigation objectives: [299]

- Reducing the whole economy's carbon intensity by about 60% in 2030 compared to 2009 levels through:
  - Promoting energy efficiency policies & measures to contribute to the continuous 2-3% carbon intensity decrease on annual basis,
  - Increasing renewable energy share in electricity generation to 30% by 2030
- Stabilizing GHG emissions by year 2050.

National Climate Change Unit

In 2018, the Tunisian Government established a Special Management Unit, under the authority of the Ministry of Local Affairs & Environment, to be responsible for the coordination, monitoring & implementation of climate change related activities across all sectors. The Unit is in charge of the development of the National Adaptation Plan, and has established two advisory committees for mitigation & adaptation, respectively. It is also responsible for the integration of climate change into the national development planning framework, strengthening stakeholders' capacity as well as monitoring INDC's implementation.[300]

Tunisia National Adaptation Plan

Tunisia has adopted a strong environment protection policy since the late 1980s with the establishment of the National Environment Protection Agency in 1988, the development of the National Environmental Action Program in 1990, followed by the establishment of the Ministry of Environment & Territorial Improvement in 1990 and the Tunisian Observatory for Environment & Sustainable Development in 1994. [301]

Tunisia has previously taken a sectoral approach in deciding its climate adaptation actions as it developed adaptation strategies for sectors that are highly vulnerable to climate change, such as, water, agriculture, health, coastline & tourism, in close coordination with development partners including but not limited to the UNDP & GIZ. Over the last few years, the Government of Tunisia has made progress working on the development of its National Adaptation Plan (NAP) as well as in laying out a National Roadmap for the implementation of both its INDC & NAP while ensuring cross sectoral coordination in the development of the adaptation planning framework. [302]

[299] Fadhel (2012)
[300] Adaptation Fund (2018b)
[301] Adaptation Fund (2019)
[302] Adaptation Fund (2018b)

Sustainable Energy Policy and Programs

Tunisia is considered to be one of the few developing countries which have been pro-active in adopting a sustainable energy framework since the mid- 1980s, and where the energy transition process has been accelerated by the mid- 2000s as a result of global increase in oil prices coupled by growing national energy deficit. This led to the development of ambitious renewable energy & energy efficiency programs to meet national requirements in a cost effective manner while reducing the country's vulnerability to increased oil prices. [303]

The main objectives of Tunisian Sustainable Energy Policy are: [304]

- Reducing the country's energy intensity & dependence on fossil fuels by diversifying sources of energy supply through the development of alternatives, such as, renewables,
- Enhancing the economy's competitiveness by reducing energy costs, and
- Contributing to global climate change combatting efforts by reducing GHG emissions.

To that end, Tunisia adopted a three-year program (2005-2007) followed by a four-year program (2008-2011) developed to reduce national exposure to rising oil prices that led to an increase in Tunisia's energy fiscal cost estimated at 12% of its GDP in 2007. Both programs aimed at promoting sustainable energy development through higher investments in renewable energy & energy efficiency. [305] The energy – saving action plan for the (2017- 2030) period presents a total investment cost of more than USD $ 11 billion. It aims at scaling up energy efficiency & renewable energy in the following sectors: industry, residential buildings, transportation, public lighting, agriculture & fishery. [306]

National Energy Transition Fund

The Energy Transition Fund was established in 2014 as an instrumental means for the implementation of Tunisia's national energy transition agenda. The agenda aims at strengthening the energy sector management, and its two main pillars: energy efficiency & renewable energy by achieving a 30% reduction in primary energy demand as well as a 30% increase in renewable energy share in electricity production by year 2030. The Energy Transition Fund replaced the National Energy Management Fund and expanded its scope of intervention & actions. In its INDC, Tunisia states that the Transition Fund needs international funding support to increase its financial resources that are partly raised through imposing taxes on energy consumption.[307]

[303] GIZ (2012a)
[304] GIZ (2012a)
[305] GIZ (2012a)
[306] Tunisia's Ministry of Environment (2019)
[307] Tunisia's Ministry of Environment & Sustainable Development (2015)

Tunisian Solar Plan

The Tunisian Solar Plan (TSP) was developed in 2009 and revised in 2012 & 2015. The main objective of TSP has been to achieve a total renewable energy penetration target of 30% of the national electricity generation mix by 2030. This is in addition to adopting energy efficiency measures to reduce electricity demand by an average 1.4% on an annual basis over the 2013-2020 period. TPS implementation is expected to result in GHG emission reductions in the order of 53 MtCO2 during the 2013- 2020 period. [308]

TSP provides an integral part of Tunisia's sustainable energy framework as it addresses its future energy needs & climate change issues. TSP mainly aims at achieving the following objectives: [309]

- Deployment of renewable energy, particularly, wind & solar, in electricity generation,
- Improvement of energy demand & saving management, and
- Establishment of a strong base of expertise to promote the development of solar energy equipment industry in Tunisia.

In the 2010- 2016 period, forty projects have been implemented under the TSP in a number of areas including: solar power, wind power, energy efficiency & research. [310]

The United Nations Development Program (UNDP), in coordination with the Global Environment Facility (GEF) provided the National Agency for Energy Conservation with assistance to develop a Nationally Appropriate Mitigation Action (NAMA) to support the Tunisian Solar Plan TSP.[311]

[308] UNFCCC (2015)
[309] GIZ (2012a)
[310] GIZ (2012a)
[311] UNDP (2014)

3.5.2- Financial Flows into Tunisia's Climate Mitigation & Adaptation

In its Intended Nationally Determined Contribution, the Government of Tunisia identified its funding needs for achieving its climate change mitigation and adaptation objectives, estimated at a total of USD $ 20 billion over the 2015-2030 period. Climate change mitigation would require the mobilization of large investments amounting to USD $ 17.5 billion, while the total cost for adaptation is estimated to be about USD $ 1.9 billion over the period 2015-2030. [312]

Table (6) & (7) present Tunisia's target sectors & funding requirements for climate change mitigation & adaptation as identified in its INDC. As shown in table (1), more than 80% of Tunisia's mitigation funding needs will be allocated to the energy sector, the largest contributor to GHG emission in the country. As for adaptation, most of the funding needs are required to provide institutional support, capacity building as well as research & development. [313]

Table (6)- Tunisia- Sectors & Funding Needs for Mitigation

Sectors/Fields	Funding (USD million)	% of Total
Energy	**14,917**	**86%**
Energy efficiency	6,991	47%
Renewable energy	7,926	53%
Agriculture, forestry and other land use (AFOLU)	**1,533**	**9%**
Agriculture	967	63%
forestry and other land use	566	37%
Water	**972**	**6%**
Solid water	70	7%
Sanitation	902	93%
Total	**17,422**	**100%**

Source: Tunisian Ministry of Environment & Sustainable Development (2015)

[312] Tunisia's Ministry of Environment (2015)
[313] Tunisia's Ministry of Environment (2015)

Table (7)- Tunisia - Sectors & Funding Needs for Adaptation

Sectors/Fields	Funding (USD million)	% of Total
Water resources	533	28%
Coastline	556	29%
Agriculture	21	1%
Ecosystems	782	41%
Health	7	0.4%
Tourism	17	1%
Total	**1,916**	**100%**

Source: Tunisian Ministry of Environment & Sustainable Development (2015)

Climate Funds Operating in Tunisia- Selected Projects

Adaptation Fund (AF) has recently provided Tunisia with support reaching about USD $ 10 million for its integrated natural resource management & livelihood project implemented in the rural Kairouan region. The project specifically aims at promoting sustainable land management as well as reducing poverty by improving the rural poor's resilience to climate change and protecting their livelihoods. It plans on promoting sustainable land management practices by reducing water losses, encouraging groundwater replenishment, reducing damage to productive land & rural transport infrastructure as well as introducing climate resistant agriculture technologies & livelihood schemes. The project's objectives will be achieved through its three main components: [314]

1- Improving access to basic services & protecting livelihoods,

2- Strengthening sustainable value chains through climate resilient infrastructure and

3- Promoting knowledge management

[314] Adaptation Fund (2019)

Green Climate Fund (GCF) has supported three projects targeting climate change mitigation and adaptation in a number countries including Tunisia. The first GCF project focusses on sustainable energy financing facilities, and is implemented in coordination with the European Bank for Reconstruction & Development EBRD, with total finance reaching USD $ 420.5 million. The project aims at scaling up private climate finance through local financial institutions for more than 20,000 scalable & replicable renewable energy, energy efficiency & climate resilience projects to be undertaken in a number of sectors including industry & agriculture. The project is implemented in a number of countries including four in the Arab region. [315]

The GCF has also provided funding support reaching EUR 228 million to finance its "Green Cities Facility" project implemented in a number of countries including Tunisia and in coordination with the European Bank for Reconstruction & Development EBRD. The project aims at enabling the transition of cities to low-carbon & climate-resilient urban development. The facility is targeting to help 10 cities to plan and undertake comprehensive green city actions, reducing more than 11 million tCO_2eq, and benefitting more than 23 million individuals.[316]

In its recent "High Impact Program for the Corporate Sector" project, implemented in coordination with the European Bank for Reconstruction & Development EBRD, the GCF aims at enabling a structural transformation within the energy intensive industries, (non-fossil energy) mining companies, agribusinesses and agribusiness value chains through de-carbonization. This can be achieved by establishing strong linkages between climate considerations at the project level and corporate governance performance, supported by the adoption of low carbon climate resilient technologies & sectoral strategies. The total GCF finance provided for the implementation of this program in 7 countries including Tunisia, has reached over USD $ 250 million.[317]

[315] GCF (2016)
[316] GCF (2018)
[317] GCF (2020)

Chapter Four- Scaling Up Sustainable Finance in the Arab Region

This chapter starts, in section 1, by a discussion of the barriers to scaling up sustainable finance in general & climate finance in particular in the Arab region. Section 2 provides a SWOT analysis for the region's financial system to underline its strengths, weaknesses, opportunities as well as threats associated with the readiness of Arab countries' financial sectors to support the transition to greener economies. In doing so, it presents a list of immediate needs for the region's financial systems to enhance their readiness to play its potential role in funding the green growth inclusive process. Section 3 then presents good practices in financing the transition to green climate resilient economies. The chapter concludes, in section 4, with policy recommendations for enhancing the role of Arab countries' financial systems in channeling scarce financial resources to their most efficient uses in green socially responsible investment.

4.1 - Barriers to Promoting Sustainable Finance in the Region

Sustainable finance practices are still in their early development stages in the Arab region, and are expected to deepen over the next coming years. That's why, it is important to understand the various barriers that could be inhibiting the promotion of sustainable finance in general and climate finance in particular in order to be able to address such barriers through appropriate policy measures. This section starts by discussing the various barriers that may be limiting the needed finance flowing into greener, climate resilient and more responsible investment.

First- Inadequate Legislative Support

The non- mandatory nature of requirements to adhere to sustainable finance policies & rules could be one of the barriers inhibiting its promotion in the region. This has been the case in most Arab countries where no explicit climate related financial regulations have been enacted and where the environmental, social & governance (ESG) guidelines have been developed as reference guidance framework to be adopted, on voluntary basis, by finance providers & investors, and not as mandatory requirement for accessing finance or for reporting & disclosure.

Absence of adequate enforcement mechanisms of green finance policies, rules & regulations has been cited among the top barriers to scaling up green finance in the United Arab of Emirates (UAE). This has been noted by financial institutions in response to an online survey developed & conducted in 2015 by the Ministry of Environment & Water (MOEW) & the Central Bank in cooperation with the Insurance Authority, Securities & Commodities Authority (SCA) and Dubai Financial Services Authority (DFSA), and which aimed at providing an assessment of green finance practices in the UAE, the challenges as well as the financial sector readiness. [318]

[318] UAE MOEW (2016)

This has also been the case in Egypt where the adoption of ESG rules has been voluntary and sustainability requirements have not been strictly enforced in the banking sector as per a recent country case study on mainstreaming green finance in the Egyptian Banking sector. Specifically, the study shows that some banks expressed their reluctance to impose non- mandatory requirements, associated with environmental & social risks, so not to risk losing their customers to more lenient market competitors that do not comply by sustainability rules & procedures. In that respect, inadequate enforcement may lead to inconsistency in implementation across the sector and may create an unwarranted opportunity for unhealthy competition among financial institutions.[319]

To that end, enforcement may be necessary to motivate financial institutions to adopt green finance practices and to promote investment in greener solutions while penalizing those who do not comply with green & sustainable finance policies. Mandating sustainability adoption of bank lending procedures may also lead to better enforcement of environment regulations by borrowing firms in the Arab countries where environmental laws are poorly enforced. [320]

Second- Lack of Awareness of Sustainable Finance Merits

Lack of understanding or awareness of the merits of green sustainable finance could act as a barrier on the part of investors as well as finance providers. According to the UAE Securities & Commodities Authority SCA's Master Plan for Sustainable Capital Markets issued in 2019, the main challenges to the development of sustainable financial markets include the lack of understanding & awareness on the part of many investors of the importance of the concept of sustainability and its ensued benefits on their businesses, beyond corporate social responsibility.[321]

Based on Sustainability Awareness Survey, conducted by the Egyptian Stock Exchange, more than 85% of investors in Egypt are not aware of sustainability indices that differentiate between firms listed in the stock market. This underlines investors' inability to understand the link between firms' adoption of sustainability practices & potential higher profitability ensuing from better risk assessment, management & mitigation. This also explains investors' lack of interest in pursuing information & knowledge about firms' sustainability rankings & ratings. [322]

[319]Atef (2017), the study's results are based on interviewees' response to questionnaires addressed to senior/ middle risk management officials with credit approval & decision making authority, in a number of Egyptian banks.
[320] Atef (2017)
[321] UAE SCA (2019)
[322] Atef (2017)

Some Egyptian banks have also reported that investors may lack the awareness & understanding of the importance of undertaking socially responsible & environment friendly projects. This is because most borrowing corporations perceive integrating sustainability practices as a means to get certified as a green entity to acquire certifications, such as ISO, and do not perceive how mainstreaming sustainability practices makes a clear business case for supporting their own ventures' profitability.[323]

It could be also the case that integrating environmental & social risk assessment systems into the region's financial institutions' business model is still perceived as a philanthropic practice rather than a strategic consideration to be factored into their business decision- making process. This has been reported in the Association of Banks in Jordan ABJ's Banking Sector Sustainability Report of 2016 where it underlines noticeable improvement in non- financial reporting & sustainability disclosure, and shows higher tendency for banks to develop new sustainable financing products, yet it shows that the merits of mainstreaming sustainability are still underestimated and mostly associated with charity & humanitarian actions.[324]

Third- Lack of Incentives to Finance the Transition to Green Climate Resilient Economies

Lack or absence of incentives explicitly offered to finance providers to promote financial sector greening may be one of the main barriers limiting the potential role of the region's financial institutions in supporting the transition to greener & more resilient economies. In most Arab countries, incentives have been offered within the sustainable energy framework to promote private investment in renewable energy & energy efficiency sectors through a number of measures, such as, tax incentives & exemptions, among others.

In Jordan, for instance, according to Renewable Energy RE & Energy Efficiency EE Law, all RE & EE production equipment & inputs whether locally developed or imported, have been exempted from sales taxes and custom duties. [325] On the other hand, no explicit incentives have been directed to finance providers to promote their participation in scaling up green finance, through measures, such as, preferential rates & credit allocation policies, as has been the case in countries, such as, Bangladesh & India discussed in the following section.

[323] Atef (2017)
[324] Association of Banks in Jordan ABJ (2016)
[325] Jordan's Ministry of Environment (2017a)

Fourth- Market Barriers

The limited pipeline of bankable green projects in general & climate specific projects in particular may be attributed to the difficulty of identifying and structuring investment opportunities in such ventures. As a result, this may limit the development of an efficient market for financing green & climate change related projects, and hence may reduce the ability of financial institutions to scale up sustainable & climate finance in the region.

Limited private investment in climate change related projects has been to a large extent determined by the nature of their risk- return profile where most of these projects are highly capital intensive and the value at risk is too high. This is in addition to lack of capital, human resources & technical know- how that act as barriers to market formation & private investment. [326]

Market barriers also underline perceived lack of profitable investment opportunities as well as low commercial readiness associated with green projects' riskiness, long payback period & low profitability. These have been noted as some of the main barriers to promoting green finance in the United Arab of Emirates by more than 20% of surveyed financial institutions, following in ranking the inadequate enforcement of green rules & policies. [327]

Similarly, the UAE Securities & Commodities Authority SCA's Master Plan for Sustainable Capital Markets (2019) states that investment decision making short termism, misconceptions about sustainable investment's risk– return profile and lack of sufficient investment opportunities are among the important challenges inhibiting the development of sustainable financial markets.[328]

Fifth- Climate Funds Accessibility's Challenges

Difficulty accessing dedicated climate funds' resources as a result of slow & complex procedures coupled by the under- developed capacity of national implementing agencies could be an important barrier to scaling up climate finance in Arab countries. Despite Arab countries' strong need for climate adaptation financial & technical support actions, four low income countries, namely, Djibouti, Mauritania, Sudan & Comoros, have been able to access the Adaptation Fund's resources only once since its establishment in 2001 through the end of year 2019, while a country like Yemen has had no access to the Fund.[329]

[326] UNEP (2019a)
[327] UAE MOEW (2016)
[328] UAE SCA (2019)
[329] ESCWA (2019)

Accessing climate funds has proven to be challenging for Arab countries as a result of complex accreditation processes that demand strong institutional capacity at recipient national entities as they need to submit their funding proposals through accredited agencies. It has been estimated that the accreditation process and endorsement of investment plans may take on average between 10 & 28 months while the project approval stage may require an additional 12 to 22 months. Similarly, Caps or limits imposed by some climate funds constrain countries' access to financing their adaption priority needs as has been the case with three Arab countries, Morocco, Jordan & Iraq that already reached their funding limit with the Adaptation Fund, set at only USD $ 10 million per country, despite each implementing only one project. [330]

To address these challenges, some climate funds have developed country readiness programs to enhance the capacity of national implementing agencies in both project proposal development & accreditation process. This has been the case with the Green Climate Fund GCF whose readiness program allocates up to USD $ 1 million per country in the form of grants and technical assistance. The GCF has already approved readiness support requests from a number of Arab countries under the National Designated Authority NDA Strengthening & Country Programming projects. These countries are Algeria, Comoros, Djibouti, Egypt, Iraq, Jordan, Libya, Mauritania, Morocco, Oman, Sudan & Tunisia. [331]

Sixth- Implementing Agencies' Limited Institutional Capacity

The under- developed capacity of implementing agencies in most Arab countries may be limiting their ability to access the various sources of private & public climate finance, available at the national & international levels. This has been the result of a number of factors including but not limited to poor quality data, lack of experience & know how as well as institutional constraints, such as, the absence of a centralized body capable of monitoring activities and efficiently coordinating between the various stakeholders.

[330] ESCWA (2019), the accreditation process aims at ensuring that the recipient entity has the sufficient capacity to efficiently use the financial resources, and is based on an assessment of a number of factors including but not limited to fiduciary standards as well as social & environmental safeguards

[331] ESCWA (2019)

These factors have been noted in Egypt's First Biennial Update Report (BUR), presented to the United Nations Framework Convention on Climate Change UNFCC in 2018, highlighting lack of reliable & consistent data sets, inefficient institutional coordination mechanisms as well as less than developed systems for measurement, reporting & verification MRV. This is in addition to lack of competent personnel that is capable of developing funding proposals and adequately communicating climate related risks to vulnerable communities as well as opportunities to the society at large.[332] These constraints have also been reported in Jordan's First Biennial Update Report (BUR), presented to the UNFCC in 2017.[333]

Seventh- Absence of Data, Standards & Definitions

Lack of consistent good quality data as well as absence of well- developed commonly accepted metrics, classification standards, definitions & methodologies have all acted as barriers for promoting sustainable finance in general & climate finance in particular in the region as they influence the ability of the various stakeholders to efficiently adjust to business related risks and to adequately capitalize on opportunities. Well– structured information is necessary to enable investors to make well informed decisions, and its absence may have played a significant role in limiting private investment in climate specific opportunities as it affects the business decision making process through risk assessment & due diligence.[334]

[332] EEAA (2018)
[333] Jordan's Ministry of Environment (2017b)
[334] UNEP (2019a)

4.2 - Financial Sector's SWOT Analysis & Immediate Needs

This section provides an overview of the strengths, weaknesses, opportunities & threats of the Arab region's financial sector, as discussed in Table (1) below. This is followed by a presentation of the system's immediate needs to enable & support its instrumental role in funding Arab countries' transition to greener economies by gradually shifting its "financing model" from being conventional to a more sustainable one.

This highlights the necessary reform measures that financial sector governance bodies would need to consider in order to scale up sustainable finance in general & to promote climate finance in particular irrespective of the country's level of economic development or progress in shifting towards a more inclusive sustainable financial system.

First- SWOT Analysis - Arab Region's Financial Sector

Table (1): Arab Region's Financial Sector SWOT Analysis

STRENGTHS	WEAKNESSES
Financial Soundness Indicators ▪ Arab countries' financial system has been mostly dominated by the banking sector that has shown signs of stability & development over the past few years.[335] These include the following: ○ Capital adequacy ratios reaching an average of more than 16% over the 2015- 2018 period,[336] ○ Liquidity ratios reaching 28% average in 2018,[337] ○ High earnings with return on equity ROE ratio averaging between 12.5 & 14% over the 2013- 2018 period,[338] ○ Loan to deposit ratio reaching 100% in 2018 for the region up from 90% in 2017,[339]	**Inadequate Regulatory Support** ▪ No explicit climate specific financial regulation have been enacted, ▪ No mandatory enforcement of ESG guidelines already issued in some Arab countries, and which are adopted on voluntary basis, ▪ Poor enforcement of environment related laws in the region and which makes it difficult for FIs to mainstream environmental & social (E &S) risks into their core operations & strategies by requiring their clients to abide by E & S procedures.

[335] Arab Monetary Fund (2019), the total assets of the region's banking sector represent more than 120% of Arab countries' total gross domestic product GDP, as of 2018.
[336] Arab Monetary Fund (2019), Arab banks' capital adequacy ratios are higher than Basel III requirement of 10.5%
[337] Arab Monetary Fund (2019)
[338] Arab Monetary Fund (2019)
[339] Arab Monetary Fund (2019)

○ Reduced ratios of non- performing loans (NPLs) to total loan ranging from less than 2% in countries, such as, Qatar, Saudi Arabia & Kuwait, to a maximum of less than 14% in countries, such as, Tunisia, Iraq & Algeria, as of 2017.[340] ▪ Improvement in the Arab financial system's performance has been the result of the region's financial sector reforms undertaken over the past decade. This focused on restructuring the financial sector through mergers & acquisitions, injecting capital to raise FIs' capital adequacy ratios, cleaning FIs' balance sheets through debt settlement & rescheduling. [341] ▪ This is in addition to the strengthened role of financial supervisory & regulatory authorities in the region in the wake of the 2008 global financial crisis. [342] ▪ Further reforms are being undertaken for the development of non- banking financial sector to improve access to finance.	**<u>Absence of Skills & Expertise</u>** ▪ This is important to provide support to the growing sustainable finance sector through a base of well qualified lawyers, accountants & data providers, among others, to address the various issues associated with the full integration of sustainable & climate finance into the region's system **<u>Under Developed Risk Management Capacity</u>** ▪ In spite of the ongoing progress in FIs' capacity building & training, most of the region's FIs still need to develop their risk assessment & management capacity which have been under- developed as a result of a number of factors including: ○ Long legacy of FIs' State ownership & prolonged period of directed credit to public enterprises, ○ Risk aversion & reluctance on the part of lending institutions to extend credit in light of financial sector reforms reducing NPLs built up over the past decades, and

[340] Hassan (2019)
[341] Zarouk (2011)
[342] Zarouk (2011)

Supportive Policy Framework ▪ Existing policy framework provides support for the gradual move towards sustainable financial system as most countries in the region have already enacted & adopted regulations over the past two decades to raise private sector participation while targeting increased investment in specific sectors, such as, the energy sector. ▪ Enacted regulations include public private partnerships laws. These may be considered as stepping stones for further policy support needed to promote sustainable finance.	○ FIs' preference to invest in high return/ low risk financial assets, such as, government treasury bills, thus limiting private sector's access to credit. ▪ Underdeveloped risk management capacity may also lead to FIs' increased exposure to operational risk as a result of lack of understanding of the environmental & social (E & S) risks associated with promoting sustainable & climate finance. ▪ Increased operational risk may ultimately lead to systemic risk negatively affecting the financial sector's stability at the national & regional levels. **Lack of Awareness of the Merits of Sustainable Finance** at the society level and at most of the region's financial institutions that still consider sustainable finance as a philanthropic & humanitarian cause rather than a business case for developing their ventures.

Table (1): Financial Sector SWOT Analysis (Continued)

OPPORTUNITIES	THREATS
Financial Sector Structural Transformation ▪ **Capitalize on Current Reform Momentum** ○ The region's financial sector is currently undertaking a structural transformation process at the regulatory, operational & technological levels steadily & gradually progressing towards the establishment of a more inclusive financial sector & a cashless economy ○ The current reform phase aim at promoting both financial inclusion & digitalization to improve access to finance among the most vulnerable groups and to speed the move to cashless economies respectively. This is being underway through the development of national financial inclusion & digital transformation strategies as well as the development of new products & services.	Threats to the Financial sector are mostly associated with climate change related risks which have ensuing costs to the stability of the system & the economy as a whole. This is in addition to operational and systemic risks, as noted above. ▪ **Climate Change Related Risks-** These include the following: [343] ○ **Transitional Risks –** Transition to low carbon green economies entail changes at various fronts including: policy, institutional, regulatory, market & technology which may disrupt FIs' operations & systems ○ **Physical Risks** – These are directly associated with the impact of climate change on borrowing firms through potential damage to their assets, disruption of their supply chains, operations, transport & delivery system, and water & energy supply

[343] UNEP (2019a)

OPPORTUNITIES	THREATS
○ Arab countries aim at raising private sector engagement in greening their economies. There is a room for the role of financial sector extending credit and developing new tools & services to capitalize on sustainable & climate change related investment opportunities	▪ **Operational Risk**- As noted above, less than adequate risk management capacity and lack of understanding of the E & S risks, associated with promoting sustainable finance & climate finance, may increase FIs' exposure to operational risk. ▪ **Systemic Risk-** this may result from FIs' heightened exposure to physical, transitional and/ or operational risks, if not well assessed, priced, managed and adequately provisioned for.

Second- Financial Sector Immediate Needs

The following presents a list of reform measures & policy interventions that financial sector governance bodies need to consider to address the financial sector's immediate needs:

1- **Establish National Sustainable Finance Framework**- This would provide a national roadmap for the country's financial sector stakeholders for aligning the financial sector nationwide with sustainable development & responsible investment by integrating sustainability into financial institutions FIs' business model & decision making process. It should include a number of key components as follows: [344]

   a. Assessment for the national financial system's needs,

   b. Estimation of required financial & technical resources,

   c. Identification of barriers to scaling up sustainable finance,

   d. Development of proper policy reforms & intervention measures, and

   e. Identification of result measurement framework to assess progress & impact.

2- **Issue Green Finance Guidelines & Regulations**: These are necessary to provide FIs with reference guidance framework to enable them to efficiently integrate sustainability considerations into their operations & core strategies while addressing potential risks.[345] [346]

   a. Develop Green Finance Guidelines: These would provide FIs with a set of green finance definitions, methodologies, standards & tools,

   b. Enact Green Finance Specific Regulations- These include but are not limited to climate specific financial regulations to enable FIs to deal with climate change related risks, such as, transitional & physical risks, and

   c. Enforce Green Finance Rules & Regulations- FIs may be mandated to follow green finance rules & regulations, and this can be undertaken on a gradual basis within a 3 to 5 year time framework.

[344] UNEP (2017)
[345] UNEP (2017), for instance, China has issued "Guidelines for Establishing the Green Financial System" in 2016. In 2016, France issued the first mandatory climate change financial disclosure law in the world.
[346] UN Environment (2015), Bank of Bangladesh issued Policy Guidelines for Green Banking in 2011, and required commercial banks to gradually adopt them over a three phase - time framework

3- **Align Financial Institutions FIs' Incentive System with Sustainable Finance through**:[347]

a. Selective Intervention- This may include a number of measures such as credit allocation policies and priority sector lending whereby central banks can provide FIs with direct incentives to lend out to specific sectors, as has been the case in countries such as India & Bangladesh,[348] and

b. Sustainability Targets- these could be incorporated into FIs' business strategies, governance framework and key performance indicators (KPIs) to which finance providers are held accountable. [349]

4- **Develop Financial Sector Infrastructure to Enable the Integration of E & S Considerations through the following**:[350]

a. Sustainability Information & Data Sharing- this should be scaled up to promote transparency within the financial system through disclosure & reporting highlighting related issues, risks & opportunities. This would address information gaps while enabling the role of financial data providers,

b. Product Development- promote the use of green & sustainable finance instruments, such as, green bonds & Islamic bonds *sukuks*, that are aligned with sustainable development goals while encouraging the development of new innovative financing instruments, and

c. Technological Advancement- promote the use of digital finance & innovative financial technology while addressing potential regulatory gaps that may lead to negative outcomes endangering the financial sector's stability through new set of risks such as cyber security.

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[347] UNEP (2017)

[348] UNEP (2019a), UNEP (2017) & UN Environment (2015), Bank of Bangladesh has been successful in implementing an ambitious greening program offering innovative green refinancing & credit allocation policies benefitting more than an estimated USD $ 30 million in investments, as of 2016. It offers both commercial banks & NBFIs with targeted refinancing lines at reduced interest rates for loans extended to projects considered green, such as, solar energy, waste management as well as water & energy efficiency measures, covering more than 45 green products, services & investment types. India has taken a more interventionist approach in greening its financial system where the Priority Sector Lending PSL Program enables the Reserve Bank of India RBI to intervene with commercial banks' lending mandating them to allocate 40% of their credit to priority sectors such as renewable energy & social infrastructure projects.

[349] UNEP (2017)

[350] UNEP (2017)

5- Strengthen Capacity of Financial Sector's Stakeholders

a. **Develop Financial Institutions FIs' Capacity**- This can be achieved through education & training programs as it is necessary to enable finance providers across the sector to better identify, assess, price & mitigate environmental and social (E& S) risks associated with sustainable, green & climate finance.

   i. Enhance FIs risk management capacity & understanding of E & S issues, risks & opportunities to improve their ability to analyze & evaluate related financing proposals, hence increase funding of green projects, [351]

   ii. FIs should be required to undertake climate change – related stress testing to ensure resilience of their investment portfolios to environmental risks, and

   iii. Establish Sustainable/ Green Finance Unit within FIs to raise awareness of green finance merits and to promote its practice, as has been the case with the small & medium enterprises SMEs where some countries in the region have mandated the establishment of SME units within their banking system to promote SME lending.

b. **Enhance Financial Sector's Governance Bodies Capacity**- This is necessary to enable regulators & supervisors of both central banks & non- banking financial institutions (NBFIs) to efficiently undertake their regulatory & supervisory roles through a number of mechanisms including but not limited to:[352]

   i. Establishing Green Finance Department within governance bodies in order to enhance sustainable finance supervisory, regulatory & market practices,

   ii. Integrating environmental risks, such as, climate related physical & transitional risks into FI's supervisory & prudential oversight,

   iii. Supporting sustainable finance related research, such as, examining the level of green assets' riskiness and their impact on financial sector stability & resilience, and

   iv. Promoting international collaboration to ensure alignment with best practices at the regional & global levels.

[351] UNEP (2017), the Brazilian Central Bank required all banks to incorporate and to adopt E & S risk management system in 2014
[352] UNEP (2017)

4.3 - Good Practices Financing the Transition to Green Economies

Innovative financing instruments can be used to scale up sustainable finance & climate finance in Arab countries to enable them to meet their pressing sustainable development needs while addressing their increasing social demands as well as climate change challenges. There exists a number of funding mechanisms that have been used globally and in the region to mobilize the needed funding resources. These include blended finance, green bonds, green Islamic bonds "green *sukuks*," debt for climate swaps and results- based financing.

First- Blended Finance

Blended finance refers to the use of public funds to catalyze or to crowd in private investment in climate related activities. It is true that there is perceived lack of profitable opportunities on the part of private investors in climate related projects. This is because responding to climate change needs has long been perceived as a public good that lack market returns. There is lack of awareness of the possibility of profitable public private partnerships (PPP) when it comes to climate change associated projects.[353]

Arab countries have been determined to increasing the share and participation of the private sector in economic activity over the past few decades. This presents an opportunity for Development Finance Institutions & the public sector in the region to act as catalyst to crowd in private investment in climate change related opportunities. This could be undertaken through number of ways, including but not limited to, blended finance structuring approach.

Blended finance is a financial engineering tool that allows for combining concessional public funds with non- concessional private finance & expertise, while sharing risks & returns under clear and well- established rules. Specifically, public resources are mainly used to attract private investment through the creation of commercially viable investment opportunities by reducing projects' transaction costs and changing their risk/ return profiles while aligning private incentives with public policy objectives through PPP structured deals. These help mitigating projects' risks, reducing their costs & increasing their success factors through enhanced credibility. [354]

[353] UNDP (2018b)

[354] ESCWA (2019), examples of blended finance include Morocco's Ouarzazate Solar Power Project undertaken in 2011

Second- Green Bonds & Green *Sukuks*

Over the past few years, the green bond market has been growing fast from USD $ 37 billion in issuance in 2014 to USD $ 170 billion in 2018, reaching over USD $ 230 billion by end of 2019. The market is expected to significantly expand as indicated by the Climate Bond Initiative targeting an issuance of about USD $ one trillion by end of 2020 providing a key instrument to finance countries' climate actions as per their nationally determined contributions (NDCs). [355]

Green bonds are financing debt instruments that can be issued by national, regional, multinational public entities as well as private corporations. Their proceeds are specifically tied to financing green investment & socially centered activities, in accordance with clear set of rules that is an integral part of the bond issuance. Green bonds are usually issued for environmentally friendly projects including those addressing climate change mitigation and/ or adaption, namely, energy, low carbon buildings & transportation. The first green bonds were issued in 2007 by the World Bank & the European Investment Bank, to be followed by issuance of the first corporate green bond in 2013 and the first sovereign green bond in Poland in 2016.[356]

The first green corporate bond in the Arab region was issued in the United Arab Emirates in 2017 by the National Bank of Abu Dhabi.[357] More recently, Egypt has become the first Arab country to issue sovereign green bonds to finance its sustainable development needs, with particular focus on environment friendly projects, namely, renewable energy & energy efficiency, pollution reduction & control, sustainable water & waste management, as per the Egyptian Ministry of Finance's statement in September 2020. [358]

Multilateral development banks have been using green bonds to finance environment friendly & socially responsible projects. The European Investment Bank & the World Bank are among the largest issuers to date. The African Development Bank has established a "Green Bond Program" in 2013 to co- finance projects related to waste management, emission reductions, renewable energy & energy efficiency. The Asian Development Bank has launched a similar program to finance Asian countries' transition to low carbon climate resilient economies.[359]

[355] ESCWA (2019)
[356] ESCWA (2019)
[357] ESCWA (2019)
[358] Arab News (2020), https://www.arabnews.com/node/1741946/business-economy
[359] UNDP (2018b)

Islamic finance can significantly contribute to financing sustainable development goals in both developed & developing economies as its core principles are well aligned with sustainability considerations as they aim at promoting inclusiveness, equitable growth and social justice, among others. The industry has been rapidly growing from USD $ 200 billion in 2003 to USD $ 2 trillion in 2015, and is expected to reach USD $ 3 trillion by end of 2020.[360]

Green & social impact *sukuks* are Islamic financing instruments that can be used to scale up financing of socially responsible & environment focused investment. They are green bonds that are compliant with Islamic *Shariah* principles and where the risks & returns are shared based on certain rules in accordance with investors' financial contributions. The first green *sukuk* issuance has been undertaken in Malaysia in 2017 to finance a renewable energy project whose investment reached USD $ 58.5 million. This was followed by issuance of the first green sovereign *sukuk* in Indonesia in 2018 amounting to USD $ 1.25 billion to finance renewable energy, sustainable land use, waste management & green tourism. Qatar & the United Arab Emirates have recently expressed their plans to issue green *sukuks*. [361]

Third- Debt for Climate Swaps (DCSs)

Debt for nature swaps (DNSs) are based on debt for equity swap model where the leveraged funds are used for local conservation efforts. In that case, the proceeds are invested in climate related activities in the indebted countries. The DNSs were first developed to preserve forests in Latin America in the 1980s, and was used as part of addressing the region's sovereign debt crisis. Then DNS were later used in Africa, Asia & Europe. It is a triple win for all parties involved: the debtor government who pays part of their debt, the environment conservation organization which gets to achieve greater environmental impact through the funds available and the creditor who gets to recover part of their debts. [362]

Debt for climate swaps (DCSs) have been proposed as a variation of the debt for nature or debt for development swaps whereby public expenditures allocated for external debt payments are redirected towards financing climate change mitigation and/ or adaptation projects. These provide a suitable instrument for financing climate change needs in countries with high debt burden and public expenditure constraints. Four Arab countries have already used debt for development swaps: Egypt, Morocco, Jordan & Yemen, whereas no Arab country has used debt for climate swap, as of yet. [363]

[360] UNDP (2018b), *Shariah* or Islamic law prohibits the use of interest bearing instruments, and mandates that financial transactions must be asset backed, namely, associated with real economic activity
[361] ESCWA (2019)
[362] UNDP (2018b)
[363] ESCWA (2019)

Fourth- Results- Based Finance (RBF)

Results- Based Finance (RBF) is a less common financing tool where payments are being made upon delivery of pre-defined and verified output. RBF is suitable for donor agencies that aim at providing financing support to public sector projects, and plans on the disbursement of concessional finance based on the actual achievement of targeted results. In the case of private sector financing, RBF can be used by linking investors' returns to the project's performance hence aligning profit incentives with non- financial outcomes, such as, climate mitigation and/ or adaptation objectives. RBF has been successfully used in the Arab region, and specifically in case of Egypt where the World Bank used RBF to promote industrial compliance with environmental legislation. [364]

[364] ESCWA (2019)

4.4 - Policy Recommendations

This section presents a discussion of policy recommendations for scaling up sustainable finance & climate finance in the Arab region.

First- Strengthen Legislative & Regulatory Framework

Over the past few decades, Arab countries have made progress developing their policy framework to raise private sector participation in their economies while paying special attention to promoting private investment in green sectors, with focus made on sustainable energy, namely, renewable energy & energy efficiency projects.

In doing so, the regulatory framework has been adjusted to enable scaling up private investment through the enactment of Public Private Partnership PPP laws as well as Renewable Energy & Energy Efficiency regulations providing the private sector with rules of engagement & incentives for raising their investment in the energy sector. Nevertheless, this has not been the case with the financial sector's regulatory framework where no explicit climate related financial regulations have been enacted & enforced. [365]

Policy Recommendation: Regulators should enact climate change related financial rules & regulations and endorse ESG mandatory reporting & disclosure requirements as rules of the new game to promote adherence to green finance rules & procedures in order to scale up sustainable finance & climate finance by ensuring the integration of social & environmental risk assessment procedures in FIs' business models.[366]

It should be noted that adoption of mandatory sustainability practices in financial institutions' lending practices may also lead to better enforcement of environment regulations in the Arab region where existing environment laws have been to a large extent poorly enforced. [367]

[365] UNEP (2019a), Endorsement of mandatory adoption of ESG reporting & disclosure requirements has been undertaken in some of the developed countries to safeguard the transition to greener economies. This has been the case in France where the French Energy Transition & Green Growth Law of 2016, the first mandatory climate change financial disclosure law in the world, require publicly traded firms, banks, credit providers, asset managers & institutional investors to disclose and to report climate related financial activities.

[366] UNEP (2017), the Financial Stability Board's Task Force on Climate – related Financial Disclosures recommends mandatory disclosure by all financial institutions

[367] Atef (2017)

Second- Raise Awareness of Sustainable Finance Merits

Over the past decade, most countries in the region have made a lot of progress developing financial inclusion education programs & awareness campaigns in order to improve financial literacy and to improve access to finance reaching out to the marginalized groups in their societies. These include but are not limited to: the rural poor, women, youth as well as micro, small & medium entrepreneurs MSMEs. More recently, digital transformation campaigns have been conducted in a number of Arab countries to raise awareness of the financial sector's ongoing efforts to support the transition to cashless economies.

Policy Recommendation: Efforts should be dedicated to developing awareness campaigns of the merits of green economy transition while highlighting the need to adopt & enforce sustainable finance rules & regulations. Work should be undertaken to promote cultural change by conducting comprehensive education, training & awareness campaigns similar to the ones conducted on financial inclusion & digital transformation by most central banks in the region. This is necessary to address misconceptions and lack of awareness & understanding on the part on the various stakeholders including investors, consumers & producers as well as finance providers to better identify the financial & non- financial benefits of greening the economy and highlight associated green finance solutions.

Third- Provide Incentives to Finance the Transition to Green Climate Resilient Economies

Arab countries' financial sector regulators should provide financial providers with direct incentives to motivate them to green the financial system & to scale up sustainable finance in order to enhance the integration of social & environment risk assessment procedures into their business models & decision making process. It could be suggested that the region's current voluntary implementation of green finance rules could be combined with a supportive incentive system to promote greening practices to be gradually phased out for mandatory endorsement within 3 to 5 year time framework

Policy Recommendation: Arab countries need to be more proactive in greening their national financial systems through the role of their Central Banks & NBFIs' regulators offering incentives, such as, preferential rates & credit allocation policies as has been the case in countries like India & Bangladesh where Central Banks have mandated their financial institutions to scale up financing of green priority sectors, as earlier noted.[368]

[368] UNEP (2019a) & UNEP (2017)

Fourth- Adopt Sustainable & Climate Finance Taxonomy

Gradual adoption of sustainable & climate finance taxonomy is instrumental to enable financial sector governance bodies to better understand sustainability & climate change related issues as well as challenges in order to develop the right set of regulatory policies & supervisory measures necessary to safeguard the soundness of the financial system while greening it. It is also important to enable finance providers to efficiently identify, assess & manage climate change specific risks, and hence to respond to market needs by developing suitable products & services to capitalize on related opportunities.

Policy Recommendation: Financial sector regulators could mandate finance providers to use and adopt sustainable finance metrics, definitions, standards & methodologies that have already been developed in more advanced economies, such as, the European Union EU & China. It could be also suggested that Arab countries can work on a collective basis on the development of regional sustainable financial taxonomy that would be better adapted to their social & climate specific financing needs.

Fifth- Develop Pool of Bankable Green Projects

Policymakers should play an active role in the development of a bankable pool of green & climate specific projects by identifying as well as structuring related investment opportunities during their national planning stage in order to raise private sector engagement whenever possible, namely, whenever commercially viable. This would provide the region's financial institutions with a pipeline of bankable projects enabling scaling up sustainable & climate finance.

Policy Recommendation: It is important to raise the alignment of private investment flows with Arab countries' nationally determined climate action priorities necessary to meet their climate change mitigation & adaptation needs. This may be possible through financial engineering mechanisms, such as, blended finance in order to ensure an appropriate risk – sharing degree between the public & private sectors. [369]

Sixth- Raise National Readiness for Climate Change & Finance

According to the UNFCC 2018 Biennial Assessment "Some of the most vulnerable countries… have their access to climate finance hindered by institutional capacity barriers, weak policy & fiscal framework". [370]

[369] ESCWA (2019)
[370] ESCWA (2019)

Raising national readiness for mitigating & adapting to climate change as well as for accessing climate finance dictates reform measures to address institutional weaknesses, planning gaps as well as technical capacity & expertise constraints.

Policy Recommendation:

- Enhancing national implementing agencies' institutional capacities is necessary to efficiently collect & categorize data, to track climate mitigation & adaptation actions and measures, to identify related financing needs and to develop funding proposals. This would improve national entities' access to financial resources available at climate funds as well as at financial institutions, hence creating more room for private sector engagement,

- Integrating climate change into the national planning framework and ensuring the allocation of adequate financial flows to concerned ministries' budgetary lines, to be increased gradually on an annual basis, to address mitigation & adaptation needs,

- Improving coordination among the various stakeholders, including but not limited to ministries, financial sector regulators, financial institutions, investors, to better communicate climate change financing mitigation & adaptation needs as well as associated investment risks & opportunities, and

- Developing a pool of well trained & qualified industry experts, including but not limited lawyers, accountants & data providers, that are capable of providing support to sustainable & climate finance subsector of the industry.

References

Abdallah, L. (2020), "Egypt's Nationally Determined Contributions to Paris Agreement: Review & Recommendations", International Journal of Industry & Sustainable Development (IJISD), Vol. 1, No. 1, pp. 49-59, January 2020, ISSN 2682- 4000

Abu Dhabi Securities Exchange (2019), "Environmental, Social & Governance ESG disclosure Guidance for Listed Companies".

Adaptation Fund (2020), "Proposal for Jordan and Lebanon", Adaptation Fund Project AFB/PPRC.26.a-26.b/32

https://www.adaptation-fund.org/wp-content/uploads/2020/08/AFB.PPRC_.26.a-26.b.32-Proposal-for-Jordan-Lebanon.pdf

Adaptation Fund (2019), "Proposal for Tunisia", Adaptation Fund Project AFB/PPRC.25/11

https://www.adaptation-fund.org/wp-content/uploads/2019/09/AFB.PPRC_.25.11-Proposal-for-Tunisia.pdf

Adaptation Fund (2018a), "Building Resilience of the Agriculture Sector to Climate Change in Iraq (BRAC)", Adaptation Fund: Project ID IRQ/MIE/Agri/2017/1

https://www.adaptation-fund.org/project/building-resilience-agriculture-sector-climate-change-iraq-brac-2/

Adaptation Fund (2018b), "Readiness & Preparatory Support Proposal: National Adaptation Plan: Advancing Risk- Informed Development and Land Use Planning in Tunisia," Adaptation Fund Project

https://info.undp.org/docs/pdc/Documents/TUN/6213%20Tunisia%20NAP%20GCF_31%20July%202019_CLEAN.pdf

Adaptation Fund (2015), "Proposal for Jordan", Adaptation Fund Project AFB/PPRC.16/11 http://www.adaptation-fund.org/wp-content/uploads/2015/04/AFB.PPRC_.16.11-Proposal-for-Jordan.pdf

Adaptation Fund (2012), "Building Resilient Food Security Systems to Benefit the Southern Egypt Region", Adaptation Fund Project EGY/MIE/Food/2011/1 https://www.adaptation-fund.org/project/building-resilient-food-security-systems-to-benefit-the-southern-egypt-region/

Ahram Online, "Egypt Approves First Issuance of *Sukuk* by Talaat Mostafa Subsidiary", issued April 8th, 2020

http://english.ahram.org.eg/NewsContent/3/12/366878/Business/Economy/Egypt-approves-first-issuance-of-sukuk-by-Talaat-M.aspx

Amman Stock Exchange ASE (2018a), "The ASE Issued a Guidance on Sustainability Reporting", published by Amman Stock Exchange ASE August 29th, 2018

https://www.ase.com.jo/en/announcements/ASE-Issued-Guidance-Sustainability-Reporting

Amman Stock Exchange ASE (2018b), "Guidance on Sustainability Reporting", issued by Amman Stock Exchange ASE August 2018

Amman Stock Exchange ASE (2018c),"Sustainability 1", issued by Amman Stock Exchange ASE September 2018

Amman Stock Exchange ASE (2018d),"Sustainability 2", issued by Amman Stock Exchange ASE October 2018

Amman Stock Exchange ASE (2017), "ASE 2017 Annual Report", issued by Amman Stock Exchange 2017

Arab African International Bank AAIB (2019), MOSTADAM Certified Training Program "Introduction to Sustainable Finance", March 24th – 28th, 2019

Arab African International Bank AAIB Website, MOSTADAM
https://aaib.com/en/pages/MOSTADAM

Arab Forum for Environment & Development AFED (2018), "Financing Sustainable Development in Arab Countries: Annual Report of Arab Forum for Environment & Development", issued in 2018, Saab, N., Sadik, A.K., (Ed.); Beirut, Lebanon, Technical publications.

Arab Monetary Fund (2019), "Financial Stability Report in Arab Countries in 2019", issued by the Arab Monetary Fund in coordination with the Council of Arab Central Banks & Monetray Authorities Governors

Arab News (2020), "Egypt Issues First Green Bonds in MENA", issued September 29th, 2020 by Arab News https://www.arabnews.com/node/1741946/business-economy

Arab Republic of Egypt (2015), "Egyptian Intended Nationally Determined Contribution", as per the United Nations Framework Convention on Climate Change, submitted in November 2015

Association of Banks in Jordan ABJ (2016), Sustainability Report for the Banking Sector in Jordan: A 2016 Study by Schema, issued by the Association of Banks in Jordan in 2016

Atef, N. (2017), "Can Green Banking Help Promote and Enforce Sustainable Development: The Case Study of Egypt", A Thesis Submitted to Center for Sustainable Development in May 2017 in partial fulfillment of the requirements for the degree of Master of Science in Sustainable Development

Autorite Marocaine du Marche des Capitaux AMMC (2018), Green, Social & Sustainability Bonds: Instruments du Financement de Development Durable, issued by the Moroccan Capital Market Authority AMMC in partnership with the International Finance Corporation IFC: World Bank Group June 2018

Autorite Marocaine du Marche des Capitaux AMMC (2017), Green Bonds Guidelines, issued by the Moroccan Capital Market Authority AMMC in partnership with the International Finance Corporation IFC: World Bank Group

Autorite Marocaine du Marche des Capitaux AMMC & Bourse de Casablanca CSE (2017), Guide Sur La Responsibilte Sociale Des Entreprises et Le Reporting ESG, issued by the Moroccan Capital Market Authority & Casablanca Stock Exchange

Bahrain Association of Banks BAB (2020), "Policy Recommendations for Regulatory Considerations on Sustainable Finance", issued in 2020 by BAB's Sustainable Development Committee

http://www.banksbahrain.org/research-and-publications/

Bahrain Association of Banks BAB (2018), Sustainable Development Committee Terms of Reference

Bahrain Bourse (2020a), Bahrain Bourse Sustainability Report, issued by BHB in 2020
https://www.bahrainbourse.com/resources/files/Sustainability/Sustainability%20Report%20EN.pdf

Bahrain Bourse (2020b), "Bahrain Bourse Promotes Integration of Environmental, Social, and Governance Best Practices" Jan. 18th, 2020
https://bahrainbourse.com/bahrain-bourse-promotes-integration-of-environmental-social-and-governance-best-practices

Bahrain Bourse (2020c), Bahrain Bourse ESG Reporting Guide", issued by Bahrain Bourse in June 2020
https://www.bahrainbourse.com/resources/files/Sustainability/ESG_11%20June%202020.pdf

Bahrain Bourse (2019), Bahrain Bourse Annual Report, issued by BHB in 2019

Bahrain Economic Development Board (2019), Bahrain Fin Tech Ecosystem Report (2018), Published by Bahrain Economic Development Board & Fin Tech Consortium.

BAM - AFI Global Conference on Green Finance (2019), "Speech by Governor of Bank Al-Maghrib Abdellatif Jouahri", Wednesday, 30 October 2019 Rabat, Morocco

https://www.afi-global.org/speeches/2019/10/global-conference-green-finance-rabat-morocco-introductory-speech-governor-bank-al

BNP Paribas, Feb. 10th, 2020. "What We Learnt at the Abu Dhabi Sustainable Forum 2020" https://cib.bnpparibas.com/sustain/what-we-learnt-at-the-abu-dhabi-sustainable-finance-forum-2020_a-3-3347.html

Business Wire, Jan. 14th, 2020. https://kommunikasjon.ntb.no/pressemelding/abu-dhabi-securities-exchange-adx-announces-issuing-the-first-sustainability-report-during-the-first-half-of-2020?publisherId=90063&releaseId=17877831

Casablanca Stock Exchange (2018), Casablanca Stock Exchange & Vigeo Eiris Set Up an ESG Benchmark Index and Celebrates the 2018 ESG Top Performers, Press Release issued by CSE September 27th, 2018

Central Bank of Egypt CBE (2020), "CBE Instructing banks to Establish Financial Inclusion Departments", CBE Circular May 5th 2020

Central Bank of Egypt CBE (2018), "Financial Stability 2018 Report", issued by the Central Bank of Egypt in 2018

Central Bank of Egypt CBE & Alliance for Financial Inclusion AFI (2018), "Financial Inclusion through Digital Financial Services and Fintech: The Case of Egypt", issued by the Central Bank of Egypt, the Alliance for Financial Inclusion & the Digital Financial Services Working Group in 2018

Central bank of Jordan CBJ (2018), "Financial Stability Report" issued by the Central Bank of Jordan in 2018

Central Bank of Jordan CBJ (2017a), "The National Financial Inclusion Strategy: 2018- 2020" issued by the Central Bank of Jordan in 2017with support from GIZ

Central Bank of Jordan CBJ (2017b), "Fifty Years of Achievements: 1964- 2014", Special Edition Celebrating the 50th Anniversary of the Establishment of the Central Bank in Jordan, issued by CBJ Research Department December 2017

Clean Technology Fund CTF (2014), "Revised CTF Investment Plan for MENA CSP: Third Update Note CTF/TFC.13/6", Meeting of the Clean Technology Fund Trust Fund Committee on June 26, 2014

Climate Transparency Report (2019), "Climate Transparency: Brown to Green G20 Transition Towards a Net- Zero Emissions Economy: Saudi Arabia- Country Profile 2019", issued by Climate Transparency in 2019

Climate Transparency Report (2016), "Climate Transparency: Brown to Green G20 Transition to Low Carbon Economy: Saudi Arabia- Country Profile 206", issued by Climate Transparency in 2016
https://www.climate-transparency.org/wp-content/uploads/2016/09/Saudi-Arabia_Country-Profile.pdf

Commercial International Bank CIB Website, "CIB Continues to be a Model of Sustainability"
https://www.cibeg.com/English/News/Pages/CIB-continues-to-be-a-model-of-sustainability.aspx

Commercial International Bank CIB Website, "Sustainability Governance Structure" https://www.cibeg.com/English/CIBCommunity/Corporate%20Sustainability/Pages/Sustainabilty-Corporate-Governance.aspx

Daily News Egypt (2019a), "All Banks Operating in the Egyptian Market Invited to Adopt Principles of Responsible Banking" January 20th, 2019 https://wwww.dailynewssegypt.com/2019/01/20/all-banks-operating-in-egyptian-market-invited-to-adopt-principles-of-responsible-banking/

Daily News Egypt (2019b), "FRA approves establishing Regional Centre for Sustainable Finance by Presidential Decree" October 15th, 2019 https://wwww.dailynewssegypt.com/2019/10/15/fra-approves-establishing-regional-centre-for-sustainable-finance-by-presidential-decree/

Daily News Egypt (2018a), "Egyptian Banks Find their Way towards Green Banking as Path to Sustainable Development", October 25th, 2018

https://wwww.dailynewssegypt.com/2018/10/25/egyptian-banks-find-their-way-towards-green-banking-as-path-to-sustainable-development

Daily News Egypt (2018b), **"**UAB to Highlight Green Banking in Hurghada Forum" June 24th, 2018 https://wwww.dailynewssegypt.com/2018/06/24/uab-to-highlight-green-banking-in-hurghada-forum/

Del Novo, Simone (2016), "The Case for a Comprehensive Legislation on PPP", bizbahrain issued August 7th, 2016

https://www.bizbahrain.com/the-case-for-a-comprehensive-legislation-on-ppp/

Deutsche Gesellschaft für Internationale Zusammenarbeit GIZ (2012), "Renewable Energy and Energy Efficiency in Tunisia – Employment, Qualification and Economic Effects", issued in December 2012 by the Deutsche Gesellschaft für Internationale Zusammenarbeit GIZ

DT Business, April 29th, 2018, "BAB UNDP to Boost Sustainable Finance"
https://www.newsofbahrain.com/epaper/29-04-2018/single/page-10.pdf

Dubai Declaration for Sustainable Finance (2016), https://www.unepfi.org/grt/2016/wp-content/uploads/Dubai-Declaration_launched.pdf

Dubai Financial Markets (2019), "ESG Reporting Guide: Value Enhancement through Voluntary Sustainability Disclosures".

Dubai Financial Services Authority (2019), "The DFSA in Action": Vol. 16, December 2019

Economic & Social Commission for Western Africa ESCWA (2019), "Climate Finance in the Arab Region", Technical Report E/ESCWA/ SDPD/2019/ TP.10, issued in December 27th, 2019 by the Economic & Social Commission for Western Africa ESCWA

Egypt's Official Gazette (2010), "Law No. 67 of 2010 Concerning Regulating Private Sector Participation in Infrastructure & Services Projects", issued May 18th, 2010 in Official Gazette Vol. 19 (A)

http://www.mof.gov.eg/Arabic/_Layouts/MOF/ExternalPages/Laws/Default_Ar.aspx

Egypt's Ministry of Finance (2020), "MENA's First Sovereign Green Bonds Sees Strong Demand for Egypt", Press release issued October 2020 by Ministry of Finance

http://www.mof.gov.eg/English/Pages/Green-Bond-Documentation.aspx

Egypt's Ministry of Planning, Monitoring & Administrative Reform MOP (2018), Vision 2030: Egypt's Voluntary National Review, issued by the Ministry of Planning, Monitoring & Administrative Reform in 2018

Egypt Vision 2030, issued February 2016

https://www.arabdevelopmentportal.com/sites/default/files/publication/sds_egypt_vision_2030.pdf

Egyptian Cabinet Information & Decision Support Center IDSC (2011), "Egypt's National Strategy for Adaptation to Climate Change and Disaster Risk Reduction", issued December 2011 by the Egyptian Cabinet Information and Decision Support Center IDSC in coordination with the United Nations Development Program UNDP.

Egyptian Environmental Affairs Agency EEAA (2018), "Egypt's First Biennial Update Report to the United Nations Framework Convention on Climate Change UNFCC", issued in 2018 in coordination with the United Nations Development Program UNDP & the Global Environment Facility GEF

Egyptian Prime Minister (2019), "Prime Minister Decree No. 1129 of 2019 concerning amendments related to the National Council for Climate Change" *Prime Minister Cabinet.*

Egyptian Prime Minister (2015), "Prime Minister Decree No. 1912 of 2015 establishing the National Council for Climate Change" *Prime Minister Cabinet.*

Egyptian Stock Exchange EGX (2019), "The Egyptian Exchange Model Guidance for Reporting on ESG Performance & SDGs", issued by Egyptian Stock Exchange in 2019.

Egyptian Stock Exchange EGX (2017), The Egyptian Stock Exchange Annual Sustainability Report, issued by the Egyptian Stock Exchange in 2017

Egyptian Stock Exchange EGX (2016), The Egyptian Stock Exchange Sustainability Brochure, issued by the Egyptian Stock Exchange December 2016

Egyptian Stock Exchange EGX (2015), The Egyptian Stock Exchange Sustainability Brochure, issued by the Egyptian Stock Exchange December 2015

Egyptian Stock Exchange EGX Website, "Egyptian Stock Exchange Sustainability Committee" https://www.egx.com.eg/en/Sustainability-Committee.aspx

El- Hawary, D., W. Grais & Z. Iqbal (2004), "Regulating Islamic Financial Institutions: the Nature of the Regulated", World Bank Policy Research Working Paper no. 3227, issued March 2004 by the World Bank Financial Sector Partnerships Department

Emirates News Agency, Jan. 15th, 2020. **"**Abu Dhabi Department of Energy announces Green Bond Program" https://wam.ae/en/details/1395302816528

European Investment Bank EIB (2019), "Jordan: The EU Bank boosts resilient and sustainable growth of municipalities through a partnership with the Cities and Villages Development Bank", published on EIB Website in Oct. 17th, 2019

https://www.eib.org/en/press/all/2019-271-the-eu-bank-boosts-resilient-and-sustainable-growth-of-municipalities-in-jordan-through-a-partnership-with-the-cities-and-villages-development-bank

Fadhel, Imed (2012), "Tunisia's Strategy on Climate Change: Focus on Mitigation Initiatives & NAMAs Development in the Energy Sector", issued by Tunisia's Climate Change National Focal Point

Financial Regulatory Authority FRA (2017), "FRA Strategy for Non- Banking Financial Sector (2018- 2022)", issued by FRA in 2017

Financial Regulatory Authority FRA (2018a), "Annual Sustainability Report of FRA 2018", issued by FRA in 2018

Financial Regulatory Authority FRA (2018b), "FRA Annual Report 2018: Building Bridges Not Walls", issued by FRA in 2018

Financial Regulatory Authority FRA, "Concept Paper Green Bonds Guidelines"

Fosse, J., K. Petrick, F. Fiorucci, M. Moulet, J. Albaraccin (2018), "Green Finance in the Mediterranean", Published by European Institute of the Mediterranean in March 2018

Global Green Growth Institute GGGI (2019), "Review of GGGI's Experience to Design & Operationalize National Financing Vehicles to Finance Climate & Green Growth Policy Implementation", GGGI Technical Report No. 9 issued by Global Green Growth Institute GGGI in December 2019

Government of Jordan (2012), "Law No. (13) of 2012: Renewable Energy & Energy Efficiency Law" issued by the Government of Jordan in 2012

Green Climate Fund GCF (2020), "FP140: High Impact Program for the Corporate Sector: Multiple Countries- European Bank for Reconstruction & Development EBRD Decision B.26/09" Funding Proposal issued September 17th, 2020 by Green Climate Fund GCF

Green Climate Fund GCF (2019a), Readiness & Preparatory Support Proposal, issued by the Green Climate Fund with the Global Green Growth Institute GGGI for Kingdom of Morocco in December 30th, 2019

Green Climate Fund GCF (2019b), "Building Capacity to Advance the National Adaptation Plan Process in Iraq," Readiness Proposal with the United Nations Environment Program UNEP for the Republic of Iraq, issued December 18th, 2019 by the Green Climate Fund GCF

Green Climate Fund GCF (2019c), "Technology Needs Assessment and Associated Action Plan for Climate Change Mitigation and Adaptation in Iraq's Most Vulnerable Sectors", Readiness Proposal with the Climate Technology Center & Network (CTCN) through UNIDO for the Republic of Iraq, issued November 22nd, 2019 by the Green Climate Fund GCF

Green Climate Fund GCF (2018), "FP086: Green Cities Facility: Multiple Countries- European Bank for Reconstruction & Development EBRD Decision B.21/34" Funding Proposal issued November 28th, 2018 by Green Climate Fund GCF

Green Climate Fund GCF (2017a), "FP039: GCF – EBRD Egypt Renewable Energy Financing Framework" Funding Proposal issued March 15th, 2017 by Green Climate Fund GCF & the European Bank for Reconstruction & Development EBRD

Green Climate Fund GCF (2017b), "FP053: GCF- UNDP Enhancing Climate Change Adaptation in the North Coast and Nile Delta Regions in Egypt" Funding Proposal issued November 2nd, 2017 by Green Climate Fund GCF & the United Nations Development Program UNDP

Green Climate Fund GCF (2017c), "NDA Strengthening and Country Programming Support for Iraq", Readiness Proposal with UNDP for the Republic of Iraq, issued September 14th, 2017 by Green Climate Fund GCF

Green Climate Fund GCF (2016), "FP025: GCF – EBRD Sustainable Energy Financing Facilities: Armenia, Egypt, Georgia, Jordan, Moldova, Morocco, Serbia, Tajikistan & Tunisia - European Bank for Reconstruction & Development EBRD Decision B.14/ 07" Funding Proposal issued October 10th, 2016 by Green Climate Fund GCF

Globally Today Clean News, March 2nd, 2020
https://globallytoday.com/solar-financing-in-bahrain-to-accelerate-sustainability-drive/

Guiding Principles on Sustainable Finance in the UAE (2020) https://dfsa.ae/MediaRelease/News/The-DFSA-signs-Guiding-Principles-on-Sustainable-F

Hassan, G. K. (2019), "Non- Performing Loans & their Impact on the Banking Sector in Arab Countries", Economic Studies no. 56/ 2019, issued in 2019 by the Arab Monetary Fund, Abu Dhabi, the United Arab of Emirates

Hawkamah: The Institute for corporate Governance and Ernest & Young (2014), "Environmental, Social & Corporate Governance Practices in the MENA Region 2007– 2012: Review of the S&P/ Hawkamah Pan Arab ESG Index

International Energy Agency IEA (2019), “Energy policies Beyond IEA Countries: Morocco 2019”, issued by the International Energy Agency in 2019

International Finance Corporation IFC (2019a), Sustainable Banking Network: Country Progress Report Egypt, issued by the IFC World Bank Group, October 2019

International Finance Corporation IFC (2019b), “Global Progress Report of the Sustainable Banking Network: Innovations in Policy & Industry Actions in Emerging Markets”, issued by the IFC October 2019

International Finance Corporation IFC (2019c), Sustainable Banking Network: Country Progress Report Morocco, issued by the IFC World Bank Group, October 2019

International Fund for Agriculture Development IFAD (2015), “Egypt- Sustainable Agriculture Investments and Livelihoods Project (SAIL)”, issued in August 2015 by the International Fund for Agriculture Development: Adaptation for Smallholder Agriculture Program

International Monetary Fund IMF (2018), “Saudi Arabia: Selected Issues”, Country Report No. 18/ 264, issued August, 2018 by the International Monetary Fund, Washington DC

International Renewable Energy Agency IRENA (2019), “Renewable Energy Market Analysis: GCC 2019”, published in 2019 by the International Renewable Energy Agency IRENA

International Renewable Energy Agency IRENA (2018), *Renewable Energy Outlook: Egypt*, International Renewable Energy, Abu Dhabi

Iraq Energy Institute (2018), “Towards Sustainable Water Resources Management in Iraq”, issued in August 30th, 2018 by Iraq Energy Institute, Publication Number: IEI 300818

Jordan’s Ministry of Environment (2017a), “A National Green Growth Plan for Jordan”, issued by the Ministry of Environment, Global Green Growth Institute GGGI & Germany Federal Ministry for the Environment, Nature Conservation, Building & Nuclear Safety

Jordan’s Ministry of Environment (2017b), “Jordan's First Biennial Update Report to the United Nations Framework Convention on Climate Change”, issued by the Ministry of Environment in coordination with the United Nations Development Program UNDP and the Global Environment Facility GEF.

Jordan’s Ministry of Environment (2014), “Jordan’s Third National Communication on Climate Change”, issued by the Ministry of Environment in coordination with the United Nations Development Program UNDP and the Global Environment Facility GEF

Jordan's Ministry of Environment (2013), "The National Climate Change Policy of the Hashemite Kingdom of Jordan 2013-2020", issued by the Ministry of Environment in coordination with the United Nations Development Program UNDP and the Global Environment Facility GEF

Jordan's Ministry of Planning & International Cooperation (2017), "Main Messages of Jordan's National Voluntary Review", presented at the High Level Political Forum on Sustainable Development in July 2017 in New York

Jordan's Ministry of Water and Irrigation (2016a), "National Water Strategy of Jordan (2016-2025)" issued by the Ministry of Water and Irrigation, the Hashemite Kingdom of Jordan in 2016.

Jordan's Ministry of Water and Irrigation (2016b), "Climate Change Policy for a Resilient Water Sector" issued by the Ministry of Water and Irrigation, the Hashemite Kingdom of Jordan in 2016

Jordan's Official Gazette (2014), "Law No. 31 of 2014 Regarding Public Private Partnership", issued in 2014, Jordan Official Gazette

https://www.ammanchamber.org.jo/Uplaoded/PRNews/4867.pdf

Kandah, Adli (2017), "ABJ's Sustainability Journey: From Social Responsibility to Sustainable Development", presentation by the Association of Banks in Jordan ABJ's Director General in Amman- Jordan in November 15th 2017

King Abdullah Petroleum Studies and Research Center KAPSARC (2017), "Growth Through Diversification and Energy Efficiency: Energy Productivity in Saudi Arabia", Consultation Report No. KS 2017- DP 024 published in November 2017 by King Abdullah Petroleum Studies and Research Center KAPSARC in coordination with the UN ESCWA

King Khalid Foundation (2018). "Financial Inclusion in Saudi Arabia: Reaching the Financially Excluded", published by King Khalid Foundation in 2018
https://kkf.org.sa/media/ipuh5olx/2-financial-inclusion-in-saudi-arabia-2018.pdf

Kingdom of Saudi Arabia KSA (2017), "Public Investment Fund PIF Program: 2018- 2020", published by Saudi Arabia Vision 2030

Kingdom of Saudi Arabia KSA Capital Market Authority (2019), "The CMA Adopts the Amendment of the Corporate Governance Regulation", published by Capital Market Authority on 27 of May 2019
https://cma.org.sa/en/MediaCenter/PR/Pages/Corporate-Governance-Regulation.aspx

Kingdom of Saudi Arabia KSA INDC (2015), "The Intended Nationally Determined Contribution of the Kingdom of Saudi Arabia under the UNFCCC", issued in November 2015

Kingdom of Saudi Arabia KSA Ministry of Finance (2020), "The Kingdom of Saudi Arabia Acting through the Ministry of Finance: Sukuk Issuance Program", Information Memorandum issued July 21st, 2020
https://www.mof.gov.sa/en/NDMC/IssuancePrograms/Documents/Information%20Memorandum-%20NDMC%20Sukuk-English-%20Final.pdf

Kingdom of Saudi Arabia KSA MONSHAAT Website, the General Authority for Small & Medium Enterprises https://www.monshaat.gov.sa/en/about

Kingdom of Saudi Arabia Vision 2030, "The Financial Sector Development Program: Delivery Plan 2020", published by Saudi Arabia Vision 2030
https://vision2030.gov.sa/en/programs/FSDP

Kingdom of Saudi Arabia Vision 2030, The National Transformation Program NTP
https://vision2030.gov.sa/en/programs/NTP

Kingdom of Saudi Arabia Vision 2030, Invest Saudi
https://investsaudi.sa/en/about/vision-2030/

Kingdom of Saudi Arabia Vision 2030: Progress
https://vision2030.gov.sa/en/vision-progress

Kingdom of Saudi Arabia Vision 2030 (2018), "Towards Saudi Arabia's Sustainable Tomorrow: First National Voluntary Review 2018- 1439" presented during the UN High Level Political Forum: Transformation towards Sustainable & Resilient Societies held during July 9th- 18th, 2018 in New York
https://sustainabledevelopment.un.org/memberstates/saudiarabia#

Lopez C., J. Bendix & C. Servin (2020), Bahrain & the Fourth Industrial Revolution, Published by Milken Institute

Marrakech Pledge (2017), "Morocco Launch of Casablanca Statement for Financial Centers Sustainability, published April 14th, 2017

http://marrakechpledge.com/news/morocco-launch-of-casablanca-statement-for-financial-centers-sustainability/

Millennium Development Goals MDG Achievement MDGA Fund (2013a), "Egypt- Country Fact Sheet: "Climate Change Risk Management in Egypt: MDGF-1675" MDG Achievement Fund. http://www.mdgfund.org/node/164

Millennium Development Goals MDG Achievement MDGA Fund (2013b), "Adaptation to Climate Change to Sustain Jordan's MDG Achievements (MDGF-1646)," MDG Achievement Fund

Ministry of Environment & Egyptian Environmental Affairs Agency Website, The Environmental Protection Fund
http://www.eeaa.gov.eg/en-us/aboutus/epf.aspx#:~:text=The%20Environmental%20Protection%20Fund%20(EPF,environmental%20social%20and%20economic%20policies.

Ministry of State for Environmental Affairs & Egyptian Environmental Affairs Agency (2016), "Egypt Third National Communication Under the United Nations Framework Convention on Climate Change UNFCC", issued in March 2016 in coordination with the United Nations Development Program UNDP & the Global Environment Facility GEF

Mohammed bin Rashid Al Maktoum, Ruler of Dubai (2015), "Law No. (22) of 2015 Regulating Partnership between the Public Sector and the Private Sector in the Emirate of Dubai", issued in August 10th, 2015, *Mohammed bin Rashid Al Maktoum, Ruler of Dubai* https://www.dof.gov.ae/en-us/publications/Lists/ContentListing/Attachments/532/PPP%20Law%20No.%20(22)%20of%202015.pdf

Morocco's National Sustainable Development Strategy

Morocco's Nationally Determined Contribution NDC (2017), "NDC Country Outlook Morocco", issued by NDC Partnership in November 2017

N Business, March 5th, 2018, "Why Banks in Bahrain are increasingly discussing sustainable finance: The UN's Sustainable Development Goals offer opportunities for banks worldwide"

https://www.thenational.ae/business/economy/why-banks-in-bahrain-are-increasingly-discussing-sustainable-finance-1.710189

Nakhooda, Smita, Alice Caravani, Prachi Seth & Liane Schalatek (2012), "Climate Finance for the Middle East and North Africa: Confronting the Challenges of Climate Change", issued in November 2012 by Climate Funds Update

NAP Global Network (2019), "Jordan: National Adaptation Plan Approach", issued July 2019 by the NAP Global Network

National Center of Privatization (NCP) (2018), "Draft Private Sector Participation Law", National Center of Privatization (NCP) in Saudi Arabia https://www.ncp.gov.sa/en/PublicConsultation/Documents/Draft_Private_Sector_Participation_Law_-_English.pdf

Netherlands Ministry of Foreign Affairs (2018), "Climate Change Profile: Iraq", published in April 2018 by the Ministry of Foreign Affairs of the Netherlands

Oxford Business Group OBG (2018), "Sharia-compliant Lenders Offer Alternative Financing in Jordan", The Financial Services Chapter from the Report: Jordan 2018

https://oxfordbusinessgroup.com/analysis/power-bonds-sharia-compliant-lenders-are-poised-expand-credit-while-islamic-bonds-offer-alternative

Oxford Business Group (2020a), "Abdellatif Jouahri, Governor, Bank Al Maghrib (BAM): Interview", Banking Chapter from the Report: Morocco 2020, Oxford Business Group 2020

https://oxfordbusinessgroup.com/interview/going-green-abdellatif-jouahri-governor-bank-al-maghrib-bam-sustainable-banking-and-increasing

Oxford Business Group (2020b), "New Banking Regulations Fuel Growth in Morocco", Banking Chapter from the Report: Morocco 2020, Oxford Business Group 2020

https://oxfordbusinessgroup.com/overview/take-it-bank-stronger-regulations-and-continental-expansion-fuel-growth

Oxford Business Group (2020c), "Green Financing Attracts Investors to Morocco's Banking Sector", Banking Chapter from the Report: Morocco 2020, Oxford Business Group 2020

https://oxfordbusinessgroup.com/analysis/breath-fresh-air-investors-turn-green-bonds-finance-clean-energy-and-sustainable-construction

Oxford Business Group (2020d), "Morocco Increases its *Sharia*-compliant Banking Offerings" Banking Chapter from the Report: Morocco 2020, Oxford Business Group 2020

https://oxfordbusinessgroup.com/analysis/book-market-matures-new-sharia-compliant-offerings

Oxford Business Group (2020e), "Saudi Arabia 2020: Industry Analysis", issued by Oxford Business Group in 2020
https://oxfordbusinessgroup.com/analysis/solar-powered-diversifying-energy-mix-through-solar-and-wind-projects

Partnership for Market Readiness PMR (2019), "PMR Project Implementation Status Report (ISR)" for Hashemite Kingdom of Jordan issued in April 2019 by Partnership for Market Readiness PMR

Petroleum Economist (2019), "Developing a Green Economy in Saudi Arabia", issued by Petroleum Economist on January 4th, 2019
https://www.petroleum-economist.com/articles/low-carbon-energy/renewables/2019/developing-a-green-economy-in-saudi-arabia

Renewable Energy Solution for the Mediterranean RES4Med (2019), "Scaling Up Renewable Energy Development in Jordan", position paper issued by Renewable Energy Solution for the Mediterranean in March 2019

Republic of Iraq Ministry of Health & Environment (2016), "Iraq's Initial National Communication to the UNFCCC", issued by Ministry of Health & Environment in coordination with the United Nations Development Program UNDP, UN Environment Program UNEP and the Global Environment Facility GEF

https://unfccc.int/sites/default/files/resource/316947520_Iraq-NC1-2-INC-Iraq.pdf

Republic of Iraq Ministry of Health & Environment (2015), "Iraq's Nationally Determined Contributions to UNFCCC 2015 Agreement," issued by the Ministry of Health & Environment in coordination with the United Nations Development Program UNDP and the Global Environment Facility GEF

https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Iraq/1/INDC-Iraq.pdf

Republic of Iraq Ministry of Environment (2012), "The National Environmental Strategy and Action Plan for Iraq (2013-2017)", issued by the Ministry of Environment in collaboration with the United Nations Environment Program UNEP, United Nations Development Program UNDP and the World Health Organization WHO

Republic of Iraq Ministry of Planning (2018), "National Development Plan: 2018- 2022" issued by the Ministry of Planning in June 2018

Republic of Tunisia's Ministry of Environment (2019), "Tunisia's Third National Communication as part of the United Nations Framework Convention on Climate Change", issued by the Ministry of Environment in coordination with the United Nations Development Program UNDP and the Global Environment Facility GEF

https://unfccc.int/non-annex-I-NCs

Republic of Tunisia's Ministry of Environment & Sustainable Development (2015), "Intended Nationally Determined Contribution of Tunisia to UNFCCC", issued in August 2015 by Tunisian Ministry of Environment & Sustainable Development

Reuters (2020), "Aramco IPO Proceeds to Fund Saudi Industry Including Defense" Issued January 21st, 2020 by Reuters
https://www.reuters.com/article/us-davos-meeting-saudi/aramco-ipo-proceeds-to-fund-saudi-industry-including-defense-finance-minister-idUSKBN1ZK1RC

Saudi Arabian Monetary Authority (2020), "SAMA announces the launching of licenses for non-bank financial institutions", published by Saudi Arabian Monetary Authority on January 30th, 2020
http://www.sama.gov.sa/en-US/News/Pages/news-399.aspx

Saudi Arabian Monetary Authority SAMA (2019), "Saudi Arabian Monetary Authority 55th Annual report 1440 H- 2019" published by SAMA in 2019
http://www.sama.gov.sa/en-US/EconomicReports/AnnualReport/Annual_Report_55th-EN.pdf

Saudi Gazette (2020), "UAE Guiding Principles on Sustainable Finance Credit positive for Banks", published by Saudi Gazette on Jan. 26th, 2020

https://www.saudigazette.com.sa/article/587670/BUSINESS/UAE-guiding-principles-on-sustainable-finance-credit-positive-for-banks

Saudi Gazette (2018), "Saudi Arabia's First Sukuk Issuance through Primary Dealers Positive for Islamic Capital Market Development", published by Saudi Gazette on August 4th, 2018
https://saudigazette.com.sa/article/540469

Sekuriti, S. (2019), "Islamic Green Finance: Development, Ecosystem & Prospects", published March 2019 by Securities Commission Malaysia in coordination with the World Bank Group: General Knowledge & Research Hub

Standards & Poor's S&P Dow Jones Indices (2016), S&P/ EGX ESG Index Methodology: S& P Dow Jones Indices: Index Methodology, issued February 2016

Standards & Poor's S&P GLOBAL RATINGS, FEB. 18TH, 2019, "Green Finance Takes Hold in The GCC" https://www.spglobal.com/en/research-insights/articles/green-finance-takes-hold-in-the-gcc

Sustainable Stock Exchange SSE Initiative (2018), "Saudi Stock Exchange", issued by The UN Sustainable Stock Exchange Initiative on December 17th, 2018.
https://sseinitiative.org/all-news/tadawul-joins-united-nation-partnership-programme-for-sustainability/
https://sseinitiative.org/stock-exchange/tadawul/

SUNREF Website: Sustainable Use of Natural Resources and Energy Finance, "Green Lending Program: Supporting sustainable Energy and Environment protection in Jordan

https://www.sunref.org/en/projet/green-lending-programme-supporting-sustainable-energy-and-environment-protection-in-jordan/

The Hashemite Kingdom of Jordan (2016), "Intended Nationally Determined Contribution (INDC)" Hashemite Kingdom of Jordan

https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Jordan%20First/Jordan%20INDCs%20Final.pdf

The Hashemite Kingdom of Jordan (2015a), "Jordan 2025: A National Vision & Strategy"

The Hashemite Kingdom of Jordan (2015b), "Jordan's Way to Sustainable Development: First National Voluntary Review on the Implementation of the 2030 Agenda

The Kingdom of Bahrain (2018), First Voluntary National Review 2018: on the implementation of the 2030 Sustainable Development Agenda and the Sustainable Development Goals

The Kingdom of Bahrain (2017), National Energy Efficiency Action Plan

The Kingdom of Bahrain (2017), National Renewable Energy Action Plan

The Kingdom of Bahrain (2008), "from Regional Pioneer to Global Contender: our Vision the Economic Vision 2030 for Bahrain

The National (2019), "Draft Private Sector Law Will Drive Investment in Saudi Projects", published by The National on September17th, 2019

https://www.thenational.ae/business/property/draft-private-sector-law-will-drive-investment-in-saudi-projects-1.911486

United Arab Emirates UAE Securities & Commodities Authority SCA (2019), "The Securities & Commodities Authority Master Plan for Sustainable Capital Markets"

United Arab of Emirates UAE Ministry of Climate Change & Environment MOCCAE (2017), "The National Climate Change Plan of the United Arab Emirates (2017–2050)", issued by the United Arab Emirates Ministry of Climate Change & Environment.

United Arab of Emirates UAE Ministry of Environment & Water MOEW (2016), "UAE Green Agenda (2015–2030): State of Green Finance in the UAE, the First National Survey on Contributions of Financial Institutions to Green Economy", issued by the Ministry of Environment & Water.

United Nations Development Program UNDP (2018a), "Climate Change Adaptation in the Arab States: Best Practices and Lessons Learned", issued in July 2018 by the United Nations Development Program UNDP in coordination with the Global Environment Facility GEF

United Nations Development Program UNDP (2018b), "Financing the 2030 Agenda: An Introductory Guidebook for UNDP Country Offices, issued in January 2018 by the United Nations Development Program UNDP

United Nations Development Program UNDP (2016), "Iraq's Nationally Determined Contributions to UNFCCC 2015 Agreement Final Report 2016, May 2015 – March 2016", United Nations Development Program UNDP

United Nations Development Program UNDP (2014), "Tunisia: De-risking Renewable Energy Investment - Selecting Public Instruments to Promote Renewable Energy Investment for the Tunisian Solar Plan NAMA", Issued in December 2014 by United Nations Development Program UNDP in coordination with Global Environment Facility GEF and The National Agency for Energy Conservation ANME

United Nations Economic Commission for Africa UNECA (2014), "The Green Economy in Tunisia: an implementation tool of the new sustainable development strategy (2014-2020)", issued by the United Nations Economic Commission for Africa UNECA

United Nations Environment UNE (2017), UN Environment Inquiry: Annual Review

United Nations Environment UNE (2015), "Designing a Sustainable Financial System in Bangladesh," issued by the UN Environment Inquiry in 2015

United Nations Environment Program UNEP (2019a), "Driving Finance Today for the Climate Resilient Society of Tomorrow", issued by UNEP Finance Initiative in coordination with Global Commission on Adaptation & Climate Finance Advisors in 2019

United Nations Environment Program UNEP (2019b), "UN Environment and Saudi Arabia Sign Deal to Strengthen Environmental Protection", published May 19th, 2019 https://www.unenvironment.org/news-and-stories/press-release/un-environment-and-saudi-arabia-sign-deal-strengthen-environmental.

United Nations Environment Program UNEP (2017), "Roadmap to sustainable Financial System", issued in 2017 by the United Nations Environment Program UNEP

United Nations Framework Convention on Climate Change UNFCC (2015), "NAMA Support for the Tunisian Solar Plan", NAMA Profile #7, issued in October 2015 by the NAMA & Registry Unit of the United Nations Framework Convention on Climate Change UNFCC

United Nations Framework Convention on Climate Change UNFCCC (2013), "Submissions on information from developed country Parties on the resources provided to fulfil the commitment referred to in decision 1/CP.16, paragraph 95", presented at the Conference of the Parties, nineteenth session, Warsaw, 11- 12th November 2013

United States Agency for International Development USAID (2017), "Climate Change Risk Profile – Jordan", issued in March 2017 by the United States Agency for International Development USAID

Waheesh, N. (2020), "Egypt Goes for Green", Ahram Online, March 7th, 2020

http://english.ahram.org.eg/NewsContent/50/1202/364639/AlAhram-Weekly/Economy/Egypt-goes-for-green.aspx

Watson, C., ODI, L. Schalatek & HBS (2019), "Climate Finance Regional Briefing: Middle East and North Africa," issued in February 2019 by Climate Funds Update

White & Case (2015), "New Moroccan PPP Law", Client Alert: Energy, Infrastructure, Project and Asset Finance, Issued in April 2015

World Bank Group (2020a), "Climate Change Knowledge Portal for Development Practitioners and Policy Makers: Saudi Arabia, Country Overview", World Bank Group 2020
https://climateknowledgeportal.worldbank.org/country/saudi-arabia

World Bank (2020b), "Implementation Completion and Results Report: Loan 7927-EG, TF 096930-EG, TF 096929-EG, For an Egypt – Wind Power Development Project", Report No. ICR00004965 issued in May 30th, 2020 by the World Bank.

World Bank (2013), "Implementation Completion and Results Report on a Grant in the Amount of USD 6.9 Million to the Government of Iraq for the Integrated National Energy Strategy Technical Assistance Project", Report No. ICR00003035, issued in December 26th, 2013 by the World Bank Sustainable Development Department for the Middle East & North Africa MENA

World Finance (2019), "A New Direction for the Saudi Arabian Economy", issued by World Finance October 3rd, 2019
https://www.worldfinance.com/featured/a-new-direction-for-the-saudi-arabian-economy

World Food Program WFP (2019), "Jordan Country Strategic Plan (2020- 2022)", Executive Board Second regular Session, Rome 18th – 19th November 2019

Zarouk, G. (2011), "Global Financial Crisis's Transmission Channels to Arab Economies", issued in 2011 by the Arab Monetary Fund, Abu Dhabi, the United Arab of Emirates