CLIMATE CHANGE LEGISLATION IN

Egypt

AN EXCERPT FROM

The 2015 Global Climate Legislation Study

A Review of Climate Change Legislation in 99 Countries

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Egypt

Legislative Process

Egypt acquired full sovereignty from Great Britain and was declared a republic in 1953. The legal system is a mixture of French civil and penal law and Islamic law; however, following from the popular Arab uprisings that began in Tunisia in December 2010 and spread to Egypt in January 2011, Egypt's government and legal system has been in a dynamic state of evolution and transition.

This evolution has seen two presidents removed from office: in 2011 President Hosni Mubarak resigned amid protests, transferring power to the military and the second, in 2013 when President Mohammed Morsi was removed from power amid public protests supported by the Egyptian Armed Forces (AEF). The current President Abdel Fattah al-Sisi was elected in May 2014.

The President is responsible for appointing a Prime Minister, who must form a government and win the confidence of the majority of the members of the House of Representatives within 30 days of his appointment. In the event that the Prime Minister does not win a vote of confidence, the President appoints a new Prime Minister nominated by the party or coalition that holds the highest number of seats in the House. The government and its ministries have the authority to issue administrative decrees. The President has the authority to issue decrees with the force of law; however, only if a House of Representatives has not been elected. Following the House's election, it must approve Presidential Decrees within 15 days.

Before the uprisings, Egypt had a bicameral legislature, which was dissolved in 2013. The constitution was approved, by referendum, in 1970 and further amended in 1980, 2005, and 2007. In January 2014, a new constitution was approved by referendum, establishing a unicameral House of Representatives with a minimum of 630 seats, 600 of which will be elected and 30 of which may be appointed by the President, with all members serving 5-year terms. Elections scheduled to be held in early 2015 have been deferred.

Under the new constitution, both the President and the House of Representatives have the authority to issue and reject laws. The Cabinet, the President and the House have the authority to propose laws within the House. For a resolution or bill to pass in the House of Representatives it must have the support of an absolute majority of those members present at the time of the vote; provided that the majority is no less than one third of the entire House. Bills are referred to relevant committees for further review, pending the approval of the House. Legislation rejected by the House cannot be proposed again during the same session.

The President may reject laws passed by the House of Representatives and refer them back to the legislative body. If he does not do so within 30 days, the law in question takes effect. If he does refer the law back to the House, it can be re-approved by a majority vote of two-thirds its members.

Approach to Climate Change

Egypt, with a population of 86.8m people, is the second most populous country in Africa and the most populous in the Arab world. However, about 97% of the population lives on only 4% (40,080km^2) of the land area. Only 2.87% of Egypt's land area is arable, most of it in the Nile River Delta and Valley. The Sahara desert dominates the rest of Egypt's landscape, leading to a significant population density along the Nile. Combined with increasing demographic pressures, possible

climate change impacts exacerbate Egypt's existing concerns about the water flows of the highly sensitive Nile River and Delta, sustaining an adequate freshwater supply, adjusting crops to temperature shifts during growing seasons, and mitigating desertification, soil degradation and soil salinization.

The Nile Valley is the epicentre of the country's economic activity, in particular agriculture, which, in 2013, accounted for 14.5% of the country's total GDP and employed an estimated 29% of the workforce. Water from the Nile River provides 95% of total water resources, about 80% of which is used for agriculture, leaving just 10% for municipal drinking water and 10% for other industries. Egypt also depends on the Nile Delta for more than 80% of its total fish production. This strong dependence on the Nile waterways for freshwater, agriculture, and food security leaves the country highly vulnerable to climate change impacts. As the 2010 Second National Communication (SNC) to the UNFCCC emphasises, the Nile River water flows are "extremely sensitive" to both changes in levels of precipitation and temperature. As well as the significant and interconnected impacts climate change would have on water resources, agriculture and food security, the SNC identifies coastal resources, tourism, and human health as among the most vulnerable sectors to climate change.

Although Egypt lacks a significant legal framework for climate change adaptation and mitigation measures, there are many policy plans in implementation and many government agencies responsible for integrating climate change into the national policy agenda. The Ministry of State for Environmental Affairs and, its executive arm, the Egyptian Environmental Affairs Agency (EEAA), located within the Ministry, are the two lead government bodies responsible for national climate change mitigation and adaptation strategies. A climate change unit was first established in the EEAA in 1992, which has since been upgraded to a Central Department for Climate Change. The EEAA also chairs the inter-ministerial National Committee of Climate Change, established in 1997 and restructured in 2007 composed of representatives from other relevant Ministries, as well as scientific experts and members of the public.

The SNC explains that the aim of many national plans across sectors is to "create a national greenhouse gas mitigation portfolio to support the process of sustainable development in Egypt". The SNC stresses that reducing GHGs by promoting renewable energy resources and energy efficiency is consistent with the country's long-term socioeconomic development goals. The Ministry of Water Resources and Irrigation (MWRI), the Ministry of Agriculture and Land Reclamation (MALR), the Ministry of Electricity and Energy (MOEE) and the New and Renewable Energy Authority are also involved in mainstreaming climate change goals with the country's national action plans. Both the MWRI and MALR have ministerial committees for climate change within their respective ministry and, in 2009, the MOEE began hosting a Regional Centre for Renewable Energy and Energy Efficiency to promote renewables and demand response within Middle East North Africa (MENA) countries.

Egypt's First National Communication to the UNFCCC was delivered in 1999, after 25 climate change vulnerability, mitigation, and adaptation studies facilitated by two major programmes: the Support for the National Action Plan (SNAP), financed by the United States Country Studies Programme (USCSP), and Building Capacity for Egypt to respond to the UNFCCC, financed by the Global Environment Facility. A Climate Change Action Plan was released in the same year, focused on creating an inventory of GHG emissions, formulating policies to reduce GHG emissions, and evaluating the economic impact of GHG abatement. However, the policy was never published or implemented.

The inventory of GHG emission was subsequently conducted in 2000 and reported in the SNC that total emissions increased by an average of 5.1% annually throughout the decade. The four sectors that contribute most significantly to total emissions are: (i) energy, which accounted for 61% of the

total in 2000, 27% of which was transportation-related (ii) agriculture (16%) (iii) industrial processes (14%) and (iv) waste (9%). Barriers to GHG mitigation efforts included: institutional capacity constraints, lack of information about GHG reduction opportunities and technology, and limited access to the investment capital required to implement mitigation technologies and procedures. The SNC estimates that the existing package of mitigation efforts, focused on fuel substitution, renewable energy and energy efficiency will lower GHG emissions by nearly 8.3mt CO_2-e.

In 2008, Egypt partnered with the Millennium Development Goals Achievement Fund (MDG-F) to establish and implement a Climate Change Risk Management Programme me (CCRMP) with three central objectives: to integrate GHG mitigation into national policy and investment frameworks; to increase climate change adaptation capacities, particularly in agriculture and water; to raise awareness regarding the impacts of climate change. According to MDG-F, some key achievements of the USD4m joint programme include successfully assisting and supporting: (i) the establishment of a Clean Development Mechanism Awareness and Promotion Unit (CDM APU) within the EEAA, (ii) the establishment of the Energy Efficiency Unit (EEU) that advises the Cabinet on energy efficiency, (iii) the development of the MWRI's capabilities to forecast climate change scenarios, and (iv) the irrigation research and climate change crop simulation activities of the MALR. CCRMP explains that Egypt "is moving towards a less GHG intensive path mainly by becoming a more energy efficient economy, and by increasing the utilization of its large renewable energy potential".

In 2010, in addition to the SNC, Egypt published a National Environmental, Economic and Development Study (NEEDS) for Climate Change to outline the financial and institutional needs for implementing prospective and ongoing adaptation and mitigation measures. This study recognises that the next phases of climate change planning should include a National Action Plan for Adaptation (NAPA) and National Low Carbon Economy Plan. The NEEDS report highlights the need to develop GHG monitoring system that aggregates and disseminates information about GHG emissions across sectors.

Additionally, in January 2014, the Ministry for Environmental Affairs signed an agreement with Italy's Ministry of the Environment to transform El-Gouna City into the first carbon-neutral city in Africa.

Energy supply

Egypt depends heavily on hydrocarbons to fuel socioeconomic development. It is the largest non-OPEC oil producer and the second-largest dry natural gas producer in Africa. In the past decade, oil production has struggled to keep pace with growing domestic demand and, in 2010, consumption surpassed production.

The most extensive climate change mitigation efforts have been conducted within the energy sector, including substituting oil with natural gas generation, introducing combined heat and power generation, integrating large-scale wind farms in the electricity grid, the transition to compressed natural gas (CNG) in some commercial vehicles and promoting demand-side management.

In 1986, a New and Renewable Energy Authority (NREA) was created within the Ministry of Electricity and Energy to expand efforts to develop and integrate renewable energy into the energy mix and co-ordinate energy efficiency programmes. After the NREA was set up, Egypt began formulating a national renewable energy strategy. The current New National Renewable Energy Strategy was announced by the Supreme Council of Energy in 2008 and aims to generate 20% of the country's electricity from renewable sources by 2020. Of this 20%, 12%, or 7,200MW, is meant to be generated by wind farms. The overall strategy for energy supply, released in 2007, also seeks to develop nuclear power generation, carbon capture and storage technology and demand-side management. The commitment to renewable development was enshrined in the 2014 Constitution, which directs the

state to "make the best use of renewable energy sources, motivate investment therein, and encourage relevant scientific research."

The current renewable energy portfolio is dominated by hydropower, the largest energy source in the country after natural gas and oil. Most hydropower is from the Aswan Dam, which generated 13.2bn kWh of electricity in 2012. In 2011, Egypt connected its first solar-thermal power plant, which has a capacity of 140MW and employs concentrated solar power (CSP), with back-up natural-gas fired generators. The government recently announced plans to invest USD1bn in the development of additional solar projects.

The NREA reports that Egypt has significant wind energy potential, particularly in the Gulf of Suez and the Nile Valley. Wind capacity is predominantly generated from the 545 MW Zafarana and 5 MW Hurghada wind farms, which were financed in co-operation with development banks in Japan, Germany, Denmark, and Spain. The NREA has plans to increase wind capacity to 7.2GW by 2020. Currently, Egypt has about 29 GW installed electricity capacity across generation technologies.

Energy demand

In 2013, Egypt was the largest oil and natural gas consumer in Africa with fossil fuels accounting for 94% of total energy consumption, of which 53% was natural gas and 41% was oil. Hydroelectric was responsible for 3%, coal 2%, and 1% other renewables.

During the past few decades, there has been rapid growth in energy demand, which has resulted in frequent electricity blackouts. This rising demand is spurred by population growth, urbanisation, economic growth, increased industrial output, energy-intensive industries, motor vehicle sales, and energy subsidies. The 2010 NEEDS assessment estimates that in order to meet this growing demand, Egypt requires an additional 2.7GW of generation capacity every year through 2020.

REDD+ and LULUCF

Egypt does not identify forestry as a priority area of adaptation or mitigation in its National Communications, explaining "wetlands and land use change and forestry are not surveyed as the available data are neither sufficient nor reliable enough to obtain the estimates". A number of wetland areas are, however, designated sites of international importance by RAMSAR.

Egypt has initiated a desert afforestation programme under the supervision of the Undersecretariat for Afforestation and the Environment within the MALR. This programme, while not expressly formulated to combat climate change, is consistent with goals to mitigate GHG emissions. According to the EEAA, by 2008, 16,984 Feddans (approximately 7,133 ha) of forest plantations had been planted, employing treated sewage wastewater for irrigation.

Transportation

The energy-intensive transportation sector is the fastest growing source of GHG emissions in the country, due to reliance on roads and motor vehicles as the primary means of transportation. The Ministry of Transport has been implementing a transportation and urban traffic improvement strategy that includes the expansion of the public transportation system, the electrification of existing diesel railway lines, and the promotion of the use of hybrid motor vehicles.

Egypt has over 5,000km of railway lines, providing access to nearly all major cities; however, these lines are in need of significant modernisation. It is also home to the first metro system in Africa, Cairo Metro, which has been operational since 1990. Cairo Metro has two fully operational lines, the first phase of a 3rd line was opened in spring of 2014, and a 4th line is scheduled for completion in 2019.

Adaptation

Egypt is highly vulnerable to climate change impacts across a range of sectors and adaptation measures are central to climate change policy. There are a number of adaptation projects, primarily focused on coastal zones, freshwater scarcity, and disaster risk management. Projects include measures to improve beach nourishment and to construct coastal drainage systems, breakwaters and dykes. Limited attention has been given to the implementation of agriculture adaptation efforts.

The NEEDS assessment articulates a number of adaptation priorities relating to coastal zones, freshwater scarcity and agriculture, including: constructing a national integrated coastal zone management programme, improving existing crop patterns, improving irrigation efficiency, and establishing a special fund for adaptation and risk reduction activities.

The flagship law on the Protection of the Environment (Law 4/1994) charges the EEAA with the development of a National Integrated Coastal Zone Management (ICZM) Strategy. An EEAA "Country Report on Egyptian ICZM Experiences" (2003) identifies a binding ICZM strategy or plan as a "long-term" objective necessary to provide clear guidance for actions in Egypt's coastal zones to address: irrational land use, shoreline erosion and flooding, water pollution, and the deterioration of natural resources and habitats. Although progress has been made on developing an ICZM plan through a number of stakeholder working groups, a binding strategy or plan has not been finalized or adopted.

In 2011, Egypt released a National Strategy for Adaptation to Climate Change and, in 2013, a specific Adaptation Strategy for the MWRI was proposed; however, it is uncertain whether it was adopted by the MWRI. The proposed MWRI Adaptation Strategy prioritises adaptation measures addressing droughts and water scarcity and presents an implementation plan, beginning in 2015, to develop deep groundwater wells, expand agricultural drainage water re-use, construct desalinisation plants, invest in waste water treatment facilities, reduce evaporation losses in Lake Nasser, and increase control over water distribution and efficiency.

Egypt is also a member of the Nile Basin Initiative (NBI), a partnership among states along the Nile Rivers established to encourage sustainable socioeconomic development through the equitable division of the Nile Basin's water resources. The NBI has begun to address climate change within this regional framework and, in 2010 launched the project "Adapting to Climate Change Induced Water Stress in the Nile River Basin" with assistance from UNEP and the Swedish International Development Agency (SIDA).

A 2004 report of the OECD Development and Climate Change project asserts that Egypt is at the forefront among developing countries for coastal zone vulnerability and impact assessments and the existence of institutional framework to address climate change impacts; however, it faces numerous impediments to implementing adaption policies. The OECD report emphasises that other development issues frequently take priority over or hinder the implementation of adaptation policies, such as: lagging land productivity, increasing living costs, and economic subsidies for both water and electricity that shape private decisions regarding resource use. These barriers to implementation are compounded by the continued unrest and the government's focus on restoring order and economic stability in the wake of the 2011 popular Arab uprisings.

Egypt: Executive Portfolio

Name of Policy	**National Energy Efficiency Action Plan (2012-2015)**
Date	11 July 2012 (approved by cabinet)
Summary	Outlines energy efficiency targets and measures to be implemented by the Ministry of Electricity and Energy in co-operation with the following Ministries: Industry and Foreign Trade; Housing; Local Development; and Tourism. Establishes a target of achieving a cumulative energy savings of 5% between 2012 and 2015 (compared to the average of the previous five years of consumption). Outlines measures to achieve this target that span the residential sector, the public sector, and the tourism sector. Residential sector efforts include: a target to sell 12m Compact Fluorescent Lamps (CFLs) by 2015 and energy efficiency standards and labels for household appliances. Public sector measures include: replacing 1m sodium, mercury vapour, and incandescent lamps in street lights and public buildings with high efficiency bulbs by 2015 and conducting a study to investigate reducing electricity consumption in public buildings. Following from this latter study, an energy efficiency code has been established for government buildings. Tourism sector measures include: developing a financing mechanism to encourage the use of solar water heaters in hotels. The plan does not address the heavy subsidy on electricity, which is recognized as a significant cause of electricity overconsumption.

Name of Policy	**Egypt's National Strategy for Adaptation to Climate Change and Disaster Risk Management**
Date	December 2011
Summary	The overarching goal of this Strategy is to increase Egypt's flexibility in dealing with climate change risks and disasters as well as the Egyptian Community's "ability to absorb, contain, and reduce such risks and disasters" across different sectors. The Strategy evaluates the current situation and risks across key sectors, in particular the intersection of coastal zones with water resources and irrigation, agriculture, health, urban areas, housing, roads, and tourism. It recommends (i) the integration of sector specific adaptation plans with each five-year plan and national development programmes; (ii) enhancing community participation and building a "Safety First" culture; (iii) promoting regional and international co-operation; and (iv) engaging in continuous monitoring of progress. The Strategy identifies seven determinants of success in adapting to climate change risks: (i) political will at all levels, (ii) availability of human, financial, and natural resources, (iii) reform and adjustments of institutional frameworks, (iv) amendments to legislation and laws, (v) strengthening the National Information Exchange System, (vi) identification and monitoring, assessment, and follow-up of performance indicators, and (vii) development of a national model for social and economic analysis and projections. The specific framework for adaptation outlined in this Strategy is divided into four phases of execution consisting of four five-year plans. Key proposed operational measures for the first five-year plan include: developing a GIS monitoring database on coastal zones, developing a Regional Climate Model (RCM), studying the effectiveness of natural protection systems such as dunes, formulating national legislation to enable climate change risk reduction, developing additional regulations for coastal development, and enhancing partnerships between the public and private sector. Further outlines total estimated investment costs over 20 years by sector and specific operational measure. The total estimated cost across all sectors is calculated to be EGP53.07bn (USD7.4bn).

Name of Policy	**New National Renewable Energy Strategy**
Date	February 2008
Summary	Establishes a target of generating 20% of electricity from renewable sources by 2020, 12% of which (or 7,200MW) will be generated by wind farms. Outlines two methods of achieving these ambitious targets: (1) 1/3 of the installed capacity, or 2,400MW, will be publicly funded and implemented by the New and Renewable Energy Authority, and (2) 2/3 of the installed capacity, or 4,800MW, will be achieved through private investments facilitated by government incentives. Incentives for private investment outlined in this strategy include: long-term PPAs of 20-25 years; a feed-in tariff system; the establishment of a renewable energy fund to provide subsidies to make renewables more cost competitive; and the pre-allocation of 7600 square km of land for renewable projects.

Sources

Abdel Gelil, Ibrahim. (2014) "History of Climate Change Negotiations and the Arab Countries: the Case for Egypt," (Beirut: Issam Fares Institute for Public Policy and International Affairs, American University of Beirut).

Borhan, M., Farouk, M., and Hamdy, T. (2003) "Country Report on Egyptian ICZM Experience with Special Reference to Sharm El-Sheikh – Southern Sinai." Arab Republic of Egypt, Ministry of State for Environmental Affairs, Egyptian Environmental Affairs Agency, Coastal and Marine Zones Division [http://www.persga.org/Files/Common/ICZM/ICZM_Egypt_Experiences.pdf].

"Cairo Metro, Egypt," *Railway-technology.com,* 2014 [http://www.railway-technology.com/projects/cairo-metro/].

CIA World Factbook, "Egypt," (2014). [https://www.cia.gov/library/publications/the-world-factbook/geos/eg.html].

"Climate Change Risk Management in Egypt," (2014) MDG Achievement Fund [http://www.mdgfund.org/content/climatechangeriskmanagementegypt].

"Constituting Institutions: The Electoral System in Egypt," (2014) Middle East Policy Council, [http://www.mepc.org/journal/middle-east-policy-archives/constituting-institutions-electoral-system-egypt].

Constitution of the Arab Republic of Egypt 2014, unofficial translation, Egypt State Information Service [http://www.sis.gov.eg/Newvr/Dustor-en001.pdf].

Egyptian Government Services Portal (2014) Official Website, [http://www.egypt.gov.eg/English/Home.aspx].

"Egypt Country Profile," (2014) Clean Energy Information Portal, Renewable Energy and Energy Efficiency Partnership [http://www.reegle.info/policy-and-regulatory-overviews/EG].

"Egypt Country Profile," (2014) International Energy Agency [http://www.iea.org/countries/non-membercountries/egypt/].

Egypt GHG Reduction Strategy (2010) Industrial Modernisation Programme & McKinsey & Company, [http://www.imc-egypt.org/studies/Egypt%20GHG%20Emissions%20Reduction%20Strategy.pdf].

Egypt's Ministry of Agriculture and Land Reclamation (2014) [http://www.agri.gov.eg].

Egypt's Ministry of Energy and Renewable Energy (2014) *Official Website*, [http://www.moee.gov.eg/english_new/home.aspx].

Egypt's Ministry of Environment, Environmental Affairs Agency (2014) *Official Website*, [http://www.eeaa.gov.eg/English/main/about.asp].

Egypt's Ministry of Water Resource and Irrigation (2014) *Official Website* [http://www.mwri.gov.eg].

Egypt's New and Renewable Energy Authority (2014) *Official Website*, [http://www.nrea.gov.eg/english1.html].

Elrefaei, Hatem and Khalifa, Marwa. (2014) "A Critical Review of the National Energy Efficiency Action Plan of Egypt," Journal of Natural Resources and Development [http://jnrd.info/wp-content/uploads/2014/07/1322.pdf].

Fahim, Kareem. (2 May 2012) "Underground, Everything that Life Above is Not*," The New York Times*, [http://www.nytimes.com/2012/05/04/world/middleeast/cairos-subway-is-efficient-orderly-and-dependable.html?_r=2&].