

Climate Change and Environment in the Arab World

July 2014

HISTORY OF CLIMATE CHANGE NEGOTIATIONS AND THE ARAB COUNTRIES:

The Case of Egypt

Ibrahim Abdel Gelil
Arabian Gulf University

Research Report

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The Climate Change and Environment in the Arab World Program aims to understand the climate change and environment policy process in the region and define the most appropriate policy recommendations by linking development in applied sciences on issues related to climate change and environment to social sciences.

Rami G. Khouri *IFI Director*
Nasser Yassin *Director of Research*
Nadim Farajalla *Faculty Research Director*
Karim Makdisi *Project Leader*
Rana El Hajj *Program Coordinator*
Patricia Haydamous *Program Research Assistant*
Rabih Mahmassani *Communications Manager*
Michael Huijjer *Outreach & Publications Manager*
Donna Rajeh *Designer*

Ibrahim Abdel Gelil
Arabian Gulf University

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Biography of Author

Prof. Ibrahim Abdel Gelil is H.H. late Sheikh Zayed Bin Sultan Al Nahayan chair in Environmental Management at the Arabian Gulf University (AGU). He received his Ph.D. in chemical engineering from Cairo University in 1984. His professional experience has involved work in the governmental, industrial and academic sectors. Prior to his appointment at AGU, Prof. Abdel Gelil served as a Chief Executive Officer of the Egyptian Environmental Affairs Agency (EEAA) from 1997 until 2002; and the Chairman of Board of the Organization for Energy Conservation and Planning (OECP) from 1994 to 1997. He also served as a research fellow at the Natural Resources Department of Cornell University, and visiting researcher at the Lawrence Berkeley Laboratory (LBL), CA. in 1994.

Prof. Abdel Gelil work in energy and environment studies has focused on climate change in the Arab region, including policy formulation and analysis, strategic planning and program development and management. His professional experience and policy work has put him at the forefront of Egypt's energy and environment policy. Leading the Egyptian delegation in the UNFCCC negotiations, he assumed various advisory and coordinating positions for partnerships between the Government of Egypt and other International Organizations including the European Community, USAID, the World Bank, various UN agencies (UNDP, UNEP, ESCWA) and other bilateral and multilateral development assistance organizations. He also represented North Africa in the council of the Global Environmental Facility (GEF).

In addition to his frequent writings in the Arabic media, Prof. Abdel Gelil has written and published more than 100 publications, authored and co-authored eight books and many authoritative reports including the newly published *"Global Energy Assessment"*.

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Preface

IFI's Climate Change and Environment in the Arab World Program, launched in 2008, has been tracking and framing climate change international negotiations under the United Nations Framework Convention on Climate Change (UNFCCC) - in particular to what pertains to Lebanon and Arab countries.

Key members of the program have attended nearly all the Conferences of the Parties (COP) as part of the official Lebanese delegation since COP 15 in Copenhagen, Denmark in 2009. From this exposure, it has become apparent that literature on the history of the involvement of key Arab countries in the past 20 years of negotiations is non-existent. This makes the development of any understanding of the role that Arab countries had played in the negotiations, if any, and how their positions have shifted throughout the years, very difficult.

With this knowledge gap in mind, the Climate Change and Environment in the Arab World Program has embarked on a research project aimed at developing and creating in a clear systematic manner a much-needed archive of Arab negotiations on climate change. A second goal of the project is to provide a guide for policy-makers and researchers of all positions and tracks taken by Arab countries within the UNFCCC negotiations.

The paper is the first output of this research project; we plan to publish more papers based on this project in the near future.

Abstract

Even though Egypt's share of Global Greenhouse Gases (GHGs) emissions is less than 1 %, Egypt has proved to be one of the most vulnerable countries to the potential risks of climate change. The most vulnerable sectors include coastal zones, water resources, and agriculture. Estimates show that a Sea Level Rise would lead to the permanent submersion of large areas of cropland in the Nile Delta, and accelerate the trend of desertification that is worsening the already fragile situation of food security. In the meantime, the energy policy of Egypt aims to improve efficiency, switch to low carbon fuels, and promote renewable energy resources, which have all proven to be climate friendly policies. These two factors, Egypt's vulnerability and its energy policy are the two main drivers of its climate change policy. At an early stage recognizing the importance of the climate change issue to its future development, Egypt has actively participated in the efforts of the international community to address it since signing the United Nations Framework Convention on Climate Change (UNFCCC) in 1992. The country has been successful in developing a relatively mature climate policy framework, which in turn plays an instrumental role in attracting donor funding, crucial in assessing vulnerability and adaptation strategies, building national capacity, and benefiting from the clean development mechanism of the Kyoto protocol (KP).

This paper outlines Egypt's vulnerability to potential impacts of climate change, analyses Egypt's involvement in the climate change negotiations process, and sheds light on the major developments of national positions throughout the course of the negotiations up to the 18th Conference of the Parties (COP 18) in Doha in 2012. Analysis shows active involvement on Egypt's part in the global climate regime and alignment of Egypt's position to that of other developing countries, especially the Arab and African groups. The major shift in Egypt's position observed throughout the negotiations process is the concession regarding its commitment to reduce GHGs emissions, which they had rejected since 1992. This shift took place gradually, starting with Egypt's acceptance of the Nationally Appropriate Mitigation Actions (NAMAs) in Cancun, followed by its acceptance to negotiate a legally binding instrument applicable to all, in Durban in 2011. It is evident that Egypt, together with Kingdom of Saudi Arabia (KSA), has been playing a leading role within the Arab group irrespective of its own divergent national interests.

List of Acronyms and Abbreviations

AILAC	Association of Independent Latin American and Caribbean States
AU	Alexandria University
AWG-L	Ad-hoc Long-term Cooperative Action
AWG-KP	Ad-hoc working Group Under the Kyoto Protocol
CAMRE	Council of the Arab Ministers Responsible for Environment
CCAP	Climate Change Action Plan
CCU	Climate Change Unit
CCS	Carbon Capture and Storage
CDM	Clean Development Mechanism
CEO	Chief Executive Officer
COP	Conference of the Parties
CTE	Committee on Trade and Environment
DNA	Designated National Authority
EB-CDM	Egyptian Bureau for the Clean Development Mechanism
EC-CDM	Egyptian Council for the Clean Development Mechanism
EEAA	Egyptian Environmental Affairs Agency
EGPC	Egyptian General Petroleum Corporation
ETS	Emissions Trading Schemes
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
GCC	Gulf Cooperation Council
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
Gwh	Gigawatt hours
GHG	Greenhouse Gases
HDR	Human Development Report
ICAO	International Civil Aviation Organization
ICZM	Integrated Coastal Zone Management
IFAD	International Fund for Agricultural Development
IMO	International Maritime Organization
IPCC	Intergovernmental Panel on Climate Change
IWRM	Integrated Water Resources Management
JI	Joint Implementation
KP	Kyoto Protocol
KSA	Kingdom of Saudi Arabia
LAS	League of Arab States
LULUCF	Land Use, Land Use Change and Forestry
MDG	Millennium Development Goals
MEAs	Multilateral Environmental Agreements
MENA	Middle East and North Africa
MOFA	Ministry of Foreign Affairs
MOP	Ministry of Petroleum
MoP	Meeting of the Parties
MSEA	Ministry of State for Environmental Affairs
NAMAs	Nationally Appropriate Mitigation Actions
NBI	Nile Basin Initiative
NCCC	National Climate Change Committee

NCR	National Communication Report
NEAP	National Environmental Action Program
OAPEC	Organization of Arab Petroleum Exporting Countries
OEP	Organization for Energy Planning
SBI	Subsidiary Body for Implementation
SBSTA	Subsidiary Body for Scientific and Technical Advice
SCCF	Special Climate Change Fund
SEC	Supreme energy Council
SLR	Sea Level Rise
SNAP	Support for the National Action Plan
SNC	Second National Communication
TNC	Third National Communication
UNCED	United Nations Conference on the Environment and Development
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
USA	United States of America
USCSP	United States Country Study Program
WTO	World Trade Organization

1. Introduction

Egypt is a typical example of a developing country that is highly vulnerable to climate change which exposes it to numerous threats to its economic, social and environmental sustainability. Climate change is also expected to add to the growing threats to national security fueled by a growing population and an increased demand on the already constrained resource base. Egypt's security threats that will be further affected by the impacts of climate change include:

- *Energy Security* — Unsustainable use of oil and gas resources with underutilization of the available renewable resources, coupled with heavily subsidized prices, has led to strained national budgets and is jeopardizing Egypt's economic competitiveness.
- *Water Security* — Egypt has one major source of water supply, the Nile River, which supplies over 95% of the country's annual water needs. Consequently, agricultural development is closely linked to the River Nile and its management. Climate change could cause significant variation in the annual Nile floods. With a growing population, the share of fresh water per capita is estimated to drop to 550 m³ by 2020 (well below the water poverty line of 1000 m³ per capita).
- *Food Security* — Limited water and agricultural land, coupled with population growth and other factors, are creating mounting pressure on Egypt's ability to provide food for its growing population.
- *The Need for Jobs* — Egypt needs to generate over one million new jobs every year for its growing young population
- *The Poverty Gap* — With millions still living under the poverty line, Egypt needs to lift the standard of living for the poor. With the current social and political unrest, it is extremely difficult for Egypt to attract foreign direct investment (FDI) or development aids.

Geographically, Egypt forms the north-eastern corner of the African continent with coasts on both the Mediterranean and the Red Sea. Part of Egypt's territory, namely the Sinai Peninsula, is located in Asia. The total area of Egypt is 1,001,450 km² with a coastline of 3,500km. The surface level ranges from 133m below sea level in the Western Desert to 2,629m above sea level in the Sinai Peninsula.

According to Egypt's second national communication (SNC) to UNFCCC, the general climate of Egypt is dry, hot and desertic, with a mild winter season with rain over the coastal areas, and a hot and dry summer season. Data collected by the Egyptian Meteorological Authority and local universities for the period between 1961-2000 indicate a general trend towards a warming of the air temperature, with an increase in the number of hazy days, misty days, turbidity of the atmosphere, frequency of sand storms and hot days (EAAA, 2010). The country has particularly good wind regimes with ideal sites along the Red Sea and Mediterranean coasts with an excellent potential to produce wind power.

Egypt is a lower-middle income country with a population of about 90 million, of which nearly 56 % are living in rural areas. The population is estimated to reach 100 million by 2020, assuming the population growth rate remains unchanged. About 97% of the population in Egypt lives on the Nile Valley and the Delta, which represent about 4% of Egypt's total area.

In 2009, the Gross Domestic Product (GDP) per capita was US\$5673¹, and the average yearly economic growth rate for the period from 1990 to 2007 was 4.47%. Agriculture, which contributes nearly 14% of the annual GDP, remains an important part of the economy. An estimated 55% of the labor force in Egypt is engaged in agricultural activities and the sector consumes about 80% of the fresh water resources. There are a number of limiting factors for future agricultural growth in Egypt, which enhance the sector's vulnerability to climate change. These include:

1. Historically high reliance on low efficiency irrigation systems (30% or less), which poses increased pressure on water resources,

1 Based on PPP at constant 2009 US\$

2. Land degradation and desertification due to poor water management, poor agricultural practices, and intensive utilization of fertilizers and other agro-chemicals, and
3. Urban sprawl over agricultural land due to population growth and poor land use planning.

The industry and services sectors account for about 32% and 54% of the GDP respectively. Though attracting FDI is one of the major goals of the Egyptian development plans, it has been relatively low at 3.6% of the GDP (Table 1). The current Egyptian exports are dominated by energy intensive and low-technology products. However, the vision of Egypt's "Industrial Development Strategy" is that "by the year 2025, Egypt will be a leading industrializing nation in the Middle East and North Africa (MENA) region in terms of industrial performance as well as a main export hub for medium-technology manufactured products" (IMC, 2012). The cement and fertilizers industries have intensively grown, and their impact on the GHG emissions in Egypt is remarkable.

Though social indicators have improved over the last decade, the fight against poverty and illiteracy (about one third of the adult population) remains an important challenge to policy makers (UNDP, 2011). Over the past decade, 22% of the Egyptian population was living on less than 1.25 USD a day (national poverty line). Egypt was ranked 113th according to the 2011 United Nations Development Program (UNDP) Human Development Report (HDR) (Table 1). Increasing rural-urban migration inevitably results in the mushrooming of slums and informal settlement with frequently inadequate services. Concentration of industry and transport in the capital means that Cairo is home to 40% of all industrial production sites, 32% of all vehicles and 25% of Egypt's population. As stated earlier, a combination of urbanization and general population growth enhance expansion of residential areas into valuable agricultural land and put strain on agricultural production. This is especially critical in view of the fact that Egypt is far from being food self-sufficient and relies heavily on food imports.

Table 1: Key Development Indicators

Indicator	
Total population (million, 2011)	82.5
Annual population Growth (% , 1990-1995)	1.8
Surface area (Km ²)	1,001,450
Population density (people per Km ² , 2011)	82.4
Rural Population (% of total, 2011)	56.5
Adult Literacy rate (% , 2005-2010)	66.4
Population below national poverty line PPP US\$ 1.25 a day (% , 2000-2009)	22
GDP Per Capita PPP (constant 2009)	5673
Annual Growth Rate of GDP (% , 1990-2003)	2.5
Human Development Index (2011)	Rank 113
Public Expenditure on education (% of GDP, 2006-2009)	5
Public Expenditure on Health (% of GDP, 2009)	5
Foreign Direct Investment (FDI) as % of GDP (2011)	3.6
ODA as % of GDP (2011)	0.5

Source: UNDP, HDR, 2011

Though Egypt's share of the Global Green House Gas (GHG) emissions in 2005 was just 0.6% (McKinsey & company, 2010), Egypt realized early on the importance of the climate change issue to its future development path and has been actively participating in the efforts of the international community to address it since the convening of the United Nations Conference on Environment and Development (UNCED) in Rio in 1992.

This paper outlines Egypt's vulnerability to the potential impacts of climate change, discusses Egypt's involvement in the climate change negotiation process under the United Nations Framework Convention on Climate Change (UNFCCC), and sheds light on the major developments of its official positions during the course of negotiations since signing the UNFCCC in 1992 till the COP 18 in Doha in 2012.

2. Methodology

In order to assess the evolution of Egypt's climate policy and positions, this study was prepared by conducting four major tasks:

1. Desk study

A desk study was undertaken to review relevant documents. Research was performed through an extensive review of academic and policy literature. These included reports of national, regional, and international organizations and relevant climate change published literature. Further, the desk study included a review of the two National Communication Reports (NCR), GHGs mitigation studies, vulnerability and adaptation studies, and government policies and strategies. It also included a review of the formal documentations of the UNFCCC process from its inception until now.

2. Interviews

A series of one-on-one, email and phone interviews were organized to meet with senior stakeholders. The interviews supplemented and guided the study results through:

- validating some data and/ or
- obtaining proxy data where official or well-documented data sources were not available, and most importantly
- providing further insights into relevant issues.

The interviews were semi-structured, i.e. based on a questionnaire but not limited to it. The technique of semi-structured interviews allows for the option of addressing questions and issues as they arise during the interview, thus allowing for new insight.

3. Reviews

Review of the current institutional setup for climate change, policy development and implementation, and to identify the role of each entity, and review any relevant national reports.

3. Vulnerability and Adaptation to Climate Change

3.1 Vulnerability

Egypt is highly vulnerable to climate change impacts as noted in Egypt's Initial National Communication (INC) to the UNFCCC (EAAA, 1999), in the UNDP Global HDR 2006 (UNDP, 2006) and in the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (IPCC, 2007). Climate projections make it clear that current and future changes in climatic conditions constitute a major environmental risk that may jeopardize Egypt's development gains and poverty reduction strategies. Egypt's most vulnerable sectors to climate change are: 1) coastal zones, 2) water resources and 3) agriculture. Climate change would cause serious damage to human settlements, to large parts of productive agricultural land and to industrial areas in the North Coast. Estimates show that 0.5m Sea Level Rise (SLR) would lead to the permanent submersion of 1,800 km² of cropland in low areas of the Nile Delta, and accelerate the trend of desertification in the form of increased soil salinity in the remaining land (EAAA, 1999).

The IPCC estimates that the Mediterranean Sea will have risen by one meter by 2050 as a result of global warming, ending in the loss of one third of the most productive land in the Nile Delta (IPCC, 2007). Observations at various points along the Nile delta shoreline indicate that sea levels have already been rising. This SLR is due to a combination of local factors that include coastal subsidence and reduced sediment loads due to the construction of the High Aswan Dam upstream. It is also associated with global warming and thermal expansion of the oceans and glacier melting (El Shennawy, 2008). Several studies on the vulnerability of Alexandria, the second largest coastal city in Egypt, indicated that a 0.3m SLR would inundate large parts of the city, resulting in billions of dollars damage to infrastructure, displacement of over half a million inhabitant, and a loss of about 70,000 jobs. Such concerns about future SLR are well-reflected in Egypt's NCR to the UNFCCC. Along with the loss of populated and agricultural area, some industrial cities and important historic cities like Alexandria, Damietta, Rosetta, and Port Said would be victims of SLR. Furthermore, the expected SLR's impacts include threats to food security, damage to the large investments in the tourism sector along the North West Coast, and the relocation of more than 10 million people to the already over populated Nile Valley. This will have a direct and critical impact on Egypt's entire economy.

As indicated before, agriculture contributes nearly 14% to the GDP, making it a key sector of the Egyptian economy. Egypt has a unique heavily irrigated agriculture system. Temperature rises due to climate change will likely reduce the yield of the major crops and increase their water requirements. The combined effect of temperature increase, SLR, water shortage and other environmental conditions would worsen agriculture productivity, and therefore Egypt's food security.

Additionally, Egypt has just one major source of water supply, the Nile River, which supplies over 95% of the country's annual water needs. The mean annual rainfall is estimated at 18 mm/year, ranging from 0 mm/year in the desert to 200 mm/year in the northern delta region. Non-renewable underground fossil water supplies are accessible outside the River Nile valley, especially in the scattered oases. Consequently, agricultural development is closely linked to the River Nile and its management, which would be impacted by climate change. Models have predicted that the annual Nile flow will vary between an increase of 30% and a decrease that can reach 70%. These two extremes can have serious implications in terms of increased flood risks or droughts that would lead to a decrease in food production and an increase in the number of lost jobs and water conflicts. As a full-fledged member of the Nile Basin Initiative (NBI) (Nile Basin Initiative), Egypt is currently involved in the development of a regional Nile hydrological model and decision-support-system. The results so far are too broad to generate scenarios useful for assessing impacts of climate change on the Nile water, and identifying adaptation measures in the water and agricultural sectors.

Further potential impacts of climate change include human health due to warming-induced outspread of vector-borne diseases, and bleaching of coral reefs, which are one of Egypt's most valuable natural assets. It is obvious that the potential risks of climate change would exacerbate deterioration of Egypt's natural resources, already under increased pressures from rapid population and economic growth. This would jeopardize the country's ability to realize, the Millennium Development Goals (MDG) which include poverty reduction and sustainable development. Thus, the country is in need to build and develop capacities of both human resources and institutions in order to be able to adopt and implement effective strategies for managing climate risks in key vulnerable sectors, a process that is successfully underway.

3.2 Adaptation

The IPCC defines adaptation to climate change as any "adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities" (IPCC, 2001). Logically, Egypt's national adaptation strategy primarily focuses on the most vulnerable sectors, namely: agriculture, water resources, and coastal areas. For agriculture, it is recommended to change crop patterns to stress-tolerant ones, to change farm systems and fertilization practices, to develop simple and low-cost technologies suitable for the local context, to establish a special adaptation fund for agriculture, to build scientific capacity, and to improve public awareness. It is also recommended to enhance the adaptive capacity of rural communities through social protection and economic diversification. In terms of water resources, the country has been implementing the concepts and practices of Integrated Water Resources Management (IWRM). The national adaptation strategy recommends public awareness campaigns on impacts of climate change on water resources, the development of local and regional circulation models capable of assessing the impact of climate change on the Nile basin, building scientific capacity, and enhancing exchange of information among Nile basin countries. The strategy also promotes integrated coastal zone management (ICZM), recommends the creation of wetlands in low lying areas, building shore protection structures (including dams), and management of coastal lakes; raise public and policy maker awareness; and use of remote sensing in monitoring SLR (Vernor, 2012). Several adaptation actions are planned and currently underway to minimize the potential adverse impacts of climate change. As a potential alternative to agriculture and living areas, the government of Egypt has developed a massive infrastructure project in Toshka in the south of the country, bordering Sudan. Toshka features one of the most powerful water pumps in the world that diverts water from the Nile to the desert for irrigation and living needs. Yet to date, there has been no relevant migration to Toshka, as was initially planned, due to the hot climate and inadequate social services.

Several international organizations such as UNDP, the International Fund for Agricultural Development (IFAD), and the Food and Agriculture Organization of the United Nations (FAO) are collaborating with Egypt to assess vulnerability and adaptation of water, agriculture, and coastal zones to climate change. This collaboration also includes the implementation of a communication strategy to increase awareness of climate change risks and promote the integration of adaptation measures into national development plans. The Agriculture Research Center in the Ministry of Agriculture and Land Reclamation collaborates with IFAD and FAO to assess existing agricultural policies and advocate the adaptation of climate-sensitive strategies and practices, develop stress-tolerant crops, along with the dissemination of knowledge on these crops, and enhancing optimized cropping patterns that cope better with global warming.

Another study, financed by the Global Environment Facility (GEF), on the needs and gaps to adapt to SLR has been prepared jointly by the Stockholm Environment Institute, Alexandria University (AU), and the Coastal Research Institute of the National Water Research Centre. The overall aim of the study was to enhance Egypt's resilience and reduce vulnerability to climate change impacts. The study concluded that an ICZM plan is a key element for adaptation along the coastal zones of Egypt. A combination of spatial planning and enhanced coastal defenses to manage the risk of SLR and storm surge is needed. Proactive adaptation requires more effective partnerships among different stakeholders to facilitate the transition towards safe urban development in large port cities and to implement effective disaster management in the event of flooding (Elshinnawy, 2010).

4. Energy and Egypt's Climate Policies

Global GHGs emissions have increased from 106,839.6 Mt CO₂e in 1990 to 193,237.6 Mt CO₂e in 2000 (UNFCCC). McKinsey & Company had estimated that the total emissions of Egypt would be in the range of 220 Mt CO₂e in 2005, and projected these emissions to be about 550 Mt CO₂e by 2030 (McKinsey & company, 2010).

According to the International Energy Agency (IEA, 2012), per capita CO₂ emissions from fossil fuel combustion in Egypt is nearly 2.9 tons, though while less than the world's average of 4.4 tons it remains higher than Africa's average of 0.91 tons (Figure 1). The major emitters of GHGs are the energy sector, industry, agriculture, and waste. Their relative contributions to the total emissions are presented in Fig. (2). It is clear that burning oil and gas contributes about 60% to Egypt's total emissions. A comprehensive study undertaken by McKinsey & Company has assessed the potential of GHGs emission reductions in the major economic sectors. The study concluded that five economic activities contribute about 75% of the total emissions. They are the generation of electricity, residential and commercial buildings, the cement industry, road transport, and agriculture (McKinsey & company, 2010). The study also estimated that an overall potential of GHGs emission reduction is in the range of about 200 Mt CO₂e, equivalent to nearly 36% of the business-as-usual scenario in 2030. It further realized that nearly 80% of the abatement potential comes from the same five key sectors, and nearly 50% of the potential reduction can be implemented with economic benefits.

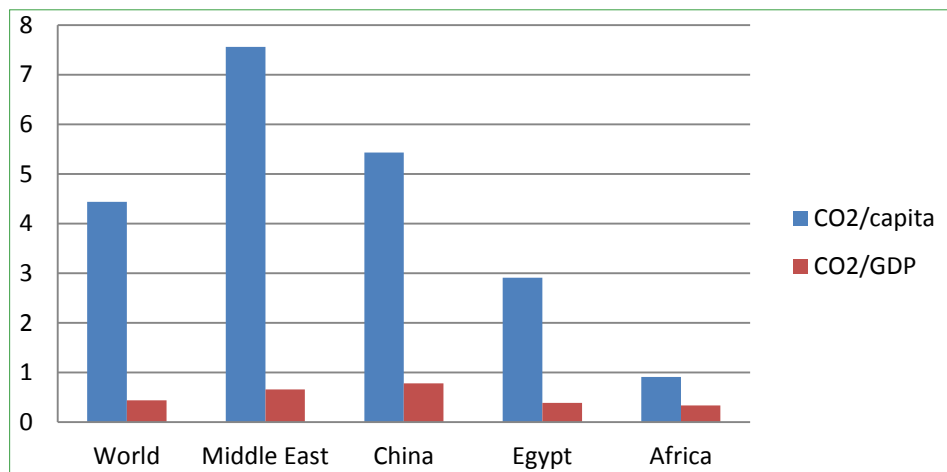


Figure 1: Egypt's Emissions Indicators

Source: IEA, 2012

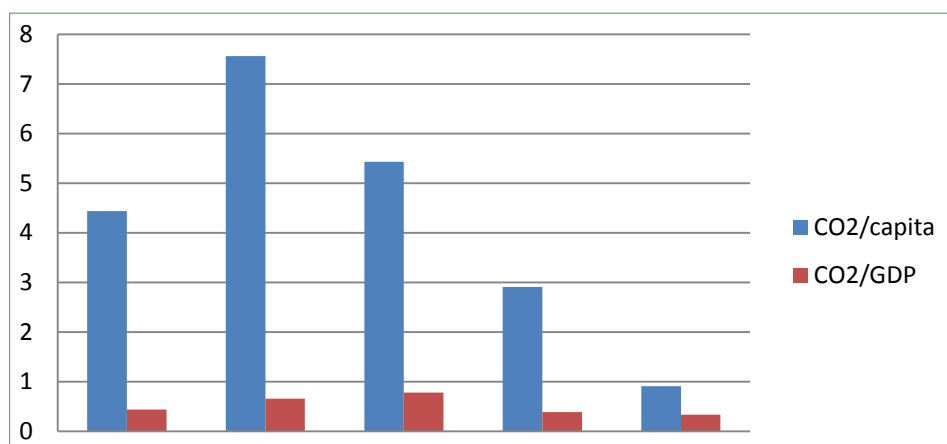


Figure 2: GHG Emissions By Sectors (2000)

As a non-annex I country, Egypt is not yet required to meet any specific emission reduction or limitation targets under the UNFCCC or the Kyoto Protocol (KP). However, mitigation measures are already underway to achieve multiple economic, social, or environmental objectives. These include the need for environmentally sound technology transfers, donor funding, capacity building and tapping on the available opportunities offered by the Clean Development Mechanism (CDM).

Egypt is the largest energy consuming country in North Africa. Production of oil and gas in 2009 reached nearly 81 tons oil equivalent (toe) representing about 95 % of the country's needs. The rest of the needs are met through hydropower, wind and biomass. Egypt is currently a minor oil exporter but expected to become a net oil importer soon. Generated electricity from hydropower does not exceed 15.5%, and thermal power plants that use oil and gas produce the remaining energy needs. Electricity generation, despite the move to gas instead of oil in the past decade, is the biggest GHG emitter. The annual growth of the electricity demand over the last decade is nearly 6-7% reaching about 125 Gigawatt hours (Gwh) in 2008, and it is estimated to remain the same over the next decade. Most of the future demand of electricity generation will be met by natural gas, accelerating the growth of the GHG emissions and the rest will be met by solar and wind energy.

Egypt can move towards a low-carbon development path, mainly by becoming a more energy efficient economy and by making greater use of its large renewable energy potential. Nevertheless, the heavy energy price subsidy is constraining investment in the energy sector while the full potential for GHG reduction is far from being exploited. In recent years, the government had adopted several measures to increase both rational use of energy, and renewable energy contribution in energy supply. These measures culminated by activating the Supreme Energy Council (SEC) headed by the Prime Minister. SEC aims to revise national energy policies including energy efficiency measures, incentives for renewable energy, private sector investment in energy services, and revise energy prices for large industrial facilities and other end-users. The continuation of these efforts will help Egypt to better manage the budget deficit while contributing to modernizing the economy and reducing GHG emissions through implementing energy efficiency and CDM projects. In addition, the Government also established an electricity regulatory body in 2000² to assist in reviewing electricity prices and ensure transparency and fair market competition.

Even before ratifying the UNFCCC, the government announced a national strategy to promote renewable energy resources in the early 1980s. This strategy has been revised and adapted according to the changing financial, market and technological framework conditions. To mitigate GHG emissions from the energy sector, the current national target is to improve energy efficiency by 8% by 2022 and to scale up the use of renewable energy in electricity generation to 20% by 2020. It is evident that the energy sector is a major driver of the climate change policy in Egypt. As a party to the KP since 2005, the Egyptian Designated National Authority (DNA) has issued Letters of No Objection for 32 CDM projects. However, only 15 projects have reached the registration phase. Other projects in the portfolio are at different stages of development in the CDM cycle (Table 2)

2 Presidential Decree No 339/2000.

Table 2: Registered CDM projects of the Arab Countries (2013)

Country	Projects
Egypt	15
UAE	13
Morocco	13
Tunisia	5
Qatar	1
Jordan	4
KSA	3
Syria	3
Libya	2
Algeria	2
Lebanon	3

Source: CDM website (<http://cdm.unfccc.int/>)

5. Policy Framework

Egypt does not have climate change-specific legislation, although the country was amongst the first countries to sign on to the UNFCCC during the Rio conference in 1992 and to ratify it in 1994. The country also signed the KP in 1999 and was the first Arab country to ratify it in 2005.

5.1 Legal Framework

The adoption of the National Environmental Action Program (NEAP) in 1992 served as a basis for an upgraded and extended national environmental policy and regulatory framework. Based on the recommendations of the NEAP, Law 4 of 1994 was enacted, with executive regulations issued in 1995. The same law was amended by Law 9 of 2009. The law and its executive regulations assign the roles and responsibilities of the Ministry of State for Environmental Affairs (MSEA) and the Egyptian Environmental Affairs Agency (EEAA)³. The EEAA is responsible for formulating national environmental policy; preparing environmental law and regulation, and monitoring compliance and coordinating enforcement actions. In addition to Law 4, the regulatory framework in Egypt for environmental management consists of a number of sectoral laws, which various government agencies are responsible for implementing. This regulatory framework entitles EEAA to take the lead in addressing most of the global environmental issues, including climate change, in collaboration with other major stakeholders. Thus, the EEAA acts as the national focal point for both the UNFCCC and the KP.

3 www.eeaa.gov.eg/English/main/about.asp

5.2 Institutions

As discussed earlier, the EEAA is the lead institution responsible for environmental affairs in Egypt. To address the threats of climate change, the EEAA started early to complete a national institutional framework. This framework is headed by an inter-ministerial National Climate Change Committee (NCCC) that was established in 1997, and was restructured in 2007. The NCCC functions as an effective coordinator of climate change on the national level. The committee is chaired by the EEAA's Chief Executive Officer (CEO) and its members encompass a broad range of governmental, academic and non-governmental representatives. The committee facilitated the establishment of Egypt's Climate Change Action Plan (CCAP), the INC on Climate Change in 1999, and the SNC in 2010. The preparation of the Third National Communication (TNC) report is currently underway. The NCCC has also been instrumental in coordinating governmental, non-governmental and private sector climate change projects with substantial international financial and technical assistance.

Within the EEAA, a Climate Change Unit (CCU) was established in 1992, which has recently been upgraded to become a central department for climate change. Additionally, after the ratification of the KP in 2005, Egypt completed the required institutional arrangements by establishing the DNA for the CDM⁴. In the same year, a national committee on CDM chaired by the Minister of State for Environment was established. It began to develop a national CDM strategy and a portfolio of potential CDM projects. The Egyptian DNA was later developed to be a two-body unit composed of the Egyptian Council for CDM (EC-CDM) and the Egyptian Bureau for CDM (EB-CDM). The EC-CDM is headed by the Minister of State for Environmental Affairs and is composed of 13 permanent members who represent all related government departments, private businesses and non-governmental organizations. At the national level, the council is responsible for implementation of the CDM process, e.g. it suggests legislation to the government, establishes project proposal guidelines, develops project evaluation criteria and procedures, and approves projects. At the international level, the EC-CDM is the counterpart to the CDM Executive Board and the point of contact for CDM stakeholders. The Egyptian Bureau for CDM acts as the Council's permanent secretariat and is headed by the CEO of the EEAA. It is comprised of five representatives from the MSEA, one from the Ministry of Electricity and Energy and one from the Ministry of Industry and Foreign Trade. The Bureau is responsible for monitoring projects throughout their life cycle, maintaining relations with the CDM Executive Board and organizing EC-CDM meetings.

It is obvious that the institutional structure to address climate change in Egypt has evolved since 1992 and matured over the years to enable Egypt to be actively involved in the global climate regime, to attract more bilateral and multilateral financial assistance, to build national capacity, to raise public awareness, and to benefit from the different opportunities offered by the international community.

4 Ministerial Decree No. 42 of 14/3/05).

6. History of Egypt's Involvement in the Climate Negotiations

The involvement of Egypt in the climate change negotiations started from the beginning of the process and evolved in parallel with the evolution of the international climate regime. Chronologically, Egypt's participation can be discussed in four stages, mainly associated with cabinet shuffles and changes in leadership in the MSEA and the EEAA. In the following sections we will discuss the effects of some domestic factors such as leadership of the environmental institutions (MSEA and EEAA), size and composition of Egypt's delegation, and some external factors such as donors' support, and positions of the regional and international negotiation blocks.

6.1 The First Stage: Laying the Foundation (1992-1996)

The response of the international community to the climate change challenges began with the adoption of the UNFCCC in 1992. At the UNCED, known as Rio Earth Summit, 154 signatories to the UNFCCC agreed to stabilize "greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system." In the convention, developed countries accept responsibility for the historic majority of emissions, since the industrial revolution, and "aim[ed] to stabilize" those emissions at 1990 levels by the year 2000 (UNFCCC, 1992). Egypt was amongst the first group of countries that signed the convention during the Rio Earth Summit, and ratified it in 1994. This ratification marked the starting point of Egypt's climate policy development. At the time, the Minister of State for Environment Dr. Atef Ebeid, who signed the UNFCCC in Rio on behalf of the Egyptian government, was not dedicated to environmental issues and he had other portfolios in the cabinet (public sector and administration development). He thus delegated most of his responsibilities in relation to climate change to the CEO of EEAA⁵.

An agreement was held in 1994 between the CEO of EEAA and the chairman of the Organization for Energy Planning (OEP)⁶; which is affiliated to the Ministry of Petroleum (MOP). The agreement stated that OEP would take over the responsibility of issues related to climate change. This was due to the lack of capacity at EEAA at the time and the general perception that the climate change issue was mainly an energy issue. It is worth noting that during the same period, and immediately after Rio, a heated public policy debate was underway in Egypt over drafting the first ever environmental law, which was issued two years later in 1994. This law, as described before, laid down the foundation for the first legislative and institutional framework for environmental management in Egypt, and reestablished the EEAA as the government entity responsible for the law enforcement. The newly established EEAA had developed the First NEAP, which attracted substantial funding from many bilateral and multilateral donors.

During that time, and due to scientific uncertainties, the climate change issue was still controversial at the global level, and was perceived in most of the developing countries as an energy and environment issue, rather than a development one. However, the vulnerability of Egypt to climate change was recognized early on during this stage with the support of two donor-funded projects. The first was the "Support for the National Action Plan (SNAP)" financed by the United States Country Study Program (USCSP) which is supported by the US government, and the second was "Building Capacity for Egypt, in response to the UNFCCC" supported by the GEF.

5 Salah Hafez

6 The author of this paper

SNAP produced the first Egyptian Action Plan for Climate Change. The Plan included national goals for enhancing knowledge about causes and consequences of climate change. The second project in its first phase, aimed at institutionalizing climate change issues at the national level. It facilitated 25 different studies covering the fields of GHG emissions inventory, mitigation, vulnerability and adaptation, abatement costs and more. These studies were conducted by a group of Egyptian universities and research institutions, involving the scientific community early on in developing the climate policy in Egypt.

The two projects ended in December 1999 by the submission of Egypt's INC, building some national capacities at different research institutions and universities, and establishing a CCU at EEAA as the institutional focal point dealing with climate change. Further, the outcomes of these two projects were considered as the early scientific assessment of Egypt's vulnerability to climate change, especially those related to the vulnerability of the Nile Delta to SLR, water resources, and agriculture. In fact, the first vulnerability assessment of the Mediterranean coast of Egypt was conducted at the UA (EL-Raey, 1997). Since then, the same study has been widely cited, even by IPCC. In 1995, the second assessment report of IPCC, based mainly on the outcomes of the national studies mentioned earlier, recognized Egypt as one of the most vulnerable countries worldwide, especially the vulnerability of the Nile Delta to SLR (IPCC, 1995). Further, the head of the NCCC and the staff of the climate change unit constituted, later on, the core of Egypt's delegation to the UNFCCC negotiations.

During this period (1992-1996), the size of the Egyptian delegation to the UNFCCC meetings was too small and was composed of only one person from the Ministry of Foreign Affairs (MOFA) during the first conference of parties (COP 1) in 1995, and of two persons at COP 2 in 1996, one of whom was the Chairman of OEP. It is noticeable that, at that stage, the Egyptian delegation was only composed of representatives of MOP and MOFA. The delegation, though small in number, used to divide work during negotiation sessions in such a way that the energy expert participates in the Subsidiary Body for Scientific and Technical Advice (SBSTA) meetings, while the Diplomat participated in the meetings of the Subsidiary Body for Implementation (SBI).

In 1995 in Berlin, COP 1 acknowledged that the UNFCCC was inadequate without country-specific commitments and agreed to negotiate emission reduction targets for industrialized countries within, what is dubbed as the 'Berlin Mandate'. It called for the adoption, as soon as December 1997, in Kyoto, Japan, of a protocol or another legal instrument that strengthens commitments to limit GHG emissions by Annex I Parties for the post-2000 period and establishes a negotiation process called the 'Ad Hoc Group on the Berlin Mandate'. The 'Berlin Mandate' specifically exempted all developing country parties from any new commitments in such negotiation process for the post-2000 period. This was the first practical application of the principle of "common but differentiated responsibilities", that is explicitly stated in the UNFCCC. At the same time, the IPCC released its Second Assessment Report, which concluded: "The balance of evidence suggests a discernible human influence on global climate." (IPCC, 1995). In July 1996 in Geneva, at COP 2, the United States of America (USA) agreed to legally binding targets and timetables to reduce emissions, but also proposed an international emissions trading scheme, which later formed the basis of what is called the "Kyoto flexibility mechanisms".

In response to the "Berlin mandate", in the summer of 1997, even before the adoption of the KP, the US Senate passed the Byrd-Hagel resolution unanimously, preventing ratification of any international agreement that: 1) did not require developing countries to make emission reductions and 2) would seriously harm the economy of the USA. (Byrd-Hagel, 1997).

6.2 The Second Stage: Building Capacity(1997-2001)

In 1997, two remarkable institutional developments occurred at the Egyptian national level when the first dedicated Minister of State for Environment ⁷ was appointed, and the Chairman of OEP was selected as the CEO of EEAA. From the climate change perspective, this change in leadership helped the emerging climate policy of Egypt to further evolve. Both new leaders attended the COP 3 in Kyoto, together with four senior diplomats. During the intense negotiations sessions at Kyoto, the Egyptian diplomats provided legal support to the Arab group. Egypt had successfully joined hands with the rest of the developing countries (G77 & China) to oppose a proposal made by the USA, that developing countries should commit to legally binding emission reduction targets in an attempt to meet one of the conditions imposed, by the Byrd-Hagel resolution, on USA negotiators. In fact this resolution continues to govern the USA position in the climate negotiations up until today.

In Kyoto, more than 150 countries signed the KP, which binds 38 industrialized countries (called Annex 1 countries) to reduce GHG emissions by an average of 5.2% below 1990 levels for the period of 2008-2012. To enter into force, at least 55 had to ratify the Protocol and 55% of Annex 1 emissions were to be covered. Though details on how to achieve that target were not finalized at the time, the agreement included “flexibility mechanisms” that would allow industrialized nations to get credit for actions to reduce GHG emissions in other countries. These market-based mechanisms were intended to help developed countries reach their targets in a cost-effective way. These instruments are the Emissions Trading Schemes (ETS), inspired by the success of the SO₂ trading schemes at reducing Acid Rain in the USA, the CDM, and the Joint implementation (JI). In Kyoto, Canada was successful in including “carbon sinks” within the agreement, enabling countries to count carbon stored in forests and soils towards their emission reduction targets. The KP entered into force on 16 February 2005. Egypt signed the protocol in 1999 and was the first Arab country to ratify it on the 12th of January 2005.

During this stage, the Egyptian delegation was fully involved in the emerging climate process. For instance, the CEO of EEAA, the head of the Egyptian delegation, participated early as an expert in the in-depth review teams formulated by the UNFCCC secretariat for reviewing the national communications of two non-Annex 1 countries, Australia and Romania.

On the negotiations level, Egypt was an active member of different groups. As a member of the African group, with which it shares the same concerns of vulnerability to the adverse impacts of climate change, the Egyptian delegation was generally trying to coordinate with African countries on issues of mutual interests, such as financial support, technology transfer, and capacity building. At the same time, Egypt was active within the Arab group, trying to find a common coordinating ground. During that period, there were two distinct groups of Arab positions: The first, the hard-liners, was that of the Arab oil producing countries led by KSA, which perceived climate change as a plot from industrialized countries, major oil consumers, to harm the economies of oil producers. Thus, they were doing their best to challenge it by using different tactics to block the negotiations process by making use of the scientific uncertainty of that time as an excuse. Even during the preparatory process of Rio and within the League of Arab States (LAS), KSA insisted on referring to the scientific uncertainties of climate change on drafting the “Arab Ministerial statement on environment and development” that was issued in September 1991.⁸ Only two Gulf Cooperation Council (GCC) countries had signed the convention in due time, namely Bahrain and Oman, while the rest had acceded the UNFCCC after entry into force. The second group of Arab countries was composed of those which are most vulnerable to climate change such as Egypt, Sudan and Morocco. These countries, in contrast to the first group, were trying to push the negotiations process forward in order to address climate change risks. As such signs of contradiction between the two groups surfaced which made it difficult to reach a unified Arab position.

7 Nadia Ebeid

8 Personal communication with Ms. Fatma Elmallah, former Counselor of Climate Change, LAS

Egypt was also active to discuss the position of the G77 & China on different elements of the convention and the protocol within the different Arab committees. The Council of the Arab Ministers Responsible for Environment (CAMRE) of the LAS, while trying to address the climate change as one of today's major environmental challenges, assigned the climate change issue to two standing committees. The first was a committee composed of the representatives of the meteorological organizations in the Arab countries, and the second one composed of the representatives of the Organization of Arab Petroleum Exporting Countries (OAPEC). The first group, which was expanded later, not to be limited to meteorological institutions, was assigned the task of following the evolution of the body of literature of climate change science and the work of the IPCC. During the deliberations of this committee, and in contrast to Egypt, KSA was focusing mainly on the impacts of response measures on developing countries especially those whose economies are relying on fossil fuels. Further, when KSA was initially assigned by CAMRE to follow up on the UNFCCC process, the kingdom was keen to do so mainly through coordinating the Arab position with that of the OPEC group. This situation has changed since 2010 and will be discussed later. The second standing committee, the OAPEC committee, was mainly aimed at coordinating the Arab position to protect the economic interests of the member states' Arab oil producers. Egypt, as an oil producer and a member of OAPEC, was represented by the Egyptian General Petroleum Corporation (EGPC) in this committee. Members representing EGPC in that committee generally joined the Egyptian delegation at the UNFCCC negotiations.

From 1998 to 2000, during the three consecutive conferences of parties at Buenos Aires, Bonn, and The Hague respectively, all countries were struggling to finalize detailed procedures to implement the KP and have it entered into force. At the same time, Canada joined the USA, Japan, Australia, and the OPEC group in trying to exploit loopholes in Kyoto's "flexibility" mechanisms to delay the ratification process.

In 2001, before the COP 7 in Marrakesh, the IPCC released its Third Assessment Report, which states "There is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities" (IPCC, 2001). In March 2001, two months after his inauguration, then U.S. President George W. Bush announced his country's withdrawal from the KP, a position that remains until now.

This stage ended with Egypt's participation in COP 7 in Marrakesh in 2001, where the Marrakesh Accords were adopted. These accords consisted of a package of decisions on many of the details of the KP, including the flexible mechanisms, reporting and methodologies, land use, land-use change and forestry (LULUCF), and compliance. The Marrakesh Accords also addressed issues such as capacity building, technology transfer, response to the adverse effects of climate change, and the establishment of three funds: the Least Developed Countries Fund, Special Climate Change Fund, and the Adaptation Fund (IISD, 2012).

6.3 The Third Stage: A dormant Transition (2002-2003)

This short stage started with another cabinet shuffle, when a new Minister of State for Environment⁹ was appointed. The new minister, instead of building upon what had been achieved, chose not to attend any COP meeting as indicated in Table (3). Immediately afterwards, the CEO of EEAA was also replaced along with the other members of the Egyptian delegation. Even though the size of Egypt's delegation at COP 8 in Delhi, increased to ten persons, it was mainly composed of newcomers and diplomats. The new CEO of EEAA attended together with the head of the CCU at EEAA, who was also newly appointed. The remaining eight members were basically the whole Egyptian diplomatic mission to India headed by the Ambassador. This does not mean that all of them had participated in the negotiations process. It is customary to officially register as many members of the diplomatic missions at the host countries so that they would be able to attend the sessions whenever needed. It is noticeable that neither the new delegate members of EEAA nor those of the MOFA had any past experience in the climate change process. Luckily, the COP 8 meetings, one year after COP 7 in Marrakesh, did not deal with any major issues.

9 Mamdouh Riad

In 2003, COP 9 was held in Milan, and the size of the Egyptian delegation was reduced to six persons, two newcomers from the EEAA, and four diplomats from Egyptian Diplomatic Mission in Milan, Italy, once more, all newcomers to the process. During these two last COPs, negotiations were focused on having the KP entered into force, and discussions were based around operationalization of elements of the Marrakesh Accords. In the history of Egypt's participation in climate change negotiation, this two-year period could be considered as an inactive transition between the first two stages described above and the fourth stage that will be discussed next.

6.4 The Fourth Stage: Seizing the Opportunities (2004-2009)

This stage was marked once again by another shuffle in the Egyptian Cabinet, when a new Minister of State for Environment was appointed.¹⁰ The new minister resumed the practice of attending the high level segments of almost all but one of the COP meetings during his term in office, pointing to a high level of interest and commitment. The Egyptian delegation witnessed a sharp increase in size and diversification in composition. The delegation size as shown in Table (3) was composed of nine members in 2004 during COP 10 in Buenos Aires and reached 35 in 2009 in Copenhagen. Other than the EEAA and the MOFA, additional stakeholders began to join the Egyptian delegation. Those included the Ministry of Agriculture and Land Reclamation, the Ministry of Water Resources, the Ministry of Industry and Foreign Trade, the Ministry of Scientific Research, the Ministry of Communication, and the Authority of Civil Aviation. Additionally, the delegation was joined by parliamentarians, media, the Federation of Egyptian Industries, and the Council for Economic Competitiveness. These remarkable changes in size and composition of the Egyptian Delegation can be attributed to a change in the perception that the climate change issue is far beyond an environment problem, and a growing recognition that it is a development issue that cuts across all economic sectors. It can also be attributed to an increase in public awareness as a result of the persistent efforts by the EEAA, through its donor-funded projects, as well as a role played by media and social networks in disseminating information.

The rationale behind Participation of specific stakeholders or government entities in specific COP meetings will be further investigated as we discuss issues included in the negotiation agenda at the respective COP meetings.

In 2004, COP 10 marked the 10th anniversary of the UNFCCC entering into force. Discussions at COP 10 highlighted a range of issues, including the impacts of climate change and adaptation measures; mitigation policies and their impacts; technology transfer; and most importantly, the urgency of entry into force of the KP. These same issues continued to be pending in many of the following COP meetings.

COP 10 witnessed the first attendance of a group of three members from the Egyptian Shoura Council, one of the two houses of the Egyptian Parliament at that time. This might have been due to the ratification by Egypt of the UNFCCC in the same year, which brought the attention of the legislators to the importance of addressing the climate change issue. It might be useful to explain here the domestic process of ratification of different Multilateral Environmental Agreements MEAs in Egypt. When considering whether to ratify or accede to an international environmental agreement the concerned department at EEAA, the CCU in the case of UNFCCC seeks input from major stakeholders. This is usually done through forming an ad hoc committee comprising members from the different governmental and non-governmental stakeholder organizations. The committee meets to discuss the benefits and costs to the country of becoming a Party to a specific convention, reviewed the Agreement's provisions and finally developed a recommendation on whether Egypt should be a party to that treaty. The recommendation was deliberated at a meeting of the Board of the EEAA before taking a final decision. The board decision was then sent to the MOFA, which is responsible for Egypt's ratification of all international agreements. Various departments of the MOFA review the different aspects of the treaty before sending their final recommendations to the Cabinet. When the Cabinet takes a country decision to ratify the convention, it would then be sent to the Parliament for ratification (Abdel Gelil, 2012).

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Table 3: Size of the Egyptian Delegation and Number of Submissions

	Year	Host country	High level segment attended by:	Size of delegation	Number of submissions
COP 1	1995	Berlin		1	
COP 2	1996	Geneva		2	
COP3	1997	Kyoto	Minister of State for Environment	6	1
COP4	1998	Buenos Aires	Minister of State for Environment	4	
COP5	1999	Bonn	Minister of State for Environment	6	
COP6	2000	The Hague	Minister of State for Environment	11	
COP7	2001	Marrakesh	Minister of State for Environment	8	
COP8	2002	New Delhi		10	
COP9	2003	Milan		6	
COP10	2004	Buenos Aires	Minister of State for Environment	9	
COP11	2005	Montreal	Minister of State for Environment	11	
COP12	2006	Nairobi		13	1
COP13	2007	Bali	Minister of State for Environment	17	
COP 14	2008	Poznan	Minister of State for Environment	17	1
COP 15	2009	Copenhagen	Minister of State for Environment	35	
COP 16	2010	Cancun	Minister of State for Environment	26	5
COP 17	2011	Durban	Minister of State for Environment	16	9
COP 18	2012	Doha	Minister of State for Environment	19	9

Source: UNFCCC (<http://unfccc.int>)

On February 16, 2005, the KP entered into force and became a legally binding instrument after the Russian ratification pushed the emissions of ratified Annex 1 countries over the 55% mark. In May 2005, Bonn hosted the first COP meeting after Kyoto came into force. Since the KP entered into force, countries who have signed the protocol as well as observing countries have gathered each year during the COP meetings for formal discussions on implementing the Protocol, in what is called the Meeting of the Parties (MoP) to the KP. In December 2005, at COP 11 in Montreal, Canada, the MoP1 convened. Delegates began to address the post-2012 period (when the first commitment period of the KP was to expire) and established a new subsidiary body, the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP). At the same COP11, delegates established a "Dialogue on Long-term Cooperative Action to Address Climate Change by Enhancing Implementation of the Convention". Both the AWG-KP and the dialogue aimed to address potential future climate change agreements, respectively under the UNFCCC (which would include non-Parties to the KP, such as the USA) and under the KP. (IISD, 2012).

In parallel to the ratification of the KP, and its entering into force, it is worth noting that 2005 witnessed the development of the Egyptian institutional structure, needed to tap into the opportunities offered by the CDM of the protocol. Egypt is one of few Arab countries that early recognized that the CDM would offer opportunities of FDI, transfer of environmentally sound technologies, and capacity building. In the same year, a national committee on CDM, chaired by the Minister of State for Environment, was established which started to promote potential CDM projects. The preparation for Egypt's involvement in the CDM began in 2002, even before its ratification of the KP, when Egypt received support from UNEP in establishing its DNA, developing a national CDM strategy and a portfolio of potential CDM projects (UNEP, 2002). The establishment of the Egyptian DNA was finalized in 2005 through a decree of the Minister of State for Environmental Affairs¹¹ as previously described in sec. (6.2). The UNEP project, which ended in 2005, was successful in institutionalizing the CDM activities in Egypt, building national capacity on CDM modalities, raising awareness on opportunities offered by the CDM, and identifying potential projects for funding

11 Ministerial Decree No. 42 of 14/3/05).

under the mechanism. The project resulted in developing an initial list of potential projects, which helped Egypt to be at the forefront of the Arab countries participating in the CDM. The number of registered Arab CDM projects is listed in Table (2), which reveals Egypt's outstanding position amongst the Arab group. The number of CDM projects in the pipeline has sharply increased to 104 since 2005 (EEAA, 2012). Nevertheless, the number of registered projects and the size and scope of the CDM portfolio of projects are far below the country's overall potential for CDM projects in energy, transport, and industry sectors.

In 2006, the COP 12/MoP 2 convened in Nairobi was the first such gathering in sub-Saharan Africa. Its high-level segment featured an opening statement by the outgoing UN Secretary General Kofi Annan, who announced the "Nairobi Framework," an initiative to help spread the benefits of Kyoto's CDM among more developing countries. Further, economic issues took on a more prominent role in Nairobi as Sir Nicholas Stern of the United Kingdom presented a comprehensive economic review showing that the projected impacts of climate change will be far more costly to the global economy than the steps that would be required to avert them (Stern, 2007). The COP 12 in Nairobi made little progress, the most contentious issues were the terms of the new KP review, a proposal by Russia to establish a pathway for developing countries to take on "voluntary" emission targets, and Belarus' proposal to set an emissions target for itself. Historically, this was another attempt by Annex 1 countries to engage developing countries in emissions reduction. It is remarkable though that Egypt refused the Russian Federation proposal at the time; yet it would go on to accept the same notion five years later in Durban. Despite the lack of progress, much of the debate was marked by a growing sense of urgency about the threats posed by climate change, and the need for a strong, new negotiating mandate at next year's conference in Bali, Indonesia. As the conference was taking place in sub-Saharan Africa, among the region's most vulnerable to the impacts of climate change, adaptation issues drew considerable attention, though with only modest results. A major issue for the COP12/MoP2 was the administration of the Adaptation Fund established under Kyoto to support adaptation efforts in vulnerable countries. The Adaptation Fund is supported by a 2% levy on projects generating emission credits through the CDM. The COP, meanwhile, filled in many of the details of a five-year work plan launched two years ago in Buenos Aires, and renamed it the "Nairobi Work Programme on Impacts, Vulnerability, and Adaptation to Climate Change". The plan calls for a series of activities over the coming three years to share and analyze information on topics including climate data and modeling, adaptation tools and methods, climate variability and extreme events, and economic diversification (Center for Climate and Energy Solutions).

In 2007, governments adopted a two-year "roadmap" to initiate a new negotiating process during COP13 in Bali, Indonesia. The "Bali Action Plan" was aimed at long-term cooperative action beyond 2012, and included the establishment of a new subsidiary body under the UNFCCC, the Ad Hoc Working Group on Long-term Cooperative Action (AWG-LCA), which replaced the "Dialogue" previously adopted in Montreal. The focus of its work was to devise strategies to implement the five categories of the Bali Action Plan: shared vision, mitigation, adaptation, technology and financing. The goal was to finish these negotiations in time for the 2009 Copenhagen conference, so that a successor agreement to the KP could enter into force by the end of the first commitment period in 2012 (IISD, 2012). Another important development in the Bali Action Plan was the introduction of the concept of "nationally appropriate mitigation actions" (NAMAs) as a key mechanism to increase mitigation ambition in developing countries. Two cornerstones of the concept of NAMAs are that they should be supported and enabled by technology, financing and capacity building and that these activities should be measurable, reportable and verifiable. In fact, the adoption of the NAMAs was a step forward for the persistent efforts of developed countries, led by the USA, to encourage developing countries to commit to reducing GHG emissions. It is also a precondition to provide technology transfer, finance and capacity building only to those developing countries that are ready to reduce their emissions voluntarily in a measurable, reportable, and verifiable manner.

During the Bali conference, the IPCC presented its Fourth Assessment Report, which stated clearly that most of the observed increase in globally averaged temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations. This was welcomed by parties and considered as an advance of scientific evidence that the climate is warming. The IPCC further reported that in order to stabilize the

concentration of GHGs in the atmosphere, emissions would need to peak and decline thereafter (IPCC, 2007). The outcomes of that meeting in Bali became known as the “Bali Road Map”. One major outcome was the establishment of the Adaptation fund administered by a 32 member board, of which 16 are alternate members, representing different UN constituencies. Egypt was selected as an alternate member for Africa. Currently, Egypt and Qatar are the two Arab countries representing Africa and Asia respectively on the Board (Adaptation Fund).

Parallel to the COP13, another trade ministerial conference was held to discuss the pertinent trade issues within the World Trade Organization (WTO) and climate change. Thus, the Egyptian delegation had, for the first time, a representative from the Ministry of Industry and Foreign Trade. Egypt’s and the Arab countries’ position on this issue was to discuss trade issues within the WTO process rather than within the climate change regime. Discussions on the relationships between MEAs and WTO agreements are underway within the mandate of the “Committee on trade and environment (CTE)” within the WTO, which is out of the scope of this paper.

It is noticeable that the Egyptian delegation in Bali, composed of 17 persons, had for the first time, three journalists representing the state owned media. After returning back from Bali, the Minister of State for Environment presented the Bali outcomes to the Egyptian Cabinet meeting held in December 2007. This indicated that the climate change issue started to reach the public policy agenda in Egypt. It is noticeable that during that period of time, a debate was underway in Egypt on whether the projected impacts of SLR on the Nile Delta are realistic. The scientific community has been unable yet to avert such skepticism due to a lack of scientifically sound information.

On the regional level, at the same time COP 13 was convening in Bali, CAMRE was in its 19th session in Cairo and had adopted the Arab Ministerial Declaration on Climate Change (CAMRE, 2007). The declaration, agreed on and presented by Egypt on behalf of the Arab group in Bali, reaffirms some of the major principles stipulated in the UNFCCC such as “common but differentiated responsibility” and “pollution pays principle”. It called on COP13 to speed up the establishment of the three Funds set forth in the Marrakech Accords, to reject any new or voluntary commitments on the developing countries, to adopt CCS within the framework of the CDM projects, and to provide support for technology transfer, capacity-building and financing to developing countries. As noted above, by the adoption of the NAMAs, the Arab group together with the G77 & China had started to concede to the developed countries led by the USA. During the CAMRE meeting in Cairo, the Arab countries had also formed, for the first time, an Arab-negotiating group composed of the Arab countries, which are members of the Bureau of CAMRE, in which Egypt is a member.

The COP 14 in Poznan, Poland, was held from 1-12 December 2008. The main focus was on the long-term international cooperation post-2012 period, when the KP’s first commitment period expires. As noted earlier, the Bali Action Plan and Roadmap set COP 15 in December 2009 as the deadline for agreeing on a framework for action after 2012. Poznan therefore was marked as the “bridge from Bali to Copenhagen” as noted by the outgoing president of COP 13 in the opening session in Poznan. The international political context for the Poznan conference was somewhat different from the Bali negotiations in 2007. In Bali, the atmosphere was characterized by the strong international reaction to the Fourth Assessment Report of IPCC and a sense of urgency about climate change. In Poznan, by contrast, the negotiations took place against the backdrop of a rapidly worsening global financial situation. Many were concerned about climate policy falling victim to the crisis. Thus, as expected, there were no significant breakthroughs except for what is known as the Poznan Strategic Program for Technology Transfer, which aims to scale up investments in technology transfers and to help developing countries acquire clean, energy-efficient technologies. During the conference, Poland’s Prime Minister Donald Tusk and other delegations, said the economic crisis should not dampen countries’ determination to combat climate change (IISD, 2012). At the same time, Barack Obama’s victory in the USA elections was reason for optimism in Poznan. Obama had promised to make climate change a high priority and highlighted a green energy economy as a remedy for the ongoing economic crisis. However, in Poznan, the USA was still represented by the Bush administration and remained relatively quiet. The Egyptian delegation, headed by the Minister of State for Environment, at Poznan was composed of 17 persons from the EEAA, the MOFA, and the Ministry Of Electricity and Energy in addition to a journalist.

In December 2009, the COP 15 convened in Copenhagen, Denmark, to come up with a new framework for action post-2012 when the KP expires as envisioned by the Bali road map. Given the perceived urgency of the issue, unprecedented number of high-level diplomats and heads of state gathered in Copenhagen including an Egyptian delegation of 35 delegates, the highest number ever, representing almost all of the concerned government bodies and some Non-Governmental Organizations (NGO). In Copenhagen, the Egyptian delegation started to be chaired by a diplomat rather than an official from the Environmental Agency. This trend continued through the COP 18 in Doha and was reflected in the number of Egypt's formal submissions during this period (table 3).¹²

Despite the intense negotiations at the highest political level, COP 15 did not yield the expected outcomes and no agreement was reached on emissions commitments beyond 2012. However, the heads of states of a group of major emitter countries, including the US, and what is known as the BASIC group (Brazil, South Africa, India, and China) arrived at what is named the "Copenhagen Accord". It is worth noting that this was the first time President Obama attended a COP to show the USA commitment to address the issue of climate change, a promise that has yet to materialize. When the accord was presented to the COP15 for adoption, at the last moments, many countries including Egypt, the Arab group, and the African Group rejected it, and the COP could only resolve to take note of it. To save the negotiation process from a complete collapse, the "Copenhagen Accord" included some positive promises such as the creation of the green climate fund (GCF) with a goal to mobilize 100 billion USD a year by 2020. Additionally, one major contribution of Copenhagen to the negotiation process is the recognition of the scientific view that the increase in global temperature above the pre-industrial level should not exceed two degrees Celsius. Since the Copenhagen accord has no legal standing in the UNFCCC process, at COP 16 in Cancun, parties agreed to incorporate its core elements into the formal process.

Though the COP 15 in Copenhagen was a high profile event, it was marked by disputes over transparency and mismanagement, especially during the high level segment, which concluded the controversial Accord. Another remarkable development in Copenhagen was the beginning of dissolution of the group of G77 & China by forming the BASIC group. Another evident crack in the traditional G77 & China is the emergence of new negotiating group – comprising of Chile, Colombia, Peru, Costa Rica, Guatemala, Panama, and Peru – which spoke formally for the first time in Doha, and is known as the Association of Independent Latin American and Caribbean States (AILAC). In contrast, another developing country group, known as the "like-minded group" which includes Egypt, China, India, and other Arab countries, said they were committed to upholding the UNFCCC's principle of common but differentiated responsibility, equity, and developed countries' collective responsibility for climate change.

Hosting a CAMRE meeting at Marsa Alam in November 2009 manifested the emergence of the leadership role of Egypt on climate change at the regional level. In preparation for the COP 15 in Copenhagen, CAMRE announced an Arab position for the negotiations. It emphasized many of the typical regional positions regarding adaptation as the first priority for the Arab region, the historical responsibilities of developed countries, the "common but differentiated responsibilities", and commitments of developed countries on finance, technology transfer, and capacity building. The Arab statement in Marsa Alam was also clear on rejecting any unilateral measures on emission reduction of the civil aviation and maritime sectors (CAMRE, 2009).

A year later, the COP 16 was convened in Cancun, Mexico. It was an absolute contrast to the disappointing Copenhagen conference. The host country, together with the rest of parties, worked hard to keep the process as transparent and inclusive, regaining trust in the UNFCCC process. Generally, the Cancun meeting imported the essential elements of the Copenhagen Accord into the UNFCCC formal process, however it failed to address the problem of climate change itself in terms of parties' commitments to mitigate GHG emissions. The Cancun agreements include decisions reflecting the outcomes of the two Ad-hoc Working Groups established in Bali in 2007. They included key steps forward on mitigation, adaptation, transparency of actions, technology, mobilization of finance, actions to protect forests, and capacity building. Parties also reiterated their recognition of the need for deep cuts in global emissions in order to limit global average temperature rise to 2°C and to keep this goal under regular review.

12 Personal communication with Mrs. Fatma El Mallah, Ex counselor for climate change, LAS

Cancun witnessed some concessions from developing countries including Egypt and the rest of G77 & China. One of the remarkable outcomes of Cancun was the final agreement by developing countries on NAMAs, supported by technology and finance, aimed at achieving a reduction in emissions relative to 'business as usual' emissions in 2020. The Cancun Agreements also created a centralized registry aimed at compiling NAMAs proposals that seek international support, and at matching such proposals with financial, technological and capacity building support from developed countries. Developing countries also conceded to the process of measurement, reporting and verification (MVR) through which a review by technical experts resulting in a summary report would be conducted, which should be "non-intrusive, non-punitive, and respectful of national sovereignty".¹³ This encourages developing countries to set low-carbon development strategies or plans in the context of sustainable development. On the other hand, this marked another change in positions as for nearly two decades the developing countries were reluctant to any form of verifications of their mitigation efforts. A similar process was initiated in the early years of the negotiations to verify the information provided by developed countries in their annual NCRs, a process known as "in-depth review". In fact, the NAMAs are an incentive presented to developing countries to encourage them to reduce emissions voluntarily if they were to receive technical and financial support. Though providing technology and finance are commitments of developed countries explicitly stipulated in Article 4 of the UNFCCC, the concept of NAMAs make it conditional of emissions reduction by respective developing country.

Cancun is also marked by emission reduction targets and voluntary pledges, for the first time, by all major economies, developed and developing. This is a remarkable progress since the adoption of the KP in 1997, and a step forward to realize one of the two conditions preset in the Byrd-Hagel Resolution. However, Cancun agreements set no clear path toward a legally binding agreement post-2012.

Another element of the Copenhagen Accord that was included in the Cancun agreements was the collective commitment by developed countries to provide \$30 billion in fast-start finance for developing countries in 2010-12; and to mobilize \$100 billion a year in public and private finance by 2020. Parties agreed to establish a GCF, governed by a 24-member board with equal representation from developed and developing countries. Furthermore, the COP 16 established a Technology Mechanism comprised of a Technology Executive Committee and a Climate Technology Centre and Network. The Climate Technology Centre and Network are to help developing countries identify technology needs and options facilitate training to operate and maintain environmentally sound technologies, and facilitate partnerships among public and private stakeholders to accelerate the development and diffusion of environmentally sounds technologies. It is worth noting that the issue of technology transfer has been on the table since 1992, not only within the UNFCCC, but also in almost all other multilateral environmental agreements. The technology mechanism established in Cancun is a step forward, hoping to facilitate the transfer of environmentally sound technologies from developed to developing countries through overcoming many hurdles that exist on both sides.

The size of the Egyptian delegation in Cancun was kept relatively large (26 delegates), headed by the Minister of State for Environment and representing almost the same governments and non-governments entities. Regionally, the Arab group, pushed by Egypt, had started to coordinate its position away from the OPEC group. Furthermore, it was a precedent that the climate change issue was first discussed at the highest level within the LAS, during the Arab summit that was held in Sirt, Libya in 2010. The Arab summit's resolution in Sirt reaffirmed the Arab position as announced in the Arab Ministerial declaration in 2007. It called upon the Arab countries to mainstream climate change in regional and national policies and plans, finalize the adoption of Arab CCAP, adopt national plans to address climate change, and to speed up the ratification process of the Regional Center for Disaster Risk Reduction.¹⁴ It is worth noting that the Arab CCAP has been ready for adoption since June 2008, but was blocked by KSA until October 2012, when it was adopted by CAMRE, indicating a shift of the position of the Saudi delegation especially after the retirement of its former head, infamous of taking the hard line.¹⁵

13 UNFCCC, Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010 (FCCC/CP/2010/7/Add.1)

14 Sirt Summit's resolution, 2010

15 Personal communication with Mrs. Fatma El Mallah, Ex counselor for climate change, LAS

In November 2011, COP 17 convened for the first time in Durban, South Africa. Parties agreed on a second commitment period of the KP, to begin in 2013. They also agreed to launch the new Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP) with a mandate “to develop a protocol, another legal instrument or an agreed outcome with legal force under the Convention applicable to all Parties”.¹⁶ The new negotiations process, which began in May 2012, is scheduled to end by 2015. The outcome is expected to enter into force and be implemented starting in 2020.

Durban is considered a new turning point and resulted in a major shift in positions within the UNFCCC process. What the developed countries, led by the USA, have failed to achieve since 1997 while drafting the KP, was realized in Durban. For the first time in the history of the climate change negotiations, developing countries including the hardliners and the major emitters agreed to begin a new round of negotiations that should lead to a legally binding instrument by 2015 applicable to all. In other words, developing countries should be ready for emissions reduction commitments by 2020. After Durban, a new interpretation for the principle of “common but differentiated responsibilities” needs to be agreed upon by parties. Developing countries, including Egypt, still insist on the differentiated responsibilities as explicitly stated in the UNFCCC. In the meantime, Annex-1 countries claim that the world has changed since 1992 as 50 developing countries now have per capita incomes that exceed those of some Annex 1 countries. This issue was one of the key controversies while drafting the decision on the Durban Platform. In the end there was no reference to it in spite of strong resistance from the USA.

It is obvious that the Durban platform has sent a very strong signal that the future development will be low-carbon. Consequently, Arab countries should start a long-term transition towards low-carbon climate resilience development. Further, parties approved the GCF to be the new operating entity of the Convention’s financial mechanism, which was entrusted to the GEF before. The GCF aims at helping developing countries to shift towards low-emission and climate-resilient development. Developed countries committed to provide \$30 billion USD annually for the years 2010–2012, and to jointly mobilize \$100 billion per year by 2020. One long awaited gain for the Arab group, especially the GCC countries, was the approval by the COP 17 of Carbon Capture and Storage (CCS) under the CDM. Most of the Arab oil producers have high potential of CCS in depleted oil fields and other geological formations.

In 2011, after the January 25 revolution that toppled Mubarak’s regime, another cabinet shuffle led to changing the Minister of State for Environment, who only spent two years in office before he was replaced again in 2012.¹⁷ The Egyptian delegation at Durban was headed by the Minister and composed only of members from the MSEA the MOFA, and the Ministry of Water Resources.

COP 18 met in Doha from 26 November to 8 December 2012 for the second time in an Arab country after Morocco in 2001. The negotiations in Doha focused on ensuring the implementation of agreements reached at previous conferences, namely in Bali, Poznan, Cancun, and Durban. The Doha outcome named as “Doha Climate Gateway” mainly included amendments to the KP to establish its second commitment period for another eight years, ending the work of the AWG-KP, which started in 2005 in Montreal. It took seven years for the international community to agree on a second commitment period for the only legally binding instrument addressing the climate challenges with all its flaws. KP is far too weak to actually achieve the target of keeping global temperature increase below 2°C, as the second-round targets encompass nearly 15% of global emissions after the withdrawal of major polluters such as Japan, Russia and Canada (C2ES, 2012).

Another key element of the Doha gateway is the agreement to consider loss and damage in developing countries that are particularly vulnerable to the adverse impacts of climate change, such as SLR. The AOSIS Group¹⁸ first proposed this issue instead of the more contentious “financial compensation”, but since then it has been controversial and faced reluctance from developed countries, especially the US, which resisted any reference to liability or direct compensation. The compromise reached at Doha calls for the establishment at COP 19 of “institutional arrangements, such as an international mechanism”, to address loss and damage in particularly vulnerable developing countries.

16 UNFCCC, Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action (FCCC/CP/2011/L.10)

17 Moustafa Hussein

18 Alliance of Small Island States (AOSIS) - it is a coalition of some 43 low-lying and small island countries

Egypt is most likely one of those “particularly vulnerable countries” that would benefit from the new mechanism.

The issue of “unilateral measures” taken by a country to mitigate climate change, such as the EU’s controversial inclusion of aviation into its emissions trading scheme at the beginning of 2012, was forwarded to the “Forum on the Impact of the Implementation of Response Measures,” which was established at COP 17. This issue is crucial to GCC countries due to the vulnerability of their oil dependent economies to those response measures that would reduce global demand on oil. At the same time, the “unilateral measures” as that of the EU would have long-term implications on the civil aviation industry worldwide. This explains the representation of the civil aviation authority of Egypt in the Egyptian delegation. Egypt spoke on behalf of the Arab and the African groups on this issue of emissions from the civil aviation and marine bunkers asking to handle this matter within the deliberations of the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO).

A major success in Doha was to build upon that of Durban regarding the agreement to speedily work toward a universal new climate change agreement covering all countries from 2020, to be adopted by 2015, and to find ways to scale up efforts before 2020 beyond the existing pledges to bridge the current emission gap so that the rise in global temperature can stay below the agreed maximum 2 degrees Celsius (UNEP, 2010). The Durban Platform is at the heart of the climate negotiations since Doha. Two work streams were created—one to design the new treaty by 2015 and the second to address the so-called ambition gap.

The Egyptian delegation in Doha was headed by a new Minister of State for Environment and comprised a majority (10 delegates) from EEAA and the MOFA (5 delegates). It is worth noting that Egypt was selected by the LAS as a vice-chairman of the Arab group in the Doha’s negotiation, with KSA as the chairman. Egypt was also chairing the African group at Doha.

Looking at the number and subjects of Egypt’s formal submissions to the process since 1992 (Table 3) it is clear that the number of submissions surged during COP 16 (5 submissions), COP 17 (9 submissions), and COP 18 (9 submissions) from only one submission at COP3, COP12, and COP14 respectively. More than 65% of the submissions were presented within different groups of countries such as an Arab group, African group or developing countries group, with 40% of the total submissions related to the issue of finance. It is also remarkable that Egypt, and the Arab Group, has made use of the hands-on experience of the former Chief Executive of the Multilateral Montreal fund for protecting the ozone layer, who is an Egyptian national¹⁹, to participate in shaping the modalities of the newly established GCF. The hike in number of formal submissions by the Egyptian delegation since 2010 could be attributed to the active participation and leadership role played by few Egyptian Diplomats, who have vast experience on the multilateral processes within the UN system.²⁰ As mentioned before, since 2010, the MOFA started to lead the Egyptian delegation during the negotiation meetings. However, this is disadvantaged by the internal procedure of rotation within the MOFA, which entitled diplomats to rotate positions every four years.

19 Omar El Arenie

20 One of them spent many years as a member of the permanent Egyptian mission in New York, and the second one has already been appointed as the Egypt’s permanent representative to the UN in New York

7. Conclusions

Egypt proves to be highly vulnerable to climate change impacts according to IPCC reports. Egypt started to realize very early on the threat that climate change poses to its future development. Immediately after signing the UNFCCC in 1992 and with the support of international donors, the Egyptian scientific community started to assess the vulnerability of different economic sectors to the potential adverse impacts of climate change. Furthermore, some government research institutions have established specialized centers on climate change such as the “climate change research center” at the Water Research Institute, and the climate research center at the Agriculture Research Institute. As time passes, Egypt recognized, as well, the different opportunities offered by involvement in the global climate regime especially those related to transfer of environmentally sound technologies, financial support, and capacity building. Since the entry into force of the KP in 2005, Egypt has topped the list of Arab countries participating in the CDM with 14 registered projects and more than 100 projects in the CDM pipeline. The climate policy seems to be driven by national interests and is in line with the energy policy aiming at improving energy efficiency, switching to low carbon fuels and promoting untapped renewable energy resources. Further, there is strong evidence that Egypt’s positions have changed along with the emergence of a national climate policy framework that was induced by, among other things, a broader understanding of Egypt’s own vulnerability to climate change, as well as the awareness that both long-term development will require some development of national energy policy and that the CDM of the KP can have numerous benefits.

Bilateral and multilateral donors have played an instrumental role in building the Egyptian national capacity to deal with the climate change threats. This is clearly reflected in the number of donor-funded projects and the size of donor funding availed to Egypt since 1992. One supporting factor of attracting donor funding has been the development of the policy framework and the maturity of the institutional structure such as the establishment of the Egyptian DNA for CDM ; the climate change department within the organizational structure of EEAA, and the vital role played by the sustainable development department of the MOFA. It is also remarkable that participating in the climate negotiations has been led by the environmental agency for many years; this has lately changed to the MOFA. In contrast, in most of the GCC countries, this process is entrusted to the ministries of petroleum. As time passes, the number and composition of Egypt’s delegation to the COPs have reflected better understanding and more recognition of the different aspects of the issue and its implications on Egypt’s development, in addition to more involvement of the non-government stakeholders such as the Federation of Egyptian Industries. It is too early to assess whether the evolution of climate policy in Egypt has been affected by the political turmoil that occurred after the January 25th Revolution. However, one could argue that climate change as a development challenge that poses severe stresses on natural resources, could be turned into a significant opportunity to improve economic competitiveness, adopt innovative technologies, green the economy, and create more jobs.

Egypt has been playing a mediating role within the Arab group between the oil exporters led by KSA and the most vulnerable countries such as Sudan and Morocco. During the last years of negotiations, evidence is clear that both Egypt and KSA have reached an advanced state of coordination and have both played a leading role within the Arab group.

Throughout the negotiation stages, shifts in Egypt’s position have always been aligned to that of developing countries’, especially within the Arab and the African groups. These shifts in position mainly included major concessions regarding the acceptance of committing to reduce GHG emissions. This shift in position took place gradually and started with the acceptance of the concept of NAMAs in Cancun, which was elevated later to agreeing to negotiate a legally binding instrument applicable to all during Durban in 2011. In return, Egypt and all developing countries have succeeded over the years to institutionalize some major commitments of developed countries. These include: 1) finance by creating many financing mechanisms such as the GCF, the Adaptation Fund, and the special climate fund, 2) the creation of the technology mechanism, and 3) the agreement, during COP 18 in Doha, of establishing an “international mechanism” for “loss and damage.”

8. Recommendations

Though the scientific community in Egypt was involved early in assessing Egypt's vulnerability to potential adverse impacts of climate change, yet research is badly needed in agriculture, water resources, marine resources, public health, biotechnology and renewable energy, just to name a few. The current weak capacity of science and technology in Egypt attributed to many factors, including enormous underfunding, has been partially compensated by international donors. However, the climate change challenge is so daunting that no single country, whatever the resources it has, can face it alone. With weak research and development capacity at national levels across the Arab region, Arab countries have no other alternative but to cooperate. Though adaptation to the adverse impacts of climate change is a priority for the whole region, as the Arab ministerial declaration has clearly stated, the body of literature available on these areas does not reflect that. The Arab Action Plan on climate change, recently adopted by CAMRE, could provide a regional platform for Arab-Arab cooperation in different aspects of climate change. It is badly needed to mobilize the fragmented research assets across the Arab region to develop and implement a regional research strategy to foster climate change. The same is needed in the African group, specifically the Nile-basin group. Though bridging the science-policy gap has been enhanced through the process of developing NCRs, more needs to be done to improve participation in the IPCC working groups, engage scientists in national policy institutions, and participation in the UNFCCC meetings. This will not be realized without strong political will, public pressure, and raising the voices of scientists. Civil society organizations and the media should play the leading role in this long-term iterative process.

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The Issam Fares Institute for Public Policy and International Affairs (IFI)

American University of Beirut | PO Box 11-0236, Riad El Solh 1107 2020, Beirut, Lebanon
Tel: +961-1-374374, Ext: 4150 | Fax: +961-1-737627 | Email: ifi@aub.edu.lb | Website: www.aub.edu.lb/ifi