Country Update

Trade-related measures in Egypt's Climate Change NDC plan and implementation

By Saud Ahmed

Introduction

In 2015, at the 21st Conference of the Parties (COP21) of the United Nations Framework Convention on Climate Change (UNFCCC), all Member States of the convention signed the "Paris Agreement," the legally binding international treaty to limit global warming to well below 2 degrees Celsius, compared to pre-industrial levels[1]. Article 4 par.2 of the Paris Agreement states that each Party shall prepare, communicate, and maintain successive nationally determined contributions (NDCs)[2] towards achieving the stated global goal. Before COP21, Members were encouraged to submit Intended Nationally Determined Contributions (INDCs). According to decisions 1/CP.19 and 1/CP.20, they cover "Measures determined and intended to be applied by the country to face climate change in terms of adaptation (to climate change impacts) and mitigation (reducing greenhouse gas emissions)."[3] Members' INDCs were converted to NDCs, mandated, and required for all UNFCCC Parties under the Paris Agreement.

This note examines Egypt's first and only INDC so far submitted to the UNFCCC on November 11, 2015,[4] and converted into an NDC on June 29, 2017. The note maps the different trade-related response measures and policies planned under the various sectors covered in Egypt's NDC: Energy, agriculture, tourism, and other sectors such as industry and waste. It will also explore measures relating to Egypt's intention to establish a carbon credits market. The objective is to identify and categorise response measures that interact with the world trading system and Egypt's trade relations and identify potential areas for further development.

Overview of Egypt's Greenhouse Gas (GHG) Emissions

Based on data from the World Resources Institute Climate Analysis Indicators Tool (WRI CAIT), Egypt's Carbon Dioxide (CO2) emissions expanded 254% from 1990 to 2018. WRI CAIT estimates that Egypt emitted 329.4 million tons of CO2 in 2018. These are dominated by fossil fuel burning emissions for energy purposes, estimated at 251 million tons in 2018 by Our World in Data. Hence, Egypt was ranked 27th in energy-related CO2 emitters worldwide with a 0.75% share of global emissions[5]. Egypt's GHG Inventory covers four sectors: i) Energy, ii) Industrial Process and Product Use (IPPU), iii) Agriculture, Forestry and Other Land

[1] UNFCCC. (N.A). The Paris Agreement, https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement
[2] UNFCCC. (2016). The Paris Agreement, https://unfccc.int/sites/default/files/resource/parisagreement_publication.pdf
[3] Egyptian Intended Nationally Determined Contribution, https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Egypt%20First/Egyptian%20INDC.pdf.
[4] UNFCCC. (2015). Egypt Submits its Climate Action Plan Ahead of 2015 Paris Agreement, https://unfccc.int/news/egypt-submits-its-climate-action-plan-ahead-of-2015-paris-agreement.
[5] Abdallah, L. & El-Shennawy, T. (2020). Evaluation of CO2 emission from Egypt's future power plants, Euro-Mediterranean Journal for Environmental Integration, Vol. 5, Article number 49, https://doi.org/10.1007/s41207-020-00184-w

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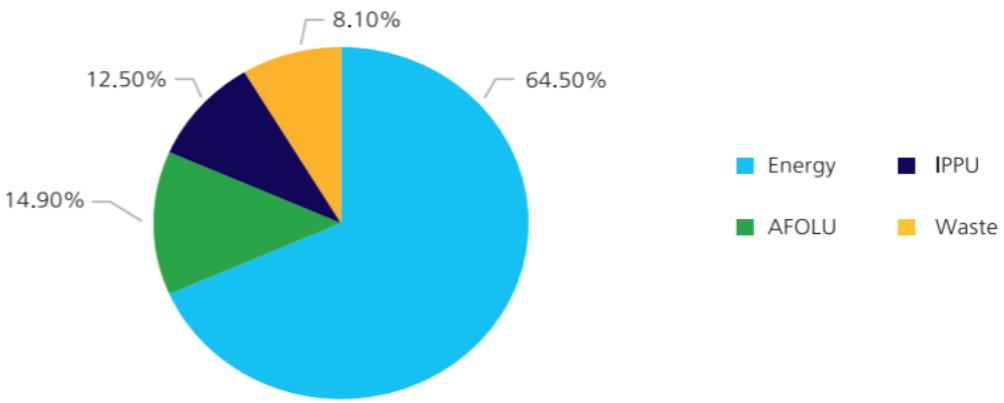
Use (AFOLU), and iv) Waste[6]. According to Egypt's first biennial update report to the UNFCCC (2018)[7], in the year 2015, the sectoral shares of national GHG emissions constituted of (Figure 1): the energy sector (64.5% of GHG emissions); the IPPU (12.5% of GHG emissions); and the waste sector (8.1%). It is worth noting also, that in terms of CO2 emissions, the energy sector contributed 87% and the IPPU sector 12% of national CO2 emissions[8].

Figure 1: GHG contribution of each Sector to the total emissions, 2015



Source: Ministry of Environment and Egyptian Environmental Affairs Agency (2018)

Sectoral Policies in Egypt NDCs

Energy

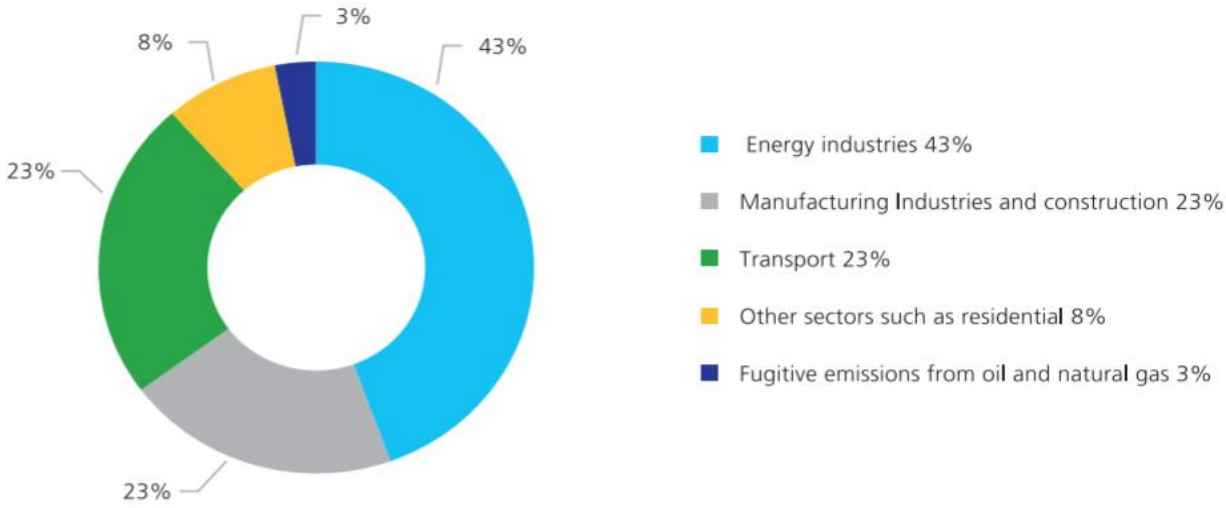
In 2018, the energy sector was responsible for 64.5% of Egypt's GHG emissions. The following sub-sectors are critical contributors to energy sector carbon emissions (Figure 2): electricity and heat production (40%), transportation (20%), industry sector (15%), and remaining other sectors (20%)[9].

Based on Egypt's INDC, one of the main reasons for the high electricity consumption is air conditioners, which lead to rising temperatures and undermine the power plant's effectiveness. Furthermore, climate change has significant impacts on the energy sector in Egypt. The sea-level rise and increased rainfall rates, for instance, expose the electric power plants and the networks across the coasts to danger.

Hence, Egypt has included several climate change responses and counter-measures in the energy sector; among these comes the reform of energy subsidies as a significant trade measure. According to the INDC of Egypt, this subsidies policy has four pillars: i) to set different prices for petroleum products based on their energy efficiency; ii) to increase the efficiency of energy use; iii) to provide support to certain sectors of the economy so that their companies and consumers can evolve to clean energy sources and technologies; iv) finally, to ensure the transparency on received fuel subsidies.

[6] Ministry of Environment and Egyptian Environmental Affairs Agency (2018), Egypt's first biennial update report to the United Nations Framework Convention on Climate Change, https://unfccc.int/sites/default/files/resource/BUR%20Egypt%20EN.pdf
[7] *Ibid.*
[8] *Ibid*
[9] Abdallah, L. & El-Shennawy, T. (2020). Evaluation of CO2 emission from Egypt's future power plants, Euro-Mediterranean Journal for Environmental Integration, Vol. 5, Article number 49, https://doi.org/10.1007/s41207-020-00184-w

Figure 2: Emissions per category for the energy sector, 2015



Source: Ministry of Environment and Egyptian Environmental Affairs Agency (2018)

It is also worth noting that Egypt is developing a nuclear energy plant. The plant is built with support from the Russian Federation, who indicated in its NDC that this support to establish nuclear energy sectors in 12 developing countries (Egypt included) contributes to the global reduction of GHG emissions by rendering these countries less dependent on fossil fuel consumption[10].

Agriculture

According to Egypt's INDC, the core climate-related issue in the agricultural sector is its dependency on three water resources: the Nile flows, rainfall, and groundwater. The INDC also mentions that 12% to 15% of arable land is negatively affected by the sea level rise and saltwater intrusion[11]. Less arable land affects Egypt's exports of agricultural products, particularly wheat and maize, Egypt's two major crops, representing 900 thousand tons[12] and 10 thousand tons respectively in 202013. The country expects that by 2050, the production of wheat and maize will drop by 15% and 19%, respectively, because of temperature rising, irrigation water deficit, and pests and plant diseases[14].

Several measures are being considered to adapt to decreasing water resources, or increasing Nile flows. Among these measures are: increasing water storage capacity, improving irrigation, and draining systems, developing new water resources through upper Nile projects, changing cultivars to those that are more tolerant to heat, salinity, and pests, etc. The Food and Agriculture Organization of the United Nations (FAO) has, in 2018, launched, with competent Egyptian Ministries, a programme to "support sustainable water management and irrigation modernisation." The programme sets up and tests a water consumption system to optimise water use in all sectors in selected areas[15].

Since the submission of Egypt's INDC back in 2015, Egypt has adopted several policies to address climate change impacts and water scarcity concerns. In 2018, Egypt adopted law n°34 of 2018, amending some provisions of the law of agriculture n°53 of 1966 and allowing the Minister of Agriculture to prohibit the cultivation of certain crops in areas with low amounts of water[16]. Such a counter-

[10] Nationally Determined Contribution of the Russian Federation, https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Russia%20First/NDC_RF_eng.pdf.
[11] Egyptian Intended Nationally Determined Contribution, https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Egypt%20First/Egyptian%20INDC.pdf.
[12] Egypt wheat's exports by Year, https://www.indexmundi.com/agriculture/?country=eg&commodity=wheat&graph=exports.
[13] Knoema, Egypt - Maize exports quantity, https://knoema.com/atlas/Egypt/topics/Agriculture/Trade-Export-Quantity/Maize-exports-quantity.
[14] Egyptian Intended Nationally Determined Contribution, https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Egypt%20First/Egyptian%20INDC.pdf.
[15] Ibid.
[16] FAO, Law No.34 of 2018 amending some provisions of the Law of Agriculture No.53 of 1966, http://www.fao.org/faolex/results/details/en/c/LEX-

measure would generate impacts on Egypt's exports and cross-border trade relations.

Tourism

The tourism sector is one of the key sectors addressed in Egypt's INDC. For instance, the coral reefs, a major tourist attraction at the Red Sea, are highly vulnerable to climate change. The INDC also alerts that Egypt's national heritage is in danger because of temperature rising, low precipitation levels and sandy winds caused by climate change[17]. For example, 45% of the Temple Nadura, situated in the northeast of the Kharga Oasis, has already been deteriorated. Tourism is one of the sectors capable of contributing significantly to Egypt's GDP. In 2019, the tourism sector represented 12% of Egypt's GDP[18]. Hence, countering climate change impacts threatening the tourism sector is one of the country's most significant interests. In the country's INDC, the Government of Egypt expressed its intent to reduce climate change risks in touristic areas, engage users in supporting the proposed strategy, raise environmental awareness in the sector, etc.

Since the INDC, Egypt's Ministry of Tourism, now the Ministry of Tourism and Antiquities (MoTA), launched Egypt's Tourism Reform Programme (E-TRP) in 2018. The E-TRP consists of 5 pillars: institutional reform, legislative reform, promotion and marketing, infrastructure and tourism development, and global tourism trends[19]. Among the measures present in the E-TRP is promoting "green tourism,"[20] which involved trade-related actions and policies. The goal of the "green tourism" strategy is to identify Egypt as a "responsible destination with recognised environmental and social sensitivities to meet future demand on green tourism products and services." Trade-related measures can be mapped in this strategy, among these: (i) increasing the green competition in the hotel sectors with the help of the Green Star Hotel certification; (ii) implementing green tourism standards as a new norm for hotel classification and ratings; (iii) financing energy efficiency and renewable technologies; (iv) and formulating environmental indicators to track the support provided and the progress towards "green tourism".

Industrial Process and Product Use (IPPU) and Waste

The industrial process and product use (IPPU) sector is responsible for 12.5% of total GHG emissions in the Egyptian territory[21]. Between 2005 and 2015, the total gas emitted by the industry sector has increased by 49%. The industry sector's CO2 emissions are mainly due to mineral industry (54%), chemical industry (18%), and metal industry 17%[22]. Moreover, it has been estimated that Egyptian industries produce between 3 to 6 million tons of waste, which is a major contributor to CO2 emissions and comprises 150 to 175 thousand hazardous industrial waste[23]. These wastes result mainly from cement, metallurgical, petrochemicals industries, etc.

According to the country's INDC, Egypt considers optimising mineral, iron, and chemicals production, etc. Egypt also intends to encourage industrial waste management and recycling. Among the trade-related measures that the country may wish to consider to promote waste management in the industrial Sector are tax incentives and subsidizing waste management technologies

When it comes to the waste sector, it is responsible for 8.1% of GHG emissions in Egypt. It has been estimated, in 2020, that 90 million tons of solid waste were generated by Egypt, for which the main

FAOC181587/#:~:text=53%20of%201966.,order%20to%20rationalize%20water%20usage, (2018).

[17] Ismael, H. (2015). The Climate and its Impacts on deterioration and weathering rate of El-Nadura Temple in El-El-Kharga Oasis, Western Desert of Egypt, https://www.researchgate.net/publication/283859354_The_Climate_and_its_Impacts_on_deterioration_and_weathering_rate_of_El-Nadura_Temple_in_El-El-Kharga_Oasis_Western_Desert_of_Egypt.

[18] Daily News Egypt. (2019). Egypt's tourism is approaching its peak, recording 12% of GDP: Al-Mashat, https://dailynewsegypt.com/2019/09/29/egypts-tourism-is-approaching-its-peak-recording-12-of-gdp-al-mashat/.

[19] Oxford Business Group. (2020). What reforms are supporting of Egypt's tourism industry, https://oxfordbusinessgroup.com/overview/steady-progress-comprehensive-reform-and-investment-infrastructure-support-long-term-growth.

[20] Al-Mashat, R. (2018), Egypt – Tourism Reform Program: http://egypt.travel/media/2338/etrp-en.pdf.

[21] Egypt's first biennial update report to the United Nations Framework Convention on Climate Change 2018,https://unfccc.int/sites/default/files/resource/BUR%20Egypt%20EN.pdf, (2018).

[22] *Ibid.*

[23]Solid Waste Management Privatisation Procedural Manual, Industrial Waste Collection and Disposal, https://pdf.usaid.gov/pdf_docs/PNACY338.pdf.

contributor of solid waste is the municipal waste[24].

Although technological and financial improvements, and incremental regulatory and planning were in place for the past 20 years, it is still challenging to manage solid waste due to unclear responsibilities, inadequate legal frameworks, lack of funding, and a national regulatory absence[25].

In October 2020, the President of Egypt ratified the waste management law (law 202/2020)[26] , and the competent authority is the Ministry of Trade and Industry (MTI). Among the regulations stated by the law comes a significant trade-related rule which prohibits exporting and importing hazardous materials or waste unless a license from the competent authority has been obtained[27]. A company must also obtain a Waste Management Regulatory Authority (WMRA) permit to import non-hazardous waste. Furthermore, the law addresses single-use plastic bags by limiting the manufacture, import, and export of single-use plastic bags. The law adds that the MTI must issue a decree to define technical specifications and standards for the manufacturing, importing, and exporting single-use plastics bags. They also keep the possibility of banning the entry of imported bags if they contain additives and components that cause grave danger to the environment.

Establishing a National Carbon Market

Egypt's INDC foresees establishing a national market for carbon trading without indicating a timeline for its accomplishment. A national carbon market (or a national emission trading system): is a market-based system whose objective is to reduce GHGs emissions that contribute to climate change at the national level. In more precise words, national governments set themselves a limit or cap on carbon emissions[28]. Once the cap has been set, governments give for free or auction the permits to companies in different sectors. These permits allow the firms to pollute a limited amount of carbon.

In a situation where a company pollutes less than the amount of carbon permitted, it can "trade the excess permits on the carbon market." However, if the company exceeds the amount allowed, it may buy additional permits. Furthermore, according to its INDC, Egypt is also willing to integrate the regional markets of the Arab and African regions to spur foreign direct investment in carbon trading.

Emphasis on the Critical Role of Developed Countries' Support

To conclude its NDC, Egypt emphasised that implementing the enlisted GHG emissions mitigation and adaptation measures from 2020 to 2030 requires the financial support of the developed partners estimated back in 2015 at 73 billion Dollars. The Government of Egypt pointed out that only national contributions to these projects would not be enough. Therefore, Egypt recalled article 4.4 of the 1992 United Nations Framework Convention on Climate Change mandating that the "developed country Parties and other developed Parties [...] shall also assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects"[29]. Egypt asked for international support in terms of financing but also pointed to the technology transfer needed to meet mitigation targets[30].

Conclusion

Egypt's INDC, submitted back in 2015, focused considerably on the energy sector given that it's the primary contributor to the country's carbon emissions. The INDC also concentrated on counter-

[24] Hashem, E. (2020). Factors affecting Solid Waste Recycling in Egypt, http://jibe-net.com/journals/jibe/Vol_8_No_1_June_2020/1.pdf.
[25] Ministry of Environment and Egyptian Environmental Affairs Agency (2018), Egypt's first biennial update report to the United Nations Framework Convention on Climate Change, https://unfccc.int/sites/default/files/resource/BUR%20Egypt%20EN.pdf
[26] Lynx Business Bulletin. (2020). Egypt's Waste Management Law, http://www.lynxegypt.com/assets/pdfs/Waste-Management-Law.pdf.
[27] *Ibid.*
[28] BBC. (2015). carbon trading: how does it work?, https://www.bbc.com/news/science-environment-34356604.
[29] United Nations. (1992). United Nations Framework Convention on Climate Change, https://unfccc.int/resource/docs/convkp/conveng.pdf
[30] Egyptian Intended Nationally Determined Contribution,https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Egypt%20First/Egyptian%20INDC.pdf.

measures for Climate Change impacts affecting agriculture and promoting Egypt as a "Green Tourism" destination since the sector regained its important share of the country's GDP.

The INDC revolved around strategies and intended measures; some were translated into trade policies or had trade implications. Among the trade measures utilised to lower emissions are a subsidy reform program in the energy sector, prohibiting exporting and importing hazardous materials or waste, and foreseeing establishing a national carbon market. On the other hand, some of the policies adopted following NDC submission and in line with the implementation of its intended strategies for the agriculture and tourism sectors can impact trade. In agriculture, for instance, measures to adapt to the scarcity of water resources can impact Egypt's main crops' production and exports, hence requires thorough studying. As in tourism, adopting green certifications as part of Egypt's Tourism Reform Plan 2018 may constitute a trade barrier to the sector's small and medium service providers and businesses.

In future NDCs, Egypt may wish to include detailed measures considered for making progress towards its emission target and specific indicators that would facilitate monitoring and reporting on the country's progress. Also, the Egyptian Government may consider adding a detailed analysis of trade and climate change policy linkages based on lessons learned under the first NDC and proposing potential trade-related measures that would promote mutual positive spill-overs.

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