

Development Challenges in Egypt: Constraints, Practices, and Opportunities

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Abstract

This paper analyzes the constraints, practices, and opportunities of Egypt's development. Egypt experienced economic stagnation under the regime of President Hosni Mubarak which was exacerbated by the political situation that resulted from its end. Egypt's economic efforts stalled and it was not until the end of the power struggle between the Muslim Brotherhood and the Egyptian Army, during the counterrevolutionary period, that political normalcy returned to the extent needed to focus on improvements of the domestic economic situation. This phase resulted in the election of President Abdel Fatah El-Sisi whose policies fought back against terrorism and initiated successful developmental efforts to address developmental constraints. These initiatives range from diplomatic efforts to solve the Nile River dispute between Egypt and Ethiopia, building roads and bridges, encouraging foreign investment, and increasing the supply of electricity. There is still a long way to go in terms of building various industries, increasing exports, lowering unemployment rates, and encouraging tourism as an important source of income and also a vital means of obtaining foreign currency. Successful development efforts in Egypt will allow for increased levels of self-sufficiency regarding agriculture and water as well as broader levels of prosperity across other sectors of production.

Keywords: terrorism, population, Egyptian debt, water scarcity, desalination, industries, education, public health

1. Introduction

This paper seeks to understand the overall political, economic, and social struggles in Egypt in order to clarify developmental strategies that if applied, may lead the country to an improved economy and prosperity. In order to understand the developmental dynamics of Egypt, one must know the backdrop behind a history of continuous, failed, developmental initiatives. Egypt in the years prior to January 25th, 2011 had been governed by the regime of Muhammad Hosni Mubarak, who had ruled the country with an iron fist. The society that existed under the Mubarak regime was well-educated but severely burdened by high unemployment, political corruption, economic stagnation, all-around poverty, and police brutality. The overall environment was vulnerable to acute events that carried with it the possibility of inflaming widespread unrest against the government. A major event of this type occurred in June, 2010 when a man named Khaled Said was killed by Egyptian police in the streets. Soon thereafter, mass protests were organized online and millions of Egyptians took to the streets protesting continuous police violations of human rights and the aforementioned issues against the existing 30-year regime (Özekin and Akkaş, 80). The protests in turn led to political turmoil that culminated in the resignation of President Mubarak.

After the Egyptian Revolution of January 25th, 2011 that led to the end of the thirty-year presidency of Muhammad Hosni Mubarak, Egypt experienced two significant political transitions of power. After Mubarak's resignation, a national election took place that resulted in the assumption of the Presidency by Mohammed Morsi and the Muslim Brotherhood obtaining a majority of the seats in Parliament. However, due to popular sentiment against the Muslim Brotherhood's policies that were viewed as self-serving and too extreme on multiple fronts, a counterrevolution took place on July 3rd, 2013. The 2013 revolution resulted in the suspension of the Egyptian Constitution of 2012 followed by a referendum that passed the current Constitution in January of 2014. During this time the Chief Justice of the Supreme Constitutional Court of Egypt, Adly Mansour, served as an interim president until June 8th, 2014. The first presidential election under the new constitution occurred in May of 2014, with former Minister of Defense Abdel Fattah El-Sisi winning a landslide victory. The new administration wasted no time in its curtailing the influence of the Muslim Brotherhood, which was declared a terrorist organization by the Egyptian government

in 2014 due to its subsequent attacks on police, military installations, and civilians (Sharfe, 2014). The Muslim Brotherhood was also banned from participating in future parliamentary elections. President Abdel Fattah El-Sisi was subsequently reelected in 2018 and remains the current president of Egypt.

President Abdel Fattah El-Sisi inherited an Egypt that had suffered from decades of economic stagnation and other development challenges from multiple fronts. Indeed, during the presidency of Mubarak, Egypt was subjected to several stages of economic reforms. However, inflation remained high, unemployment was a chronic issue, the distribution of wealth was skewed towards a small well-off elite, and much of the population experienced severe poverty (World Bank, 2019). Poverty in Egypt was, like other parts of the third world, often characterized by the presence of large squatter settlements with rudimentary or intermittent services like sewage or electricity (The Economist, 2010). Egypt's rate of urbanization is low enough that the majority of the population is still considered rural but due to the overall population, still ensured that cities such as Cairo and Alexandria ended up with millions of new people. These new arrivals often find themselves near the confines of existing cities in unplanned neighborhoods rather than previously unsettled areas in the desert. The Egyptian government lacked a plan to incentivize orderly settlement in promising areas such as Sinai and the western desert (supplied by water through the so called "Toshka Project"). In other words, urban development in Egypt was poorly managed, if at all. Like urban development, education, health systems, and social justice were neglected by the Mubarak regime and as a result, progress on all these fronts was often minimal, despite deceptive measures of growth that would suggest otherwise.

President Abdel Fattah El-Sisi recognized early in his administration that the process would be neither easy nor straightforward but in order to advance development it was vital to unite the Egyptian people. It was imperative that unity would be a fundamental element towards progress in Egypt. Unity was perceived as a matter of national security. Indeed, reconciling differences among social subsets and promoting political stability are the cornerstones of the development of sovereign states. Lack of political stability can endanger security, reduce investment opportunities, and prevent the tourism industry from flourishing. Rüçhan Kamil Altun established in his study the relationship between political stability and economic development. The study involved the analysis of a dataset containing 157 countries over a ten-year period. Altun concluded, "a one point increase in the political stability variable is associated with an increase of the GDP growth rate by around 1.38-1.62 percentage points or an increase of GDP per worker by around \$1,207-\$1,730." (Altun, 2017). This data illustrates to Egypt that political stability and development are interconnected.

2. Elements That Are a Challenge to Development

2.1 Terrorism

Throughout the modern era Egypt has suffered repeated acts of terrorism that targeted government officials, police and military officers, and religious minorities, such as Christians and Sufis. Terrorists who targeted senior political leaders and hundreds of civilians orchestrated the majority of these attacks. Copts were also the target of these attacks with the goal being to sow divisions between them and the rest of the mostly Muslim society. Additionally, Copts were targeted in the hopes of portraying Egypt as a country that is intolerant of Christians in the eyes of predominantly Christian countries. Sufis on the other hand were targeted as a means of enforcing the extremists' narrow view of Islam. The ancillary aim of these attacks was to undermine the legitimacy of the Egyptian Government and show that the existing government is unable to provide security to either resident minorities, government officials, or foreign tourists. Furthermore, extremists, and specifically the Muslim Brotherhood, attempted to implement Sharia-law in Egypt without regard for Egypt's recent history and adverse impacts on multiple sectors of Egyptian society. The implementation of Sharia-law constitutes a political apparatus that is incongruent with Egypt's social culture, and incompatible with an increasingly urbanized society. This was made apparent when Egyptians rejected the Muslim Brotherhood's attempts to push Egypt in a more fundamental religious direction after a year in power.

After the removal of Morsi, a Muslim Brotherhood figure, the new administration implemented several security measures intended to bolster domestic security. Chief among them was the designation of the Muslim Brotherhood as a terrorist organization. The Muslim Brotherhood has a long history of using terror to achieve political ends that stretches back to its founding in the early 20th century (Rinehart, 2009). This designation led to dramatically increased scrutiny from police forces, a formal ban on political participation, and a reduction in the ability of Brotherhood members to fund ongoing operations. Government institutions, such as the Parliament, in addition to lawmakers collectively worked on banning any activities by the Muslim Brotherhood in political and secular affairs. Despite these measures, attacks continued to occur against police and military personnel, especially in the Northern region of the Sinai Peninsula. The objective of these attacks is to undermine the political stability of Egypt and

transform Egypt into a failed state. Groups such as ISIS-SP (ISIS Sinai Province) and similar groups who are operating in states such as Syria, have claimed responsibility for some of the attacks in Egypt while others are clearly an organized effort but without a self-proclaimed party responsible (Country Reports on Terrorism, 2019). As a result, the Egyptian military has responded with an ongoing military campaign known as Operation Sinai commenced in 2012 and closely following Operation Eagle that was started the previous year. Both operations were centered in the North Sinai Governorate to fight the extremists' insurgency and expedite the end of terrorist operations in the region.

Terrorism is one of the major challenges that threatens to derail government efforts to promote real-world development of Egypt's resources and people. Acts of terror are used to create insecurity and through damage to the revenue-generating sectors of society, constitute an attempt to injure the state itself. That is not to say that security measures were ever neglected but a sovereign state would benefit from having ironclad security to protect and deliver its development. This would attract tourists and foreign investments, each of which are sensitive to the security situation in Egypt (Elshennawy and Siddig, 2023). By depriving Egypt of opportunities to improve its own economic situation, the state is rendered much less effective towards that end.

The tourist industry, by virtue of its importance to the Egyptian economy has long been a target for acts of terrorism. "The political, military, [and] terrorist acts that took place during 2011-2017 have affected the tourism industry to a large extent, their effects being seen in the gradual decrease of the number of tourists generating income not only for tourism agencies, but also for tourism objectives for small merchants selling their products near tourist attractions." (Neagu, 2018). Indeed, one third of the world's historical monuments are located in Egypt and tourism is one of the most important revenue sources for the economy. According to the World Travel & Tourism Council (WTTC), "the total contribution of travel and tourism to Egypt's gross domestic product (GDP) in 2017 was EGP 374.6bn (\$21.1bn), 11.0% of GDP." (Travers, Gaeta, Hanna, Ibrahim, Ramses, El Shrief, Saleh, 2018). It is also stated that tourism in Egypt employs about 12% of Egypt's workforce. This data illustrates how crucial tourism is to the Egyptian economy. When a terrorist attack targeting a prominent tourist site occurs, it has an immediate and rippling effect on the industry. Among the most prominent terrorist attacks are the Luxor massacre in November 1997, the Church of Saints Peter & Paul bombing of December 2016, and the Arish attack on November 2017, to name a few. All led to the causality of hundreds of innocent civilians and tourists.

As a phenomenon, terrorism not only affects the tourist industry but foreign investment as well. Foreign investment is responsive to violence and unrest, especially if the capitol and foreigners themselves are the target. According to Matthew Powers and Seung-Whan Choi, who conducted a cross-sectional, time-series data analysis of over 100 developing countries, when terrorism is directed at property and persons associated with foreign investment, levels of foreign investment will likely decline as a result (Powers & Choi, 2012). It is not a giant stretch to imagine a similar dynamic of terrorism directed towards tourists causing a similar effect. A decline in tourism and foreign investment decreases the flow of foreign currency into Egypt and leads to a decrease in the value of the Egyptian currency (Pound). The Egyptian currency's loss of value contributes to inflationary pressures, such as the price of products and services, and increases the burden of servicing sovereign debt (Dawoud, 2023). Development is encumbered as a result. The state is forced to allocate additional resources to security rather than focusing its efforts on agriculture, education, health, infrastructure, and urban development.

2.2 Egyptian Debt and the IMF

In the decades after World War II, developing countries tended to rely upon domestic resources and policies to further economic development. However, these policies were not implemented in isolation from the process of economic globalization. This phenomenon can be "understood as the cluster of technological, economic and political processes that drastically reduce the barriers to economic exchange across borders" (Lanoszka, 2018). The impact of these processes is not confined to cross-border exchanges and the specter of their influence reaches domestic politics and economies. International institutions such as the World Bank and the International Monetary Fund (IMF) use their own influence and incentives to guide domestic economic reforms. They coordinate and manage transnational economic transactions and integrate developing countries into the global economy.

The IMF has traditionally prescribed measures to countries that result in the liberalization of their economies in exchange for much-needed loans to support economic growth. IMF involvement is supposed to be temporary with the goal of alleviating economic stagnation. Yet, a major criticism of the IMF's operations is the tendency to create dependency of an indebted country upon its resources instead of self-sustaining economic improvement (Conway, 2007). The IMF has long been viewed by some development experts as a western-oriented institution that tends to keep debtor nations dependent upon western resources. By implication of this criticism, debtor nations are forced to devote resources to debt-service that could otherwise be used for development. The question in this analysis is:

does the IMF perpetuate the conditions that it seeks to alleviate or is it effective at improving the situation of countries to which it loans money? Axel Dreher, in his article *IMF Conditionality: Theory and Evidence*, attempted to answer this question and failed to find a net benefit to countries that utilize IMF services when they were forced to comply with conditions placed upon receipt of the loans (Dreher, 2009). IMF influence was often hindered or supplanted by local conditions, such as the level of corruption, strength of property rights, and existing trade policies. It was found that the IMF's developmental impact was minimal when relevant domestic policies were already problematic. Moreover, truly large amounts of aid relative to the size of an economy were found to maintain detrimental policies, as the incentive to reform was often removed with the injection of such funds. When a country is loaned money by the IMF under circumstances in said country that make repayment and economic growth unlikely, debt then serves as a further drag on future economic prospects.

The IMF's history in Egypt is extensive. Egypt first obtained funds from the IMF in 1962 and has continued to work with the IMF until the present day (International Monetary Fund, 2018). These funds are allocated in the form of Special Drawing Rights which are comprised of major currencies of contributing countries. As of 2019, Egypt has used 4,298,209 out of 8,596,570 SDRs available as an extended fund facility from the IMF (International Monetary Fund, 2018). These funds are not lent freely without conditions. Egypt's most recent set of loans from the IMF required it to allow the Egyptian Pound to float freely in 2016, resulting in a loss of nearly 50% in value against major currencies. Even though the 2016 devaluation attracted regional investors, it led to a rise in domestic prices of commodities, food, and services, which made it difficult for lower and middle-class Egyptians to afford basic necessities. Additionally, Egypt introduced a value-added tax (VAT), cut subsidies to fuel and food, and introduced changes to investment regulations (Momani, 2018). The tough measures that the Egyptian government implemented was done at the behest of the IMF to strengthen the overall economy.

These economic measures were met by criticism from the opposition of the El Sisi administration. To many critics the IMF is perceived as a constraint to development because changes to domestic policies are not in their view sufficient to create an environment of sustainable growth in Egypt (Feldman & Winter, 2017). Their concerns derive from a fear that IMF directives lack recognition of the role that corruption, bribes, and nepotism take in policy-implementation. Furthermore, if money loaned from the IMF is misallocated, it will not be used to improve economic conditions and saddle the country with additional debt. A debtor nation in this situation would then be dependent upon further aid to maintain solvency.

The question that follows is, does the IMF currently constitute a constraint to development in Egypt? Certainly, it can be said that the IMF is loaning Egypt funds that will eventually have to be repaid by the government using (at least in part) tax funds raised from the Egyptian people. However, in pushing Egypt to make some tough reforms, the IMF provided additional impetus for change that would be otherwise lacking among the domestic political structure. It is also apparent that El-Sisi's administration is itself committed to making the necessary reforms in domestic policies, such as a reduction in the regulatory burden for new and foreign businesses, a simplification of bankruptcy laws, and easier industrial licensing (Momani, 2018). These reforms were made to allow IMF funds to have the greatest impact on the Egyptian economy. The Egypt-IMF Executive Board was satisfied by Egypt's progress, stating in 2019:

The macroeconomic situation has improved markedly since 2016, supported by the authorities' strong ownership of their reform program and decisive upfront policy actions. Critical macroeconomic reforms have been successful in correcting large external and domestic imbalances, achieving macroeconomic stabilization and a recovery in growth and employment, and putting public debt on a clearly declining trajectory (Lipton, 2019).

The result of Egypt's reforms was a budgetary surplus of 2 percent of GDP for 2019. Moreover, the end of fuel subsidies allows Egypt's budget to be far less vulnerable to volatility in the price of oil. This allowed the mobilization of new revenues to fund education, health, and other programs to benefit the Egyptian public (Lipton, 2019). While critics worry about the IMF's adverse impacts in the long-run, the IMF has given Egypt the excuse and funds it needs to implement valuable reforms that will enhance Egypt's ability to grow as a developing economy.

2.3 Egypt's Current and Projected Population

Egypt's population in 2021 is estimated to be 106 million people (World Factbook, 2023). The current population represents an almost 50-fold increase from the beginning of the 19th century of 2.5 million (Millbank Memorial Fund Quarterly, 1949). The rate of population growth since the 1950's has averaged above 2% annually through to the present day. It is expected that the population in Egypt will continue to grow as a result of high fertility rates and population momentum due to an increase in the overall number of women who will enter their reproductive

years in the near future (Khalifa, Davamzo, & Adamson, 2018). The increase in population has been one of the major constraints to development in Egypt. This has several implications, such as an increase in the number of students in schools, increased pressure on water resources, additional challenges to employment, and causing more families to fall into poverty. These facts are important, but it is critical to examine the relationship between population growth in Egypt and economic conditions that the average individual is likely to experience. An understanding of such relationships would help to confront further challenges like those aforementioned.

President El-Sisi's administration has been working to ameliorate the rate of population growth. The Egyptian government has launched several initiatives to encourage smaller families with public health programs and family planning services. The Egyptian parliament has amended article 41 of the constitution to enshrine in legislation the need to balance between population and economic growth. According to the 2014 Egyptian Constitution, "The state is to implement a population program that achieves a balance between population growth and available resources and maximize the investment in human capital in the context of sustainable development" (Osman, 2016). It is imperative that the Egyptian government takes action to achieve such a balance. Indeed, Egypt's population has increased at a steady pace over the last few decades while Egypt's economy has also grown (albeit with significant volatility). Figure 1 shows Egypt's population from 1991 to 2021 and projects exponential as well as linear trajectories of increase. It is estimated that the population of Egypt can reach 184 million or 145 million on the exponential or linear projections, respectively. The numbers are daunting. Exponential population growth would result in a decline of GDP per-capita in the future. Conversely, linear population growth (which represents a decline in the overall rate of population growth from 2% to 1%) would allow for GDP per-capita to increase (See Figure 3). These assumptions are based upon future linear GDP growth of around 2.4% annually (see Figure 2). While this may seem conservative, averaged past annual GDP growth of around 7.65% is not likely to be as high going forward if Egypt's economy continues to develop. This is not to say that Egypt's economy will not grow in the future, but developing countries eventually experience a slowing rate of economic growth ensuring that past performance (and volatility) is not indicative of similar performance in the future. For current and forthcoming generations of Egyptians, the quality of their lives will depend in part upon the success of population balancing and a steady rate of economic growth. This means that reducing population growth is a must.

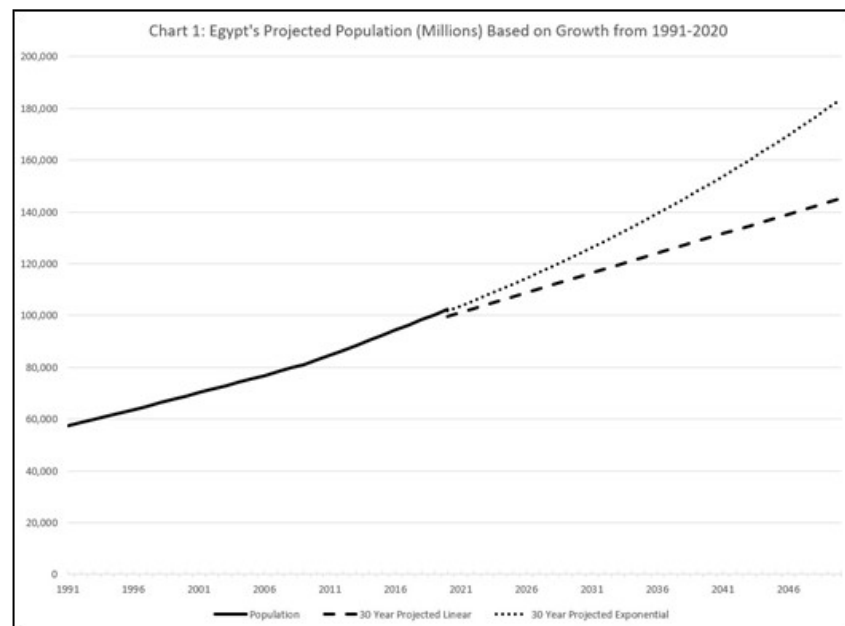


Figure 1. Egypt's projected population (Millions) based on growth from 1991-2020

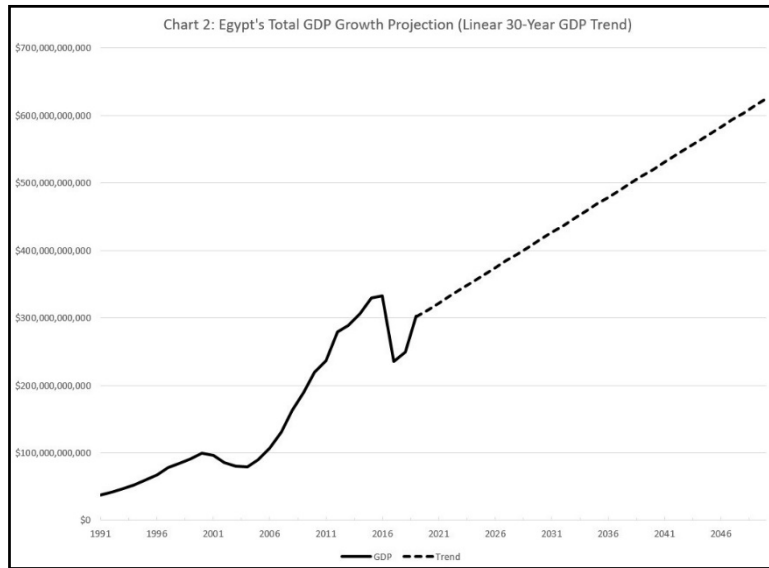


Figure 2. Egypt's total GDP growth projection (Linear 30-year GDP trend)

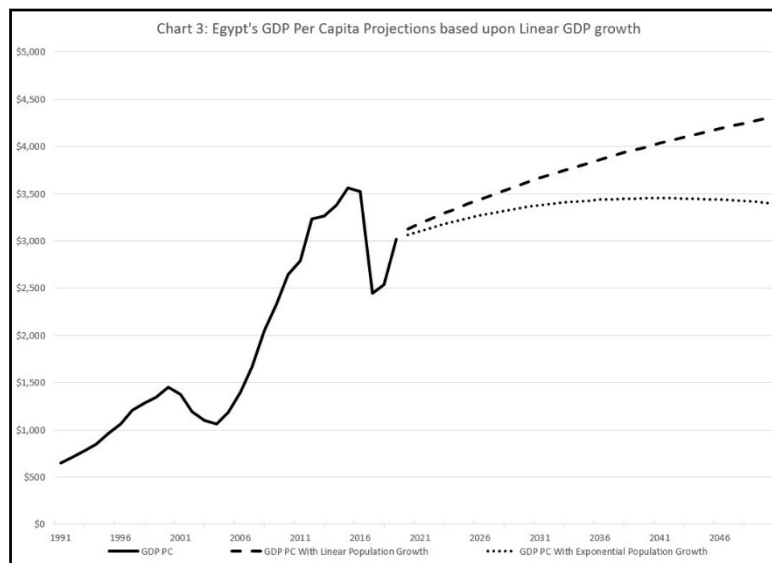


Figure 3. Egypt's GDP per capita projections based upon linear GDP growth

2.4 The Nile Is a River in Egypt

Throughout history Egyptian civilizations, from the Old Kingdom to the present day, have been centered around and dependent upon the Nile River. The Nile River is by far Egypt's major source of fresh water. Nearly the entirety of Egypt's population lives within the immediate vicinity of the Nile or its distributaries (National Geographic Society, 2023). The Nile has been and continues to be critical to enabling agriculture and food production. It is also a source of energy generation through the Aswan Dams, which generate around 12% of Egypt's electricity (Razavi, 2012). Most importantly, geography has endowed an otherwise hot and dry Egypt with a source of water to sustain life and development.

Before entering Egypt, the Nile or its tributaries flow through countries such as Sudan, Ethiopia, Uganda, and others. Each of these countries derive the same benefits from the river or rivers that flow through their borders while at the same time seeing some of the waters flow downstream to neighboring countries. All of them except for Egypt which has no downstream neighbor. All impacts from usage of the river, such as the addition of pollutants and other types of wastewaters, as well as water diversion through its use upstream as irrigation or storage in reservoirs, will eventually manifest itself in the quality and volume of water in Egypt. In addition, Egypt lacks

alternative sources of water that can offset the Nile or substitute any of its current benefits. Therefore, further diversion of the Nile or its tributary upstream through dam construction presents itself with the possibility of decreasing the volume of water flow downstream and no country will be more adversely impacted than the furthest country downstream, which is Egypt.

The Renaissance Dam currently under construction in Ethiopia is a major concern for the Egyptian government. The dam will create a reservoir of water formerly destined to flow to Sudan and Egypt. During a drought, Egypt fears that Ethiopia will choose to continue using the water to generate electricity rather than release some for consumption downstream. This has been a cornerstone of dispute between the Ethiopian, Egyptian, and Sudanese governments. The African Union, through South African President Cyril Ramaphosa, has attempted to mediate the dispute and allow all parties to reach an agreement on use of the river's waters. The endeavor was partially successful but Ethiopia has not agreed to a scenario whereby it would be obligated to release water during a drought. Egypt has suffered droughts in recent years as the Grand Ethiopian Renaissance Dam has already contributed to a further reduction in the volume of the Nile River (Bermudez Jr., Funaiolo, Jun, Devermont, Harris, Parris, & Baston, 2021).

The Grand Ethiopian Renaissance Dam is not the only factor that is stressing Egypt's water resources. Egypt's water scarcity has been building up long beforehand. The continuous increase of Egypt's population exceeds the Nile's capacity to supply which may end up forcing millions to face severe shortages of water. Population growth is estimated to be 2% per year, a percentage that is moderate but still lowers each individual's share of the water. In the last sixty years, the population of Egypt increased from twenty-seven million to over one hundred million, leading to a significant decrease in the per capita water supply due to a lack of growth in the volume of water from the Nile. According to the World Bank, the growing population and ongoing drought will lead Egypt to face severe water scarcity in the near future. "By 2025, water supply is estimated to drop below five hundred cubic meters per capita, a very low level that hydrologists typically define as "absolute scarcity" (Cohen, 2021). The United Nations also defines absolute water scarcity "as less than 500 cubic meters of water per person per year" (Goodman, 2021). The annual water share of Egypt is 560m³ per person placing the country near the level of absolute scarcity and well below internationally defined levels of scarcity. If Egypt ends up reaching absolute water scarcity, the scope of adverse impacts will be wide-ranging, with a rise in unemployment, millions of people falling below the poverty line, and significant food insecurity. This will have a wide impact on Egypt's agricultural sector, food supply, forestry, and fishing (Cohen, 2021). Moreover, climate change has had a substantial impact on Egypt's water supply. Water scarcity, droughts, and rising sea levels are all adversely impacting Egypt's climate. Specifically, climate change has also led to hot and dry years, even by Egyptian standards, that contributed to limited and insufficient water supply as the Nile gets drained to the extent that it barely reaches the Mediterranean Sea.

3. Egyptian Policies and Practices of Resource Management

The Nile river's importance to Egypt has created an incentive for the state to ensure that maximal resources are extracted from the waters that flow through to the Mediterranean. This includes not just the water itself but power generated from the Aswan High Dam. The dam was constructed in the 1960s and was the single largest power supplier to Egypt when it was first built. In addition to power, the dam stored waters in lake Nasser and allowed for greater control and orderly release for irrigation downstream through to the delta. This process of annual release of waters continues to this day and has only been impacted, other than the variations in climate, by the construction of the GERD in Ethiopia. The proposal for the GERD dam in Ethiopia was delayed by opposition of the Egyptian government during the presidency of Hosni Mubarak. With the Egyptian revolution in 2011 and the end of Mubarak's presidency, Egypt was unable to try and stop construction from proceeding due to its own internal strife at that time. By the time President El-Sisi had been elected, Ethiopia had managed to begin construction of the GERD and by 2020, the reservoir had already substantially filled with water at the end of the first phase of construction. The *fait accompli* of the GERD's existence caused Egypt to attempt a different approach and try to mitigate impacts to Egypt through mediation and diplomacy with Ethiopia. The United Nations has been involved, trying to broker an agreement with Ethiopia, Sudan, and Egypt over further filling of the reservoir that all countries can agree to (United Nations, 2021). However, an agreement has not been reached and tensions remain over the dam regarding water usage and release during a drought.

Egypt has responded to a lack of water resources with the construction of a series of desalination plants to extract fresh water directly from the sea (Gomaa, 2022). Egypt's desalination industry has been supplying fresh water for over 100 years. However, the size and importance of the industry has increased dramatically in recent decades and Egypt is planning to add more than 90 new desalination plants to increase the amount of fresh water available. "At present, Egypt encourages both the public and private sectors to expand in desalination plant construction and uses of different technologies" (Elsaie Y, Soussa H, and Gado M). Egypt has promulgated a "five-fold plan" to increase

the number and capacity of desalination plants from 2020 to 2050. The stated goal of this policy is to ensure that urban areas are better served and to allow Egypt's fresh water capacity to increase to meet the needs of Egypt's projected population increase (Gomaa, 2022). Specifically, Egypt is increasing the capacity of its existing 82 desalination plants currently operating by the establishment of 14 new plants. This will increase the total capacity of water to 1.4 million cubic meters per day. Egypt has made such a bold policy decision due to the exogenous constraint on its domestic water supply imposed by the construction of the GERD and its future population growth. The country is forced to use desalination technologies to provide fresh water directly from the sea for urban water-needs as well as brackish water for agricultural and other needs. Despite the desalination process introducing a solution to, or at least a reduction of water scarcity in Egypt, it is energetically and financially expensive, yet if costs continue to fall, may be a significant source of fresh water in Egypt's future.

The desalination process requires a massive amount of power in order to produce fresh water for Egyptians. This will undoubtedly require an expansion of electrical generating capacity. By far the largest such expansion of capacity will be as a result of the EL-Dabaa nuclear power plants currently under construction. The site was originally designated as a potential nuclear power plant location in 1981 (Megahed, 2009). In 2015, Egypt signed an agreement with Russia to build a series of nuclear power plants at El-Dabaa and it should be noted that these nuclear plants also include an adjacent desalination facility (M Patrick, 2023). The total build capacity of the first four reactors at El-Dabaa will be 4,800 megawatts which is more than double the power generated from the Aswan High Dam. Units at El-Dabaa are expected to start generating power in 2028 with the site being fully operational a few years later (Proctor, 2022). The total expected cost of all the nuclear plants at El-Dabaa is projected to be at least 25 billion dollars. The move will secure Egypt's energy production and sustain water desalination, agriculture, and other industries. The Egyptian government has made continuous efforts to ensure that the project is successful and deliverable.

The increase in demand for electricity and fresh water has spurred interest in solutions that simultaneously address both. Nuclear desalination plants were considered for El-Dabaa that would have the ability to produce electricity and fresh water but it is unclear the extent to which such a co-generation scheme will be implemented there. Even if the nuclear plants are only producing power, their presence on the shores of the Mediterranean near Alexandria will provide a natural opportunity to expand water desalination facilities given the availability of dependable electricity and demand from nearby populations.

Water and power are not the only resources the Egyptian government is managing, Oil and Natural Gas production is critical. They are the most dynamic industries in Egypt. Egypt is concentrating on the production of hydrocarbons as it is the largest single industrial activity in the country. According to the International Trade Administration, Egypt's hydrocarbon industry represents around 13% of total GDP in 2018. "Egypt's proven hydrocarbon reserves stood at 3.3 billion barrels of oil and 77.2 trillion cubic feet (tcf) of natural gas at the end of 2018" (International Trade Administration, 2023). Fifty international oil companies operate in the oil and gas sectors in Egypt and their operation is facilitated through a variety of incentives by the Egyptian government. Supporting infrastructure consisting of pipelines that carry oil and natural gas from the Mediterranean to the Red Sea and onwards to Asia. These operations generate a significant source of revenue for the Egyptian Government. Further state support is provided through the Ministry of Petroleum and Mineral Resources whose policies will also encourage the development of Egypt's petrochemicals sector in the near future. The Egyptian government indicates that the petrochemical industry currently represents 12% of industrial production and make up 3% of Egypt's total GDP. Improvement of these industries is also facilitated by inducements towards foreign investments in the oil and gas sector. More specifically, Egypt signed several oil and gas exploration agreements with international oil companies and provided bonuses for the drilling of 319 wells. These new wells will contribute to the discovery of new sources of energy and boost oil and gas production in the country.

To support Egypt's goal of becoming a leading energy hub in the region, the East Mediterranean Gas Forum was established in January 2019. The forum aimed to promote collaboration on natural gas resources between Egypt, Israel, Italy, Greece, Cyprus, Jordan, and the Palestinian Authority in the East Mediterranean. Leveraging its prime location, advanced infrastructure, and extensive gas reserves, including the Zohr field, Egypt is positioning itself as a key energy player in the region. The Zohr gas field, which is believed to be the largest discovery ever made in the Mediterranean Sea, produces an impressive 30 trillion cubic feet (tcf) of natural gas annually. Egypt boasts two significant gas fields: the Nooros Gas field in the Nile Delta and the Atoll field in the East Delta. These fields produce 32 million cubic meters and 350 million cubic meters, respectively. Notably, Refinitiv data reveals that Egypt has exported 9.45 million cubic meters of liquid natural gas during the first seven months of 2022, marking a 44% increase from the previous year (Reuters, 2022). This expansion in natural gas production can be attributed to the newly discovered fields as well as efforts to expand production in existing fields. This will lead to an increase

in natural gas exports and eventually become a source of foreign currency. Administering these new resources requires harmonized practices between government institutions and the private sector. Revenues generated from the hydrocarbon industry should be directed towards expansion of the industrial sector and development of vital sectors like urban development, education and public health.

4. Egypt's Opportunities for Development

The journey of development was given a concrete goal when the Egyptian government set upon itself to become a slum-free country by 2030. The government acknowledges that 75 percent of urban areas across Egypt are unplanned. Egypt is home to about one thousand slum areas, three hundred and fifty of which are located in and around Cairo. These slums lack electricity, fresh water, and adequate sewers and meet formal definitions of "unsafe zones."

The Informal Settlements Development Fund (ISDF) identifies four levels of unsafety based on the threat they pose to citizens. Level one is geological and environmental factors; two, conditions suitable for building; three, proximity to high-voltage power cables and exposure to industrial pollution; and four, location on state-owned land (Farid, 2019).

The population living in rockslide-prone areas are by far the most unsafe with severe geologic uncertainty compounding the risk that all other slum areas deal with constantly. The difficulties faced by slum residents have prompted the government to address the issues inherent within unsafe zones by launching a project to urbanize slum areas that are suitable for living while in turn evacuating those that are not. This project started in several Egyptian cities such as Cairo, Alexandria and Port Said. According to Hani Younis, the spokesperson for the Ministry of Housing, the Egyptian government built 600,000 social housing units to replace unsafe zones across the country. Egypt spent 32 billion Egyptian Pounds in the past four years to provide alternative housing for those who live in slums (Abu Zaid, 2021). These initiatives are among the many opportunities the Egyptian government has undertaken to develop infrastructure and deliver it to the Egyptian people while managing to replan urban areas according to national standards and configurations. Indeed, it is an important step towards development. However, slum eradication does not end with the relocation of its residents. There has to be economic programs in place that will empower the impacted population. Moreover, additional facilities to accommodate the elderly and those with special needs as well as ancillary community institutions like schools, sports facilities, youth centers, and healthcare-related sites have been shown to benefit residents of newly created neighborhoods such as those built in Egypt.

President Abdel Fattah El-Sisi underscored the opportunities possible in a Slum-Free Egypt while also playing a fundamental role in directing the government towards investing in road and rail infrastructure across the north African country. "The roads and bridges that the Egyptian leader inspects represent the most visible aspect of a major infrastructure drive aimed at revitalizing the economy and putting an end to traffic congestion" (Farouk, 2021). New roads and bridges have been built in eastern Cairo and Alexandria as part of a network that links the first and second capital respectively, with a new capital being currently under construction in the desert and due to open in December of 2023. The scale and scope of the new capital can appropriately be classified as a mega project sponsored by the Egyptian government. The New Administrative Capital Monorail project was initiated as a link from big cities to the new capital and it represents a revolution in the transport sector of Egypt. "The project will have a length of 56.5 km, which represents a major cultural shift in mass transportation, as it is fast, safe, and environmentally friendly, according to economists" (Farouk, 2021). Hassan El-Haywan, an economist and professor of economics at Ain Shams University, asserts that developing the desert areas and building transport connections to the new capital benefits businessmen, investors, and tourists that visit the country. Such development will boost the speed of transportation of goods and raw materials and the availability of job opportunities. It also will reduce the pressure of crowded communities within big cities and create more new integrated communities as a result. Indeed, the World Bank estimates the cost of congestion in Cairo alone to be the equivalent of 3.6 percent of national GDP. This means that the Egyptian government loses millions of dollars every year just from traffic congestion, a problem the Egyptian government sees as an opportunity to solve. The benefit to successfully mitigating transportation issues will accrue to the Egyptian people as a whole and leave the country with a legacy of something more than just new roads and bridges.

It goes without saying that Education in Egypt is one of the most important opportunities for the development of Egypt. Egypt is fortunate in having an extensive educational system compared to the Middle East and North Africa. "It has more than 60,000 schools, of which only 7,000 are private schools" (International Trade Administration, 2022). Egypt's educational system both reflects and augments the socio-economic status of its own people. It is vital to the transmission of cultural values and serves as a critical force in individual and national Egyptian

development. The aim of the Egyptian educational system is to build the Egyptian individual to be faithful to God, homeland, and to the values of good, truth, and humanity (Constitution of Egypt, 2014). The Egyptian government should construct and develop an educational system that is more like those in Singapore and South Korea. These models have been very successful in imparting a high educational standard that greatly benefit the domestic workforce and marketplace. In support of these efforts, the Ministry of Education and Technical Education launched the Education 2.0 reform to restructure teaching from rote memorization towards critical thinking. “The new Education 2.0 framework uses a competency-based curriculum, focused on the experience of learners, and is supported by IT integration programs covering digital content, with hand-held devices for students, in-class coaching, and computer-based tests” (International Trade Administration, 2022). Furthermore, the International Branch Campus Act has been ratified into law by the Egyptian parliament, allowing international universities to either build their own branches in Egypt or partner with domestic Egyptian companies. The government of Egypt has been promoting the site of its New Administrative Capital on the outskirts of Cairo as an ideal location for new higher-education campuses. In addition, the government has identified opportunities to establish three technology universities in New Cairo city, Quesna, and Beni Suef, offering specializations in information technology, mechatronics and autotronics, power plant operation and maintenance technology. There are also plans to establish other universities specializing in areas such as construction, maintenance, building materials, health and applied sciences, and fisheries and aquaculture. Despite the increasing number of schools and universities across the country, improving the living standards of teachers and educational administrators remains a priority.

In addition to education, public health is also an area of development opportunity in Egypt. The Ministry of Health and Population oversees the health system in the country, which includes both public and private sectors. The public sector mainly caters to poorer communities and is composed of government-funded hospitals and clinics, while the private sector provides services to those who can afford them. Unfortunately, the public sector faces many challenges, including low-quality care, lack of medical equipment, and a shortage of qualified personnel. The overall funding for public health is insufficient to meet the needs of the Egyptian people.

Government investment in the public system is also low with only 1.5% of total GDP for public health expenditures. Total health expenditures for all sectors totaled 4.75% of national GDP. Public healthcare financing consists of 72% from employee tax, 25% from the Ministry of Finance, 2% from the private sector, and 1% from external sources (Columbia Health Policy Library: Egypt, 2023).

Egyptians prefer to seek care in the private system if they can afford it due to the low standards of care in public facilities. Moreover, the government is encouraging the expansion of the private sector by supporting private facilities with resources that would otherwise be used for public healthcare expenses. With higher quality care, the private sector is currently dominating the portion of health services provided in Egypt. Unfortunately, people are still burdened with paying large out-of-pocket expenses for care. Even recently, it was last reported that 60% of all health care services were funded from out-of-pocket spending.

Egyptian policies to improve healthcare have often addressed high-end demand for medical needs that would normally be served by facilities located abroad. Egyptians who have not been able to find domestic care would often resort to travelling out of country if they had the ability. The lack of Egyptian hospitals of the quality normally found internationally cannot be remedied overnight and requires investments not only in facilities and equipment but also highly specialized staff. To address this deficiency, the government plans to establish a new Medical City on the outskirts of Cairo to not only provide quality treatment but new schools for training medical personnel as well. The government also plans to make the process of importing specialized equipment, such as dialysis machines, easier and reduce the customs laws and other bureaucratic barriers to importation. The medical devices are critical to providing high-quality healthcare and producing accurate diagnostic results for patients in need.

Training programs for all provider levels, from physicians to lab techs, will also benefit Egyptians throughout the country. Egypt’s healthcare system suffers from a dearth of trained personnel with over 1,000 persons for every practicing Physician (World Bank: Data, 2023). To bring the rate to something more in line with richer parts of the world, the physician population will have to expand at a rate that is faster than Egypt’s population growth. While increasing the total number of physicians will benefit Egypt’s overall healthcare industry, it is only part of what is necessary to improve the access to medical care for all strata of Egyptian society. Having a healthy population requires a commitment to bring higher quality healthcare to parts of the population that are currently cost-prohibited from accessing high-end private sector facilities. The opportunities that can emerge from a meaningful improvement of Egyptian healthcare will have positive reverberating impacts throughout the economy as a result of a healthier population capable of more economic production.

5. Conclusion

Egypt has taken several initiatives of development across different fronts. Since the election of President El-Sisi, the government has been under pressure to make required economic reforms and to build new wide-ranging infrastructure for a country that has been neglected for the last few decades. To some extent the government has been successful in building roads and bridges while improving the supply of electricity and agriculture yet the country is still constrained by its debt. Indeed, Egypt has made several requests to borrow foreign currencies, mainly dollars, from international institutions like the world bank and the IMF. Most of these requests have been approved but it puts Egypt in a constant bind of debt. These debts have resulted in substantial downward pressure on the value of the Egyptian pound. The Egyptian Pound decreased from the equivalent of 6 US dollars in 2012 to over 30 US dollars in 2023 (CEIC Data, 2023). The decision to allow the Egyptian pound to float freely in value against the US dollar are among the economic reforms the government has adopted often at the behest of lenders such as the IMF. It led to a rise in prices of all commodities and goods that are imported from abroad. The strain of all this on the average Egyptian has been intense but alleviated through the Egyptian Central Bank's increase in interest rates. This allows for more income per person from their respective savings that are in a bank. The goal of such high interest rates is to collect billions of Pounds that are circulating in the market and use them to capitalize the banks while curbing domestic inflation.

A contributing factor of this economic downturn is that resources available from foreign aid have been spent disproportionately on infrastructure rather than invested in building industries that can potentially turn a profit over shorter timeframes. The relative lack of industries which are competitive domestically and internationally is likely an aspect of the recent performance of the Egyptian Economy. While urban development is beneficial to Egyptians, ultimately without a robust and profitable economy supporting the populace, the infrastructure will be of limited utility. In order for development to continue at its current pace, eventually a shift in priorities will have to take place whereby more relative resources are devoted to enhancing industries rather than the current pace of infrastructure investment. The current approach to funding infrastructure with foreign aid will also have to change. However, this is only possible if Egyptian industries are able to produce a profit from exporting the products of their industries abroad and allow the government to utilize that profit to build infrastructure. The distorted spending priorities of the Egyptian government has in no small part contributed to the current inflationary environment and the significant decrease in the value of the Egyptian Pound. Moreover, the decreasing economic environment has caused ordinary Egyptians to be more likely to depend upon other sources of income, such as remittances and tourism. They serve as a main source of foreign currency, both of which have declined in recent years. As a result, the value of the Egyptian pound continues to deteriorate against foreign currencies, especially the US dollar. The loss of tourism-derived income leads to fewer economic opportunities for Egyptians across major cities while remittances are not enough to sustain socio-economic transformations. The reality is that Egypt has to receive a continuous flow of tourism throughout the year in order for Egyptians to sustainably benefit from the industry.

President El-Sisi came to power during a particularly turbulent part of Egypt's recent history. Perhaps the most salient issue that needed to be addressed was that of domestic terrorism. El-Sisi made combatting terrorism a top priority and his efforts to that effect have already brought benefits to those who would otherwise live in a state of fear. Further efforts to marginalize organizations and groups that supported terrorism will reshape domestic politics and encourage non-violent political engagement. Additionally, El-Sisi initiated several wide-ranging reforms and new programs to address the social and economic issues of Egyptian society. The attempt to manage unchecked urban growth and discourage the formation of new slums will benefit Egyptians in the future. In concert with these measures, the administration has also sought to improve the prosperity of the populace by reducing the material scarcity of water through desalination, increasing the availability of electricity through the construction of a major nuclear power plant, and open up a whole new city for millions to settle and lead a better life. External challenges from a variety of sources remain however. The IMF continues to exert its influence over and aid to the Egyptian government while the Nile continues to be a major source of contention between Egypt and other countries up river, especially Ethiopia. Coupled to all of this is the ever-increasing population of Egypt that requires measures improving economic growth to work all that much more to truly succeed. With continuous organized work, these issues can be resolved. The challenges that Egypt faces is immense. However, the administration of El-Sisi has sought to systematically address them with far-reaching programs that will take years to bear fruit. It is quite likely that each of these programs will need the others to succeed at least in part to truly push Egypt towards a more developed society and overcome the structural and demographic challenges that have thus far characterized Egyptian society.

6. Recommendations for a New Decade

Egypt finds itself at a pivotal moment in time that will require a progressive developmental agenda to cover the next decade. Despite the challenges that Egypt has faced, such as external debt, population growth, water scarcity,

and others, there stands an acute need to create a future plan of action that addresses the most critical needs of the Egyptian populace while managing and enhancing the resources needed to improve the longer-term condition of the nation. The agenda proposed is a series of recommendations the Egyptian government can use to enhance the prosperity and well-being of its citizens by leveraging its existing advantages and attempting to mitigate its disadvantages.

The cornerstone of this agenda is economic growth and diversification. Egypt's economic landscape requires a transformation that reduces reliance on traditional sectors and embraces new drivers of growth. Renewable energy is one of the newest approaches Egypt seeks to capitalize on. Developing renewable energy resources is paramount, not just for environmental sustainability but also for energy security and job creation. The deserts and windswept coasts offer untapped potential for solar and wind energy projects, positioning Egypt as a leader in renewable energy in Africa and the Middle East. Equally important is the modernization of agriculture, which remains the backbone of the rural economy. By introducing sustainable farming practices and improving irrigation techniques, Egypt can enhance food security, reduce water usage, and increase agricultural productivity. Furthermore, expanding the tourism sector beyond its historical and cultural sites to include eco-tourism, adventure tourism, and cultural festivals can diversify income sources and showcase Egypt's natural beauty and vibrant culture. Lastly, fostering a culture of innovation and technology through the support of startups, innovation hubs, and a revamped educational system will catalyze the development of a knowledge-based economy.

Education and skills development are critical to empowering Egypt's youthful population to meet the demands of a rapidly evolving job market. Revamping the education system to focus on quality, inclusivity, and relevance is essential. This involves not only modernizing curricula to emphasize critical thinking, digital literacy, and vocational skills but also investing in teacher training and infrastructure to ensure equitable access to education. Higher education and research should become engines of innovation and economic growth, with increased investment in STEM fields driving advancements in technology and science. Furthermore, lifelong learning and adult education programs are vital to ensuring that the workforce remains adaptable and competitive in a global economy.

Improving healthcare access and quality is another pillar of this agenda. Expanding healthcare infrastructure, especially in underserved rural areas, and investing in the training of healthcare professionals will improve access to quality medical services. Public health initiatives focused on preventive care, nutrition, and physical activity can address the rising tide of non-communicable diseases. Additionally, enhancing mental health services and integrating them into primary healthcare can address the growing need for mental health support.

Social inclusion and equality are fundamental to ensuring that development benefits all segments of society. Policies and programs aimed at empowering women and youth, protecting vulnerable populations, and promoting social justice are essential for building a cohesive and resilient society. This includes efforts to close gender gaps in employment and education, support for small and medium-sized enterprises, and comprehensive social safety nets for the poor and marginalized. Preserving Egypt's rich cultural heritage and promoting access to cultural and recreational activities can also enhance social cohesion and national identity.

Environmental sustainability is increasingly critical in the face of climate change and resource scarcity. Sustainable management of water resources, including investments in wastewater recycling and desalination, is vital for Egypt's future. Climate change adaptation measures are needed to protect critical sectors like agriculture and tourism from the impacts of rising temperatures and changing precipitation patterns. Moreover, urban development must prioritize green spaces, efficient public transportation, and pollution control to ensure livable cities for future generations.

Finally, governance and institutional reform are necessary to create an enabling environment for development. Strengthening the rule of law, fighting corruption, and promoting transparency and accountability in public services will build public trust and attract investment. Decentralization and the empowerment of local governments can ensure more responsive and effective governance. Furthermore, fostering a vibrant civil society and encouraging public participation in decision-making processes will ensure that development policies reflect the needs and aspirations of all Egyptians.

This development agenda for Egypt is ambitious yet achievable. It requires a concerted effort from the government, private sector, civil society, and international partners. By setting clear goals, implementing strategic reforms, and monitoring progress, Egypt can navigate the challenges of the new decade and realize its full potential as a leader in sustainable and inclusive development.

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