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# Egypt Industry; a COVID-19 Triggered Transformation

UNIDO Solar-water Heating in Industrial Process (SHIP) project in Egypt | May 2020

***Disclaimer:*** The views expressed in this paper are those of the authors based on their experience and on prior research and do not necessarily reflect the views of UNIDO

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# Egypt Industry; a COVID-19 Triggered Transformation

## I. Context and Objectives

**COVID-19 is not only a major risk to people lives but also to their livelihood.** On January 30<sup>th</sup>, 2020, the WHO declared that the world is facing a public health emergency due to the outbreak of the virus officially named on February 11<sup>th</sup>, 2020 as COVID-19. Within the span of few months, COVID-19 has become a personal tragedy to millions and a threat to most people on the planet. Worldwide, as of 2 May 2020, the total number of infections reported has reached 3,43,422 with a death toll of 243,831. In Egypt, the total number of confirmed cases is 6,193 and the total number of deaths is 415. Since the outbreak of COVID-19, millions of health care workers have been in a difficult fight against the immediate health threat, which is unprecedented in its global outreach. While on the immediate term and the front line, the biggest human lives are threatened, in the shadow, a major threat to human livelihood is building up to its inevitability. While the most concern is the immediate health threat, the world must calmly and skilfully prepare to face a slightly differed economic one.

**As COVID-19 posed perhaps the most intense global health crisis in a century, it is triggering an economic one with similar proportions.** The International Monetary Fund (IMF) has warned that the coronavirus pandemic will trigger the worst economic fallout since the Great Depression of the 1930s. In the latest World Economic Outlook “The Great Lockdown” published at the beginning of April 2020, the IMF thunders, “this crisis is like no other. First, the shock is large. The output loss associated with this health emergency and related containment measures likely dwarfs the losses that triggered the global financial crisis. Second, like in a war or a political crisis, there is continued severe uncertainty about the duration and intensity of the shock. Third, [...] the crisis [...] makes stimulating activity more challenging”.<sup>1</sup>

**Common slowdown but varying consequences for each nation.** Assuming that the pandemic fades in the second half of 2020 and containment efforts can be gradually unwound, the IMF projects a sharp contraction of the global economy in 2020 of –3%, followed by a 5.8% growth in 2021 as economic activity normalizes, helped by policy support. The projections for the Middle East and North Africa (MENA) are in line with the global ones for 2020 with a contraction of –3.3% in 2020. However, a great degree of variation can be observed among the MENA countries, from –1.1% of Kuwait to –12% of Lebanon. As for 2021, MENA is projected to grow at a lower rate than the world average, at 4.2%. This variation of impact reflects that despite the common threat nations face, it is the structure of each economy and the capacity of governments to respond that will make the difference.<sup>2</sup>

**Like the rest of the world, the Egyptian economy will be strongly affected by COVID-19.** The IMF estimates that “Covid-19 epidemic is likely to impact the Egyptian economy primarily due to declining travel and tourist activity, reduced worker remittances, capital outflows, and slowdown in domestic activities. The weaker demand in the global market will also reduce Egypt’s exports as well as earnings from the Suez Canal”.<sup>3</sup> The impact on manufacturing, SMEs and their employees follows the global pattern: production decline, loss of jobs and income, loss of remittances, repatriation of migrant workers, and lower trade across borders. Informal sector workers and vulnerable groups with little

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<sup>1</sup> IMF (2020c). *World Economic Outlook. Chapter 1 The Great Lockdown*. Retrieved from <https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020> accessed on 18/04/2020.

<sup>2</sup> Ibid.

<sup>3</sup> IMF (2020b). *Policy Responses to Covid-19. Policy tracker* <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19> accessed on 18/04/2020.

savings are hit hard. Youth unemployment and under-employment will worsen, particularly among daily labourers, underpaid (women) workers with irregular/informal contracts and migrant workers. However, a large youth population (almost one third of the total population) may also constitute a potential resource for effective national mobilization in recovery.

***Can Egypt continue its nascent economic successes?*** Egypt is the only country in the MENA region with a positive outlook in the short-term, with a real GDP growth of 2.2% in 2020 (though much lower than the 5.6% growth of last year), but less so in the medium-term with a real GDP growth of 2.8% in 2021.<sup>4</sup> Yet, in terms of lost opportunity, Egypt has been hit hard as its growth slides below what seemed to be a certain and successive growth exceeding 5% in both 2020 and 2021. This 2.2% “growth” is hence taken with a grin in a country with a population growth averaging above 2% in the past decade and with aspiration and determination for economic growth by citizens and government. Egypt has been steadily recovering from one of its worse economic crises. In the years following 2011, the economy has struggled with low growth rates, high unemployment, decline in FDIs, and high state budget deficit. In 2016 the country has embarked on a wide economic reform program kick started by a finance package from IMF. In a span of 5 year, Egypt, went from record lows on various economic indicators to record highs. Growth rate in FY2019 reached 5.6%, the highest in the MENA region. Egypt, in the past few years, has seen an inflation rate peaking at 30% in July 2017 then falling to 9.4% in July 2019 (Egyptian Ministry of Finance website). Unemployment has reached a 30 years record low of 7.5% in Q4 2019. It might feel unlikely to have the risk of being stopped at the track, but Egypt is aspiring to get out of the COVID-19 aftermath stronger and continue its recent success story.

***Egyptian industry at the centre of the challenge and the answer.*** Egypt economic reform program in its first phase was hinged on flotation of the Egyptian currency, attempts to decrease budget deficit, investments in infrastructure and mega scale national projects and wide reform of the Energy sector. The 2<sup>nd</sup> phase of Egypt’s economic reform was moving from a focus on public mega projects and real estate to be hinged on industrial development. Egypt Government, in line with Egypt’s Vision 2030, has been aspiring to increase local manufacturing, grow industrial SMEs and attract FDIs to its industrial zones. In 2018, Egypt industry contributed 57% of Egypt exports and with focus on local manufacturing was becoming key to balancing Egypt trade deficit<sup>5</sup>. Now that the Egyptian industry has been hit hard and tourism even harder, Egypt faces a complicated question: how Egypt can not only protect its industry but catalyse it to pull the country out of the coronavirus aftermath, continue to attract investments and keep the flow of inbound foreign currency?

**How Egypt industry can become more competitive, resource efficient and resilient in a world that will drastically change? This is the question this paper attempts to answer.** Egypt has responded fast to support its industry and the support increases as we write. The mitigation of the immediate shock was much needed. Yet, it is eminent that this support continues with an eye on the long term. If misallocated, support packages can help industry survive but render it not competitive, and vice-versa. Egypt long and intense energy subsidies, for instance, have led to an industrial sector that is 20-30% less energy efficient than international average in early 2010s. UNIDO Industrial Energy Efficiency project concluded in 2018 has seen this changing through integrated technical assistance coupled with government policy to remove subsidies and IFIs support to energy efficiency finance. Therefore, GoE needs to carefully craft its interventions to avoid unintended negative consequences. Unlike 2008 global financial crisis and post 2011 one, which was Egypt specific, COVID-19 affects both the local context and the global one. Supporting Egyptian industry in a reactionary manner or in a manner similar to those of post 2008 and 2011 could leave it more sluggish and lost in a changing world where imports and exports trends will change. It is inevitable that after crises growth takes place and opportunities arise, but not everyone benefits. This paper attempts to provide high-level directions

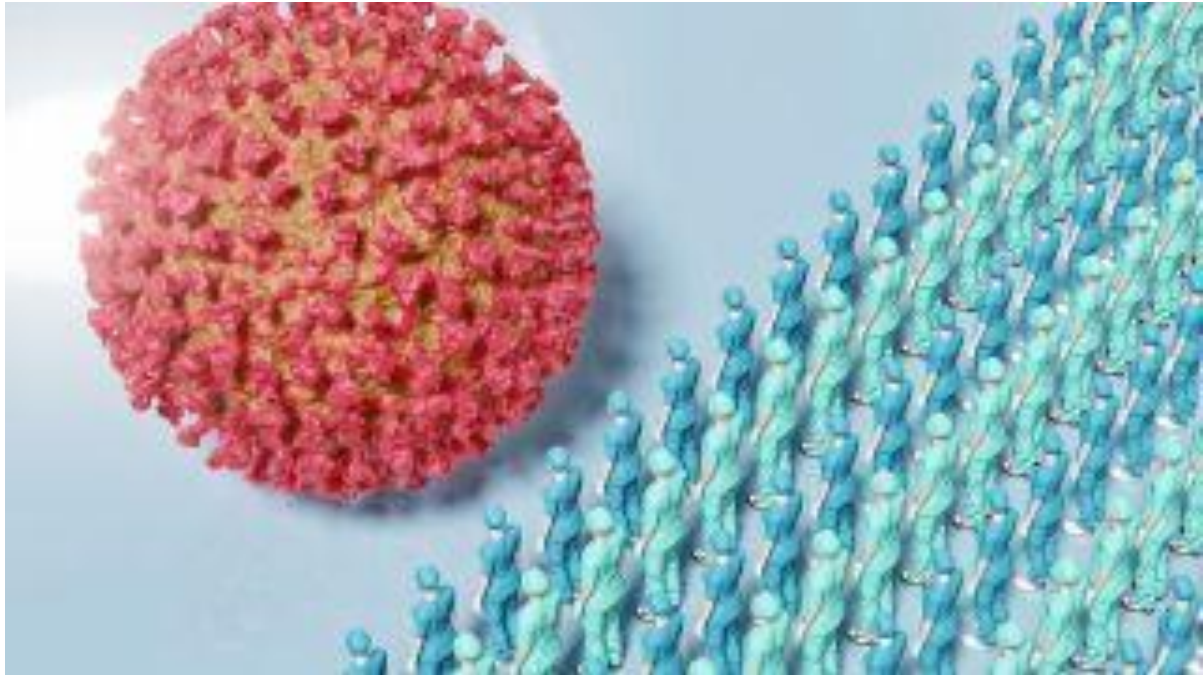
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<sup>4</sup> IMF (2020c). *World Economic Outlook. Chapter 1 The Great Lockdown*. Retrieved from <https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020> accessed on 18/04/2020.

<sup>5</sup> Add reference

on how both at government level and at firm level Egyptian industry can go through COVID-19 and emerge more competitive, resource efficient and resilient. The paper also addresses not only how Egyptian industry can survive but also capture the opportunities that will arise in the crises. The recovery plans and outline of what needs to be done at firm level are going to be similar world-wide, there will be stimulus packages, finance products, and subsidies, but the details will make the difference. The right answer, which the paper does not claim to have, is hinged on careful understanding of each nation markets, industrial sector strengths and weaknesses as well as the nation's competitive positioning.

We begin the search for the answer by understanding the challenge at hand. We provide a brief outlook on the Egyptian industry, reflect on the threats posed by COVID-19 globally and locally and reflect on key challenges on short and medium term.



## II. Features of the Egyptian Industry

**Egyptian industry is critical to the whole economy.** Egypt's manufacturing value added is 14.9% of the country's GDP (2018). Manufacturing employment accounts for 12% of total employment (2017). It contributes to 57% of exports which makes a key source of foreign currency. Manufactured goods represent 72.4% of total merchandise exports. Egypt's global market share of exports is only 0.1% at the 54<sup>th</sup> place worldwide. China, Germany and US dominate the global market share of exports, at respectively 16.5%, 9.2% and 8.9%.

**Intermediate goods are a critical part of Egypt manufacturing trade.** Egypt's top industries by export are basic metals (21%), chemicals (17.8%), food and beverages (11.9%), and textile (10%). Intermediate goods account for more than half of Egypt's total manufacturing trade, both in terms of exports (60.3%) and imports (54.9%). The countries on which Egypt relies the most for intermediate manufactures imports are China (16.6%), Germany (8.5%), Italy (5.4%), Russia (5.1%), Turkey (5%). The countries to which Egypt exports intermediate manufactures the most are United Arab Emirates (11.3%), Turkey (10.7%), Italy (7.7%), Canada (6.3%), Lebanon (4.4%).<sup>6</sup> With COVID-19 set to impact global trade on short and medium term, Egypt industrial sector faces a critical challenge.

**Egypt industrial sector has most SMEs with a degree of informality.** Egypt has 2.5 million SMEs, which account for more than 90% of the country's enterprises and 75% of the country's workforce, and many of which are in manufacturing. The Egyptian informal economy is a sizeable one, estimates of its contribution to GDP range from 40% to 70%. Informality in industrial sector is lower than that in other sectors, yet it is an important element. SMEs typically have difficulty in accessing finance due to their limited bankability from the point of view of the financial sector, unlike large entities. Egypt has announced a 100 Billion EGP for industrial SMEs in 2019, extended to all industrial sector after the COVID-19 outbreak, which reflects the government awareness of the difficulty in accessing finance that SMEs face.

**Egyptian industry has high intensity of resources** due to relatively low energy, water and material efficiency, which decreases its competitiveness globally. The industrial sector is the second main consumer of electricity in Egypt at 28%, after the residential sector that accounts for 42% of the total consumption. More than 90% of electricity is generated from oil and natural gas.<sup>7</sup> Egyptian industry typically utilizes more material, water and energy to develop a product compared to the world. This has started to change to the better when it comes to energy due to removal of subsidies and various lending and technical assistance projects, however, these efficiency improvements have not impacted SMEs.

**Understanding the strengths and weaknesses of Egyptian industrial sector.** The key strengths of the Egyptian industry are diversity, experience in certain sector (food and engineering industry), strong local demand by a 100 Million people strong local market, relatively low labour cost and its centre location and connectivity to global trade routes. Among the industry strengths is access to a large labour market and trade partnerships with Europe, Arab countries through the "Pan Arab Free Trade Agreement" (PAFTA) and various African countries through "The Common Market for Eastern and Southern Africa" (COMESA). The industrial sector weaknesses include low efficiency and productivity, limited managerial skills and cashflow management for SMEs, low value added, heavy reliance on imported industrial inputs and machinery, limited quality control capacity. It is crucial to keep the

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<sup>6</sup> UNIDO Statistics Data Portal <https://stat.unido.org/SDG/EGY> accessed on 18/04/2020.

UNIDO Industrial Analytics Platform <https://iap.unido.org/country/EGY> accessed on 18/04/2020.

<sup>7</sup> Egypt Energy Situation (2019) [https://energypedia.info/wiki/Egypt\\_Energy\\_Situation](https://energypedia.info/wiki/Egypt_Energy_Situation) accessed on 18/04/2020.

above characteristics on mind since, while threats and opportunities within the current crises are similar worldwide, the winners and losers are decided through their own characteristics. Within the next section we will reflect on the challenges ahead.



### III. Understanding the Challenge Ahead – Impacts of COVID-19 What it means for Egypt

**To devise a proper intervention both the short- and long-term impacts of COVID-19 must be considered.** COVID-19 impacts should be analysed on the short term where restrictions to movements are taking place and economic activities are kept to the minimum. The time duration and degree of restrictions are difficult to predict. However, the restrictions are not likely to be removed suddenly world-wide. The long-term period would be the one where restriction on movement subside but changes to global market take place.

**Health threats and restriction of motion will hurt productivity and cause liquidity problems.** On the short term the limitation of movement is affecting industrial productivity where working hours can be reduced. At an extreme, a high increase rate of COVID-19 could lead a to full stop of operations or its slowdown significantly. As employees become sick, factories might face a situation where large numbers of staff are inactive. In less extreme cases, labour numbers must be reduced. COVID-19 hits manufacturers by means of downward pressure on demand, production and revenues, as well as cash-flow liquidity challenges and difficulties in managing debt obligations. Manufacturing is especially vulnerable given that the bulk of its workforce is employed in on-site jobs that cannot be done remotely. Multinational companies should expect potential cash flow constraints from foreign operations — including cash repatriation complications and irregularities. Cash could also get bottlenecked when goods are paid for but are not supplied (or delayed or stranded).<sup>8</sup> Egypt face the same threat as the world does on that front. Yet, naturally, due to the limited managerial skills particularly among SMEs and low cash flow management capacity the impact could be amplified.

**The nature of the COVID-19 crisis differs considerably from the financial crisis at the end of the 2000s first decade.** COVID-19 pandemic has resulted in a collapse on demand, supply (production), trade and investment. The collapse in the supply of labour in production and trade is coupled with a declining demand for several goods and services due to the confinement of consumers.<sup>9</sup> The long term impacts of COVID-19 could reshape the global economy and provide a different business environment from that of the previous two decades. On short term, demand and supply will be limited. On the long term, demand and supply will pick up, however, changes of markets and nature of competition will occur. Hence industry can find itself outcompeted or in collapsing sub-sectors or markets.

**Trade challenges would mean increased cost of production.** Supply disruptions in one country are transmitted to its trade partners. Lower demand in one country means reduced imports from its trade partners, and supply disruptions mean lower exports. “The drop in imports, in turn, means either a shift in aggregate demand to local products – if local firms are producing a good substitute to the imports – or shortages if local producers cannot replace the imports (as in the case of some imported manufactured parts).”<sup>10</sup> Over the past four decades, much of manufacturing production worldwide

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<sup>8</sup> PWC (2020c). *COVID-19: What it means for the energy industry. Practical steps for responding to the coronavirus crisis.* Retrieved from <https://www.pwc.com/us/en/library/covid-19/pdf/pwc-covid-19-energy-industry-impact.pdf> accessed on 17/04/2020.

PWC (2020b). *COVID-19: What it means for industrial manufacturing.* Retrieved from <https://www.pwc.com/us/en/library/covid-19/coronavirus-impacts-industrial-manufacturing.html> accessed on 17/04/2020.

PWC (2020). *COVID-19: Operations and supply chain disruption.* Retrieved from <https://www.pwc.com/us/en/library/covid-19/supply-chain.html> accessed on 17/04/2020.

<sup>9</sup> UNIDO (2020a). *COVID-19 Impacts on Industry: Policy Recommendations for the Arab Region.* Retrieved from <https://www.unido.org/news/covid-19-impacts-industry-policy-recommendations-arab-region> accessed on 17/04/2020.

<sup>10</sup> Baldwin (2020). *Supply chain contagion waves: Thinking ahead on manufacturing ‘contagion and reinfection’ from the COVID concussion.* VOX CERP Policy Portal. Retrieved from <https://voxeu.org/article/covid-concussion-and-supply-chain-contagion-waves> accessed on 18/04/2020.

has been organized in global value chains (GVCs). This complicates the propagation of shocks, if one considers how intermediate goods are produced in multiple countries and require inputs from different countries. China is central to the entire global network of trade and production. This is illustrated by the fact that the industrial production decline in China (-13.5% in January and February combined compared to the previous year) is also associated with major contractions in international trade flows, thus impacting producers and consumers in countries further up and down the products' value chains. China's imports decreased by 4% in US dollar terms in January and February combined compared to the previous year, while exports dropped by 17%. In addition to supply-chain contagion, the highly interconnectedness of industrial production is also likely to cause "reverse supply-chain contagion". Even if China production is on the way to its recovery, the slowdown of production in Europe and US will hit China again together with major GVCs. Companies should expect weak links in their supply chain, as some vendors and suppliers may face operational or financial struggles of their own. This may create supply chain bottlenecks both nationally and internationally. In the near term, the cost of supplies from China may increase, stemming from overtime and expedited freight costs, as well as from paying premiums to buy up supply and hold capacity.

What does it mean for Egypt → the answer is mixed, there are bad and good news. Egypt intermediate goods account from more than half of the total manufacturing trade, both in terms of exports (60.3%) and imports (54.9%). Egypt industrial imports account for 67% of the nation inputs at large. With significant reliance on imports to run the industry the risks are high. On the short term, Egyptian industry might find it difficult to access inputs to manufacturing. This could lead for instance to interruption of supply and difficulty in accessing spare parts. Egypt imports the vast majority of production equipment, which compounds the challenge. Cost of raw material and components is likely to increase and as the productive capacity builds up worldwide the stress on producers might lead to increase in costs for the industrial sector. This means profitability of industrial firms in Egypt could decrease. On the other hand, some inputs, particularly low-tech components can be sourced locally and hence creating opportunities for local SMEs in particular. Opportunities could also arise by replacing certain imported finished products which cost could increase.

**More wary foreign investment** In addition to a collapse in production and trade, COVID-19 pandemic is also causing a collapse in investment. IMF has reported portfolio outflows from emerging markets in the last two months amounting to around 100 billion USD (three times bigger than for the same period of the last financial crisis), and UNCTAD estimates a 30-40% reduction in global FDI during 2020-21. Egypt industrial investments in 2019 increased by approximately 20% of the previous year reflecting the government efforts to encourage industrial development<sup>11</sup>. Egypt has seen a steady decline in FDIs since 2016. Egypt industrial investments are not highly dependent on FDIs, however, they could be critical to large scale industrial investments and high value-added ones.

What does it mean for Egypt → Egypt industrial investments have been growing and FDIs in Egypt have been declining. It is likely that it would be difficult in the uncertain environment to capture FDIs when it was already declining worldwide and for Egypt before the COVID-19 crises. National investors are likely also to hold off investments in industry without proper incentives. However, capital aiming at diversifying manufacturing geographies would be interesting to attract to Egypt.

**Supply bottlenecks and perceived risks of trade disturbance could lead to major changes in global manufacturing, industrial markets and supply chains.** Global manufacturing faces the risk of entering a downward spiral, as a result of cumulative effect of supply bottlenecks and falling consumer demand, coupled with divestment from developing countries. This makes the effects of COVID-19

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<sup>11</sup> <http://english.ahram.org.eg/NewsContent/3/12/364274/Business/Economy/Egypt-industry-sector-investments-rise-to-EGP-bi.aspx>

much more profound and lasting than the temporary disruptions in supply chains.<sup>12</sup> This will be compounded by fear of reliance on international markets for supply and demand. Many countries will revisit their national spending priorities and their trade approaches. Countries typically look inwards post crises like COVID-19. Certain industries are likely to attract more investments while others might receive less attention. In crises times, nations tend to focus on supporting their local industry which could reflect on certain export markets being lost. Post COVID-19, there will be a reshuffle in the sectors of focus worldwide, national consumption patterns would change and there will be threats for exports and out-sourcing of services. The COVID-19 outbreak is likely to result in longer-lasting reconfigurations of supply chains to build resilience, and this is already under way as some US companies diversify Asia operating models in response to shifting trade policies.<sup>13</sup> Can Egypt be a winner in this reconfiguration and post COVID-19 industrial market?

What does it mean for Egypt → Egypt would experience high risk of losing various export markets. Exporters will face tougher competition and national producers will compete with desperate exporters in a fiercer manner. On the other hand, Egypt can become a preferred supplier to importers of components in international markets as the world attempt to diversify. Finished goods will face tougher competition abroad, those producing inputs to industry might find opportunities in local market. In local market, those producing finished goods might find more opportunities.

**Inevitable recession or at best slowdown is to be expected.** It is likely that COVID-19 will impact consumer confidence which will limit consumption. This, along with the challenges above can lead to global recession. In the case of Egypt, exporters will be hit the most. Those serving the local market will be hit less. In the financial crisis of 2008, Egyptian local consumption helped mitigate the negative impacts of the global crises. PWC has summarized the main current fears of the finance sector as shown below (COVID-19 CFO Pulse Survey).

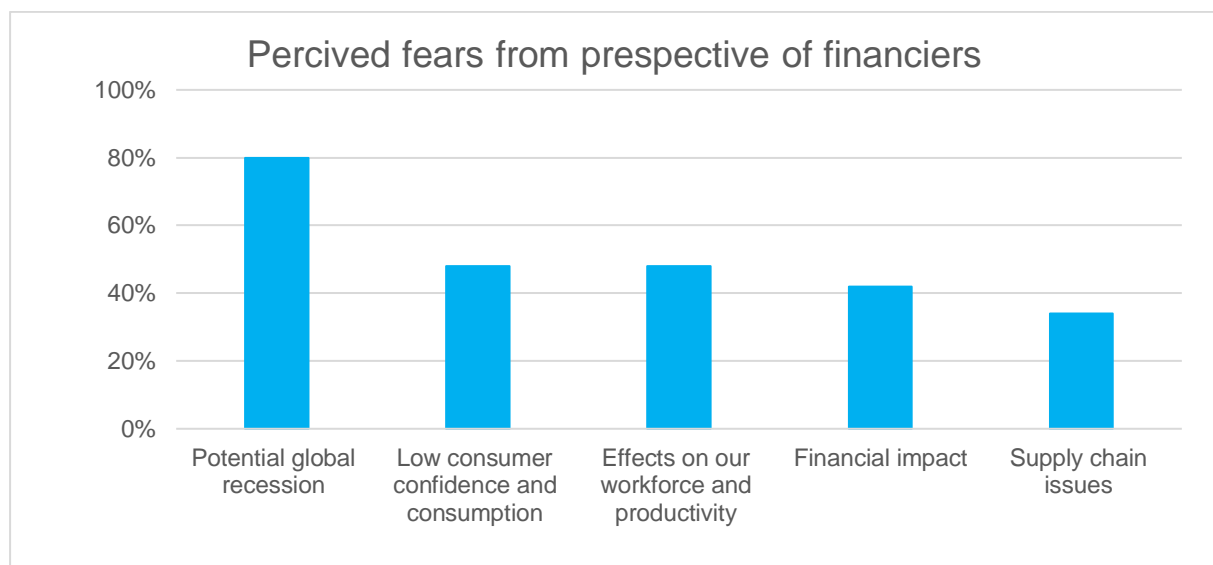


Figure 1 Perceived fears of financiers due to COVID-19 based on PWC survey<sup>14</sup>

<sup>12</sup> UNIDO (2020b). *Managing COVID-19: How the pandemic disrupts global value chains*. Industrial Analytics Platform. Retrieved from <https://iap.unido.org/articles/managing-covid-19-how-pandemic-disrupts-global-value-chains> accessed on 17/04/2020.

<sup>13</sup> PWC (2020a). *COVID-19: Operations and supply chain disruption*. Retrieved from <https://www.pwc.com/us/en/library/covid-19/supply-chain.html> accessed on 17/04/2020.

<sup>14</sup> PWC (2020a). *COVID-19: Operations and supply chain disruption*. Retrieved from <https://www.pwc.com/us/en/library/covid-19/supply-chain.html> accessed on 17/04/2020.

The above is not an exhaustive list of impacts. It is a brief reflection on the key challenges posed by COVID-19 worldwide and what this means for Egypt. Consequences for Egypt might be similar to other countries worldwide but the intensity varies from one country to another. This variation is reflective of the country competitive position and the strengths and weaknesses of its industry. In the coming section we provide more details on what the above means for Egypt industrial sector with focus on aspects which are peculiar to the nation. Hence, it is a deep and more Egypt specific dive of the previous section.



## IV. Challenges for the Egyptian Industry – From the Macro to the Micro

The previous section provides the key elements of the challenges that the world will face and their relevance to Egypt. In this section, we get a closer look at what this could mean for an industrial firm in the Egyptian industry. It is possible to classify the phases to come through different lenses. The Egyptian Centre for Economic studies puts forth five stages from the view of the spread of the virus, which fit well the macro outlook<sup>15</sup>. Another way to look at the crises from an operational view can be more suiting to the micro level discussion herein. Three phases from an operational point of view can be perceived:

- **Phase 1 – Shock and Disruption** Limited mobility – immediate – Limited production capacity: high restrictions on movement and suspension of air travel; extreme slowdown in demand and supply worldwide. It is the current stage where there is a slow-down in supply and demand.
- **Phase 2 – Struggle to Normalcy** Partial restoration of mobility – short term – Slow recovery of production capacity: partial restriction on movement and resumption of travel
- **Phase 3 – Markets Restructuring** Recovery of mobility – Medium term – Full recovery of mobility and production capacity but significant changes to market dynamics and nature of supply and demand globally.

It is important to realize that the lengths of these phases are difficult to predict, and industry should be prepared to have to operate for a possibly extended phase 2. China has shown it is possible to operate and restore production capacity in Phase 2. This strive to operating post the control of the outbreak will be replicated elsewhere as in China. It will test the capacity, willing and skill of each industry worldwide. The following paragraphs try to imagine a reactionary behaviour (a one that reacts to consequences on short term without strategic planning a futuristic insight) from factories and the state and what this could lead to. However, this does not mean that the negative outcomes/challenges discussed below will occur. While the external conditions discussed below are likely to occur, their consequences can be managed differently.

**Phase 1- Shock and Disruption** This is the present phase for most of the world. The features of this phase are: limited mobility, limited production capacity, high restrictions on movement and suspension of air travel. It is the current stage where there is a slowdown in supply and demand. China is already moving to Phase 2. Other countries that never went into an extreme limitation of mobility such as Sweden have been operating in Phase 2 since the COVID-19 outbreak. Currently as discussed above there is extreme slowdown in demand and access to supply. Egyptian industrial facilities, particularly SMEs, are having challenges in securing their supply. This is mainly due to the limitations of road movement, which expands the time needed to secure industrial inputs. It is also a reflection of slowdown in production worldwide. SMEs particularly outside Cairo are hit the hardest due to their extended supply chains. Another challenge in maintaining steady and rapid flow of production inputs is limitation of cash withdrawals. This is a challenge that is more relevant to SMEs since most large entities have limited cash transactions. Small suppliers and distributors could struggle with this challenge immensely. With extension of supply chains, slow payments, and lower demand, cash

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<sup>15</sup> Egyptian Center for Economic Studies (ECES) published an opinion piece on the impact of COVID-19 on manufacturing in terms of decline in GDP, exports, imports with various scenarios. These were discussed under five stages from the view of the virus spread.

conversion cycles will extend. Furthermore, due to limitation of working hours productivity decreases leading to less cash in.

**Liquidity issues are not only due to decrease in demand but also to slow down in accessing supply as well as internal operational challenges.** This will lead to a liquidity problem that can further decrease productivity and at times force operations to cease due to absence of cash. This is compounded due to the large numbers of SMEs in the industrial sector, the presence of informal entities, and bad cashflow management. It is further compounded by the low resource efficiency and inefficient management, which leads to high overheads and low profit margins. In addition, in case outbreaks occur in certain facilities, sudden stoppage of operations will immensely exacerbate cashflow issues. If the challenges with liquidity continues, SMEs will start losing their labour force and eventually clients. With limited cash reserves and limited access to finance, the threat for Egyptian SMEs is high. Some businesses could experience an increase in demand as in the case of detergents, disinfectants, and face masks. These businesses will face a challenge of securing cash to meet increasing demand. They will also face a challenge of maintaining productivity and health measures in place, yet the question would be, can they maintain this captured market share beyond the initial phase?

**Maintaining safeguard of labour force while sustaining production is a key challenge.** One should be prepared to an extended phase 1. In that case, the challenge would be how to start increasing productivity with restrictive measures still in place. Rapid digitalization is one option, but it is important to note that this is easier said than done. Egyptian SMEs do not have reliance on data analysis and operations are typically done through verbal instructions rather than clearly documented processes. Digitalization is a tool but if the processes are not documented and KPIs are not defined, digitalization remains a shallow façade that does not achieve its objective. Detailed discussions on way out will follow.

**Costs of production will rise, which could threaten competitiveness.** It is important to realise that all the above will increase production costs. The production cost increase reflects low productivity as well as other factors above. In addition, extra efforts to maintain hygiene and healthy operations are a must but would mean extra spending. Workers might need support with their personal health care spending. Some businesses will need to expand the health benefits and provide extra support to workers to cover the extra health related spending. The Egyptian industry is highly reliant on imported machinery and spare parts. With limited or slow access to spare parts, productivity could further decrease. Egypt capacity to produce spare parts or service machinery is structurally limited which poses higher stress and risks.

**Phase 2 Struggle to Normalcy:** This phase will include partial restoration of mobility and slow recovery of production capacity worldwide. Imagine a factory that has just managed to survive phase 1 and secured liquidity. Its immediate reaction is to try to regain clients and produce more. The most critical aspect about this phase is that the reaction of industries in it is what will ultimately decide the outcomes of the next phase. Wrong decision making with a short-term reactionary mindset work for a short period of time, but could incept worse days to come.

**Increased costs of production in some sectors due global supply chain bottlenecks.** This phase will be characterized as discussed above with bottlenecks in global supply chains as manufacturers of intermediary goods and inputs to industry try to recover production but also meet the needs of clients. We have lately seen in the case of certain medical equipment an escalated price bidding to manage securing supply. With producer of industrial intermediary goods being stressed and struggling to recover production, increased prices due to eagerness of producers to regain production can put stress on the Egyptian industry. The situation is not one size fits all. For instance, home appliances industry that relies on imports of key material (such as silicon and carbon steel) and components such as bearings might face the challenge of increased cost of production. In contrast, food industry which

most rely on local feedstock and at many cases local machinery would face a less stressful situation. However, it is important for the Egyptian industry to realize that to maintain supply cost of inputs might increase. Cash conversion cycles will shorten compared to phase 1 but will remain extended.

***In attempts to increase productivity, industries can compromise on quality and long-term resilience.***

In the struggle to regain clients and restore profitability, industries might cut jobs or attempt to save on production cost by reducing quality. To save costs, maintenance might be neglected or not done properly. As discussed above, there will be limited access to capital and investors will be reluctant to put money in the industry whether to upgrade production or expand capacity. Using cheaper raw material or spare parts could lead to lower quality and lower costs. This use of cheaper raw material and spare parts could be either driven by high cost or lack of access. It is also crucial to realise that even those sectors that will be seeing a high demand, not a slow-down, could face more stress in their upstream global supply chains. These sectors too might compromise on quality due to limited access to inputs. There would be exceptions, mainly in the case of industries that are based on local demand and supply such as basic F&B. These reactions above might restore profitability at the short term but will be detrimental in the next phase.

***Limited profitability and fear of committing capital can strongly upset investments in resource efficiency and sustainable energy.***

Egypt has been working on increasing the uptake of renewable energy and energy efficiency. The GoE has an ambitious target of a renewable energy contribution to the Egyptian energy mix by 42% in 2030. Egypt, mainly through the Ministry of Trade and Industry as well as Ministry of Environment (with major support from UNIDO) has started to aggressively tackle industrial energy efficiency and energy sustainability through a series of projects starting in 2013. Back then, the Egyptian industry's energy sustainability was limited, most industries had 20-30% higher specific energy consumption than the international average. This was due to decades of subsidized energy. Subsidized energy made investments in renewable energy and energy efficiency limited. Energy consumption was not an integral part of the decision to replace productive assets or to expand production. This led to many Egyptian industries having low competitiveness masked by subsidies that were not suitable. The situation has started changing rapidly since 2012 with the removal of energy subsidies and various technical assistance and green finance. COVID-19 pressure, as discussed above, will lead to an increase in production costs and limited profitability. A typical reaction could be deferring investments in energy efficiency or attempting to restore or expand production capacity without regards to efficiency. If policy makers also signal further energy subsidies to the industry, a decline in specific consumption will start to take place. This will increase profits but push the industry to a low competitiveness position, the price of which can be high in the future (further discussion follows in the coming section on energy and energy efficiency).

As can be seen, in this phase, external threats decrease, and internal decisions are what shape the firm's positioning in the coming phase.

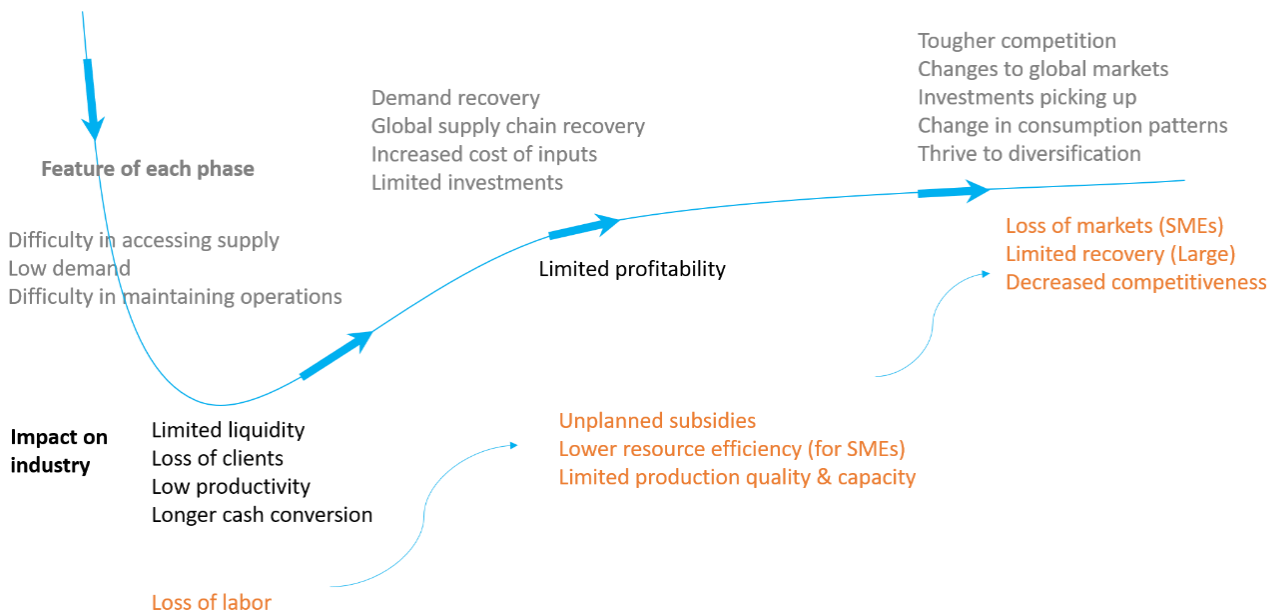
**Phase 3 Markets Restructuring:** Full restoration of mobility will take place and production capacity and demand will start to recover. Perhaps Phase 3 could on the surface be referred to as the "recovery". However, a more accurate description should reflect the significant changes to market dynamics and nature of supply and demand globally.

***Major changes to consumption patterns can leave industry with a limited recovery.*** Major changes will occur worldwide, and the actions taken in the previous phases by governments and firms will reflect on what phase 3 looks like for every-nation. This section focuses on challenges and hence would follow a narrative that reflects reactionary measures and ones that could lead to negative outcomes (reactionary measures are ones that respond to consequences of problems in a short-term manner without a strategic and futuristic outlook). Global changes would mean different things for each sector and type of manufacturing. Governments around the world will move to support the local industry, which means that exporters (Egyptians or others) will face a tougher competition. In addition, local

industries will face pressure from desperate exporters from other countries. Perhaps the most common feature of this stage is more fierce competition at home and abroad. There will be changes in consumption patterns, whether it is driven by public spending in healthcare systems or demand for services related to supporting industries. In an attempt for economies to diversify, demand for certain inputs of manufacturing will make the industry look for new suppliers. There could be a move in various countries to rely on their local industry more particularly in finished products. These reshuffling will open new markets and disrupt existing ones. This obviously creates opportunities and threats. The key challenge in this phase reflects what has been achieved in the first one. If industry fails to repivot, upgrade its production capacity and operational efficiency in phase 2, it will not be able to capture the opportunities opening up in phase 3. If industry comes out of phase 2 thinking to resume business as usual, it is likely that it will face major setbacks in phase 3. In a tough competition, industry needs to be as competitive as it can be. This means more efficient and agile operations at factory level. It also means pivoting to play in the markets where the country's competitive positioning is most fortunate. Hence, while global demand will be recovering, there is a threat of losing markets and never recover pre-COVID-19 growth rates.

*Perhaps the most critical challenge for industry is the post COVID-19 reorganized markets and changes of consumption patterns*

The figure below shows a sample chart of challenges faced by industry and the potential consequence of wrong decision-making or reactionary interventions at each stage.



**Reactionary interventions**

Now that the challenges have been outlined, we start to develop the way forward. Building a narrative towards the way forward requires reflection on government activities achieved to date, the success factors in tackling the crisis as well as the reflection on opportunities. We provide a special discussion on renewable energy and energy efficiency industries due to their crucial role in recovery.



## V. Egypt Response

***Egyptian government is on the route of managing Phase 1 (Shock and disruption) proactively and well.*** The Egyptian government has been proactive in managing the first phase of the crises. We reflect on measures taken by government as they will represent the beginning of the way forward. The successful features of the GoE interventions included being proactive, listening to the Egyptian industry, being flexible and adaptable. In Egypt, the Government has launched fiscal, monetary and macro-financial measures to support local businesses and industries through the COVID-19 pandemic.

***Stimulus packages to reinforce demand.*** The Government has announced a stimulus package of 100 billion EGP (1.8% of GDP) to mitigate the economic impact of COVID-19. As part of the 100 billion EGP stimulus, 50 billion EGP has been announced for the tourism sector, which contributes close to 12% of Egypt's GDP, 10% of employment, and almost 4% of GDP in terms of receipts, as of 2019. The package includes a 22 billion EGP stimulus to support the Egyptian Exchange, which should also benefit from a 50% reduction in taxes on the dividends of listed companies. Other fiscal measures include the expansion of the targeted cash transfer social protection programs, Takaful and Karama, to reach more families; a targeted support initiative for irregular workers in most severely hit sectors, which will entail 500 EGP in monthly grants for 3 months; and pensions' increase by 14%.

***Support to decrease financial and cost burdens was also utilized.*** The Government has announced a reduction in energy prices for the entire industrial sector: natural gas price at 4.5 USD per million British thermal units, down from 6 USD for cement factories and 5.5 USD for steel, aluminium, copper and ceramics factories; and electricity price lowered by 10 piasters per kWh for medium, high and ultra-high voltages. Moreover, a real estate tax relief has been given to industrial and tourism sectors; and subsidy pay-out for exporters has been stepped up allocating 1 billion EGP for export subsidies during March and April. The moratorium on the tax law on agricultural land has been extended for 2 years. The stamp duty on transactions and tax on dividends have been reduced for both foreign and domestic investors. Capital gains tax has been postponed until further notice. To support the healthcare sector and medical professionals, 3.8 billion EGP has been allocated, targeted at providing urgent and necessary medical supplies, together with a 75% allowance over the wages of medical professionals.

***Monetary and macro-financial interventions were also put in place.*** The Central Bank of Egypt announced a 3% interest rate cut in what it described as a "pre-emptive move" to support the wider economy. The preferential interest rate on loans to SMEs, industry, tourism and housing for low-income and middle-class families has been reduced from 10% to 8%. Loans with a two-year grace period will be made available to aviation sector firms. The Micro, Small and Medium Enterprise Development Agency (MSMEDA) has launched an initiative for small businesses, especially in the industrial and labour-intensive sectors, to provide up to 1 million EGP short-term loans of up to a year, to secure the necessary liquidity to finance working capital for operational expenses until the crisis is over. A new debt relief initiative for individuals at risk of default has also been announced, which will waive marginal interest on debt under 1 million EGP if customers make a 50% payment. Micro lenders have been instructed to also consider delays on a case-by-case basis, of up to 50% of the value of monthly instalments for struggling clients. The regulations issued last year requiring banks to obtain detailed information of borrowers have been relaxed. Suspension of credit score blacklists for irregular clients and waiver of court cases for defaulted customers have also been announced. The central bank has also launched a 20 billion EGP stock-purchase program.

***Expansion of digital payments is an excellent step.*** The limit for electronic payments via mobile phones has been raised to 30,000 EGP/day and 100,000 EGP/month for individuals, and to 40,000

EGP/day and 200,000 EGP/week for corporations. A temporary daily limit has been set for deposits and cash withdrawals for individuals and companies.<sup>16</sup>

**IFIs and development banks are signalling support.** International financial institutions and development banks have availed extra finance to Egypt in support of COVID-19 response. For example, the World Bank activated on March 20th the Contingency Emergency Response Component (CERC) under the “Transforming Egypt’s Healthcare System Project” 7.9 million USD to fund emergency response activities related to the COVID-19 outbreak in Egypt. On April 1<sup>st</sup>, it was announced that the World Bank’s Multilateral Investment Guarantee Agency (MIGA) would provide funding for six new solar power plants at Benban Solar Park in the Aswan Governorate in Upper Egypt. The total investment of 52.35 million USD will be issued in the form of guarantees to Norwegian-headquartered photovoltaics firm Scatec Solar and will be used for the operation and maintenance of the six new plants. The amount is guaranteed against the risk of currency inconvertibility and transfer restriction for up to 15 years. It is part of Egypt’s solar feed-in-tariff programme.<sup>17</sup>

**The Government of Egypt is ready to utilize diverse tools to manage the crises.** Perhaps the best aspect about the interventions put in place by the Government of Egypt is the signal they give to the market. It shows that the GoE is willing to use diverse financial and non-financial tools and policies to boost demand and support supply. The next steps of interventions will be rooted in the current actions taken by GoE.



<sup>16</sup> IMF (2020b). *Policy Responses to Covid-19. Policy tracker* <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19> accessed on 18/04/2020.

Oxford Business Group (2020). *Does solar have a bright future in Egypt after Covid-19?* Retrieved from [https://oxfordbusinessgroup.com/news/does-solar-have-bright-future-egypt-after-covid-19?utm\\_source=Oxford%20Business%20Group&utm\\_medium=email&utm\\_campaign=11457305\\_Economic%20impact%20assessment\\_Covid-19\\_Egypt\\_EU&utm\\_content=Egypt\\_Covid\\_EU\\_06-04&dm\\_i=1P7V,6TKIH,HYIC8C,RBKP5,1](https://oxfordbusinessgroup.com/news/does-solar-have-bright-future-egypt-after-covid-19?utm_source=Oxford%20Business%20Group&utm_medium=email&utm_campaign=11457305_Economic%20impact%20assessment_Covid-19_Egypt_EU&utm_content=Egypt_Covid_EU_06-04&dm_i=1P7V,6TKIH,HYIC8C,RBKP5,1) accessed on 17/04/2020

<sup>17</sup> The World Bank (2020). *Egypt: World Bank Provides US\$7.9 Million in Support of Coronavirus Emergency Response.* Press release. Retrieved from <https://www.worldbank.org/en/news/press-release/2020/04/02/egypt-world-bank-provides-us79-million-in-support-of-coronavirus-covid-19-emergency-response> accessed on 19/04/2020.

Oxford Business Group (2020). *Does solar have a bright future in Egypt after Covid-19?* Retrieved from [https://oxfordbusinessgroup.com/news/does-solar-have-bright-future-egypt-after-covid-19?utm\\_source=Oxford%20Business%20Group&utm\\_medium=email&utm\\_campaign=11457305\\_Economic%20impact%20assessment\\_Covid-19\\_Egypt\\_EU&utm\\_content=Egypt\\_Covid\\_EU\\_06-04&dm\\_i=1P7V,6TKIH,HYIC8C,RBKP5,1](https://oxfordbusinessgroup.com/news/does-solar-have-bright-future-egypt-after-covid-19?utm_source=Oxford%20Business%20Group&utm_medium=email&utm_campaign=11457305_Economic%20impact%20assessment_Covid-19_Egypt_EU&utm_content=Egypt_Covid_EU_06-04&dm_i=1P7V,6TKIH,HYIC8C,RBKP5,1) accessed on 17/04/2020

## VI. Opportunities within the Crisis

Among the most important success factors is having the mindset of how arising opportunities could be captured. It is common to think that crises create opportunities, but it is also critical to remember that only a few are capable of capturing those opportunities. The table below summarizes the challenges at each phase and what opportunities may be created.

	Challenges	Opportunities
<b>Phase 1</b> Shock and Disruption	<ul style="list-style-type: none"> <li>• Difficulty in accessing supply</li> <li>• Low demand in certain sectors</li> <li>• Difficulty in maintaining operations</li> <li>• Limited liquidity</li> <li>• Low productivity</li> <li>• Longer cash conversion</li> </ul>	<ul style="list-style-type: none"> <li>• Sudden increase of demand in certain sectors (certain FMCG and medical/pharmaceutical)</li> <li>• Opportunity of restructuring of firms operations and internal improvements</li> <li>• Opportunity for sharpening managerial capacity</li> </ul>
<b>Phase 2</b> Struggle to normalcy	<ul style="list-style-type: none"> <li>• Increased cost of inputs</li> <li>• Limited investments</li> </ul>	<ul style="list-style-type: none"> <li>• Growth of demand in certain industries (food, pharma, medical)</li> <li>• Improving resource efficiency to decrease costs</li> <li>• Replacing imported finished goods</li> <li>• Localization of industrial intermediary goods and components</li> <li>• High demand on digital services</li> <li>• High demand on maintenance and spare parts</li> </ul>
<b>Phase 3</b> Markets restructuring	<ul style="list-style-type: none"> <li>• Tougher competition</li> <li>• Decreased competitiveness</li> <li>• Changes to global markets</li> </ul>	<ul style="list-style-type: none"> <li>• Diversification of suppliers offers opportunities to FDIs in industrial sector and creates market opportunities for production on inputs to industry (intermediary goods and components)</li> <li>• Investments picking up offers chances to grow industrial base</li> <li>• Demand recovery gradually opens new markets and chances to vertical expansion in certain ones</li> </ul>

Supply disruptions and imports decline lead consumers to re-orient their demand to local products if local firms are producing a good substitute to the imports. This represents an opportunity to expand localization programs to be able to meet the rising domestic demand for local products.

Supply disruptions and imports decline may also result in shortages if local producers cannot replace the imports as in the case of some imported manufactured parts. Here too, the crisis opens up opportunities for accelerating industrialization as it calls for increased diversification of the manufacture base. Quality, i.e. higher value-added, FDIs can play a key role in helping Egypt's manufacturing sector diversify and move further up in GVCs.

**Opportunity for more aggressive digitalization.** As social distancing and confinement measures force businesses to move to online services, the current crisis also offers the opportunity to strengthen Egypt's digital infrastructure and accelerate the adoption of IoT, which are not only central in combating the health impact of COVID-19 but also in helping industries evaluate risks and trends, pivot and enter new markets.

**Sparking innovation of a young population.** Finally, Egypt's large youth population (almost one third) may also constitute a potential resource for the country's recovery. Building the capacities of young women and men, including those that will be laid off as a result of COVID-19 economic crisis, to innovate and capture new business opportunities today will empower them to create new ventures and contribute to the post-COVID-19 recovery efforts.

## VII. Success Factors

**Success factors** in managing interventions can be developed by reflecting on previous economic crises, carefully understanding the challenges to be faced in each phase as well as the strengths and weakness of the Egyptian industry.

**Governments and businesses must fight and win at two fronts.** This paper focuses on success factors and interventions for supporting the Egyptian industry. This does not ignore that governments face an intense challenge; simultaneously addressing the current health crisis and supporting businesses and households impacted by the shocks described, while at the same time starting planning for the eminent market restructuring following the recovery. Businesses and industries must adopt the same mindset amidst the severe uncertainty about the intensity and duration of the shock: minimizing the current negative impacts of COVID-19 while at the same time planning for the market restructuring that might only arrive in one year-time. This calls for the development of short- medium- and long-terms measures by Government and businesses alike to help businesses and households face the crisis and normalize through supportive fiscal, financial and monetary policies, boost demand and investment, and alleviate structural imbalances through economic diversification. The fight for the economy and for public health should be not be pinned against one another. The scope of this work focuses on interventions to serve the Egyptian industry yet, it also stresses the importance of balancing the economic and health aspect of the crisis.

**Not only managing consequence but leading a transformation.** Managing immediate consequences in the midst of COVID-19 pandemic is as essential to businesses' continuity and survival as running scenario planning exercises. Getting ready for tomorrow and beyond, and preparing for the market restructuring ahead is crucial for long term prosperity. Planning for the post-COVID-19 recovery (and the associated market restructuring) entails adapting to the changes to come in market conditions, including worst scenarios, and accordingly making strategic changes, i.e. pivoting. This means that while businesses mitigate cash flow and liquidity challenges in the short-term, they must start building business models for the medium and long-term and assessing human resources, capabilities, assets that the future operations will require. Egyptian industry was already at a crossroads with a strive to value addition and increasing localization of technology and industry. The mindset needed for success is aiming at an accelerated transformation. This transformation should aspire to a more competitive industry, with higher value addition, and a more effective industry from human and technology perspective.

**Act a step ahead and plan for two.** Each phase of the crisis has varying challenges in nature. Attempting to only manage the crisis phase by phase could lead to disappointment and limited or prolonged recovery. This would be major disappointment for Egypt, which was aspiring at leading growth in the MENA region for a decade or so. A key success factor is to act a step ahead, meaning that interventions at each phase do not only aim at solving its challenges but also pivot the industry to avoid challenges at the phase after and capture opportunities. Plans should always aim two steps ahead.

**Close collaboration of private sector and policy makers is critical.** COVID-19 challenges cannot be ideally solved only through either private sector efforts or government support. Each has critical responsibilities. Private sector should do what it does best; innovate, improve and invest in raising capacity of its workers, sharpening its business model and search for markets in which it can compete. Businesses need to collaborate, activate the role of industry and business associations, this, as can be seen later, could play a major part in the solutions of global supply chain challenges. The Government on the other hand needs to provide extremely well selected support, guide the industry through data,

market intelligence and tailored technical and financial assistance. In this, dialogue should be continuous between the government and the industry. This is already happening, and interviews conducted while working on this concept note reflect how Egyptian industry feel that the dialogue between the business, Federation of Egyptian Industry and Ministry of Trade and Industry (MoTI) is progressing in an unprecedented manner.

***Basing decisions on competitiveness and careful understanding of markets and supply chains.***

COVID-19 will intensify competition across the board. There would be a setback to trade but the world we live in is entangled through global supply chains in a manner that cannot be reversed. Most of the world will continue to uphold the basic tenants of free trade and globalization. However, government will move to support their local industries and competition will toughen at home and abroad. Decision making in managing COVID-19 crisis both on firm and government level should have the concept of competitiveness at its centre. Business should pivot to play in markets where they can be most competitive. Intervention by government and business should accelerate raising the competitiveness of Egyptian industry from resource efficiency to labour productivity. Support should intensify where local production can compete and pivoting should take place where competitiveness is low. This would require careful understanding of markets and global supply chains. For instance, it is feudal to attempt to localize bearings production since Egypt is unlikely to produce it in an effective manner, on the contrary production of shafts locally can compete with imported products while making other industries that utilize shafts as components more productive on their own.

***Sector/value chain focused interventions rather than generic ones.***

A key success factor is understanding the uniqueness of each sector and value chain. Generic finance packages and solutions are unlikely to lead to the most impact. MoTI has recently adopted a value chain and road mapping approach for certain industries, recently with UNIDO in developing local manufacturing of solar water heating systems and energy efficient motors and relevant engineering products with IFC. These value chains roadmaps reveal that the needs of each value chain or sector vary. COVID-19 will have different impacts on each sector. Some sectors will struggle to meet rising demand and these will need to expand their manufacturing capacities. Other sectors will struggle to find local alternatives to inputs they cannot secure anymore, and here working on business linkages would be crucial. This sectorial uniqueness needs to be continuously mirrored in planned interventions.

## VIII. Energy Sustainability at the Centre of Recovery

***Egyptian industry has been improving its energy sustainability since 2014 steady after decades of low energy efficiency.*** Egyptian industry has suffered from low energy efficiency for decades. This was mainly due to decades of subsidized energy prices, that were among the least worldwide. UNIDO in partnership with MoTI and Ministry of Environment has worked on developing the Egyptian industry energy efficiency through the Industrial Energy Efficiency project (IEE) from 2012 to 2018. At the beginning of the project, the industrial energy efficiency was estimated to be lower by 20-30% than that of the world average. This has limited the competitiveness of the Egyptian industry, yet it was masked by lucrative energy subsidies. The reform of the energy sector was part of Egypt economic reform plan. Egypt started to remove energy subsidies since 2016. The Egyptian industry supplies his electricity mainly from the national electricity grid and fuel in the form of natural gas predominantly followed by diesel and mazut to a lesser extent. The electricity energy prices have been increased in a more steady and systematic manner than fuel ones. This has proven to have multiple benefits. First, it started removing burdens from the government budget, hence helping balance it. The spending initially dedicated to energy subsidies could therefore be directed to health care, education and expanding the social protection network. More importantly, the removal of subsidies drove the Egyptian industry to improve its energy efficiency and invest rapidly in renewable energy. This was in line with the national strategy and its ambitious target of having 20% of electricity generated from renewable sources by 2022 and 42% by 2035 (IRENA, 2018). The rapid increase in the Egyptian industry energy efficiency and energy sustainability was reinforced through investments of IFIs, namely EBRD through its 30 Million and 140 Million Euros Egypt Green Economy Finance Facilities I and II.

***Starting 2014, the Egyptian industry started aggressively to invest in renewable energy and energy efficiency.*** Quickly renewable energy markets in Egypt started to grow rapidly at decentralized scale. The Egyptian government put in place both feed-in and net-metering schemes to support private investment in renewable energy. Coupled with increase in energy prices, this has driven the solar heating market to grow at about 10% annually (SHIP project – this growth has spiked in the beginning of 2020 to about 50%) and decentralized PV market to double almost every year since 2014 (IFC various studies from 2017 to 2019). This has created an active local industry with manufacturing starting to take hold in both PV and domestic solar heating markets. Egyptian industry was moving steadily to invest in PV systems within the net-metering scheme and solar thermal heating systems. UNIDO has followed its IEE project with Solar Heating Industrial Processes (SHIP) project, which targets both thermal energy efficiency and industrial solar heating systems equally. The project has seen over 300 entities signing up to benefit from technical assistance on the topic. Various industrial facilities have started to consider energy efficiency in their operations with larger facilities moving faster than SMEs.

***UNIDO IEE project has seen the change in Egyptian industry behaviour and decision making when it comes to industrial energy efficiency.*** UNIDO has contributed to the efforts of the Government of Egypt by addressing some of the key barriers to industrial energy efficiency by implementing the Industrial Energy Efficiency (IEE) project from 2012-2018. The project succeeded to deliver measurable results and to make an impact on how Egyptian industries manage energy through an integrated approach that combines capacity building and technical assistance interventions at the policy and energy efficiency project level. The project targeted energy intensive industries and has succeeded to reduce the energy consumption in 70 facilities by 1,247 GWh along the project duration. The project has also succeeded to create a pool of local calibres who are delivering EE services and consultations.

***Investments in energy efficiency and renewable energy are taken based on long foresight into energy pricing.*** Perhaps the most critical reason for the Egyptian industry drive to improve energy

efficiency and invest in renewable energy is not the increase in energy prices. It is the conviction that the government is determined to remove energy subsidies. Investments in energy efficiency or renewable energy require a long-term projection of traditional grid or fuel energy prices to assess their feasibility. Once industries have started to see clear commitments from the government to remove subsidies, investments in renewable energy and energy efficiency became more viable.

**Government of Egypt needs to maintain a clear signal on its stance on energy pricing.** In the wake of COVID-19, as mentioned above, the Government has announced a reduction in energy prices for the entire industrial sector: natural gas price at 4.5 USD per million British thermal units, down from 6 USD for cement factories and 5.5 USD to steel, aluminium, copper and ceramics factories; and electricity price lowered by 10 piasters per kWh for medium, high and ultra-high voltages. One needs to consider that this sudden decision made previous investments in energy efficiency and renewable energy less viable and less profitable. The Government of Egypt had a long history of retracting on energy subsidies removal, which had caused industry to always see investments in energy efficiency or renewable energy as risky and uncertain. There is a risk for the Egyptian industry to fall back in its improvement of energy sustainability. Clear signals and plans on energy pricing need therefore to be provided by the Government.

**There could be a slowdown in capacity for implementation of renewable energy project.** Factories in China manufacture about 70% of the global supply of solar panels. Another 10% to 15% of it comes from Chinese companies operating in Southeast Asia. Delivery delays are likely. A shortage of installation components including inverters and modules is pushing prices up by as much as 15% in the US. In Egypt, the domestic firm Solar Egypt has postponed the production of 4 solar plants as a consequence of the pandemic. As for the wind energy supply chain, Europe is a major manufacturing hub for wind turbines. European factories initially experienced disruptions to the supply of parts coming from China in February and then had to shut down due to strict confinement measures. Large wind manufacturers such as GE, Vestas and Siemens Gaemsa have all reported plant closures. Together with delivery delays, delays in construction activities can also be expected. Large developers with strong cash positions may be able to handle these construction delays or additional costs they incur in the short and medium term. However, the situation remains more uncertain for small project developers with less cash at their disposal. Ensuring adequate access to low-cost debt and other financing mechanisms will be key to ensuring that developers can maintain operations now and in the long term. Given the risks around executing new projects at this time, we would also expect to see energy procurement contract prices increase in the near- to mid-term. Hence, a stimulus package will also help SMEs in renewable energy survive the crisis ensuring the Egyptian renewable energy sector can continue to grow.<sup>18</sup>

**COVID-19 could drive the industry to retract on improving energy sustainability leading to deterioration in competitiveness with dangerous long-term consequences.** As discussed above, COVID-19 would pose challenges in the increased cost of input material as well as decreased productivity and hence profitability. A possible reaction from the industry is to cut spending and defer investments in energy efficiency and renewable energy. The industry may instead resort to investing in technology with low efficiency. This poses a significant set-back to Egypt economy and will put Egyptian industry on a tract of lowering competitiveness which cannot be sustained.

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<sup>18</sup> IEA (2020d). *The coronavirus pandemic could derail renewable energy's progress. Governments can help*. Retrieved from <https://www.iea.org/commentaries/the-coronavirus-pandemic-could-derail-renewable-energy-s-progress-governments-can-help> accessed on 17/04/2020.

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**Investments in renewable energy and energy efficiency can be part of the solution not a casualty of the crisis.** On the other hand, investments in renewable energy and energy efficiency can be part of a healthy recovery. The expected decrease in profitability in phase 2 can be countered by investing in improving energy sustainability. This will be a win-win situation. On the short term, it will help renewable energy and energy efficiency markets to continue flourishing, hence continuing to create sustainable and green jobs. It will also increase the industry profitability. In phase 3 this will make Egyptian industry ready for the tough competition ahead by becoming more efficient and resilient.

**Government of Egypt should double down on increasing energy efficiency and uptake of renewable energy in the Egyptian industry.** Businesses' stronger resilience and long-term flourishing are linked to increased productivity and competitiveness driven by a more efficient use of resources. Resource efficiency allows industries to produce more and better with fewer resources and at a reduced cost, keep the position in the market, retain workers and even create new jobs, and open up new markets that demand products manufactured in a sustainable way. Egyptian government should reduce the energy expenses burden on the Egyptian industry by expanding finance programs promoting sustainable energy. These finance programs can be at a subsidized interest rate or include other incentives. This approach will ensure Egypt does not derail from its energy efficiency and energy sustainability targets, and that the Egyptian industry transforms into a more competitive one.

**The Government can use the current situation to launch sustainable stimulus packages focused on clean energy technologies with communication on long term energy pricing plan to further guide investments.** Stimulus packages to counter the economic damage from COVID-19 offer an excellent opportunity to step up efforts to mitigate climate change and ensure that the essential task of building an affordable, secure and sustainable energy future does not get lost amid the flurry of immediate priorities.<sup>19</sup> The stimulus package should also clearly focus on inclusion of SMEs who have benefited less in the previous years from finance programs for renewable energy. Announcing energy pricing plans for the coming five years is critical for the mobilization of energy efficiency and renewable energy investments. Since such investments are usually committed on the target of future returns from energy saving, ambiguity can be a significant deterrent for their deployment. The above will simultaneously increase competitiveness of industry, remove energy subsidies burden from the state and also reinforce Egypt energy security which will become even more a priority in the current circumstances.<sup>20</sup>



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<sup>19</sup> IEA (2020a). *COVID-19 Exploring the impacts of the COVID-19 pandemic on global energy markets, energy resilience, and climate change*. Retrieved from <https://www.iea.org/topics/covid-19> accessed on 17/04/2020.

<sup>20</sup> IEA (2020c). *Put clean energy at the heart of stimulus plans to counter the coronavirus crisis*. Retrieved from <https://www.iea.org/commentaries/put-clean-energy-at-the-heart-of-stimulus-plans-to-counter-the-coronavirus-crisis> accessed on 17/04/2020.



## IX. Way Forward

**This paper aims at providing insights into the details of interventions which headlines most policy makers would agree upon.** A way forward with the objective of a positive transformational change will have to face the same external conditions as in the reactionary scenario. However, different decision making will change some of the challenges faced and turn them into opportunities. Shown in the figure below, the interventions at each of the three phases. Follows, an elaboration on each intervention. These interventions are at both government (policy level) and firm and industry associations level. This way forward focuses on Industry, while the interventions on public health front, which is undoubtedly the most crucial, is outside the scope of this paper. Most interventions suggested in this paper reflect headlines or broad titles of measures on which many governments and analysts would agree. However, the objective of the paper is to contextualize them to the Egyptian government and touch upon the critical details of those interventions that would make them succeed in the Egyptian context.



**The interventions outlined in the Figure above aims to balance the short term needs and the positive longer-term benefits.** The bold fiscal, monetary and financial measures which the Egyptian government has launched to help businesses and industries face the immediate challenged posed by the COVID-19 crisis must be coupled with additional longer term measures to support manufacturers, especially SMEs, boost demand and investment and help diversify the economy to make it more resilient to shocks from disruptions. In this sense, as mentioned above, COVID-19 offers great opportunities for policy makers to address structural imbalances and accelerate Egypt's growth moving forward while avoiding an economically, financially and environmentally unsustainable recovery. The figure above shows how the current measures can evolve towards a transformational route of healthy recovery instead of a reactionary one with limited recovery.

**Phase 1- Shock and Disruption** The GoE is already managing this phase by taking immediate measures. These measures need to be further refined and reinforced. Egyptian businesses have already started reacting to the shock; however, it is time for more planning. It is important to recall that it is difficult to speculate how long this phase will be and hence businesses should be prepared mentally for an extended disruption phase. The recommended interventions are discussed below.

- **Expanding and refining working capital finance facilities – SMEs Focused - Led by MoTI and MSMEDA** → the GoE through MSMEDA (Micro, Small and Medium Enterprises Development Agency) has started an immediate program to finance working capital for MSMEs which is an excellent step to manage the most critical challenge of the phase; liquidity. The GoE should prepare to expand such programs since the prolonged cash conversion cycle and limitation in inward cash will continue well into phase 2. Working capital finance facilities through various tools (such as factoring, overdraft, short term lending etc) is already available in the Egyptian market. However, MSMEs (particularly MSEs) have limited access to such facilities. Factoring services are difficult to access for industrial SMEs particularly when their suppliers are smaller entities or traders. The current terms and tenures of such facilities need to be revisited and adapted to the needs of SMEs. Tenures could be prolonged and interest rates decreased. Time to cash needs to be cut down since cash conversion cycles have already been prolonged. Furthermore, limited number of SMEs are aware of such services (factoring, overdraft, short term loans). Promotion of such financial services needs to take place. Risk guarantees might be needed to incentivise banks to engage further with SMEs on that front. This could become part of wider thrust to further link MSMEs with the banking sector. Larger entities should have less challenges with working capital finance.
- **Streamlining Export Development Fund Procedures – Industry Wide – Led by MoTI** → the GoE provides exports with various incentives through the Export Development Fund. These incentives have typically suffered from delays in payments due to prolonged and complicated bureaucratic procedures. Part of the GoE support to industry amidst COVID-19 was a decision to release 30% of delayed payments by softening the procedures required. The GoE should build upon this by streamlining the procedures and simplifying them in a permanent manner. With tougher competition to come for exporters as discussed above, effective operation of the Export Development Fund would be critical.
- **Road mapping and promotion of linkages for the localization of industrial inputs – Industry Wide – Led by MoTI** → As discussed above, the interventions needed will vary considerably per subsector (and value chains). Some value chains will face challenges related to growing rapidly and capturing the increasing demand (such as medical equipment, food products, inputs to engineering industries), other value chains will be dealing with major challenges in inputs to production, or fierce competition in export markets or at home. Some value chains will be facing loss of markets and would need pivoting. MoTI recently has developed various roadmaps for industrial sectors with IMC, IFC, and UNIDO. MoTI in partnership with UNIDO and IMC are currently implementing the roadmap for developing local manufacturing in solar water heating systems. Having a roadmap that guides implementation has proven extremely effective and beneficial for industry. Roadmaps are hinged on a profound understanding of local and global value chains, competitiveness of firms and market dynamics. They define when and where support is needed. Roadmaps mainly help answer which markets would be most competitive for a certain industry in the upcoming market restructuring, they determine which manufacturing scope is most competitive and plans how weak linkages can be developed. These roadmaps are typically developed and implemented in close collaboration with private sector. Road mapping can inform certain industrial inputs can be localized to compensate for disruption of the global supply chains. MoTI through IMC has been leading a successful program which needs to be continued and expanded; the “National Industrial Localization Program” NILP. The program works on identifying specific imported components which can be replaced through local industry. Both road mapping and NILP should be planned based on perceived competitiveness in the days to come.

- **Improved managerial capacity and crisis operation capacity through capacity building and technical assistance – SMEs focused – Led by MoTI →** MoTI should promote on wide scale training programs aimed at increasing managerial capacity of SMEs. This will help increase productivity of SMEs in times where productivity would be going down. In case restriction of movement continues, effective managerial structures will become key for the continuity of work. MoTI can provide guidelines for how operations could be resumed with social distancing measures put in place. Managerial capacity technical assistance should be seen as part of a more ambitious capacity building for the Egyptian industry to transform SMEs into more agile and effective organizations clearly driven by strategy. This capacity building will prove critical to enable continuous operations in case of extended restricted movement. They will also be essential in case any digitalization takes place since for digitalization to be effective it is to be based on proper management, clearly defined processes and data analytics which are currently not an integral part of SMEs operations.
- **Strategic planning and operation optimization – SMEs focused – Led by SMEs →** SMEs should utilize the downtime if any to develop strategic growth plans and work on optimization of production in terms of processes reengineering and resource optimization. MoTI and development partners may assist in this process through TA and capacity building. SHIP project has implemented similar training for solar thermal systems firms in 2020. MoTI has experience in implementing such programs in collaboration with various development partners such as GIZ (PSME). This stage is critical for firms to cut cost without having to compromise on quality. Cost of inputs could rise, and profitability and profits could decline, cutting costs through optimization and improvement of operation will be of great importance.
- **Maintaining labour through shifts programs – Industry Wide – Led by Industry →** SMEs should preserve their workforce for the longest time possible. This could take place through reducing labour shifts, which at extreme cases can be coupled with reduction in salaries. The government may choose to provide cost sharing for salaries at one point. However, this support should be coupled with training programs and capacity building for labour.
- **Preparing for digitalization (easier said than done) – SMEs focused - Led by SMEs →** it is common to read that the solution for COVID-19 restrictions of movement and needs for social distancing is digitalization. However, digitalization in Egyptian industry faces the risk of becoming a façade without real impact. Digitalization is based on processing of wide set of data and the capacity to communicate in a clear, systematic and organized manner. There could be a move towards digitalization in the Egyptian industry but this requires reorganization of operations at factory level. In many cases, in Egyptian industrial SMEs, and large entities documentation, recording of performance indicators and data are limited. This has to be tackled as part of the strategic planning and operation optimization discussed above. This shift to becoming data driven followed by digitalization would be an asset in the coming stages.

**The above measures will achieve the critical objectives of Phase 1 of partial restoration of productivity, steady cash in and maintaining labour, they also prepare firms for phase 2 by becoming more cost effective and resilient**

**Phase 2 Struggle to Normalcy:** This is perhaps the most critical phase of the crisis. Partial recovery will take place, yet health measures and vigilance must be still at their highest. There could be minor outbreaks, pulling back certain regions to phase 1. In this phase, there could also be an appearance of a return to normalcy masking wider market changes. The steps in this phase build upon those taken

in phase 1. In this phase, industry must cope with rising costs of production through a stronger shift to resource efficiency. Industries must also deal with global supply chain bottlenecks and rising cost of inputs.

- **Resource Efficiency Finance – Industry Wide – Led by IFIs and Central Bank →** Egypt has already moved to avail subsidized finance to the industrial sector in phase 1. There is a major risk that without proper management Egyptian industry slips in phase 2 into low resource efficiency as previously discussed. What will determine the success in phase 3 is the competitiveness of Egyptian industry. Supporting improvement of resource efficiency (material, water and energy) would help industry cut cost, cope with difficulties in accessing supply and reduced profitability. Improvement in resource efficiency could also include investing in renewable energy (solar thermal process heat, photovoltaic systems, etc.). With access to capital being a challenge in this phase, the GoE should move to provide subsidized finance programs with conditions to ensure improved resource efficiency. Instead of energy subsidies, capital to improve energy efficiency should be provided. However, it is of outmost importance to realise that thus far green finance in Egypt has benefited almost exclusively large firms. Banks still provide special green credit lines through strictly corporate finance lens with very little regards to asset finance ones. Credit lines for resource efficiency should have clear targets to serve SMEs. If needed, the subsidy should come in the form of credit guarantees, since the main barrier from the banking perspective is the perceived risk in SMEs.
- **Continuous review of custom tariffs – Industry Wide – Led by FEI and MoTI →** Egypt local industry has been going through rapid changes since the floatation of the Egyptian pound in 2016. Various investments in producing industrial intermediary goods became viable and others stopped to be. Egypt custom tariffs are yet to fully respond to such rapid change. There are currently custom regimes which make local manufacturing more expensive. In this phase, MoTI should have hot line to capture recommendations of custom tariff changes from the Federation of Egyptian Industries to ensure that there are not situations where the local manufacturing is rendered less competitive because of custom tariffs. This work needs to be tightly linked to road mapping and localization activities.
- **Collective Supply Purchase – SMEs focused – Led by SMEs →** With global supply chain bottlenecks, as discussed above, firms might find it difficult to secure certain inputs. This will mainly hit SMEs because the cost of these inputs will rise or because international suppliers will prioritize clients who can purchase larger batches. SMEs need to organize and attempt to unify their forces in securing access to supply. This can be organized through various chambers of the FEI.
- **Bilateral agreements – Industry Wide – Led by MoTI, FEI, Investors/Business Associations →** In this turbulent environment and threats to global trade, Egypt needs to solidify its relationship with key trade partners as well as new partnerships. These agreements should be based on win-win scenarios, benefitting both countries and markets. These trade agreements can be hinged on the mutual benefit in trade of finished goods and industry inputs.
- **Pivoting and stronger control on supply chains – Industry Wide – Led by businesses →** Firms will need to have deeper control and understanding of their supply chain. They might start the process of pivoting and changing their products and markets of focus while attempting to serve their current markets to the most. Local producers should be replacing international ones in case global supply cannot be accessed. Inclusion of local producers in the mix of suppliers could also be done for diversification.

The above would increase the competitiveness of Egyptian industry and offer stabilization post-shock and turbulence phase. It will ensure industrial facilities can operate while COVID-19 restrictions are put in place. Localization of manufacturing inputs should accelerate and access to industry input suppliers should start to take place.

**The above measures aim to achieve the critical objectives of Phase 2 of regaining operations, securing suppliers and becoming prepared to capture the opportunities that would open up**

**Phase 3 Markets Restructuring:** In this phase, restriction from COVID-19 would have disappeared and global production capacity would have recovered. However, markets would have been restructured significantly. The success in this phase is fully reliant on what would have been achieved in the previous one; a characteristic of dealing with COVID-19.

**Encouraging capital investments in selected industries – Industry Wide - Led by GoE →** The government of Egypt should have prioritized areas where industrial development is competitive and/or can support the growing public health sector needs in the previous phases. Food security and public health are going to be critical for various nations in the coming years. The GoE should incentivize and encourage investments in such industries. Other industries can start to develop to serve the diversification needs of international buyers with focus on Egypt key trade partners. This can be done through availing finance for capital investment in selected sectors. This finance should direct and target strategically selected industries. Particular components finance programs should be developed for components which requires localization. These should be tuned asset finance based financial products<sup>21</sup>. This will mainly target local investors.

**Focused attraction of FDIs – Industry Wide - Led by GoE →** The government of Egypt can move to capture the opportunity of the drive towards diversification of supply and manufacturing base. Egypt would then capitalize on its geographical location, access to Suez Canal (reinforced by the industrial land in Suez Economic Zone) as well as vibrant energy market and renovated infrastructure.

**Long term incentives to industrial investments – Industry Wide - Led by GoE →** The government of Egypt should continue its incentives for industrial investments through availing industrial land and factories at competitive pricing. In certain geographical regions further incentives might be needed. This is to ensure continuous inflow of capital to industrialization in Egypt in the post COVID-19 world.

All of the above interventions are full in line with GoE and MoTI long term objectives. MoTI and GoE are implementing elements of the interventions above or have implemented similar interventions in the past. In other words, Egypt has the ingredients for not only a recovery from COVID-19 led by its industry but also for a transformation of the Egyptian industrial sector. It is now the time to put together the right



recipe in terms of how measures will be deployed. The phases discussed above do not have to fall linearly and there might be a return to restriction of movements after it being eased, however, they provide a trajectory to which Egypt may aspire.

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<sup>21</sup> National bank of Egypt has a successful finance program for plastic producers which can be replicated

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