Programme for Country Partnership Diagnostic Study in Egypt

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Acknowledgment

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1 Summary

1.1 Purpose and methodology

The Government of Egypt and the United Nations Industrial Development Organisation (UNIDO) seek to help Egypt promote Inclusive and Sustainable Industrial Development (ISID) as part of the UNIDO Programme for Country Partnership (PCP). The diagnostic was conducted based on existing published reports, national documents and statistics as well as a series of interviews with policy makers and business leaders.

To support this process, UNIDO and Whiteshield Partners have developed a three-component study to:

1) Diagnose Egypt's industrial sector along three components performance (economic, social, and environmental), policy, and governance and capabilities
2) Design a blueprint for an industrial strategy
3) Align the blueprint for an industrial strategy with the PCP

The study, completed over 2019-2020, is designed to provide the Government of Egypt with an analysis of the sector and a way forward to support ISID.

1.2 Overview of study

Egypt Industrial Sector Diagnostic

The three-component diagnostic assessed Egypt's industrial sector across performance, policies, and governance and capabilities. These three components form the core of assessing ISID.

Performance

Manufacturing in Egypt has registered some notable achievements in the last decade. In terms of economic contribution, the share of manufacturing has been increasing in three main dimensions: employment, exports and FDIs. In terms of capabilities, Egypt achieved greater trade competitiveness in agriculture, textiles, and chemicals / plastics with an increase in the number of revealed comparative advantages (RCAs).

However, the manufacturing sector in Egypt has yet to achieve its full potential in economic, social and environmental performance.

- Economic: the share of knowledge manufacturing has declined as measured by share of medium and high tech MVA, share of knowledge workers in manufacturing and economic complexity. Moreover, Egyptian firms are still far from the level of automation required to fully benefit from the 4th industrial revolution. The share of manufacturing value-added as % of GDP is down from 16.26% to 14.9%, but is still in line with the level of industrialised countries.
- Social and environmental: manufacturing in Egypt has a significant potential to act as an engine of sustainable and inclusive growth. Indeed, the sector remains SME-intensive, employs a significant share of the youth and is characterized by low energy-intensity activities. However, this potential has not been fully achieved yet. Significant regional disparities undermine the social performance of manufacturing while a high level of emissions and waste challenges the environmental performance.

Policies

Egypt has implemented a number of initiatives in the last 5 years to support the development of the manufacturing sector. These include :

- Simplification of procedures to start a business and more attractive investment incentives through the new Investment Law
- New law on competition policy and reinforcement of powers for the Competition Authority
- Simplification of industrial licensing procedures

- New collateral framework and more transparent credit information for better access to finance
- Improvement in the overall quality of infrastructure (transport, ICT and utility infrastructure)

However, Egypt's policy structure has room for improvement. Of the 13 policy areas analysed, seven are ranked as of limited progress, with significant remaining challenges and six are ranked as having signs of progress. In particular, the policy performance of Egypt is hampered by:

- Rising barriers to trade in terms of tariffs and non-tariff barriers
- Excessive protection of employees, detrimental to employment and labour market flexibility
- Widening gaps in manufacturing skills, particularly in knowledge manufacturing
- Lack of support for technology upgrading and innovation
- A vertical vs horizontal "whole-of-government" approach to governance of industry
- Widening skill gaps in policy, governance and technical areas among governance stakeholders

Governance and capabilities

Some efforts have been made to address selected horizontal challenges such as SME development through the creation of a cross-cutting agency, coordinating existing disparate SME initiatives driven by multiple Ministries and Agencies. However, there continues to be fragmentation of the institutional landscape, insufficient horizontal coordination and limited policy and technical capabilities to govern the manufacturing strategy. A more systematic approach is needed to address horizontal industrial challenges through a whole-of-government approach.

Industrial Blueprint

To unlock its industrial potential, the Egypt should pursue a strategy based on 6 pillars:

1. **Whole-of-government and capabilities**: Governance should enable horizontal coordination / collaboration within the public sector and with the private sector. Emphasis placed on a National Agenda and accelerator approach.
2. **Trade to value-added manufacturing**: Prioritize intensive vs extensive industrial development by placing an emphasis on raising the standard of complexity across all sectors.
3. **4IR readiness**: Ensure that 4IR is injected into all aspects of industrial development in Egypt with a particular emphasis on traditional sectors such as agribusiness and textile.
4. **Vertical with horizontal**: Focus on addressing structural and policy barriers common to all manufacturing sectors as well as specific sectors to unlock local and foreign investment in building the next generation of manufacturing.
5. **Clean production**: Follow an integrated framework to enable the green transition of the manufacturing sector combining regulation, firm level support, new technologies and skills enhancement for sustainable manufacturing.
6. **Zones to regional / global value chains**: Move from a territorial approach to manufacturing investment to a capability-based and value-chain approach at the city, regional and global level. Sustainable and industrial infrastructure development should be leveraged to enhance attractiveness of regions.

Industrial Blueprint and the PCP

The PCP can support Egypt's future industrial strategy by enabling the implementation of these six pillars with an emphasis on inclusiveness and sustainability. Based on the diagnostic and the industrial blueprint, six main focus areas were identified as a PCP priorities: (1) Industrial Policy and Governance, (2) Sector focus (food, textile & leather, furniture, chemicals & plastic, electronics), (3) Mainstreaming the 4th industrial revolution, (4) Investment promotion, (5) Green Industry, (6) Regional Value Chains, Industrial Zones, Smart Cities and Regional Inclusiveness. The PCP structure is complemented by a set of eight enablers to be leveraged across focus areas and a 3-steps filtering process for the future selection of projects.

2 Diagnosis of Egypt performance in industrial development

2.1 Performance of the industrial sector in Egypt

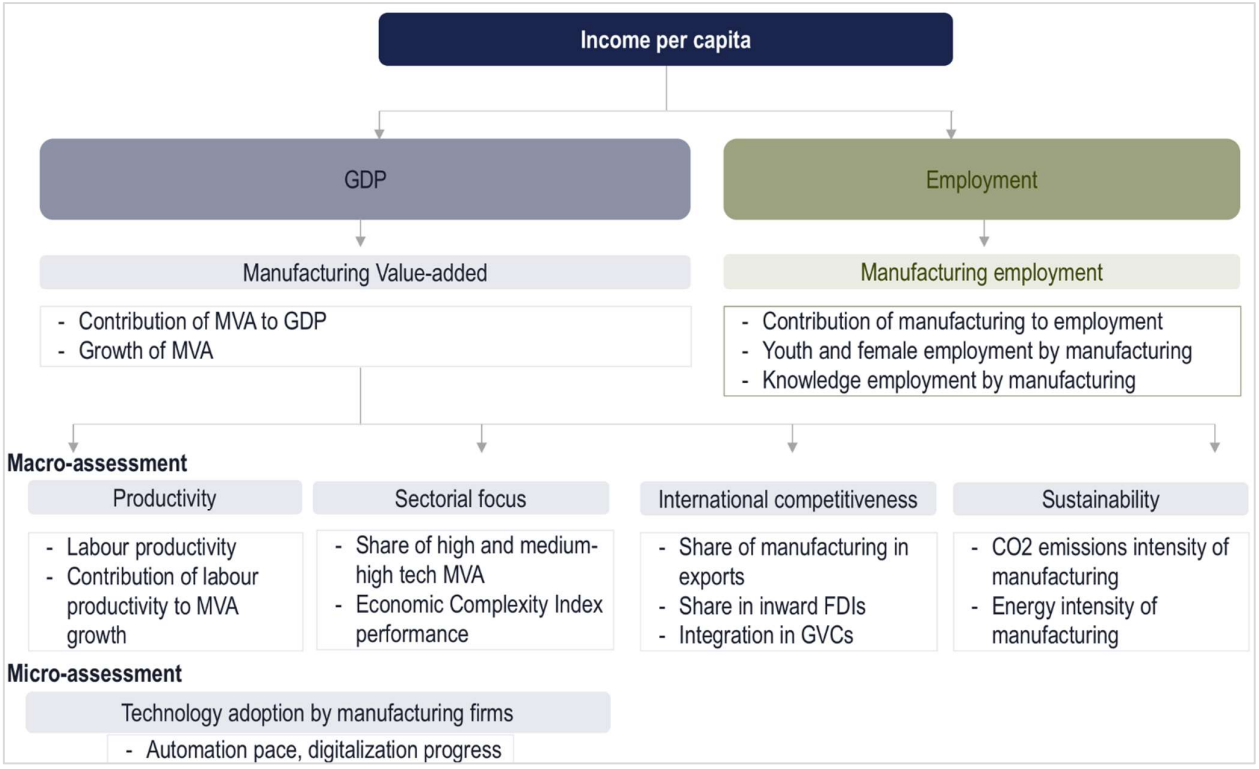
2.1.1 Performance diagnostic framework

The performance of the industrial sector in Egypt was assessed along economic, social and environmental indicators.

The selection of these indicators stems from the following decision tree. Income per capita was considered as the driving indicator or the "north" of the assessment, since manufacturing should act as an engine for economic growth. Two pillars impacting the "north" indicators are GDP and employment (Figure 1). The GDP pillar drove the selection of all indicators impacting the value-added of manufacturing and its contribution to the GDP including productivity, sectorial focus, international competitiveness etc. The Employment pillar drove the selection of all indicators related to employment contribution including youth and female as well as knowledge-intensive employment.

Indicators from both pillars were combined to assess the performance of the manufacturing sector from three perspectives: economic, social and environmental. The assessment was based on macro-level indicators but also firm-level assessment thanks to external consultations.

Figure 1: Framework of assessment indicators selection



Source: Whiteshield Partners

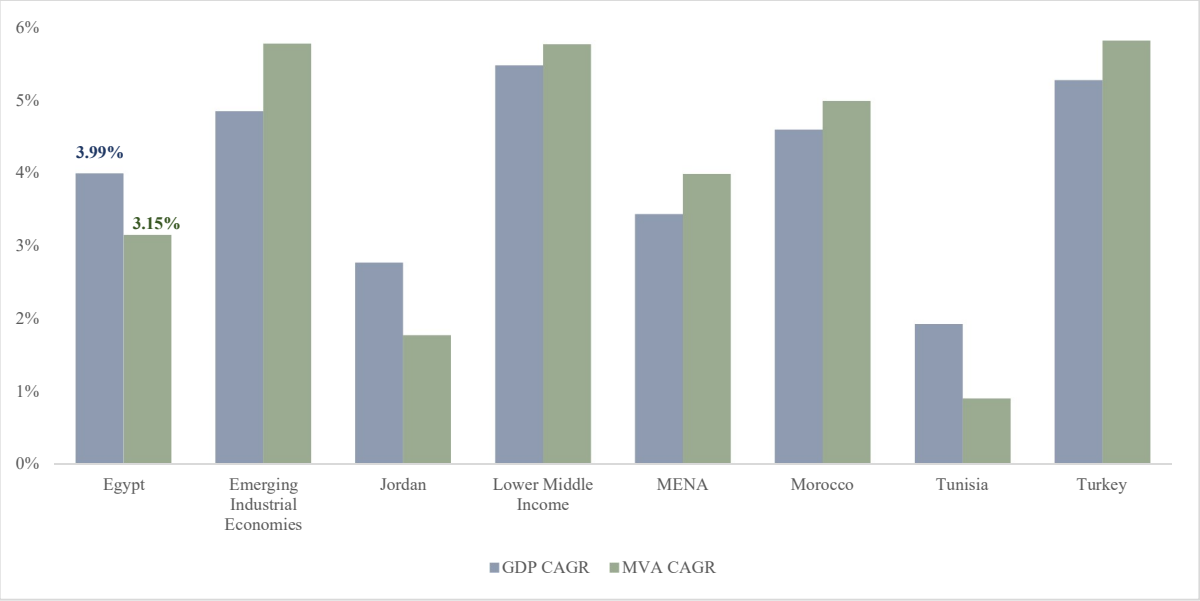
2.1.2 Economic performance

2.1.2.1 Economic contribution of manufacturing assessed by examining GDP and employment and sub-components of each

- Manufacturing Value-Added: Has the manufacturing sector been growing in Egypt over the last decade?

While the manufacturing sector has been growing both in terms of value-added and employment, this growth remains limited compared to peer-countries. Between 2008 and 2018 the manufacturing value-added in Egypt increased at a CAGR of 3,15%, lower than the economic growth rate of the country (with the GDP increasing at a CAGR of 4%) and lower than average industrial growth rates of Egypt's peer income group (5,77%), industrialization group (5,77%) and region (3,98%). Almost all peer-countries have witnessed a manufacturing growth exceeding GDP growth over the same period.

Figure 2: GDP and MVA growth trends (2008-2018)



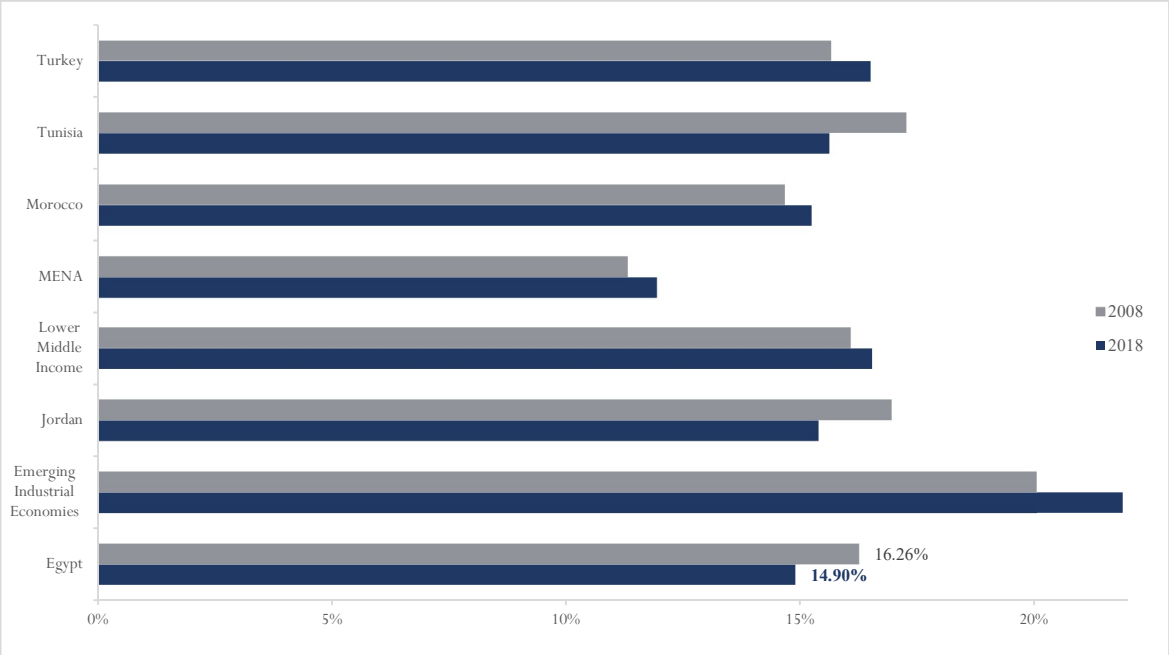
Source: World Bank, UNIDO MVA database, Whiteshield Partners

- Manufacturing Value-Added: How did the manufacturing sector economic contribution evolve in Egypt?

Accordingly, the contribution of the manufacturing sector to the GDP has been decreasing in Egypt at a CAGR of -0,87% and against the general increasing trend of Egypt's peer income group (0,28%), industrialization group (0,88%) and region (0,53%). Currently, with a contribution of almost 15% in GDP, Egypt performs below than the average of emerging industrial countries (22%) and below the average of its income group (lower-middle income economies): 16,5%. Although higher than the average of the MENA region, it is

outperformed by several countries of the region including: Turkey, Tunisia, Jordan and Morocco.

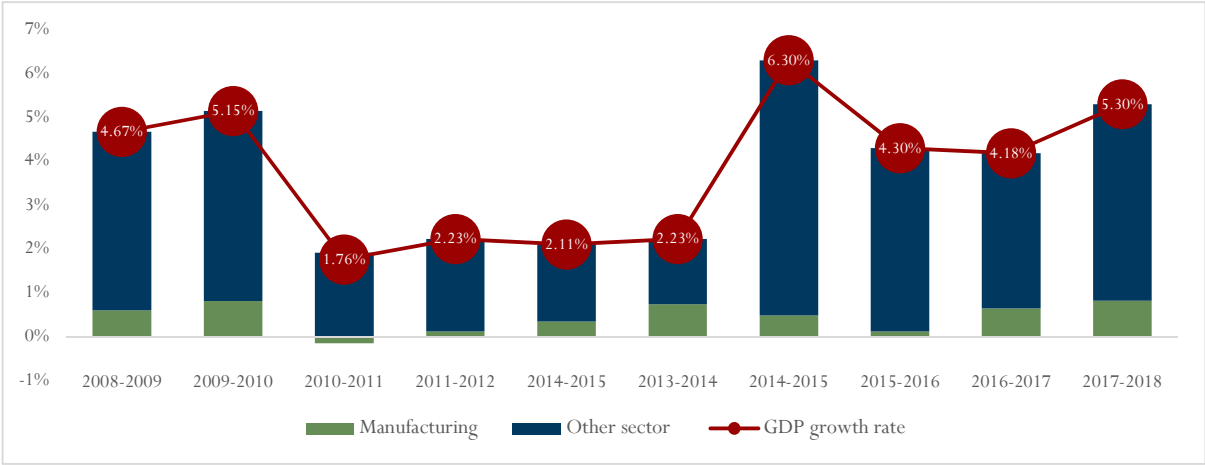
Figure 3: Share of MVA in the GDP



Source: UNIDO MVA database, Whiteshield Partners

The underlying issue of this decreasing share of MVA in GDP is a decline in manufacturing's contribution to GDP growth. Over the past decade the share of manufacturing growth in GDP growth has been shrinking in Egypt up until 2016. For instance, MVA contributed to 14% of the GDP growth between 2008 and 2009 against only 3% between 2015 and 2016. This can be considered as preliminary evidence of the decline of the manufacturing sector as a growth engine in Egypt.

Figure 4: Contribution of MVA growth to GDP growth in Egypt

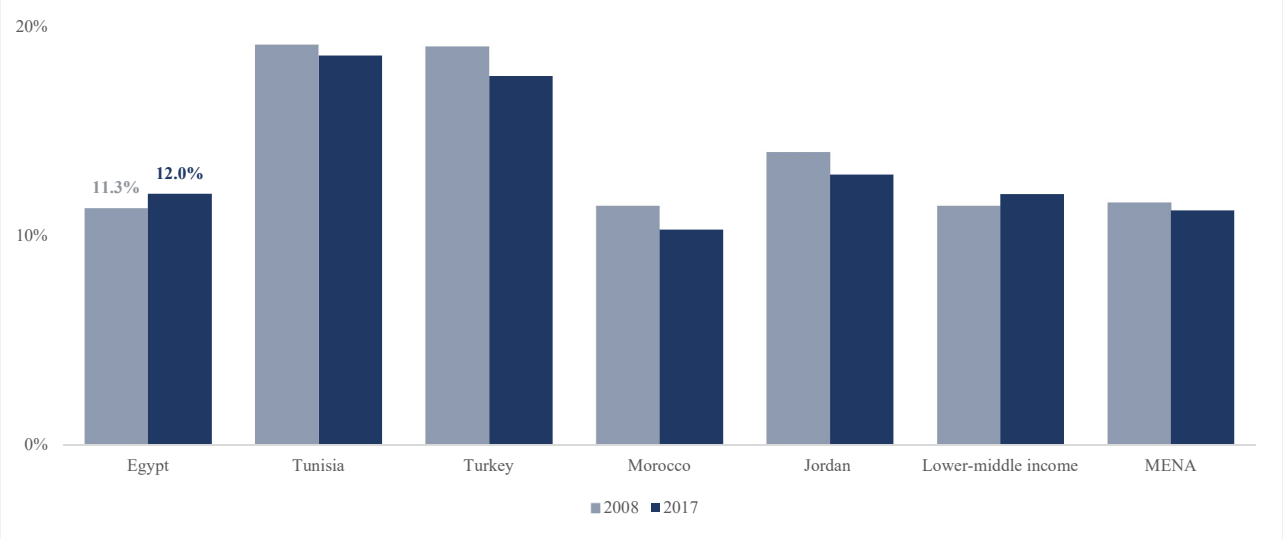


Source: World Bank, UNIDO MVA database, Whiteshield Partners

- Employment: What is the status of employment in manufacturing?

In terms of employment, findings are different with a brighter picture for the Egyptian manufacturing sector. In developing and emerging industrial economies, the number of employees in the manufacturing sector has been increasing while the share of manufacturing employment in total employment has been decreasing over the last decade. In Egypt, both metrics have been increasing albeit at a lower rate for the share of manufacturing employment (0,8%) compared to the number of manufacturing employees (1,8%). Currently, the manufacturing sector is the third largest employer in Egypt behind agriculture and retail. With a share of 12% of manufacturing employment in total employment, Egypt is at the average levels of its income group and higher than the average of its region and industrialization group although still outperformed by other developing and emerging industrial economies such as Turkey (17,6%), Tunisia (18,6%) and Jordan (12,9%).

Figure 5: Contribution of manufacturing to total employment

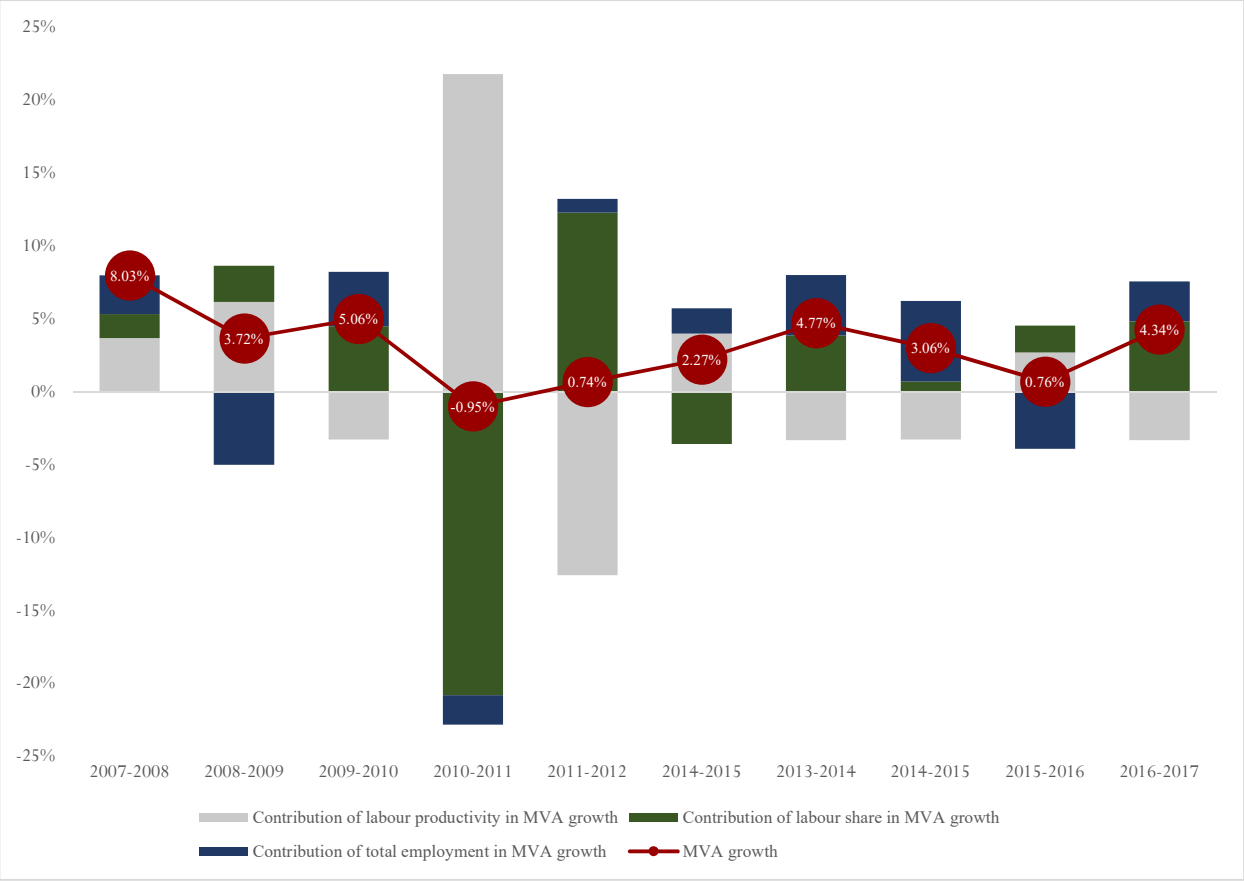


Source: UNIDO SDG 9 database

- Why are trends of manufacturing contribution in GDP and employment diverging in Egypt?

A closer look to the patterns of growth of manufacturing value-added in Egypt clarifies the apparent paradox of an increasing contribution in employment against a decreasing contribution to economic growth. The growth of manufacturing value-added can be driven by three variables: a growth in labour productivity, a growth in the share of manufacturing in total employment and/or a growth of total employment. The combination of labour productivity and labour share growth is identified as intensive industrialization and refers to an industrialization driven by structural change strengthening the weight of the manufacturing sector in the economy. On the other hand, the growth in MVA fueled by an increase of labour input -total employment- is referred to as extensive industrialization which does not give to the manufacturing sector a position of leading sector to act as an engine of economic growth. One can divide the growth of the MVA in Egypt according to these three components.

Figure 6: Decomposition of MVA growth in Egypt by factor of growth

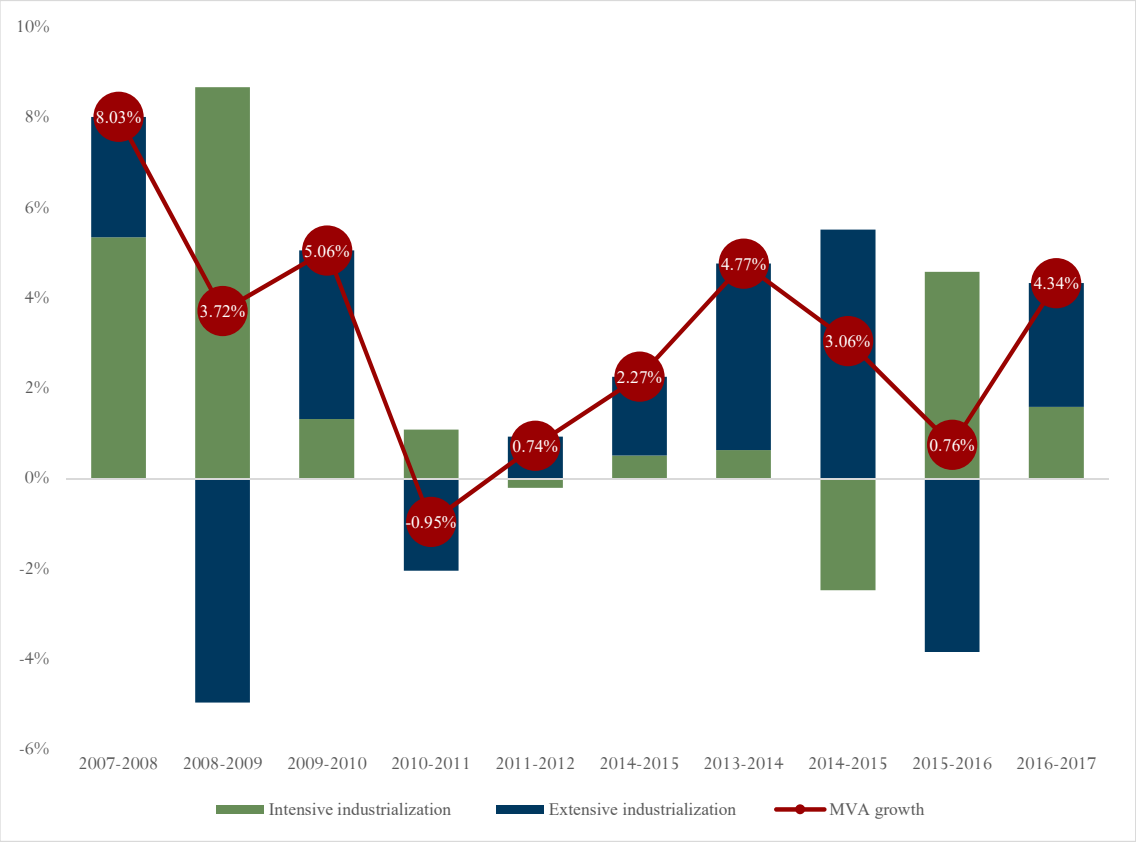


Source: UNIDO MVA and SDG 9 database, ILO, World Bank, Whiteshield Partners

The first finding from the decomposition of MVA growth is that the contribution of labour productivity growth to manufacturing growth has been overall declining during the last decade. For instance, labour productivity growth contributed to 47% of MVA growth between 2007 and 2008 but negatively impacted MVA growth by 75% between 2016 and 2017. Secondly, the overall the contribution of employment and labour share in MVA have both been increasing. This can provide an explanation for the diverging trends of manufacturing contribution to employment and GDP. In terms of intensive and extensive industrialization, this means that the decline of labour productivity as an engine of MVA is driving down the intensive industrialization compared to an increasing extensive industrialization.

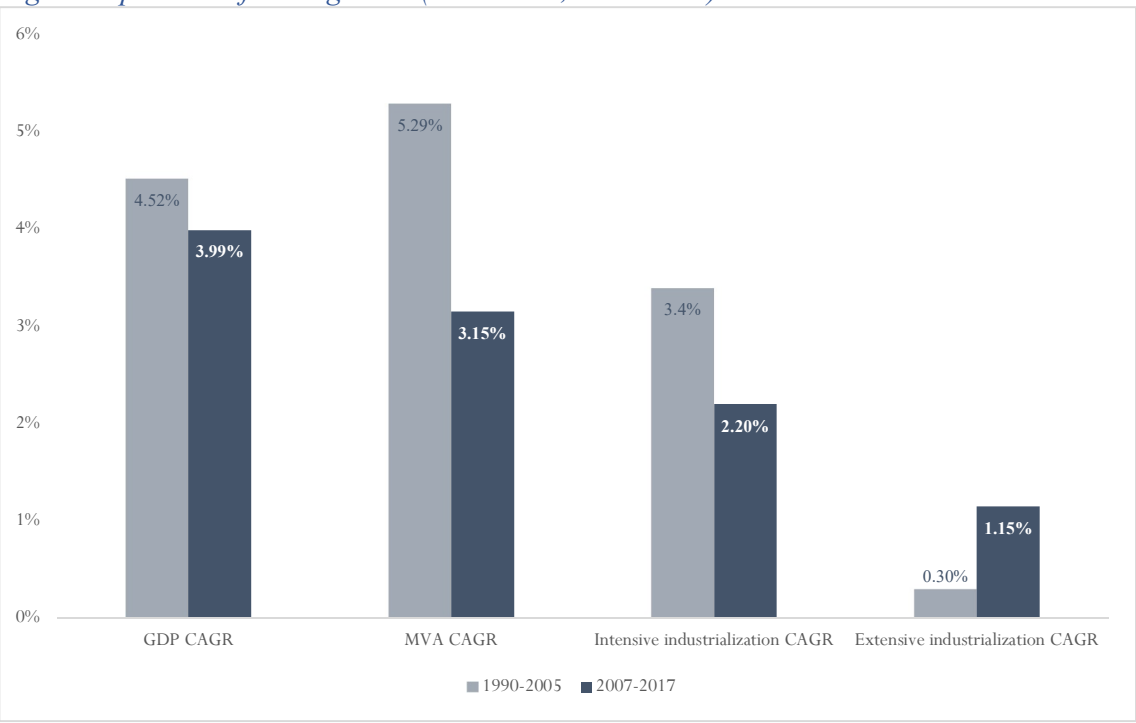
The comparison of decade trends confirms the previous finding. Between 1990 and 2005 the CAGR of intensive industrialization stood at 3,4% compared to only 0,30% for extensive industrialization. Between 2007 and 2017, the CAGR of intensive industrialization decreased to 2,2% while the CAGR of extensive industrialization increased to 1,15%. This indicates that manufacturing growth has been less and less driven by structural changes positioning the manufacturing sector as an engine of economic growth and more driven by the availability of labour input. Put differently, this means that rather than powering economic growth, the manufacturing sector has been simply following it.

Figure 7: Decomposition of MVA growth by intensive and extensive industrialization



Source: UNIDO MVA and SDG 9 database, ILO, World Bank, Whiteshield Partners

Figure 8: patterns of MVA growth (1990-2205; 2007-2017)

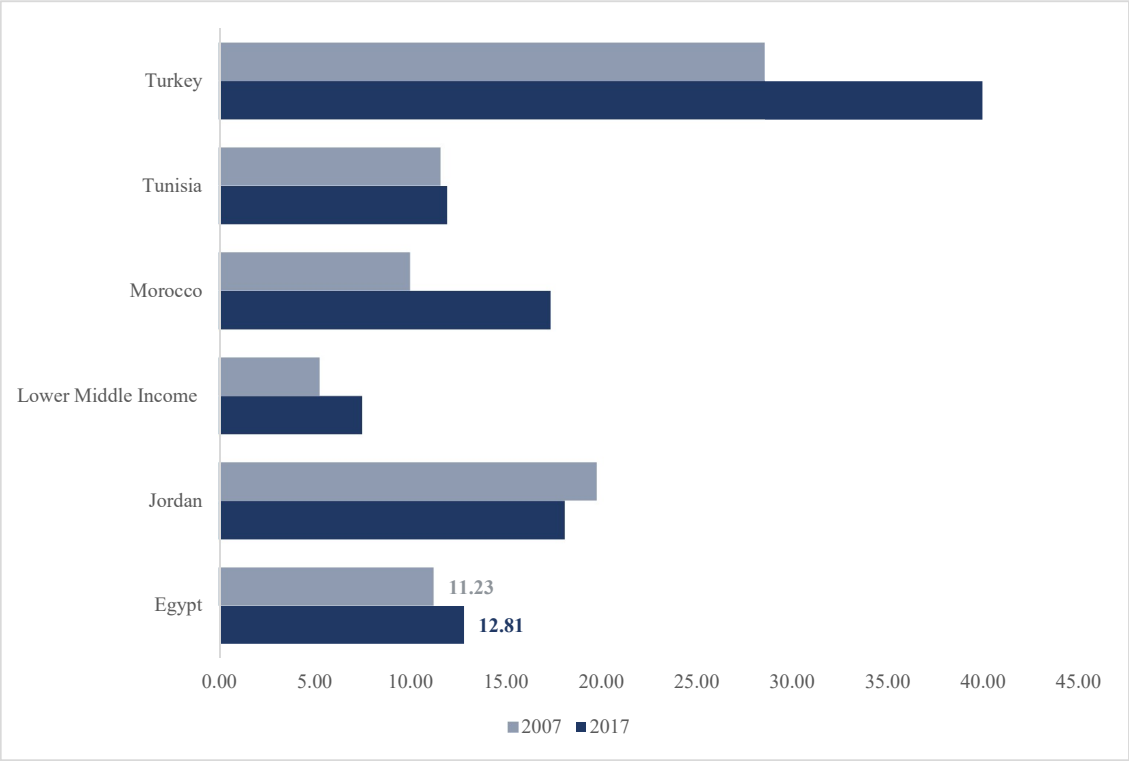


Source: UNIDO MVA and SDG 9 database, ILO, World Bank, Whiteshield Partners

- Labour productivity: Why did the contribution of labour productivity growth in MVA growth follow a declining trend?

Labour productivity in manufacturing has been increasing over the last decade although at a lower rate (1,32%) compared to income group (3,56%) and peer-countries (Morocco: 5,65%; Turkey: 3,42%). Currently, with a productivity of 12,81 thousand USD per worker, the Egyptian manufacturing sector is above its income group average (7,48 thousand/worker) but still largely outperformed by peer-countries which witnessed higher productivity growth rates. Turkey leads the way with a labour productivity more than 3 times higher than Egypt's followed by Jordan with a labour productivity 40% higher than Egypt's and Morocco (35% higher).

Figure 9: Labour productivity in the manufacturing sector



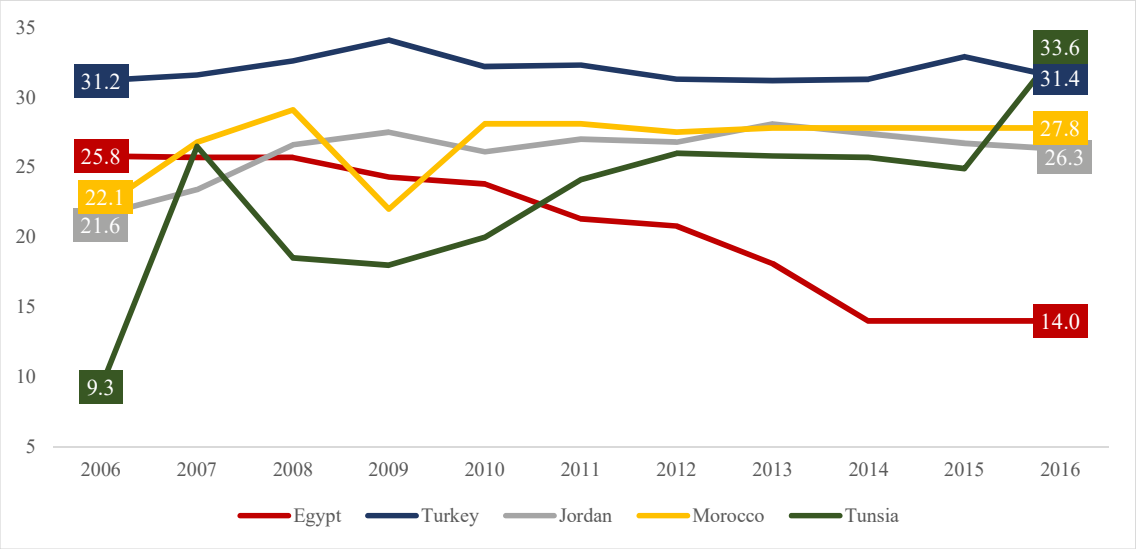
Source: UNIDO MVA database, ILO, Whiteshield Partners

The under-performance in labour productivity can be linked to two main variables. The first relates to the sectorial composition of manufacturing in Egypt, notably in terms of knowledge intensity. The second one is linked to the employment composition of manufacturing in terms of knowledge-intensive jobs.

Accordingly, the share of high and medium high tech in MVA has been decreasing in Egypt over the last decade at a CAGR of -6% against the general trend in its industrialization level group which have witnessed a growth of the share of high and medium high tech in MVA at a CAGR of 1,2%. Currently, with a share of 14% of high and medium-tech MVA, Egypt performs below the average of its industrialization level group (37,3%). It is also largely outperformed by its peer countries led by Tunisia with a share almost 2,5 times higher and

Turkey with a share **twice** as high as Egypt. Jordan and Morocco perform around 27% which is still significantly higher than Egypt's performance.

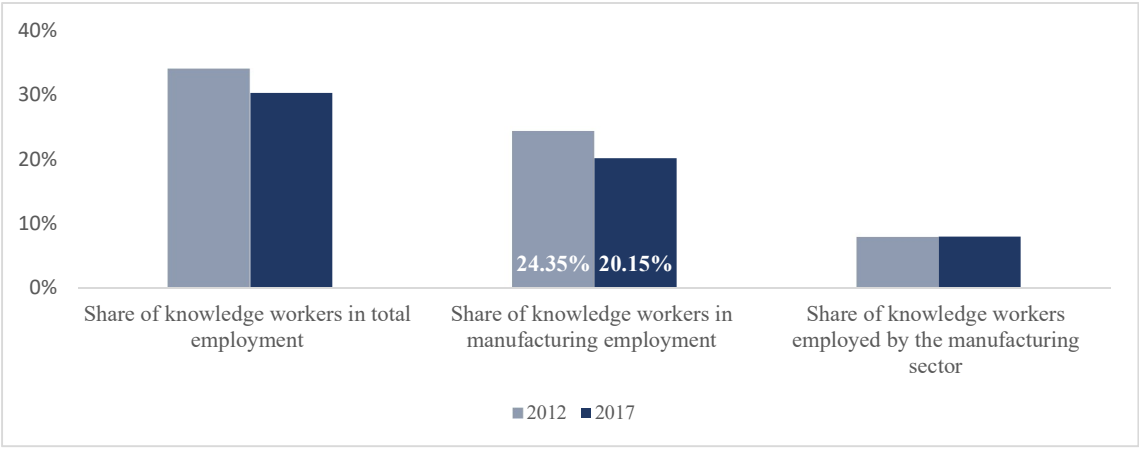
Figure 10: Share of high and medium high tech in MVA (%)



Source: UNIDO CIP database, Whiteshield Partners

Similarly, Egypt also under-performs in terms of knowledge employment. The share of knowledge workers (which includes workers in occupations of ISCO categories 1,2 and 3) in manufacturing employment has been decreasing over the past 5 years at a CAGR of -3,7%. In line with the trend in the economy in general: the share of knowledge workers in total employed decreased from 34% in 2012 to 30% in 2017. With a share of 20% of knowledge workers among manufacturing workers, the manufacturing sector in Egypt performs below than the average of the economy (30%) in terms of knowledge-intensive employment. Hence, the manufacturing sector employs only 8% of total knowledge workers in Egypt. In Turkey, the manufacturing sector employs about 12% of all knowledge workers. Both countries are still largely below the average of industrialized countries (around 40%).

Figure 11: Knowledge-workers in the manufacturing sector and in total economy in Egypt

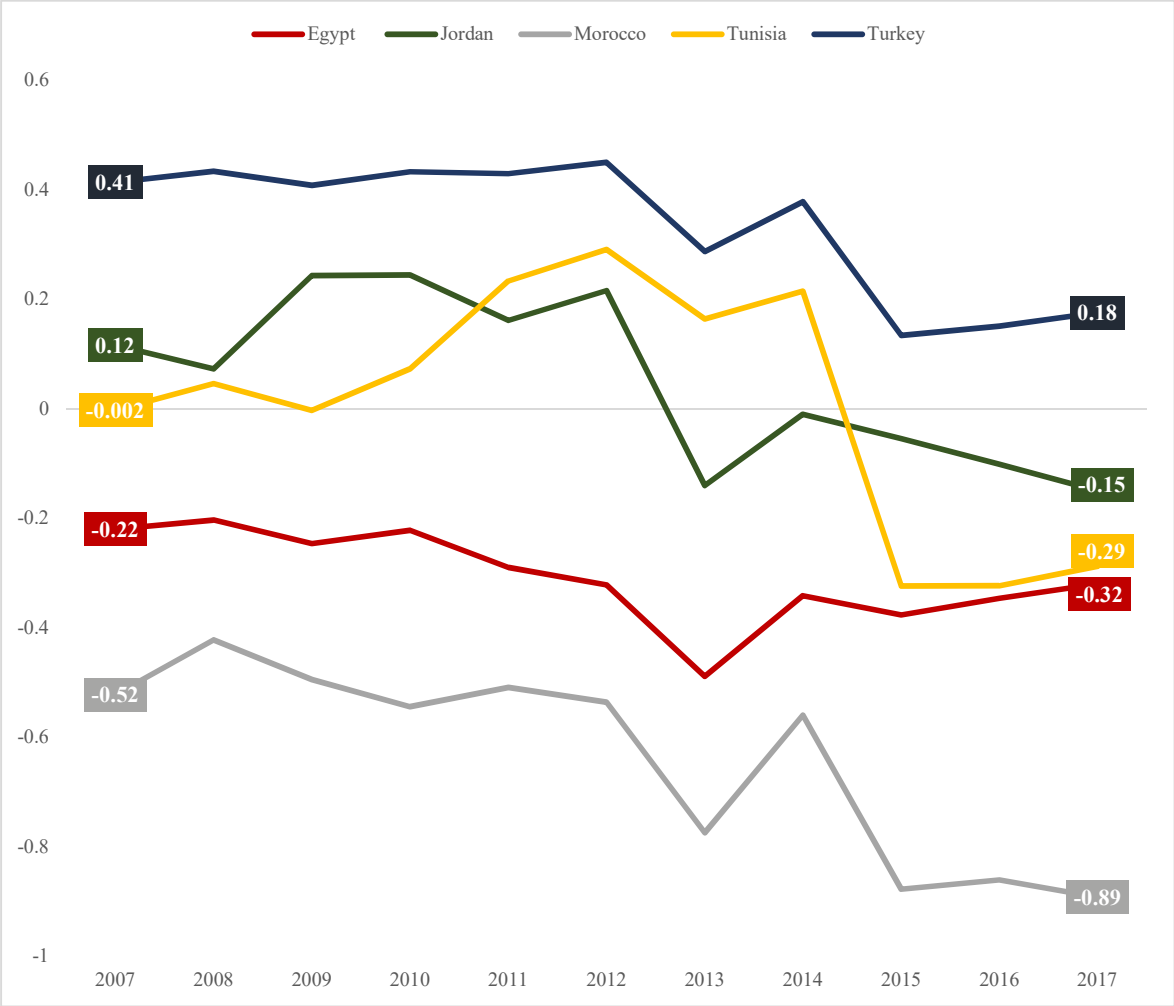


Source: ILO, CAPMAS, Whiteshield Partners

- Sectoral Focus: What does the low performance in knowledge-manufacturing entail in terms of economic complexity?

The number of revealed comparative advantages of the Egyptian product space has been increasing indicating gains in industry complexity. The number of RCAs increased by 9% over the past five years. However, the performance of Egypt in the Economic complexity index has been decreasing suggesting that the gains in RCAs were limited relative to other countries. The performance in the Economic Complexity Index decreased by 45% over the past decade. This a general trend among Egypt's peer countries including Turkey, Tunisia, Morocco and Jordan which all witnessed a decreasing performance in economic complexity. However, with a performance of -0,32 in ECI, Egypt is still outperformed by the majority of its peer-countries including Turkey (only country with a positive performance), Jordan and Tunisia- by order of economic complexity score difference magnitude. Egypt ranked **70th** out of 126 countries in economic complexity in 2017.

Figure 12: Trends in Economic Complexity Index



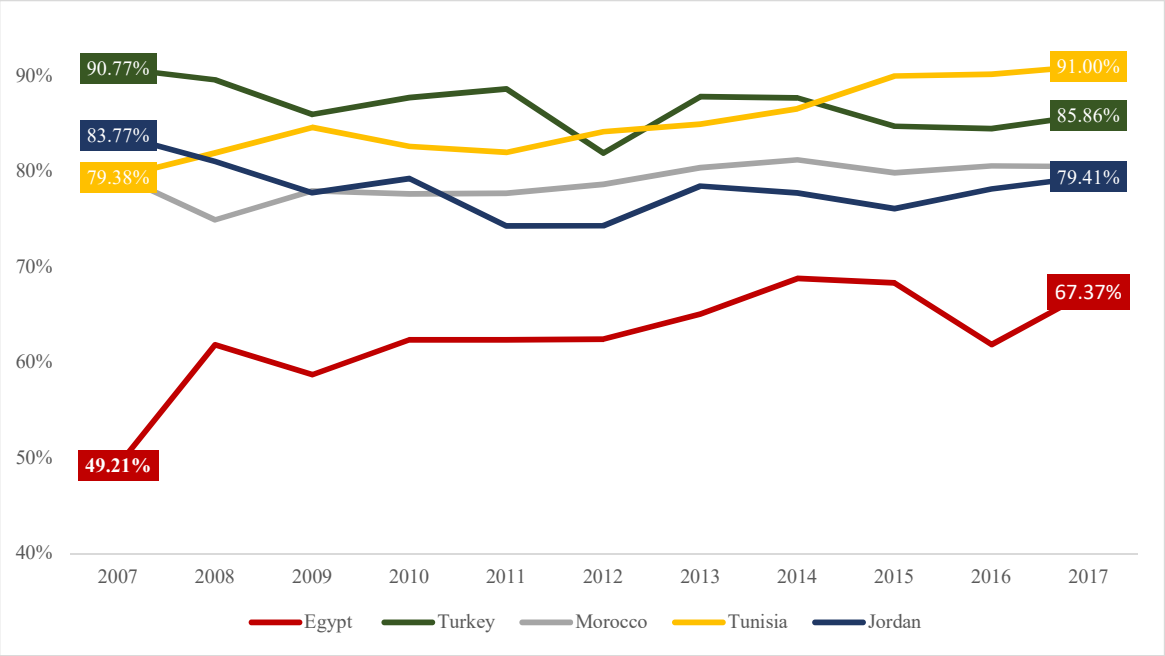
Source: Atlas of economic complexity, Whiteshield Partners

2.1.2.2 *The internationalization of the Egyptian manufacturing sector has been progressing, but Egypt's integration in GVCs is still limited to upstream segments*

- International competitiveness: How did the performance of the manufacturing sector evolve in terms of exports and foreign investments?

Manufacturing exports have been strongly increasing in Egypt over the last decade both in absolute values and in terms of share in total exports, respectively at a CAGR of 8,8% and 3,2%. This is in line with the general trend of Egypt's income and level industrialization groups. Despite this strong growth, Egypt is still in a catching-up process with its share of manufacturing exports in total exports (67,37%) below the average of lower-middle income countries and developing/emerging industrial economies. The country is still largely outperformed by its peer countries (Turkey, Jordan, Tunisia, Morocco) all with a share of manufacturing exports above 80%.

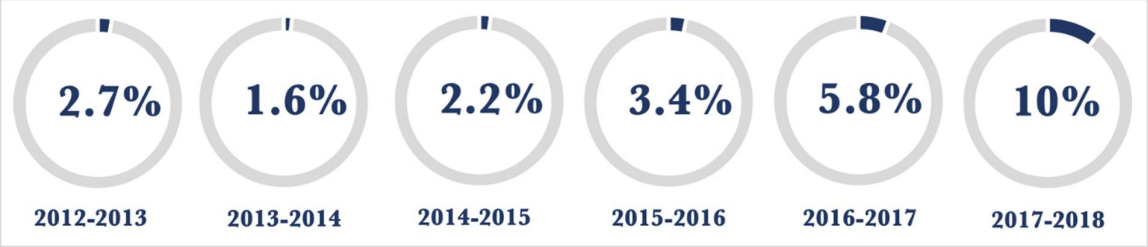
Figure 13: Share of manufacturing exports in total exports



Source: Atlas of economic complexity, Whiteshield Partners

In terms of foreign investments, FDI inflows in Egypt have been increasing during the past 5 years at a CAGR of 20%. The share of manufacturing in total FDIs inflows has also been on the rise starting the 2014-2015 financial year. Overall, between 2012 and 2018, the share of manufacturing in FDI inflows increased at a CAGR of 30%.

Figure 14: Share of FDI inflows to the manufacturing sector in Egypt by financial year

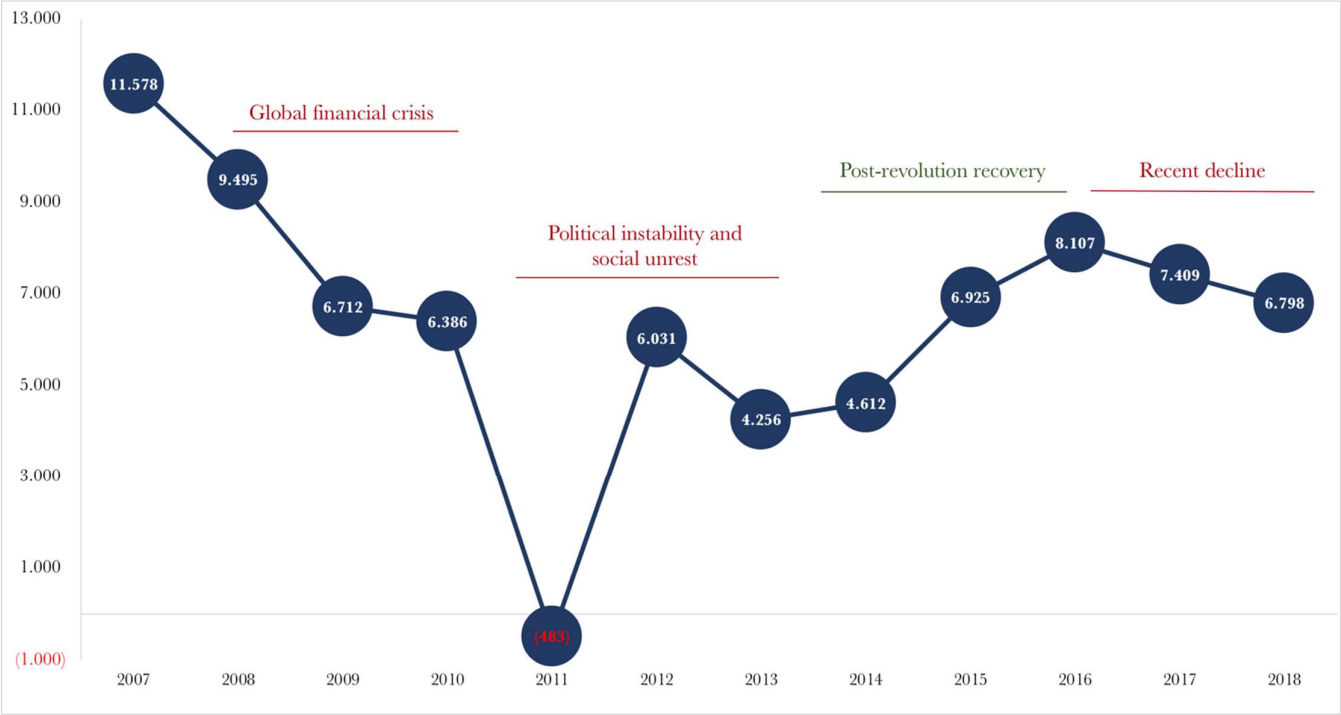


Source: Central Bank of Egypt, External Position Document, Whiteshield Partners

Despite this strong growth, the manufacturing sector in Egypt only attracts 10% of total inward FDIs, the large majority of which goes to the petroleum sector (67,3%). The services sector also attract a larger share of inward FDIs (11,2%)

Additionally, Egypt is also facing a challenge in terms of the volume of total inward FDIs. The recovery phase following political instability and social unrest lasted from 2013 to 2016. Starting 2016, the volume of inward FDIs has been on a declining trend decreasing by 16% between 2016 and 2018. Even if Egypt remains the largest recipient of inward FDIs in Africa, the current volume of these inflows remains significantly lower than a decade ago (FDIs inflows in 2018 represented slightly more than half of inflows in 2007).

Figure 15: Total FDI inflows to Egypt (million USD)

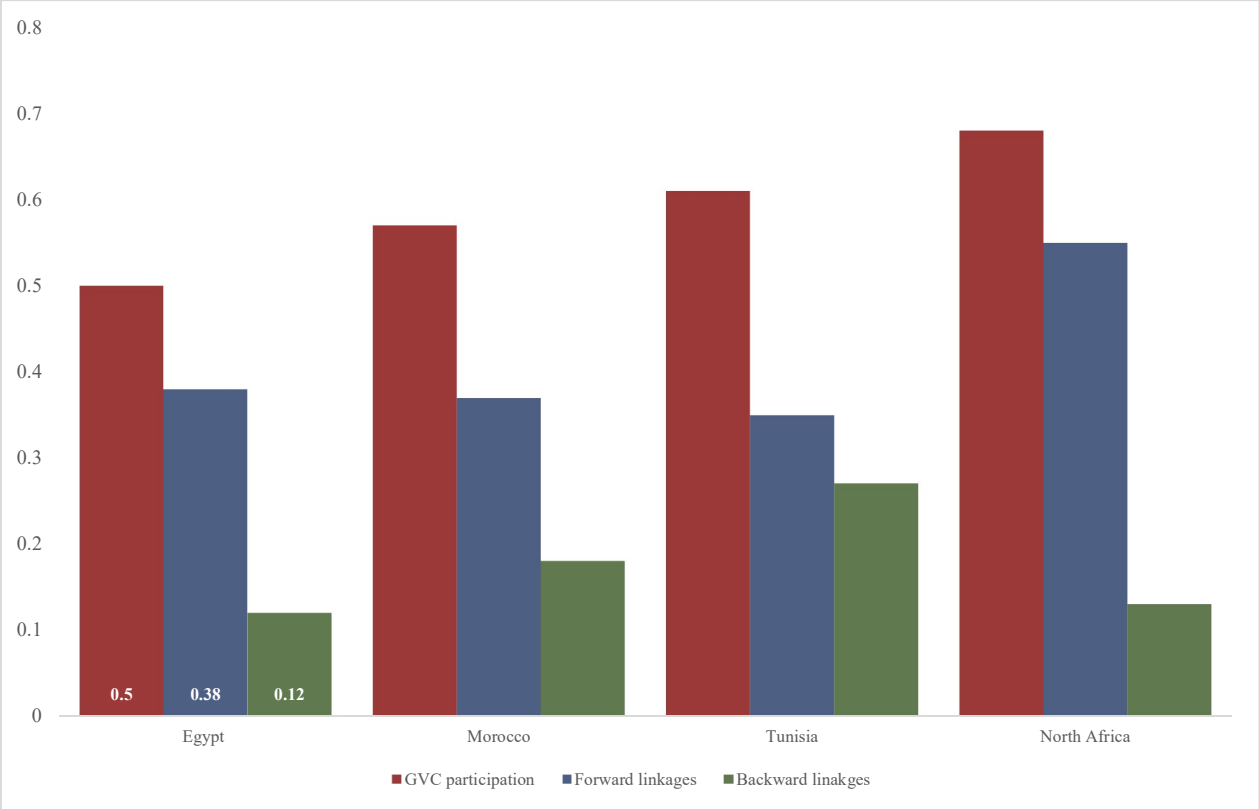


Source: UNCTAD, Whiteshield Partners

- International competitiveness: How integrated is Egypt in Global manufacturing Value Chains?

Although, on an increasing trend, the integration of Egypt in global value chains remains lower than other North African countries especially Morocco and Tunisia with an integration index of respectively 0,5, 0,61 and 0,57. The participation in global value chains can be divided into two types of linkages: backward linkages (which measure the content of foreign value-added in a country's exports) and forward linkages (which measure the content of domestic value-added in third country exports). While forward linkages can indicate a higher participation in knowledge assets at the beginning of production processes, in the case of developing countries, they are more likely to be associated with higher participation in upstream segments of basic production inputs which entail lower value-added and few opportunities of technological advancement. On the other hand, backward linkages are associated with downstream segments of production and are linked to the production of more-sophisticated export bundles and greater diversification of exports over time. Indeed, imports of intermediates are a way to access competitive inputs and thus to enhance productivity and produce goods that are more competitive for export. The Egyptian case shows a higher integration driven by forward linkages (index of forward linkages stands at 0,38) compared to backward linkages (index of backward linkages stands at 0,12) which can be an indication of specialization in upstream low-valued added segments of global value chains.

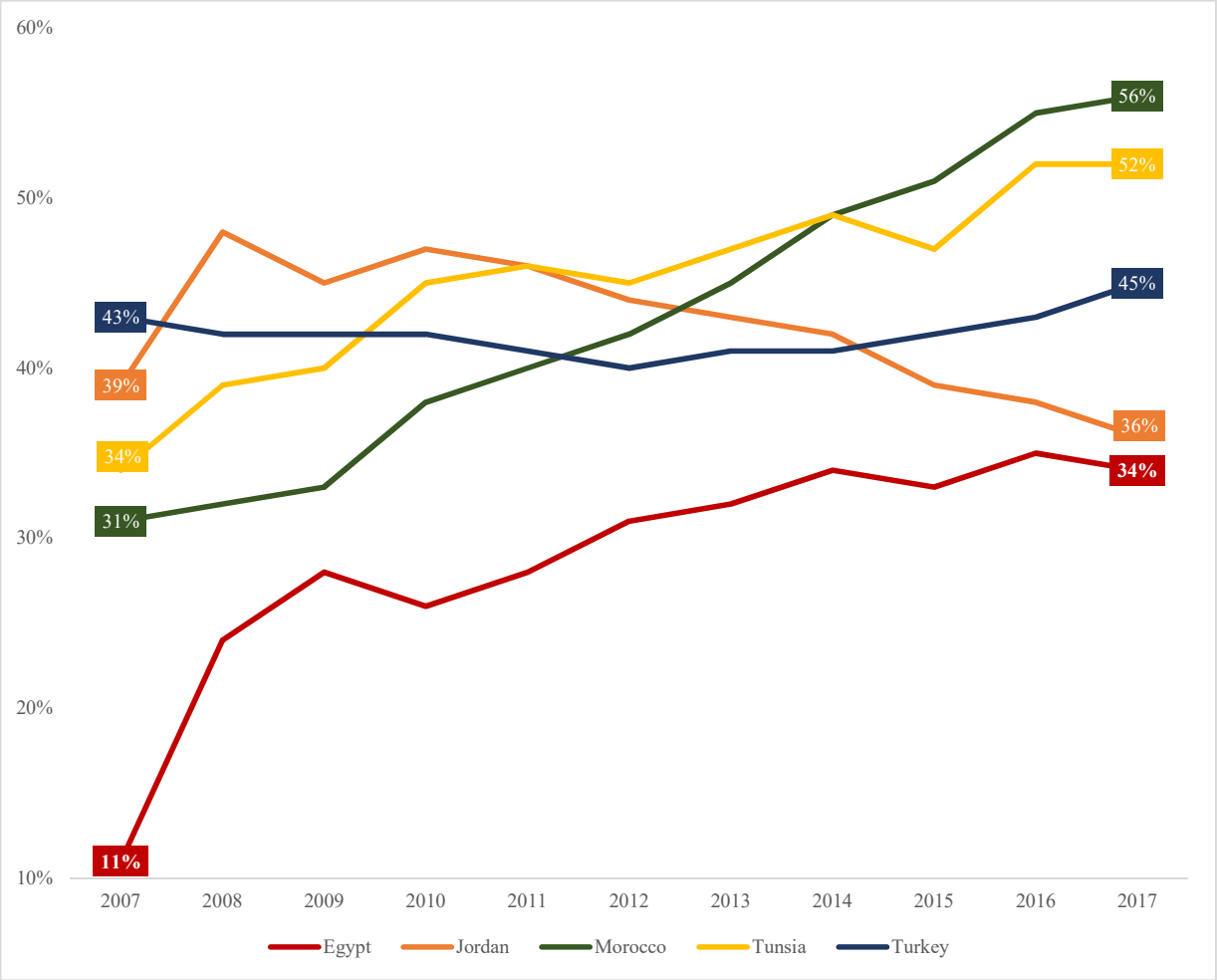
Figure 16: Participation in Global Value Chains for selected North African countries (index of GVC participation, index of forward linkages and index of backward linkages)



Source: UNCTAD, Whiteshield Partners

Accordingly, Egypt is under-performing in terms of the share of high and medium-high tech in total manufacturing exports compared to peer countries. Although the country realized major progress in this metric during the last decade (growing at a CAGR of 12%), it still has the lowest performance among other MENA region countries such as Morocco with a share more than 1.5 higher than Egypt, as well as Tunisia, Turkey and Jordan.

Figure 17: Share of high and medium-high tech exports in total manufacturing exports



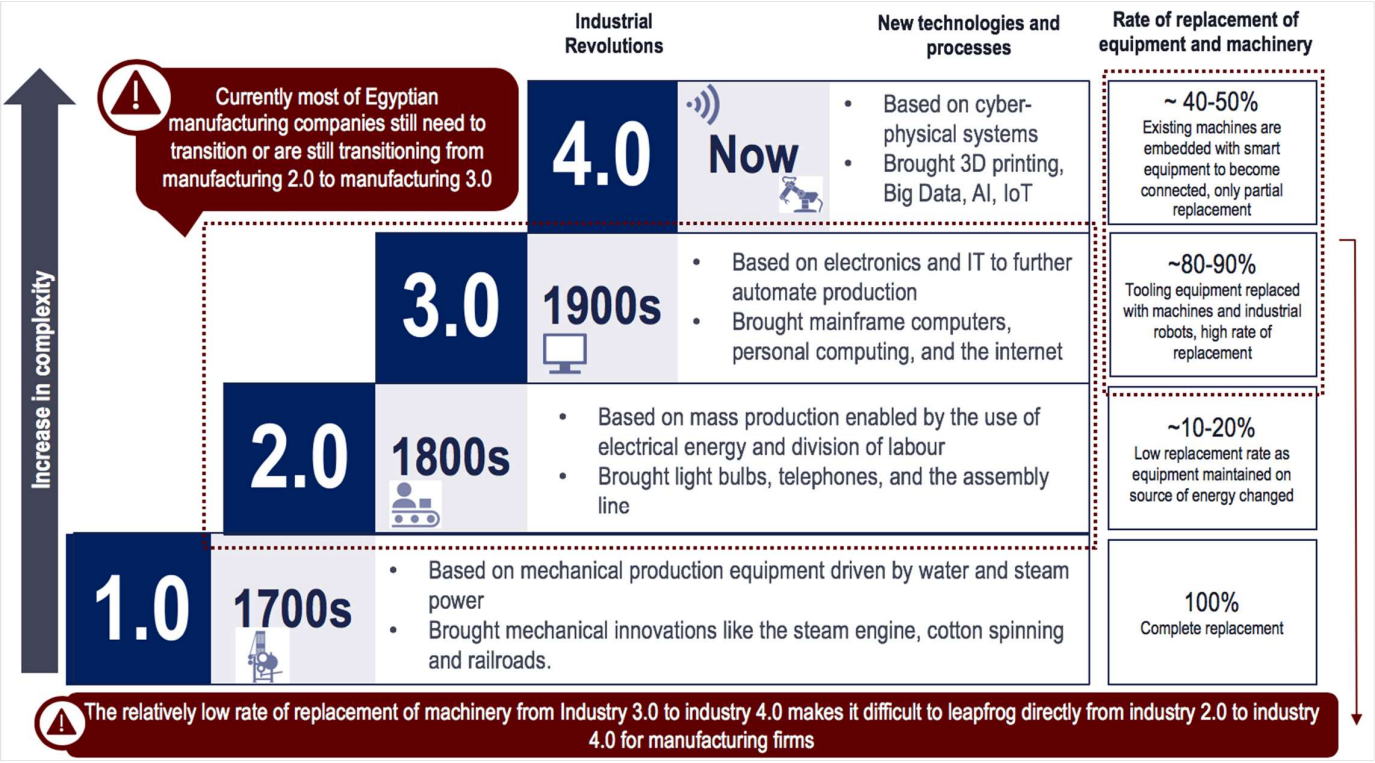
Source: UNIDO CIP database, Whiteshield Partners

2.1.2.3 *Egyptian manufacturing companies still need to fully transition to Industry 3.0 in the midst of the 4th industrial revolution*

- Where do manufacturing firms in Egypt stand in the advent of the 4th industrial revolution?

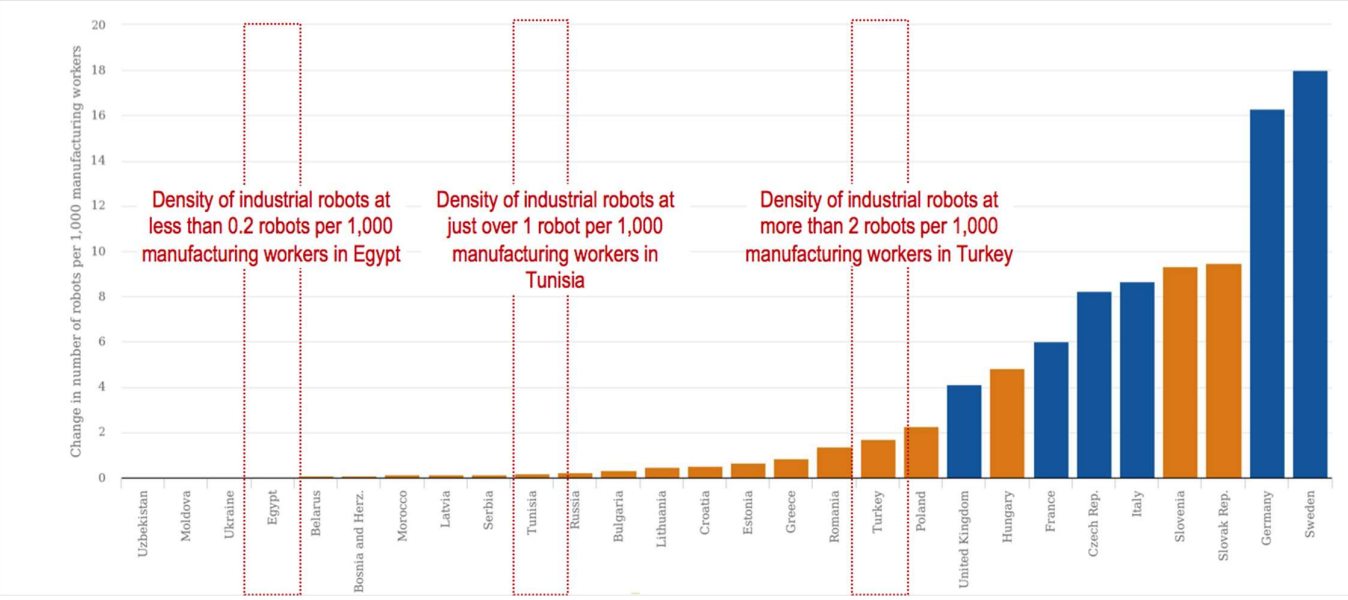
External consultations revealed that the majority of Egyptian firms are still transitioning or still need the transition from Industry 2.0 to Industry 3.0 while the 4th Industrial Revolution is already disseminating especially in developed industrialized countries. This represents a major challenge for manufacturing upgrading since the new technologies brought by the 4IR built on existing automation processes and manufacturing capabilities. Indeed, there is little room for leapfrogging from Industry 2.0 to Industry 4.0 directly at the firm level, especially from a technological standpoint since 4IR digitalization relies first and foremost on software applications (IoT, Cloud computing, Big Data, AI) to connect existing hardware machinery and evolve toward the Cyber-Physical model of Factory 4.0 (Figure 18).
More specifically, it appears that the level of automation in Egypt's industrial plants is still in the emerging stages even when compared with peer countries from the MENA region. For instance, comparing the density of industrial robots in the manufacturing sector reveals that, contrary to Tunisia or Turkey, during the last two decade, this density has not witnessed any major increase in Egypt. Currently, while the industrial robot density stands at less than 0.2 robots per thousand manufacturing workers in Egypt, it is 5 times higher in Tunisia and more than 10 times higher in Turkey (Figure 19).

Figure 18: Different stages of industrial revolution and positioning of Egyptian firms



Source: Whiteshield Partners

Figure 19: Change in the number of industrial robots per 1,000 manufacturing workers (1993-2016)



Source: EBRD, International Federation of Robotics, Whiteshield Partners

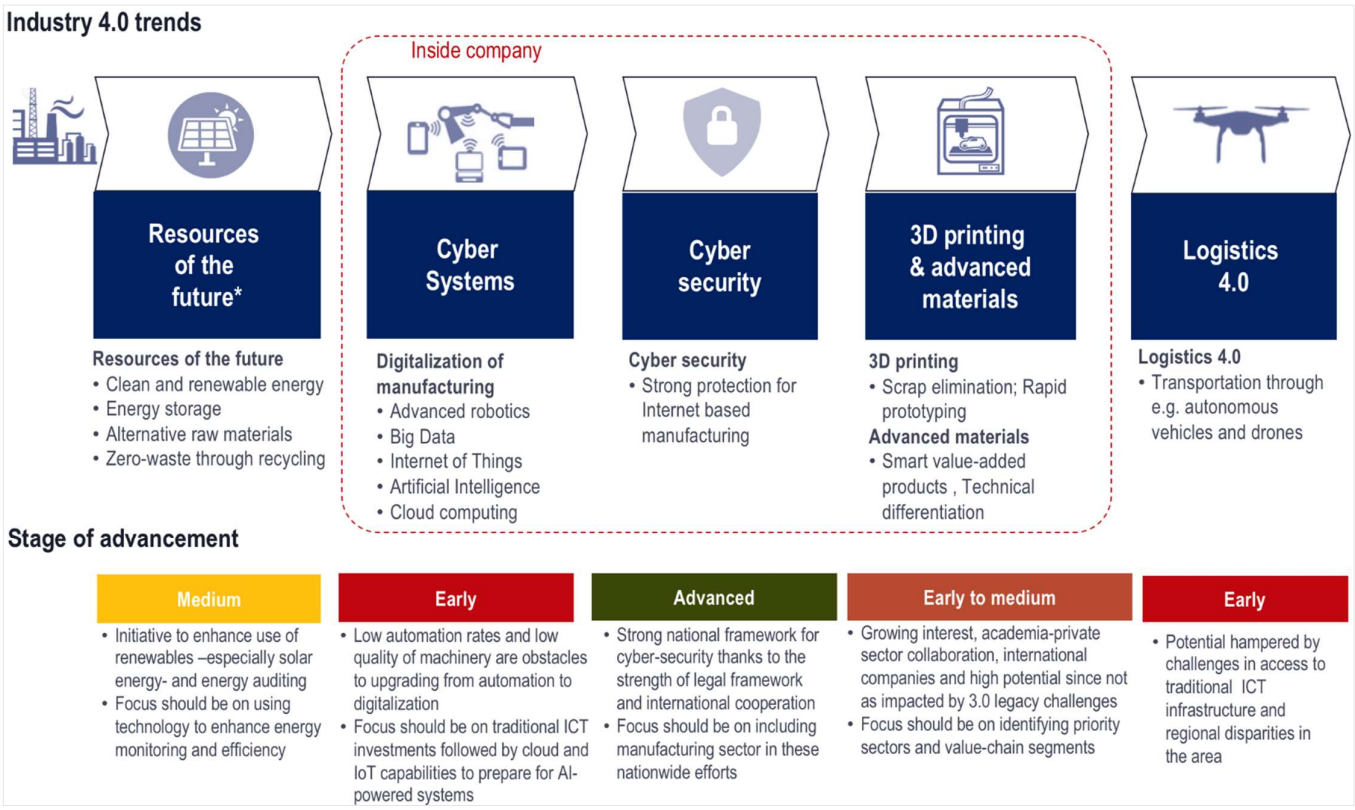
This calls for emergency priority actions within Egyptian manufacturing firms to accelerate their full transition to Industry 3.0 and automation. In this context, five main challenges need to be tackled: (1) Need to enhance machinery park and increase automation, especially field-level automation; (2) Need to progressively upgrade existing machinery which requires significant financial support for manufacturing firms; (3) Power plant supply still represents a challenge requiring actions to reduce outages and the impact of power quality issues; (4) Need to improve obsolescence management especially considering the common challenge faced by manufacturing firms in Egypt around the lack of spare parts and their suppliers; (5) Need to up-skill manufacturing employees and enhance their training especially around the LEAN manufacturing principles where skills gaps are a recurrent issue challenging the performance and upgrading of firms.

However, the 4IR is not confined to digitalization and includes other trends across the manufacturing value-chain where Egypt shows some signs of progress. The two areas where Egypt is relatively advanced include Resources of the Future and Cyber Security mainly thanks to policy driven factors such as initiatives to enhance use of renewables in the manufacturing sector or a strong legal framework promoting cyber security (Figure 20).

Considering the current advancement in the digital economy and technological trends, Egyptian manufacturing firms which have the potential to upgrade toward the 4IR need to start by adopting an integrated and progressive digital journey which includes a focus on technology applications, required infrastructure and skills and talent. It is also important to keep in mind that technological trends of the 4IR are connected and require a progressive approach. For instance, starters of the digital journey should first develop strong traditional ICT capacity and adopt digital asset management systems before focusing on internet

connectivity and cloud capabilities. They ultimately can then build for Artificial Intelligence applications and enable the transition toward a fully connected platform.

Figure 20: Egypt's stage of advancement in 4IR trends across the manufacturing value-chain



*Note: * Includes waste and circular economy*
Source: Expert interviews, Whiteshield Partners analysis

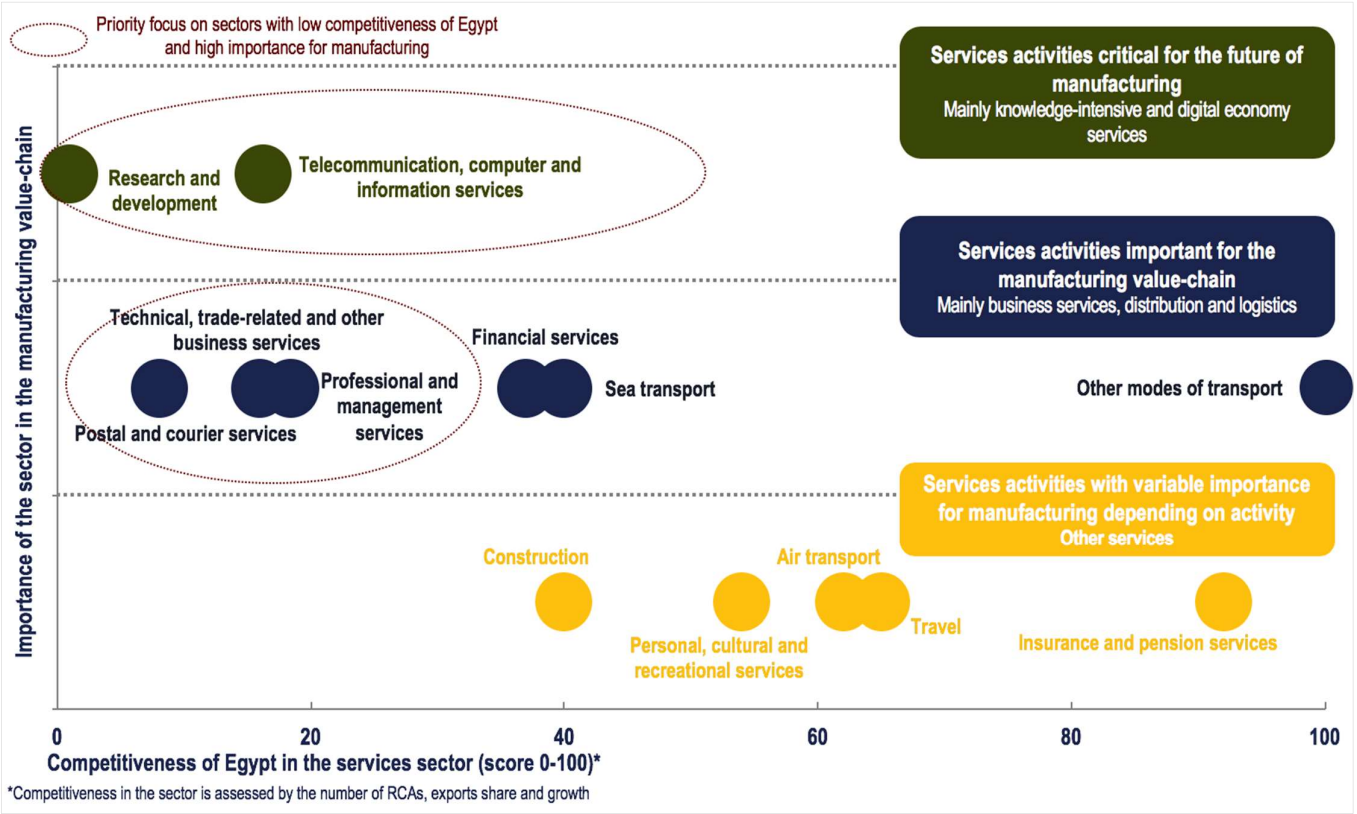
- What factors external to the manufacturing sector might represent challenges to 4IR dissemination ?

It is important to consider that the performance of the manufacturing sector, especially in terms of technological upgrading and knowledge-intensive orientation also depends on other sectors. Indeed, 4IR trends rely on a whole digital economy ecosystem where services industry and services providers play a major role. Hence, the mainstreaming of 4IR technologies within the manufacturing sector will also depend on the advancement of Egypt's digital journey in general, on ICT infrastructure as well as R&D, ICT and communication services.

More broadly, this can be linked to a trend that pre-existed the 4IR but is further deepened by its advancement and which is the servitization of manufacturing. Indeed, manufacturing firms have been ramping up their use of service inputs, leading to the emergence of service providers specifically targeting the manufacturing sector and increasingly linking the competitiveness of the manufacturing sector to that of services industries such as the ICT, R&D or engineering sectors.

In this context, it is fundamental to emphasize the importance of developing such services in order to upgrade the technological development of the manufacturing sectors. Indeed, it appears that Egypt's competitiveness is lagging behind in some services which are key to manufacturing performance and especially to the future of manufacturing including business services, R&D or telecommunication, computer and information services (Figure 21).

Figure 21: Competitiveness of Egypt in services according to their importance in the manufacturing value-chain



Source: Whiteshield Partners Sectorial Competitiveness Index

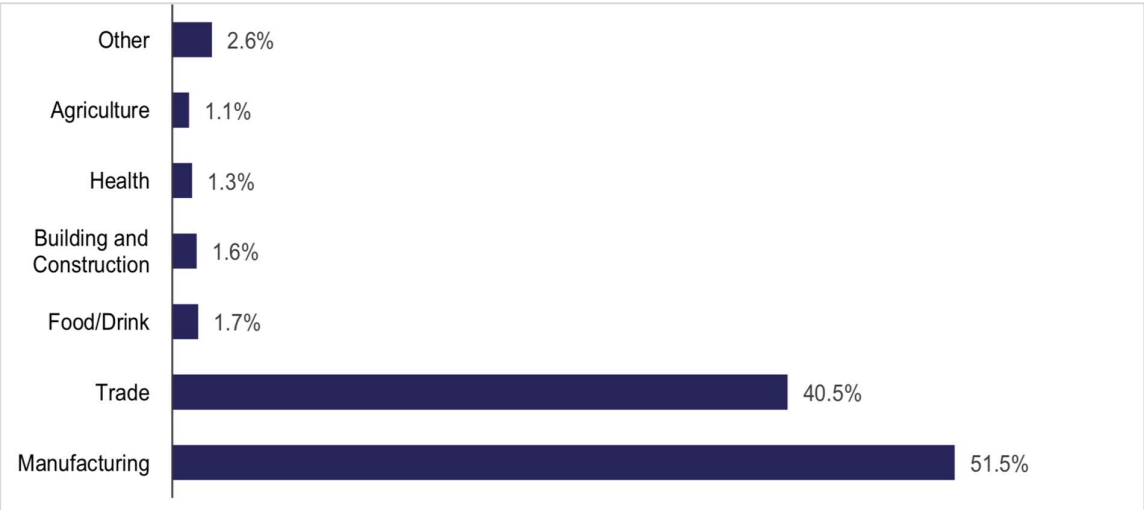
2.1.3 Social and environmental performance

2.1.3.1 The social contribution of the manufacturing sector in Egypt remains limited and can be enhanced by leveraging the potential of this SME-intensive sector

- Why does the Egyptian manufacturing sector offer a significant potential in terms of social contribution?

The manufacturing sector is very important to Egyptian SME development with more than 51% of Egyptian SMEs operating in the sector. This share if unconventionally high compared to other countries both developing and developed. In the MENA region, manufacturing SMEs usually account for a share comprised between 10% and 30% of total SMEs with trade and services accounting for the majority of SMEs. In developed countries, this share is even lower standing at around 10% of total SMEs for the EU region for instance. With this larger concentration of SMEs in the manufacturing sector, comes a larger pressure for the manufacturing sector to fulfill the social contributions usually enabled by a larger number of SMEs, including job creation particularly for segments of the labour force suffering from under-employment (such as the youth and women in the case of the MENA region).

Figure 22: Distribution of Egyptian SMEs by sector

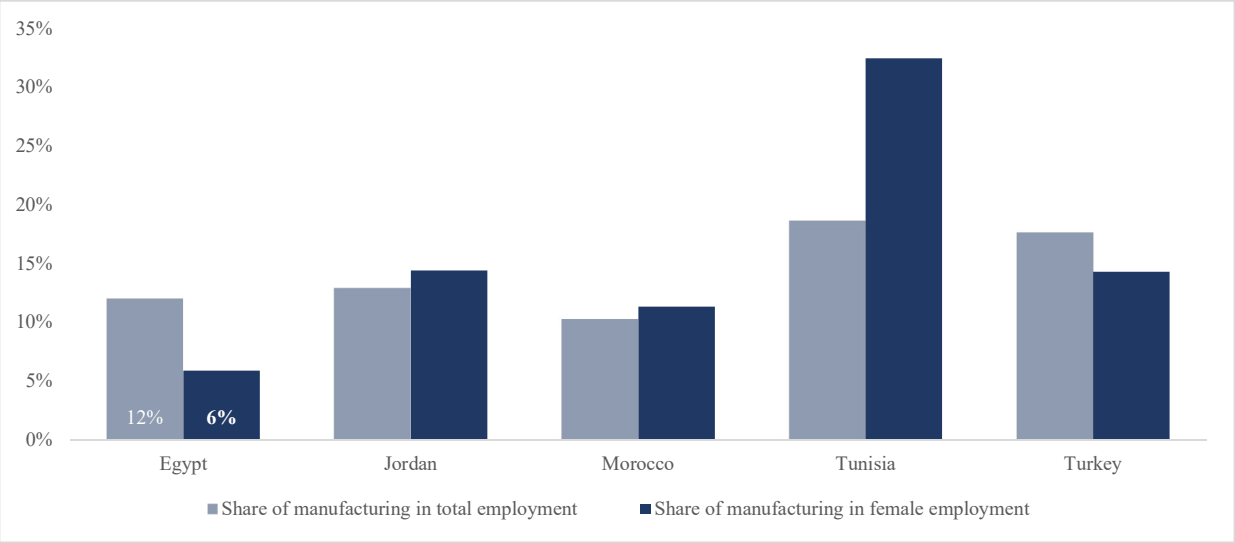


Source: Egypt Industrial Strategy (2016-2020)

- Is the Egyptian manufacturing sector living up to its social contribution potential?

In terms of female employment, the share of female manufacturing employees has been increasing both in total manufacturing employment and total female employment at a CAGR of 6% and 2,1% respectively over the last decade. However, there is still a significant gap between the share of manufacturing in total employment and the share of manufacturing in female employment, (respectively 12% and 6%). In comparison peer-countries have a larger share of manufacturing in female employment, with the largest share observed in Tunisia (32%) followed by Jordan and Turkey at around 14% and Morocco at 11%. In terms of sectorial comparison, manufacturing performs below the global Egyptian economy in terms of females in employment: the share of female in manufacturing employment is around 10% while the share of females in total employment of the country is around 21%.

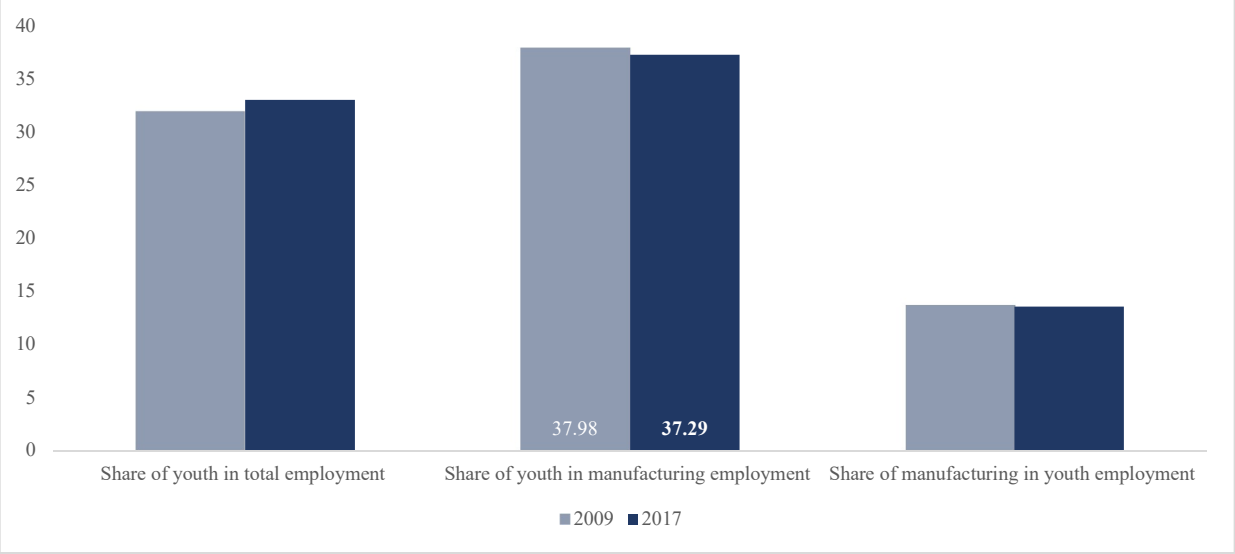
Figure 23: Share of manufacturing in total employment and female employment (2017)



Source: ILO, CAPMAS, Whiteshield Partners

In terms of youth employment, the share of young (15-29) manufacturing employees has been stagnating to slightly decreasing both in total manufacturing employment and total youth employment. Manufacturing contributes more to youth employment than total employment (respectively 13,5% and 12%). In terms of sectorial comparison, manufacturing performs above the Egyptian economy average in terms of youth in employment: the share of youth in manufacturing employment is around 37% while the share of youth in total employment of the country is around 33%. This is particularly relevant for Egypt, an economy where the unemployment rate of the youth (about 30%) is significantly larger than average unemployment rate (12%). Manufacturing can represent a source of employment for the youth, provided that the historical trend does not persist

Figure 24: Youth employment in the manufacturing sector and in total economy in Egypt



Source: ILO, CAPMAS, Whiteshield Partners

2.1.3.2 *Manufacturing development shows high levels of regional disparities considerably impacting regional inclusiveness and human development*

In general, the level of inequalities in Egypt is increasing and a major driver of under-performance in social outcomes and human development indicators is the high level of regional disparities. These are transparent in employment outcomes such as unemployment rate where some governorates have unemployment rates at around 4% while others suffer from rates as high as 23% (Red Sea) or 48% (North Sinai). These high economic regional inequalities can indubitably be linked to disparities in industrial intensity and capabilities.

Mapping governorates according to their industrialization intensity (as measured by regional manufacturing value-added per capita) and human development performance reveals four main regional clusters (Figure 23).

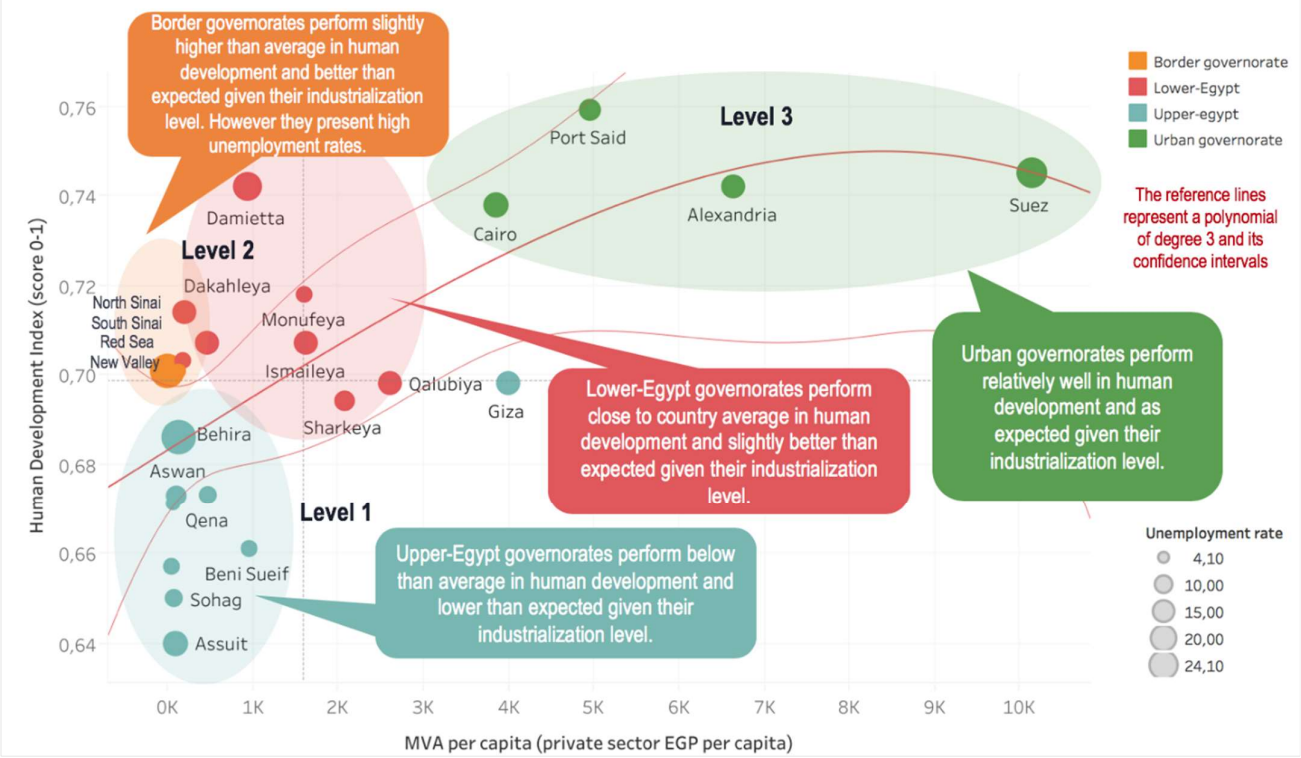
The best performing cluster consists of urban governorates (Cairo, Alexandria, Port Said and Suez) which are clearly leading in terms of industrial intensity performing far above the average in MVA per capita and consisting of more than 25% of the country's industrial establishments. They also present the best performance in terms of human development as expected given their advanced industrialization.

Lower-Egypt governorates have MVA per capita around average and slightly higher than average human development performance. The two other clusters are lagging behind with manufacturing intensity far below average.

The border governorates still manage to perform relatively well in terms of human development given their low industrialization which might indicate a reliance on other sectors, but they also present some of the highest unemployment rates. Upper-Egypt governorates are the least advanced both in human development and manufacturing intensity.

It is critical to increase regional inclusiveness in manufacturing to support these two lagging clusters. Indeed, as demonstrated by more advanced regions, increasing industrialization intensity in Upper-Egypt governorates can help them improve their human development performance. Meanwhile border governorates could benefit from increased industrialization to enhance job creation and reduce their very high unemployment rates.

Figure 25: Human Development and industrialization by governorate (2016)



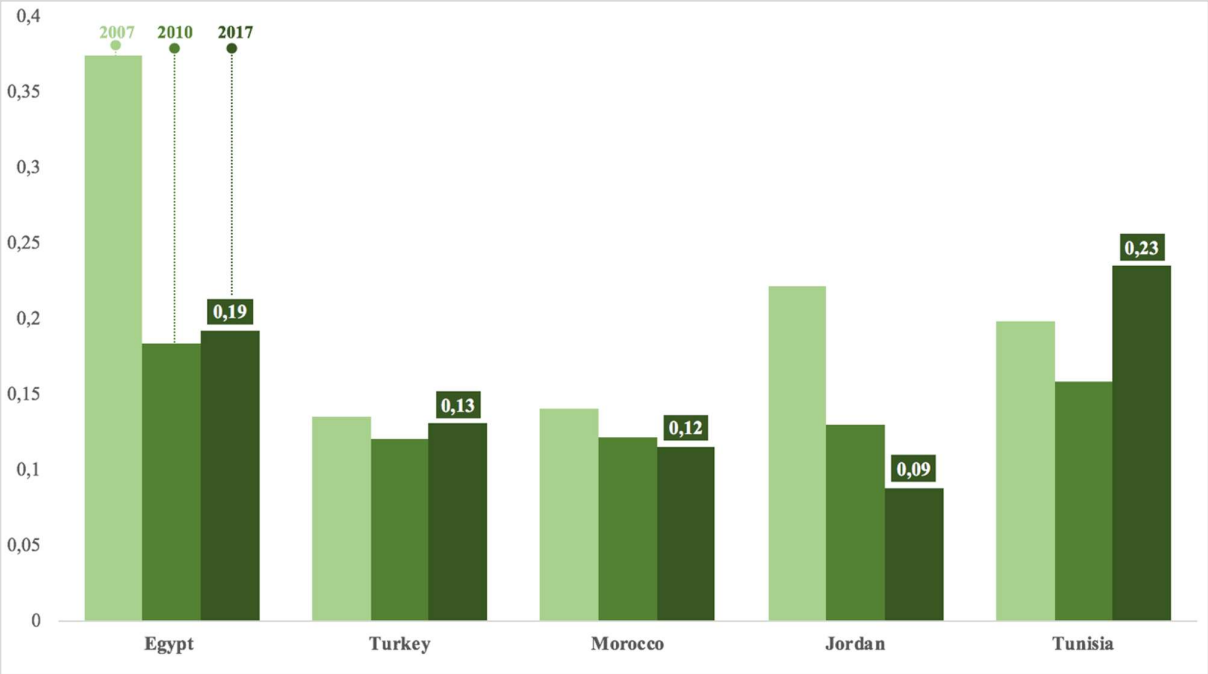
Source: UNdata, CAPMAS, Whiteshield Partners

2.1.3.3 *Egypt underperforms in key environmental performance indicators including energy, emissions and waste management*

How does the structure of Egypt manufacturing sector shape its energy performance?

Overall there has been a general improvement in terms of the energy intensity of the industrial sector over the past few years and among most countries, including Egypt and its peer-countries. Egypt witnessed a significant progress decreasing the energy intensity of its industrial sector by half during the last decade, the largest improvement among its peer-countries. However, Egypt also had the highest energy intensity at almost 0,4 tons of oil equivalent per thousand industrial value-added. Currently, at around 0,2 TOE, Egypt performs better than some peer-countries such as Tunisia but still higher than average of 0,15 among benchmarked countries, Additionally, although the country achieved major progress in the area, this can also indicative of structural changes related to the a higher focus on lower added-value, lower energy intensity activities in Egypt manufacturing sector rather than mitigation efforts to reduce energy consumption in industry.

Figure 26: Energy intensity of the industrial sector (Toe consumed per thousand value-added current US dollars, 2007-2017)

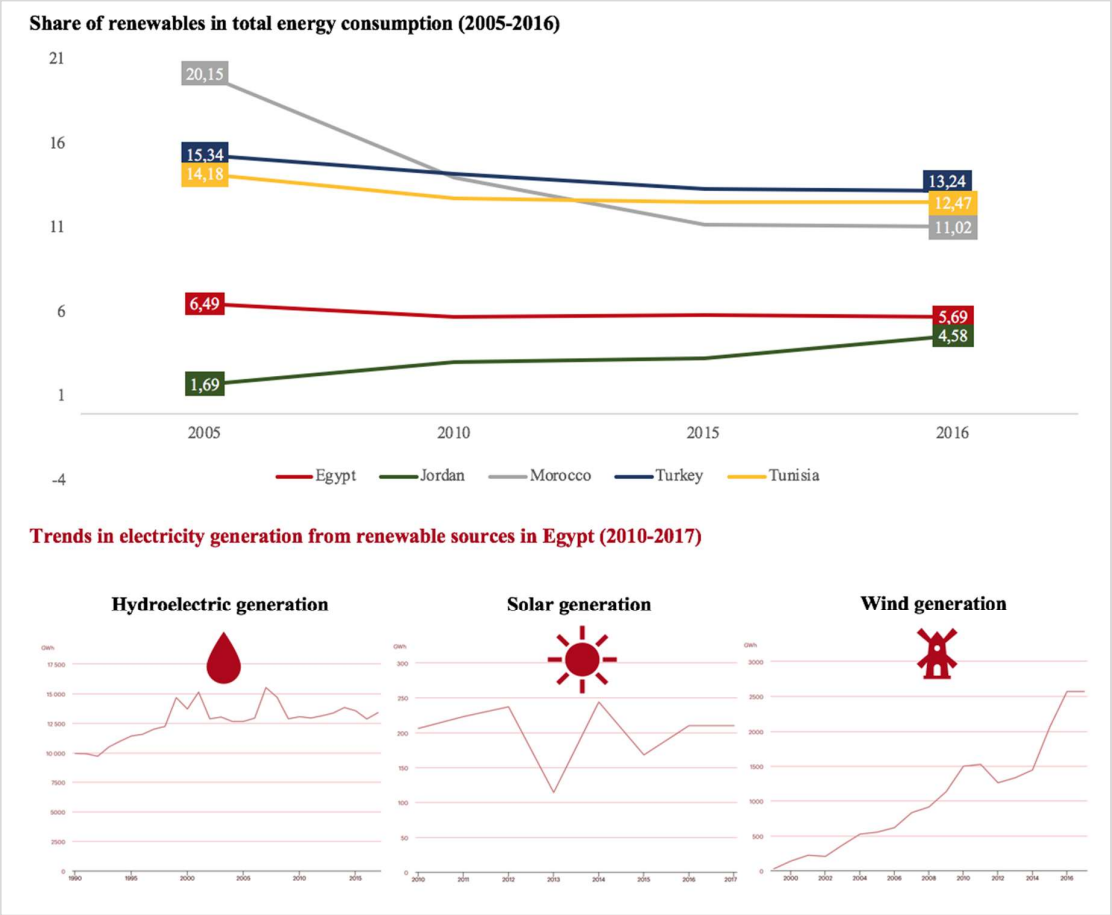


Source: World Bank, International Energy Agency, Whiteshield Partners

The relatively high industrial energy-intensity is a significant challenge especially when taking into account the use of renewables by the country. Indeed, the share of renewable energies in final energy consumption did not witness any significant progress and has been stagnating to slightly decreasing over the last decade. At 5,7%, the share of renewables in energy consumption is one of the lowest among benchmarked countries especially when compared to Turkey (13,2%), Tunisia (12,5%) and Morocco (11%). Electricity generation from renewable sources has not witnessed any major improvement (solar and hydrolic

electricity generation have been stagnating to slightly decreasing during the past decade) except in the case of electricity generation from wind although its absolute value remains limited.

Figure 27: Key indicators for renewable energy in Egypt

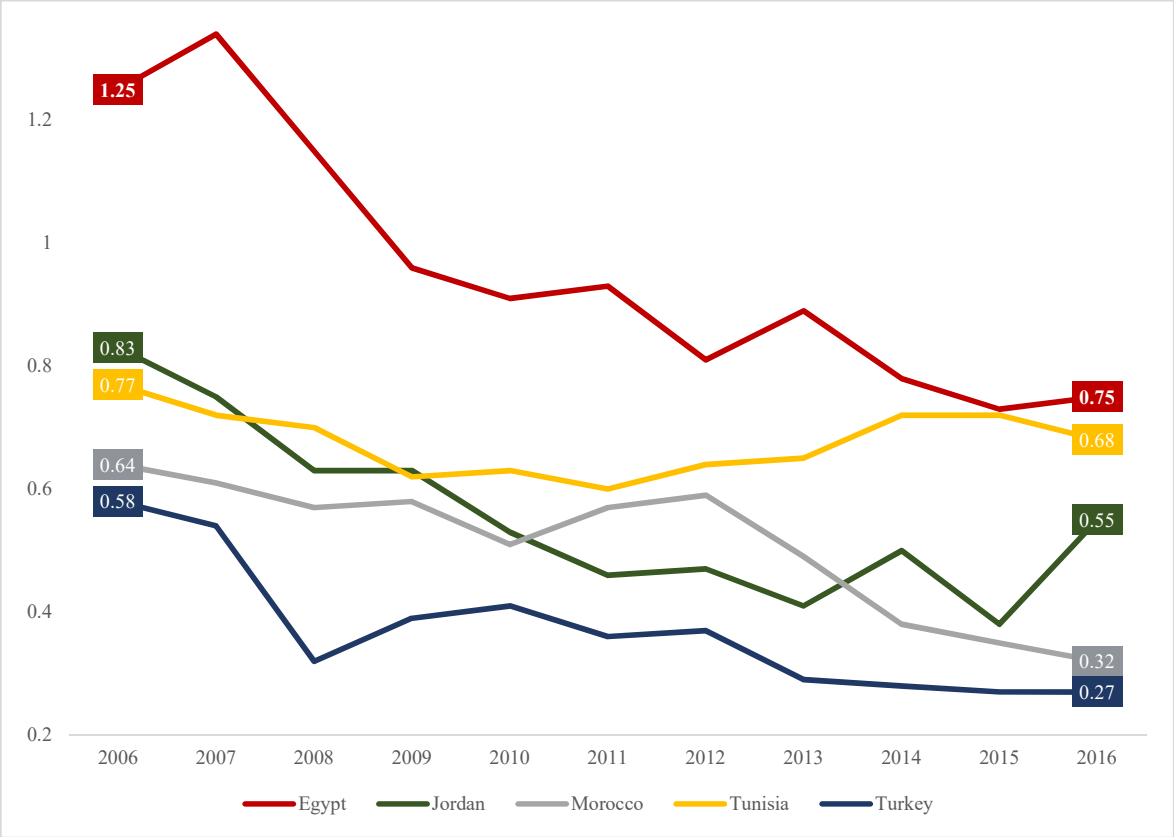


Source: International Energy Agency, Whiteshield Partners

To what extent has Egypt been able to mitigate the environmental impact of its manufacturing sector ?

CO2 emissions per manufacturing value-added unit have been decreasing at a CAGR of -4,98% over the last decade. Although this is a relatively strong improvement, some peer-countries show higher progress especially Turkey with a CAGR of -7,36% and Morocco -6,7%. Despite the decrease in CO2 emissions per MVA, Egypt is under-performing compared peer-countries with 0,75 kg of CO2 for each dollar of MVA. Egypt has the highest CO2 emissions rate per MVA unit compared to Turkey, Jordan, Morocco and Tunisia. CO2 emissions per MVA unit are almost three times higher compared to Turkey and more than twice as high as Morocco's.

Figure 28: Trends in CO2 emissions intensity of the manufacturing sector (kilograms of CO2 per constant 2010 United States dollars)



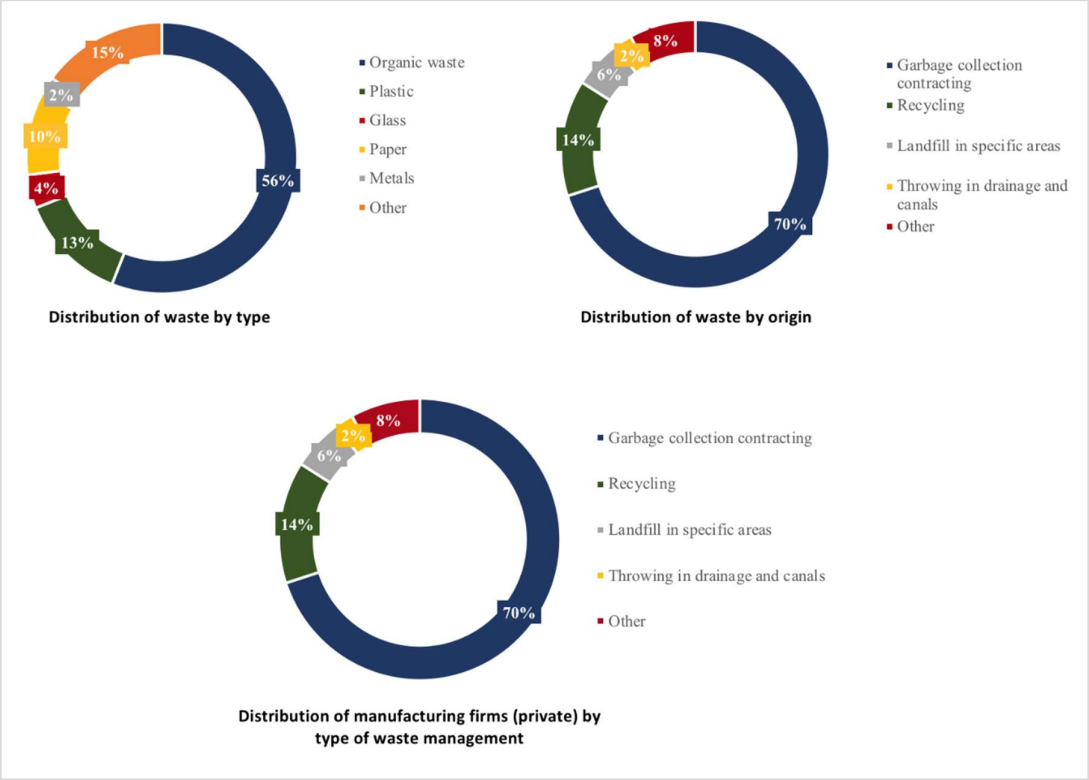
Source: World Bank, International Energy Agency, Whiteshield Partners

In terms of waste management, Egypt presents here a significant potential for improvement. Egypt generates about 1.2 kg of solid waste per person per day by households. Its collection coverage rate is at around 40% while the unsound disposal rate exceeds 80%[1]. Only about 2,5% of solid waste is recycled. This rate varies significantly between regions. The 3 best performers recycle between 98 and 72% of their solid waste (Gharbiya, Kafr al-sheikh, Qalyubia).However, the gap with the rest of governorates is very high. The fourth best performer (Daqahlia) has a recycling rate of only 0,5%[2].

The industrial sector is the 4th largest source of solid waste (6,7% of total waste generated in 2015). Additionally, among private manufacturing firms only 13% recycle their waste. Among manufacturing activities, the plastic industry is one of the largest generators of solid waste, Plastic waste is indeed the 2nd largest form of solid waste in Egypt after organic waste. The country generates between 2,1 and 2,5 mn tones of annual plastic waste and only 20% of it is recycled while less than 3% of it is being re-used. In total almost 70% of plastic waste is not collected, buried or burned.

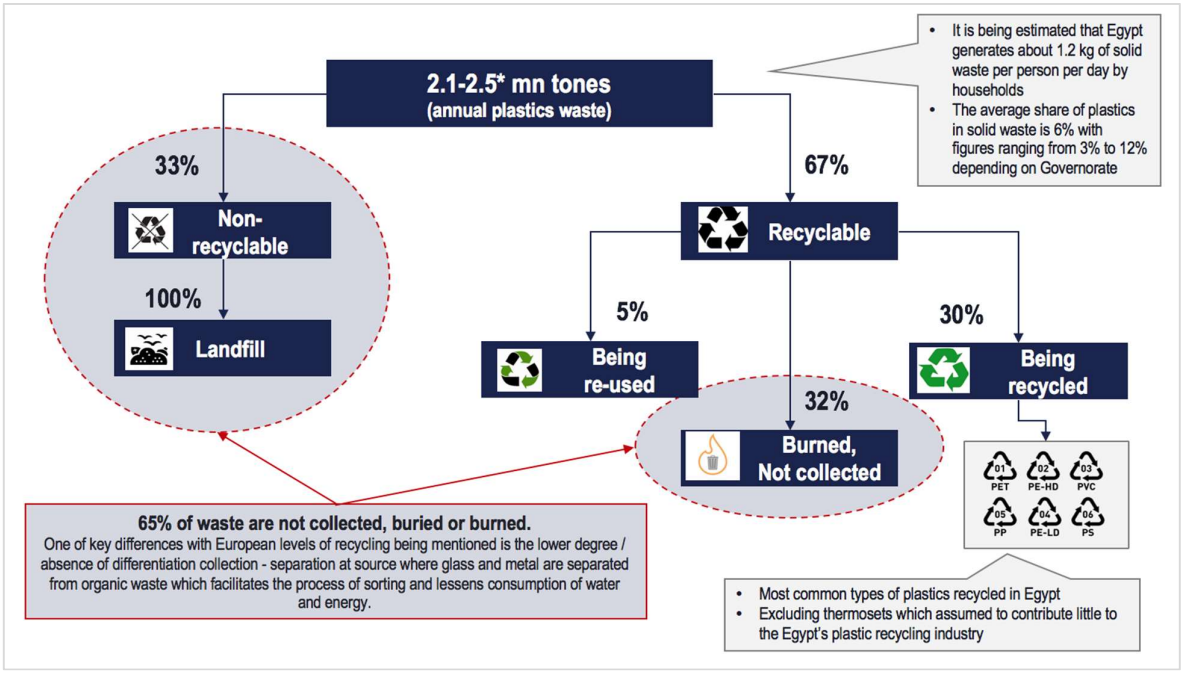
[1] Waste Atlas, http://www.atlas.d-waste.com/index.php?view=country_report&country_id=15
[2] CAPMAS, Environmental Annual Bulletin, 2017

Figure 29: Key indicators for waste and waste management in Egypt



Source: CAPMAS 2015, Environmental Affairs Agency 2016, Waste Atlas, Whiteshield Partners

Figure 30: Plastic waste management in Egypt



Source: Whiteshield Partners

2.2 Mapping and assessment of polies relevant to the manufacturing sector in Egypt

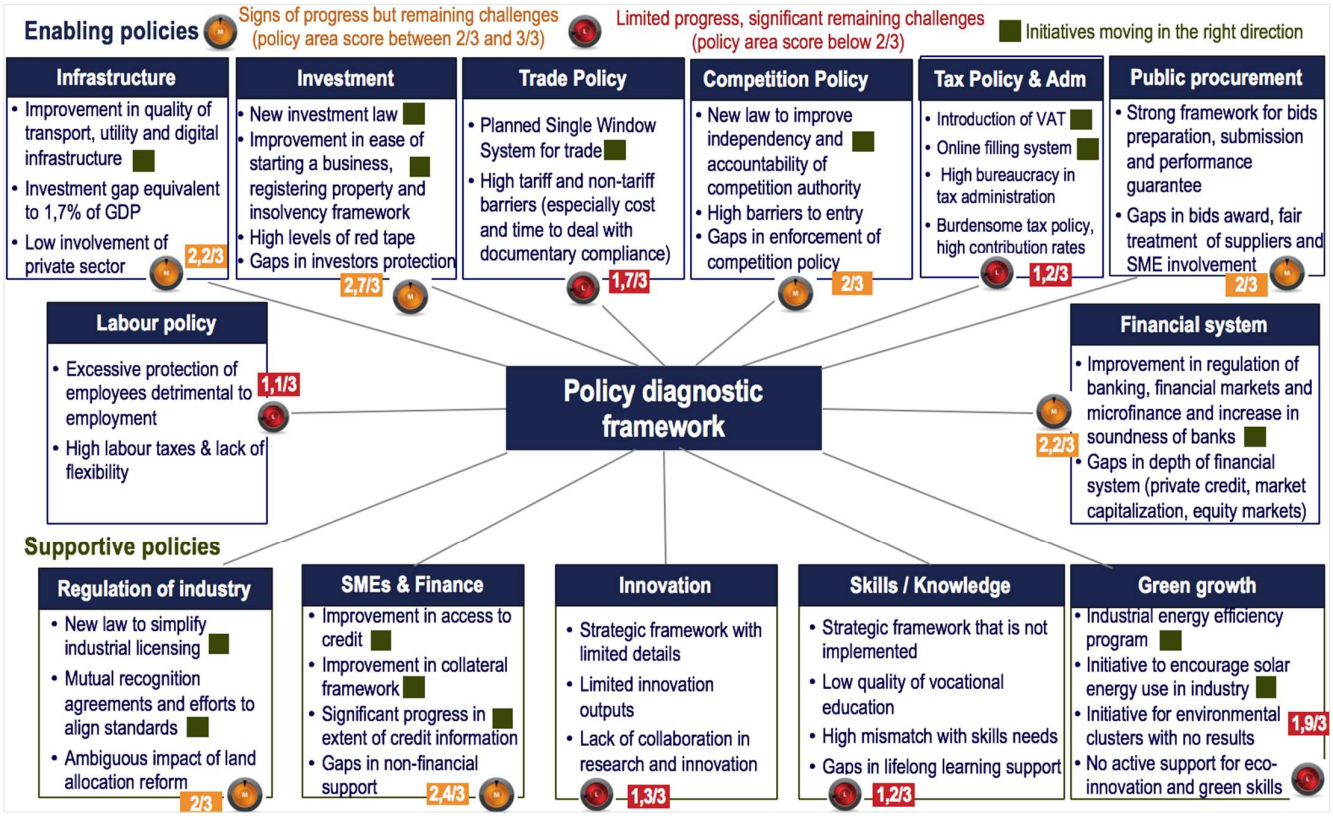
2.2.1 Policy diagnostic framework and summary

To prioritize policy interventions, policies impacting the manufacturing sector were grouped into 13 areas along two categories (8 enabling policy areas linked to the general business environment and mainly related to business and market regulations and 5 support policies directly linked to the manufacturing sector and manufacturing firms support).

Each policy area was attributed a general score based on three dimensions (1) the current performance of Egypt in the area compared to peer countries (2) the extent of policy efforts and initiatives in the area (3) the efficiency of initiatives in leading to tangible progress over the past five years. Global scores enable the comparison of progress in each area and the identification of the most challenging ones requiring priority interventions (Figure 31).

The details of scores and list of indicators used are provided in appendix 1. Detailed analysis by policy area is provided in appendix 4.

Figure 31: Summary of diagnostic by policy area



Source: Whiteshield Partners

2.2.2 Enabling policy areas diagnostic

In terms of enabling policies, Egypt has engaged in a wide range of regulatory reforms across different policy areas which allowed the improvement of the general business environment as reflected in the scores of the country in international rankings such as Doing Business Index (Figure 32). Four areas have witnessed significant improvements including investment policy, infrastructure, public procurement, financial system and competition policy with investment policy showing the most important progress.

In terms of investment policy, several regulatory initiatives allowed Egypt to increase the ease of doing business. These reforms revolved around reducing the requirements and cost to start a business, simplifying and automating procedures, as well as increasing the rule of law in business regulation. In particular, the legal frameworks of insolvency and investors protection witnessed significant improvements with the introduction of the reorganization procedure and the reinforcement of creditors and investors' rights.

In addition to business regulation, Egypt strengthened its investment promotion policy with the regime of new incentives governed by the Investment Law No. 72 of 2017. The law grants general incentives to all as well as specific incentives depending on the region of investment and the sector (including various manufacturing activities such as the automotive industry and pharmaceutical manufacturing) in the form of a deduction of between 30% and 50% of investment costs from taxable net profit.

A new Sovereign Wealth Fund was also created with the aim of attracting and steering investment toward sectors that the state sees as vital to the economy through different types of partnerships (with private-sector investors in specific industries, with other sovereign wealth funds, with the private sector on specific projects through PPP, JVs and other sub-funds). However, and despite efforts to streamline administration procedures for businesses, bureaucracy remains a major issue for the business environment, particularly in areas such as registering property. It takes on average 76 days to register a property (compared to 22 days in the MENA region). Additionally, there is still room for improvement in enhancing the rule of law for business regulation. For instance, within the protection of investors area, the extent of corporate boards' liability remains limited -below MENA region average- as is the ease for shareholders to sue in case of damages. In the enforcement of contracts, the quality of judicial process is also lagging behind the average of the MENA region.

Similarly, competition policy, public procurement and the financial system also witnessed a range of regulatory reforms improving their framework. The new competition law in 2019 aimed at improving financial, institutional and operational independence of the Egyptian Competition Authority and increasing its accountability and transparency. In public procurement, the new Government Procurement Act was based on international best practices to enable transparency, open and fair competition and improved management of procurement procedures. Finally, in financial regulation a series of circulars issued by the Egyptian Central Bank aimed at aligning the banking and capital markets regulation with international best practices and the recent evolutions of the financial services industry. However, enforcement challenges are slowing down policy progress especially in competition where the ECA's success is largely dependent on the judicial process. Similarly, in public procurement some provisions such as the minimum threshold for procurement from SMEs remain weakly

enforced. Finally, these regulatory reforms positively impacting the enabling environment were complemented by significant infrastructure improvements including in the quality of transport infrastructure and the access to utilities and digital infrastructure. However, an increased participation of the private sector in infrastructure projects is required to enhance investments especially in ICT infrastructure and prevent significant gaps in the future.

Policy areas with greatest room for improvement are labour, trade and tax policy (Figure 33). Some initiatives in these dimensions denote potential improvements such as the streamlining of tax administration through the introduction of an online system for filing and payment of corporate tax and value-added tax, the introduction of a VAT regime replacing the 10% Sales Tax and following the OECD-model or the forthcoming creation of an Egyptian National Single Window (ENSW) system for international trade. However, major reforms are still needed in these three areas especially since some newly introduced initiatives can negatively impact policy progress. For instance, Egypt's performance in the ease of trading across borders decreased due to regulatory changes in 2017 making the process of obtaining and processing documents more complex and imposing a cap on foreign exchange deposits and withdrawals for imports. Similarly, the new Labour Law is expected to further reduce the flexibility of the labour market which already represents a significant challenge for businesses.

Figure 32: Evolution of Egypt Doing Business scores (2016-2020)

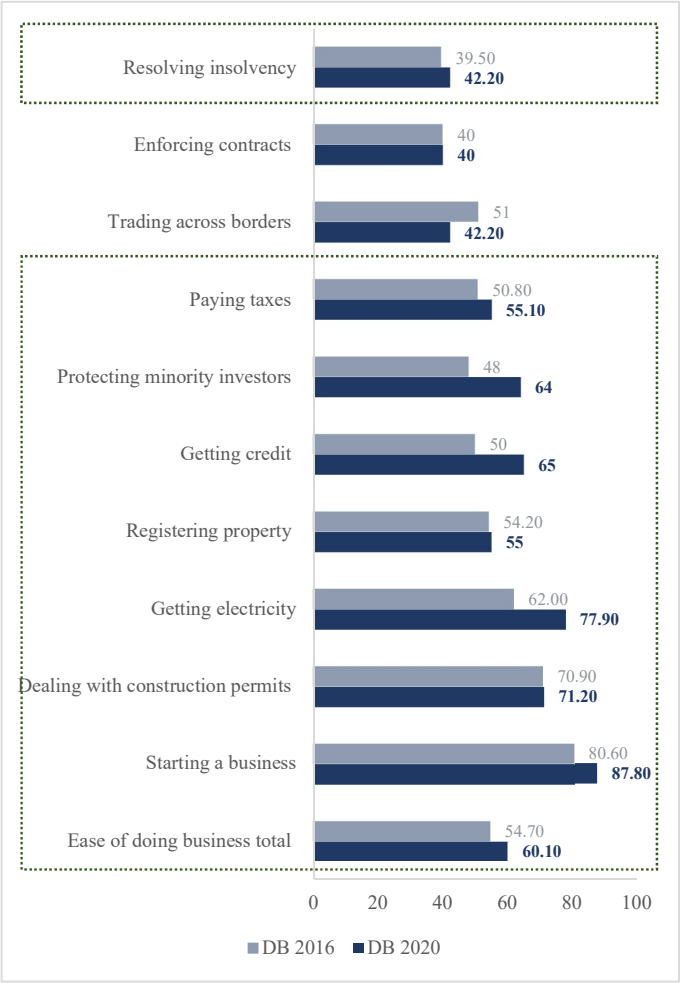
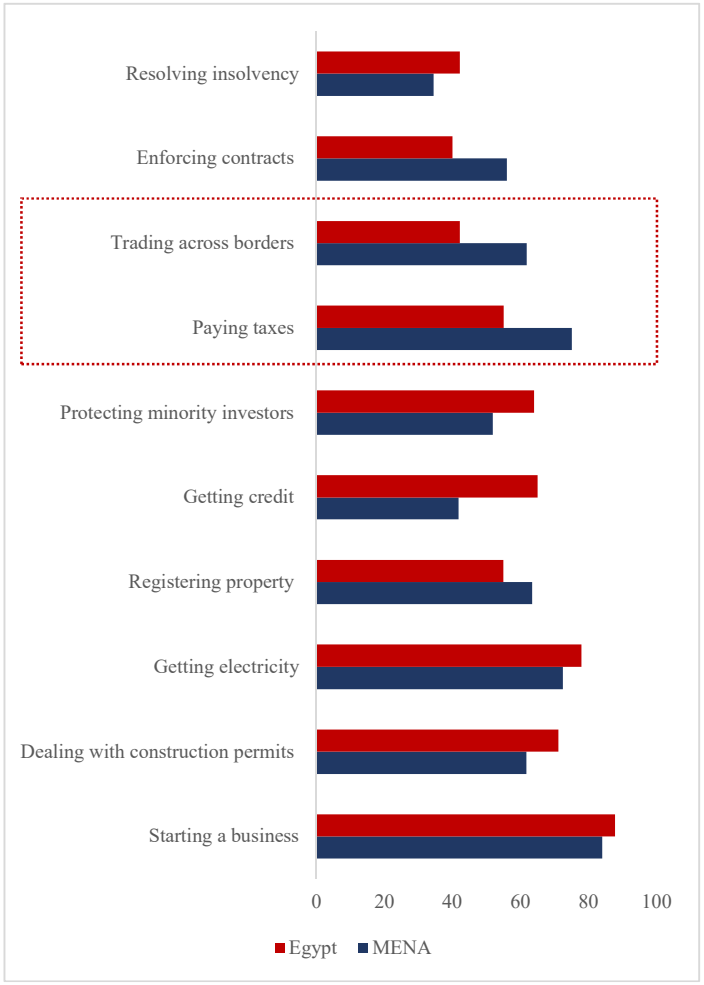


Figure 33: Benchmarking of Egypt's Doing Business scores with MENA average (2020)



Source: World Bank Doing Business ranking

2.2.3 Support policy areas diagnostic

In terms of support policies, areas which have witnessed the largest improvement include regulation of the industrial sector as well as SME support and access to finance.

Indeed, several initiatives were introduced to streamline and improve the regulation of the industrial sector at different levels. In terms of industrial licensing, the Law No. 15 of 2017 for the Simplification of Industrial Licensing Procedures simplified the requirements and shortened the length of procedures for issuing industrial licenses to 7 days for low-risk industries and 30 days for high-risk industries. In terms of industrial land, new guidelines were introduced replacing the first-come, first-served system by a scoring mechanism prioritizing industrial land allocation on the basis of various criteria which include business plans, technological expertise and export potential. Finally, in terms of industrial standards, several mutual recognition agreements were established along with an EU-Egypt twinning project on standard issuance with the adoption of a new metrology law harmonizing with EU best practices.

However, some of the initiatives can have an ambiguous impact. For example, the land allocation reform could lead to greater discretion in land allocation and might not be well adapted to the context of a developing country with limited technical capacity within institutions.

In SME-support and access to finance, a combination of regulatory reforms and policy programs enabled significant progress in the area. The regulatory reforms were mainly related to the ease of getting credit. Examples included improving the collateral framework on moveable assets, extending credit information via the credit bureau, strengthening micro-finance regulation through a new law and mandating a threshold of 20% of SME lending in total loans for national banks. The new policy programs introduced relate both to financial and non-financial support of SMEs. In terms of financial support, the Egyptian Central Bank established itself as the main new actor of SME financing with the purchase of shares of banks included in the Credit Guarantee Company.

Several initiatives were launched by the ECB including: a guarantee of EGP 2 billion for the Credit Guarantee, launching a EGP 200 billion initiative to support SME financing over 4 years, creating financing schemes for medium-sized enterprises equipment investing and short-term schemes for working capital as well as an SME portal providing information on financial instruments available to SMEs. In non-financial support, the major achievement was the creation of the MSME Development Agency to coordinate SME-support initiatives and launch of an electronic platform to provide information on all types of support programs available to SMEs. In addition, several programs were launched by other institutions especially for entrepreneurship support and in collaboration with MSMEDA. The major issue of informality in the SME sector is also being tackled through an SMEs Act currently in Parliament to provide financial and non-financial incentives for SMEs to formalize.

However, there remains a lack of clarity in the details of both new and existing initiatives, and so far, monitoring of their progress and targets is limited. Here again, some of the initiatives can have an ambiguous impact. Transferring the responsibility of supporting manufacturing SMEs from the IMC to the new MSME agency can help clarify the overlapping mandates of different institutions. However, this also means that manufacturing

SMEs will not have access to the rather diversified range of services of the center and its network of services providers and its technical expertise on the specific needs of SMEs from the manufacturing sector.

On the other hand, performance in innovation, knowledge and to a lesser extent green growth still has significant room for improvement. Among the three areas, supporting green growth remains the most advanced. Several regulatory reforms and policy programs launched are heading in the right direction. In terms of regulation, measures included a Supreme Council for Energy, a new Feed-in Tariff (FIT) to encourage investment in renewable energy through long-term contracts, and the authorization of NREA as well as investors to operate renewable energy and sell electricity to end-users and government. The new policy programs in the area were introduced mainly by agencies from the Ministry of Industry and Trade. The IMC and the Egypt National Cleaner Production Centre both offer green economy programs to support manufacturing firms in adopting environmental management certifications, environment-friendly processes and use of renewables (especially solar energy). Nevertheless, some significant gaps remain in this policy area. Most of the initiatives revolve around renewables and energy efficiency while direct support to green industries, eco-innovation and green skills and jobs training remains limited. There is also little evidence of actively involving SMEs in the greening of the industry efforts. Finally, some promising programs were not followed by effective implementation. For instance, the “Environmentally Friendly Industrial Clusters” initiative aiming to establish 22 “integrated industrial clusters” did not produce yet a successful case of eco-industrial cluster.

In innovation and education, the main challenge is a gap in implementation. Indeed, both areas were included in the 2016 Industrial Strategy as pillars. However, so far, no concrete implementation efforts have followed. The education policy remains challenged by the areas such as the overlapping of training and TVET provisions responsibilities, as well the absence of common qualification standards and the formal assessment of skills needs. The key reforms currently in progress have the potential to reduce these challenges. These include the TVET II programme and the National Qualifications Framework led by MoETE in cooperation with the Ministry of Trade and Industry and the National Authority for Quality Assurance and Accreditation of Education (NAQAAE). Additionally, Egypt presents a policy case of promising collaboration between the public and private sector: Siemens and GIZ are creating an Industry 4.0 oriented training centre in Ain Sokhna. Egypt could leverage this as a pilot to move towards an integrated framework of collaboration with the private sector to train the workforce of manufacturing sector according to industry needs.

In innovation, the effectiveness of existing policy instruments in industrial technology and innovation remains limited. The IMC dedicates a very small share of its budget to research services and projects. The Technology and Innovation Centres have a small outreach and limited capabilities. They mostly act as matching platform meaning that some firms cannot afford paying for the services provided and they prioritise local providers while the research landscape in Egypt is not application oriented.The model of the Technology and Innovation Centers in Egypt is in principle similar to the model of the Kohsetsushi centers created in Japan. They aim to increase the participation of manufacturing SMEs in research and innovation activities. These centers benefit from a long history of efficient operational functioning. One significant difference is that while in Egypt they act as matching platforms exclusively, in Japan the centers actually conduct research activities and are equipped with the necessary expertise to advise and include manufacturing SMEs in innovation activities.

2.2.4 *Combined policy assessment*

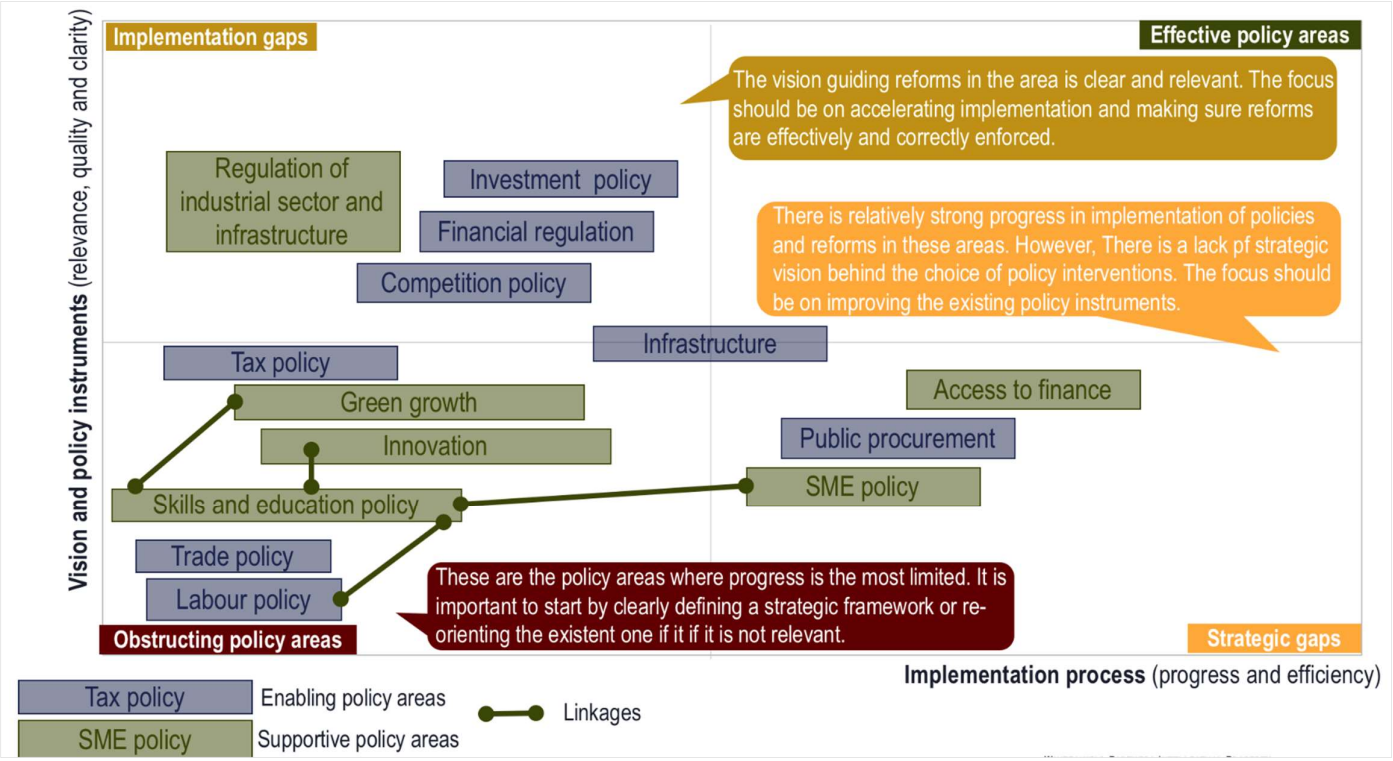
Policy efforts and initiatives can further be analyzed along two criteria to derive insights on the type of interventions required. These two criteria are: sound policy design (measuring the relevance, quality and clarity of the vision and policy instruments) and implementation progress (Figure 34). This enables the mapping of map policy areas along three categories:

(1) *Obstructing policy areas:* lagging behind both in terms of policy design and implementation progress. Interventions should prioritize most central policy areas which under-performance is a bottleneck hindering progress in other policy areas. Education and skills policy is the most relevant example.

(2) *Policy areas facing strategic gaps:* where a significant number of initiatives have been implemented but where there is a lack of integrated strategic framework. This category requires linking initiatives across policy areas to develop a consistent vision, improve efficiency and avoid an over-reliance on multiple financial schemes. SME policy offers the largest opportunities linkages.

(3) *Policy areas facing implementation gaps:* they present sound policy design and strategy, but implementation progress is still limited. Common challenges hindering implementation progress across areas need to be identified and tackled. These include a remaining prevalence of bureaucracy and quality of the judiciary process

Figure 34: Mapping of policy areas according to policy design and implementation progress



Source: Whiteshield Partners

2.3 Governance and capabilities for manufacturing support in Egypt

2.3.1 *Governance diagnostic framework*

A governance diagnostic should assess whether the government is prepared to analyse, design, and implement policies to support inclusive and sustainable industrial development. A good practice assessment can therefore be two main pillars, with five sub-pillars. For each sub-pillar, the analysis relied on quantitative indicators (provided in appendix 1) and inputs from external consultations. The detailed analysis by sub-pillar is provided in appendix 5.

Structure and organization of governance

(1) Institutional landscape, role and responsibilities: this first pillar aims at assessing the extent of fragmentation of the institutional landscape as an obstacle to sound governance. It also assesses the clarity of responsibilities' distribution and the absence of overlapping mandates at different stages of the industrial "policy value-chain".
(2) Coordination and collaboration mechanisms: assesses the institutional support for coordination between the different stakeholders of industrial policy at the different stages of the industrial policy "value-chain" including between public stakeholders, within ministries, between the different agencies, between local and national levels and between the public and private sectors.

Capabilities and policy making process

(3) Clarity of objectives: assessing the capacity to formulate long-term strategic visions, the coherence between the different objectives of the industrial policy, the ability to prioritize objectives and reach a common global consensus as well the transparency of industrial and economic policies.
(4) Monitoring of progress and reliance on performance indicators: assessing practices of evaluating public policies' impact as well the statistical comprehensiveness among governance entities and the reliability of public statistics related to the economy and industry.
(5) Industrial and policy expertise: diagnostic of skills and capabilities among governance entities both at the policy level (policy learning, policy experimentation, project management skills, reliance on rational processes for policy design and implementation) and at the technical level (expertise in industrial development, innovation, technology, financing etc.)

2.3.2 Structure and organization of governance

All policy areas impacting the manufacturing sector involve shared responsibilities between several ministries and public agencies. Some areas such as the regulation of industrial sectors and knowledge and skills improvement involves 5 major public entities in addition to the leading ministry. While shared responsibilities among several stakeholders is not an obstacle per se, this highlights the importance of horizontal coordination for manufacturing support.

One area where such a challenge clearly arises is the management of industrial infrastructure and more specifically of economic zones. In addition to the existence of multiple types of industrial zones (classified broadly along 4 types: Special Economic Zones, Investment and

Free Zones, Technology Parks and standard Industrial Zones), there are several stakeholders involved in their management. These stakeholders include both private and public bodies as well as local and national actors and vary according to the type of industrial zone. Additionally, their respective responsibilities are not clearly defined, can include a wide range of management services (e.g., land allocation, licensing, incentives for companies, project selection etc.) and vary even within the same type of industrial infrastructure.

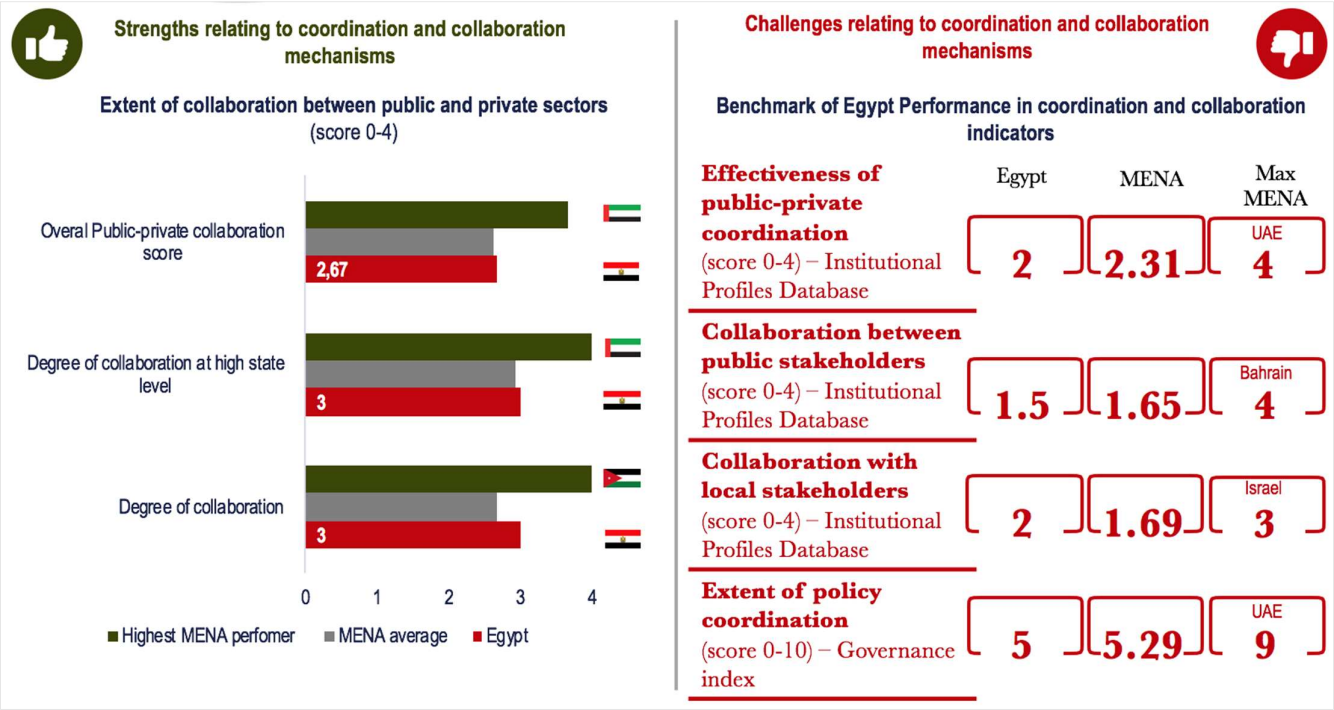
The fragmentation of the institutional landscape which leads to a distortion of the policy process and overlapping mandates is a recognized challenge and as such some efforts have been undertaken to face this issue. For instance, the support of SMEs was one of the areas presenting the largest number of overlapping mandates between different stakeholders - including the IMC, GAFI, the SFD. In order to achieve better coordination, a new agency has been created - the MSMEDA - with the purpose of leading initiatives and efforts to support SMEs. Similarly, in the area of access to finance, the Egypt Central Bank became the leading stakeholder coordinating with other institutions such as GAFI and the newly created MSMEDA. Governmental agencies have been allocated somewhat clearer mandates. The Industrial Development Agency is in charge of implementing the 2016-2020 industrial strategy, while the Export Development Agency is taking the lead in the implementation of the new Export Development Strategy (2017-2020). In the management of economic zones, Law No. 83/2016 granted the IDA the exclusive authority over industrial land, including planning, development, installation of utilities infrastructure, maintenance, and putting the land up for bids.

However, due to some gaps in responsibilities, clarification is needed across policy areas (such as education and training provision) but also across stages of the industrial policy "value-chain" (such as monitoring of policy and performance progress).

In the area of coordination and collaboration mechanisms, the picture is slightly more positive. Firstly, in terms of public-private collaboration, the private sector benefits from a history of relatively strong representation through associations and organizations including export councils, industry federation and chambers of commerce and industry which can enable strong collaboration. Additionally, there are examples of promising public-private collaboration pilots such as with Siemens in skills for Industry 4.0 or the collaboration between the MSEA, the federation of Industries and the Egypt National Cleaner Production Centre for energy efficiency in manufacturing. Secondly, in terms of collaboration within the public sector, some of the reforms introduced to clarify institutional mandates can result in better coordination, notably through the creation of platforms acting as one-stop shops. Examples include the MSME platform created by MSMEDA, the SME financing portal created by the Central Bank and the export promotion portal by the Export Development Agency.

However, the performance of Egypt in international indices and indicators related to collaboration in policy making reveals that these coordination and collaboration mechanisms could be further enhanced. Indeed, Egypt performs higher than the average of the MENA region in the extent of public-private collaboration but below its peers in the effectiveness of such collaboration as well as in collaboration between public stakeholders, and with local actors (Figure 35). Additionally, some organizations which possessed high potential to deliver formal mechanisms of coordination and collaboration became inactive. Examples include the Enterprise TVET Partnerships which could have acted as Sectoral Skills Councils or Egyptian Education, Training and Employment Observatory.

Figure 35: Performance of Egypt in indicators of collaboration in policy making process



Source: Institutional Profiles Database 2016, Governance Index 2018 BertelsmannSttiftund, Whiteshield Partners

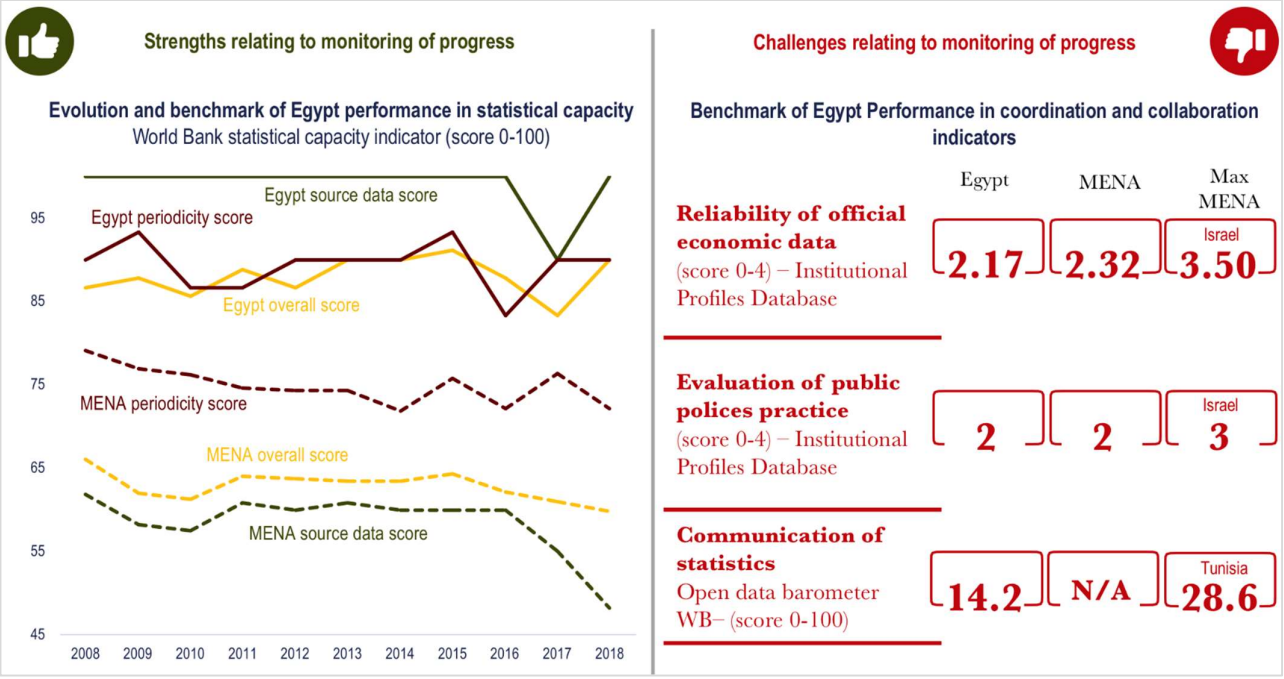
2.3.3 Capabilities and policy making process

In the clarity of policy and strategic objectives, Egypt shows progress in the adoption of long-term goals with the issuance of strategies communicating the general vision of the government including Egypt Vision 2030 and the Industrial Development Strategy. The Industrial Development Strategy also clearly states the targets, objectives and expected output from each of its pillars. However, the clarity of goals is demonstrated only at the higher strategic level. Moving further into the stages of the industrial policy "value-chain", clarity around goals, strategies and concrete implementation steps is limited. This can lead to a disconnection between the high strategic level objectives and the implementation process.

Similarly, in the dimension of performance monitoring, the country shows a relatively strong performance in frequent tracking of economic performance through high-level indicators. Indeed, the country performs significantly higher than the average of the MENA region in the World Bank Statistical Capacity Index both in terms of the comprehensiveness of general economic indicators and their periodicity (Figure 36). Some progress has also been demonstrated in more detailed monitoring directly related to policies implemented. For instance, the MSMEDA started publishing indicators on SMEs benefiting from support on its portal. However, the Industrial Development Strategy only sets high level KPIs and does not include numerical targets for projects, nor does it assign the responsibility of monitoring policy progress and impact. In general, there is no systematic mechanisms to monitor the progress and evaluate the impact of public policies and projects. An additional challenge is

the relatively low communication and diffusion of statistics despite their availability including between public sector stakeholders.

Figure 36: Performance of Egypt in indicators of statistical capacity



Source: Institutional Profiles Database 2016, Statistical Capacity database World Bank 2008-2018, Whiteshield Partners

In terms of policy and industrial expertise, interviews of external stakeholders, organisations and experts revealed that the highest capabilities gap relate to the project management, data analysis, governance and policy formulation. These gaps are particularly acute for public institutions and agencies suggesting a more critical capabilities challenge at lower levels of governance stakeholders (Figure 37).

Figure 37: Assessment of capabilities by sector

Areas	Strategy	Policy	Governance	Technical	Project management and data analysis	Overall
Government	◑	◔	◔	◑	◔	◑
Public Institutions	◔	◔	◔	◔	◔	◔
Private sector	◕	◑	◑	◑	◑	◑
Overall	◑	◔	◔	◑	◔	

Key: empty circle represents low to no capacity, full circle very high capacity

Source: The OECD SME index was used as a basis together with interviews to complete this table

3 Blueprint for an industrial strategy

The following block is an update of the 2015 industrial strategy roadmap building on the main findings of the updated diagnostic exercise conducted in block 1 and taking into account the evolving context of industrial strategy both in terms of global trends (4IR, digitalization of manufacturing, changing skills, changing global value-chains, increasing importance of green manufacturing and circular economy etc.) and national factors, including the connection with the PCP framework. Block 2 is not intended to provide detailed reforms but to suggest overarching directions of policy interventions that will inspire a more comprehensive industrial strategy for the period 2020 – 2025.

The 2015 roadmap relied on four strategic pillars:

(1) Trade to Manufacturing (aims at linking manufacturing more closely with export growth and transforming some share of trade into domestic manufacturing)
(2) Commodity to Technology (aims at upgrading value chains to move from the sole commodity business to technologies);
(3) Vertical with horizontal (focuses on strengthening the basis for multiple sectors by identifying 'missed opportunity' products and policies that disseminate knowledge and enable all the economy);
(4) Zones to Value Chains (aims at integrating zones into domestic value chains by creating transparency between demand and supply (e.g. supplier database) and establishing a 'shared language' (e.g. standards) to achieve knowledge connections and spillovers).

While the four pillars of the 2015 roadmap are still valid considering the updated diagnostic findings, they were adjusted in order to enable a more strategic support in upgrading manufacturing capabilities. This was done in line with global trends impacting the industry namely the 4th industrial revolutions and its technologies as well as green manufacturing and the circular economy model. Additionally, governance was tackled as a separate dimension in the new industrial blueprint given the challenges highlighted in the updated diagnostic (Figure 38).

The updated industrial blueprint relies on six main pillars:

1) **Whole of government approach & capabilities** - added as a standalone pillar compared to the 2015 roadmap considering the diagnostic findings of the major impact of governance on manufacturing and policy performance. The pillar aims at establishing the most efficient governance structure for manufacturing support and upgrading toward the 4IR
2) **Trade to value-added manufacturing** - which builds on a sector prioritization strategy to most efficiently enhance manufacturing capabilities while leveraging existing ones
3) **4IR readiness** - added as a standalone pillar considering its strategic importance to compete globally in manufacturing and major gaps faced by Egyptian companies in this area. The pillar aims at identifying potential directions at the strategic and operational levels to support the dissemination of the 4IR, with a particular focus on traditional sectors

4) **Vertical with horizontal** - which identifies priority policy areas to focus on in order to enable value-added manufacturing, industry-wide 4IR readiness and attract the right levels of domestic and foreign investment to make this happen
5) **Clean Production** - added as a standalone pillar given the pressing need to further enhance the green transition of the sector and adapting it to the paradigm of the circular economy
6) **Zones to regional value-chain** - which focuses on increasing the role of manufacturing in regional inclusiveness by identifying region-specific needs in terms of industrialization while transitioning from zones to value-chains and exploring how industrial, sustainable and smart infrastructure can be leveraged to increase the attractiveness of regions

Figure 38: Strategic pillars of the industrial blueprint

Strategic dimensions	Link with 2015 roadmap pillars	General vision to adopt
1. Whole of government approach & capabilities	**Added** to the blueprint as a standalone axis considering the major impact of governance on manufacturing and policy performance	The governance structure should enable **horizontal coordination** within the public sector. Stakeholders' interventions should be **rationalized, data-driven** and allow for **direct results assessment**.
2. Trade to value-added manufacturing	Aligned with two 2015 pillars*. Greater emphasis placed on **knowledge intensive sectors** with cross-cutting knowledge impact	Prioritize sectors which would most efficiently drive **knowledge manufacturing**, increase **complexity** and allow Egypt to **upgrade along GVCs** while **leveraging current** manufacturing **capabilities**.
3. 4th industrial revolution readiness	**Added** to blueprint as a standalone axis considering the major gaps faced by Egypt in this area and the significant risk to fall behind the 4IR wave.	At the **strategic** level, a paradigm shift is needed to include a 4IR **roadmap** in industrial policy including **sectorial strategies** to disseminate the 4IR in traditional sectors and **cross-sectorial enablers** such as skills.
4. Vertical with horizontal	Update from "Vertical to Horizontal" to "Vertical and Horizontal". Emphasis placed on **horizontal policy reforms** reconciled with sector specific actions	Focus on addressing **structural and policy barriers** common to all manufacturing sectors and sector specific conditions to **enhance determinants of investment attraction** toward manufacturing.
5. Clean production	**Added** to blueprint as a standalone axis given the emergency of adopting green manufacturing and circular economy principles to enable sustainable growth	Follow an **integrated framework** to enable the **green transition** of the manufacturing sector combining **regulation, firms' support, new technologies and skills enhancement** for sustainable manufacturing.
6. Zones to regional value-chains	Update of the **"zones to value-chains"** pillar to enhance spillovers between regions, integration in local value-chains and **cater to their specific needs**	The manufacturing sector should be an engine for **inclusive economic growth regionally**. **Sustainable and industrial infrastructure** development should be leveraged to enhance attractiveness of regions.

Source: UNIDO, Whiteshield Partners

3.1 Whole of government approach and capabilities

The pillar aims at identifying courses of action to increase the efficiency of governance for manufacturing support. It aims at addressing two main challenges identified in the diagnostic phase:

(1) Governance structure challenge: where there has been limited progress to face institutional fragmentation in critical areas (skills, education, innovation) or across some stages of the industrial policy value chain (monitoring). Additionally, while the collaboration between the public and private sector is relatively extensive, it is not

always efficient and does not happen early enough (at policy elaboration stage). On the other hand, the collaboration within the public sector is very weak.

(2) Capabilities challenge: Major capabilities gaps are hindering the effectiveness of policy elaboration and implementation. The performance of governance stakeholders in key policy capabilities such as policy learning or policy experimentation is limited. Consultation of stakeholders reveals that the largest expertise gaps relate to policy and governance capabilities. Additionally, governance actors are not leveraging technology to support policy making process. Technical expertise gaps strongly limit the policy performance of some public bodies such as the Technology and Innovation Centers.

In order to face these challenges, two main courses of action have been identified.

(1) The first relates to the adoption of a governance framework enabling greater collaboration and coordination between key stakeholders especially at the horizontal level (Figure 39). Such a framework can rely on the paradigm of the "National Agenda" and leverage government accelerator programs which have proven to be successful in some peer-countries such as the UAE. Government accelerators combine strategy and implementation. They allow for active private sector involvement from the beginning as well as structured implementation approach enabling governments to tackle long-term challenges and targets while achieving quick policy wins.

(2) The second course of action should target a capacity building program focusing on key policy and governance expertise such as project management, policies for competitiveness, data analysis and visualization etc.

Figure 39: Revised governance structure for horizontal collaboration – National Agenda framework

Source: Whiteshield Partners

3.2 Trade to value-added manufacturing

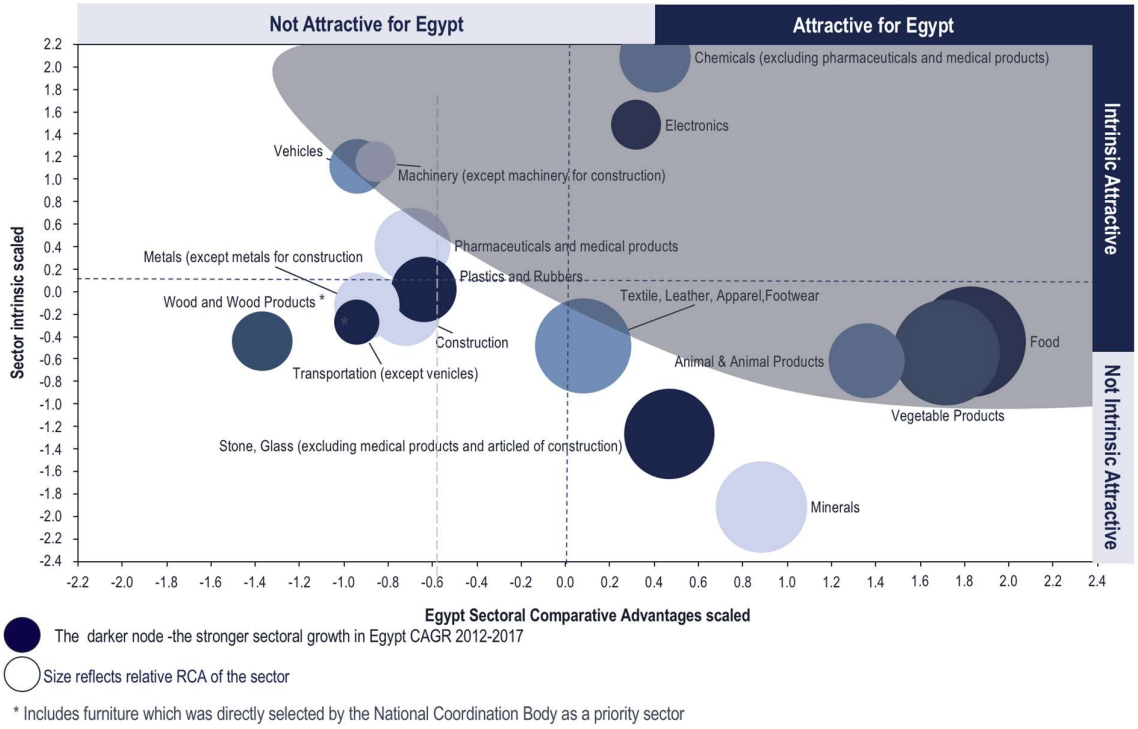
The second pillar of the industrial blueprint aims at addressing two main points: (1) What criteria should drive the sectorial prioritization strategy in Egyptian manufacturing to align with the overall target of enhancing manufacturing capabilities? (2) How to enable manufacturing upgrading through these sectors.

In terms of sectorial prioritization, the choice of priority sectors should enable moving toward higher value-added activities and enhancing economic complexity. It should also take into account social factors such as employment to align with the vision of manufacturing as an engine of inclusive economic growth. As such, a prioritization index was created based on two dimensions (Figure 40).

First, the intrinsic attractiveness of the manufacturing sector measured through the sector's size, complexity, employment and ability to attract FDIs globally. Second, Egypt's comparative advantage in the sector assessed through the sectorial share (and growth) in manufacturing value-added, exports and RCAs (Revealed Comparative Advantages), as well as sector employment and potential (measured through the opportunity gain in the sector). A more detailed methodology is provided in the Appendix.

The index was complemented by a consultation of PCP stakeholders. Building on both the sector prioritization results and the results PCP consultations, five priority sectors were identified: Agro-industries, Textile, Chemicals and Plastic, Electronics and Furniture.

Figure 40: Sectorial prioritization index



Source: Whiteshield Partners

The strategy to enable the enhancement of manufacturing capabilities through these selected sectors should rely on two main aspects:

1. Leveraging existing capabilities identified through Revealed Comparative Advantages to move up the value chain toward higher value-added segments and more complex products. For instance, in the plastics sector, Egypt can leverage the current capabilities and RCAs mainly in the plastic resins and plastic compounds segments of the value-chain to develop more RCAs in further downstream segments (final plastic products).

2. Enabling synergies between prioritized sectors by leveraging convergence between them. Enhancing capabilities and RCAs in one sector can also a country to diversify and move up along the value-chain of other sectors. For instance, enhancing capabilities in the plastic sector can allow the development of RCAs in products from the textile sector (such as special textile products for technical purposes) or machinery (parts and accessories for machine tools) and can also help develop supply chains for the agro-industries (especially in the packaged foods segment of the value-chain for instance).

3.3 4th Industrial Revolution readiness

The third pillar of the industrial blueprint aims at laying the foundations of the 4IR to enhance Egypt's industrial competitiveness. In order to do so, three main challenges should be addressed:

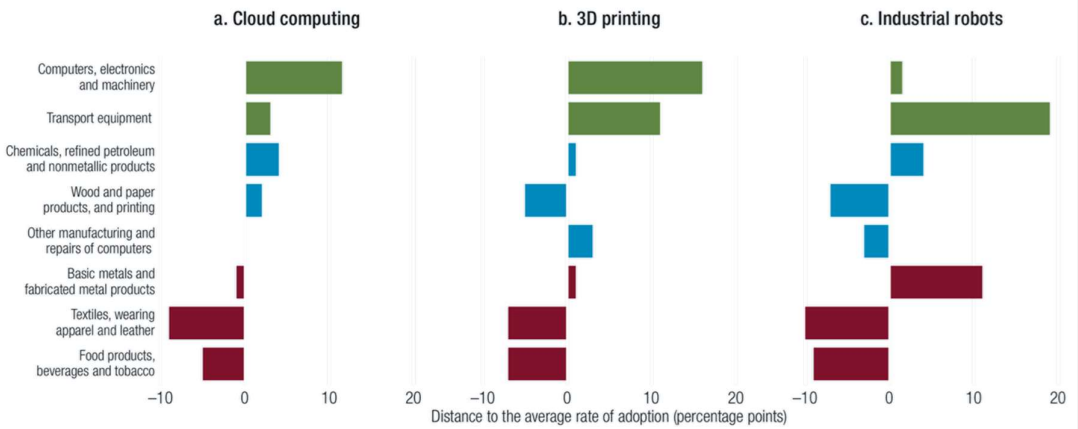
1. Egypt does not yet have a strategic vision to enable 4IR adoption and dissemination. Technology and innovation are still viewed as separate topics and there is no integrated framework to prepare the manufacturing sector for the future of production.
2. Manufacturing firms still need to transition from Industry 2.0 to industry 3.0 in the midst of the 4IR. Additionally, the pace of automation and 4IR readiness differs between manufacturing sectors.
3. The policy diagnostic revealed that policy areas most critical for the 4IR are still behind in development such as technology infrastructure.

Two levels of actions are required to address these challenges. First, at the strategic level, a paradigm shift is needed to include a 4IR roadmap in industrial policy. Indeed, it appears that Egypt is lagging behind compared to other developing countries in strategic initiatives for 4IR readiness. The few strategic efforts demonstrated in this area are cases of partnerships with foreign industry leaders in pilot programs (namely with Siemens for employees' training and vocational education to prepare for new skills needs). Such programs still need to be structured around a comprehensive framework to enable their replicability and spillovers at a wider level.

Second, at the operational level, two complementary approaches are needed to enable 4IR dissemination: sectorial and industry-wide approaches. The sectorial approach should take into account the fact that the different manufacturing sub-sectors are not at the same stage in their adoption of 4IR and digital manufacturing technologies. Note that this is not a challenge specific to Egypt. In European Industrialized countries, front-running sectors in terms of digital manufacturing technologies adoption are mainly technology-intensive sectors where adoption of new technologies is a critical competitiveness factor leading to early awareness

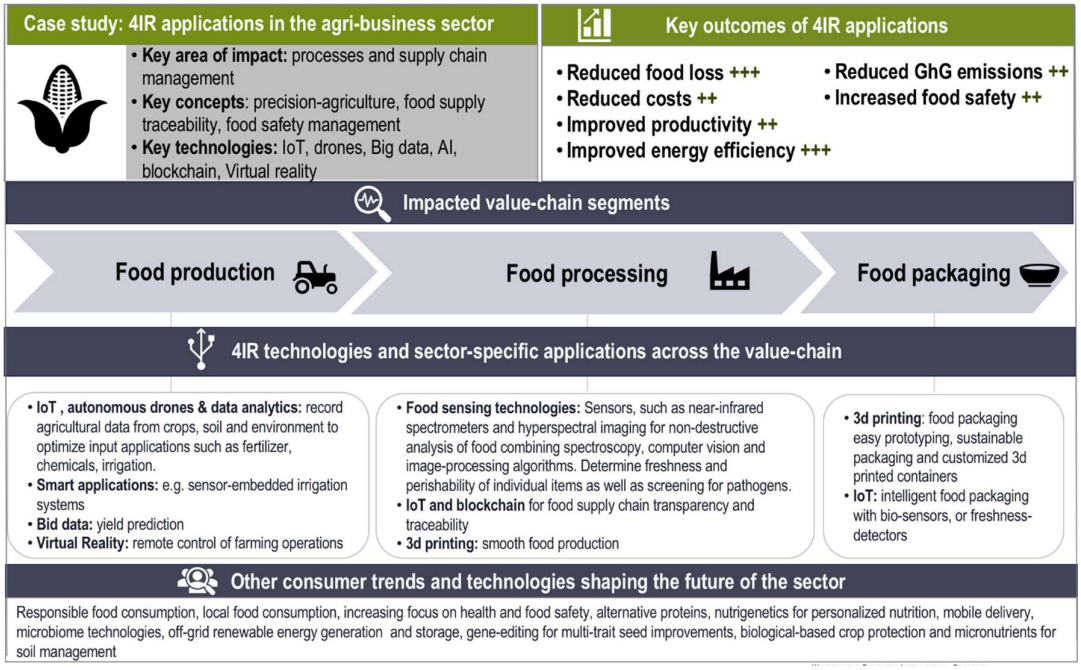
and adoption (Figure 41). On the other hand, medium and low technology show lower and different levels of adoption depending on the type of technology and its intrinsic importance for the manufacturing sector. The relatively lower technological adoption in these traditional sectors calls for targeted policy support to face potential market failures such as firms' low access to information on new technologies and their benefits. The sectorial operational approach should also take into consideration the differentiated impact of 4IR technologies and trends on manufacturing sub-sectors and identify priority technologies and their applications for each sector. Figure 42 provides an example of key 4IR applications for the agribusiness sector. The expected output from this sectorial approach is sector-specific strategies taking into account the above dimensions. These strategies should be built on PPPs, should leverage collaboration with international firms and include raising awareness among firms on their sectorial priorities.

Figure 41: Rate of adoption of key digital manufacturing technologies across manufacturing sectors in Europe



Source: UNIDO elaboration based on Eurostat (2019), Industrial Development Report 2020

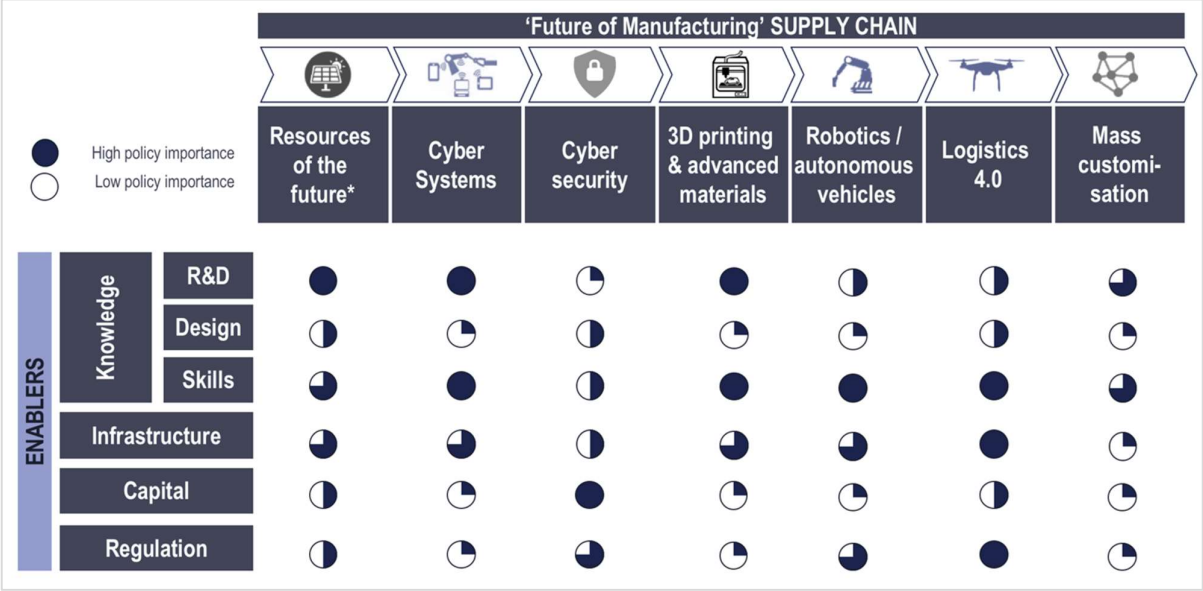
Figure 42: Case:4IR applications in the agri-business sector



Source: Whiteshield Partners

The second operational approach is a cross-sectorial one aiming at addressing industry-wide challenges to 4IR dissemination. This approach should start by an identification of most critical areas for the 4IR. Indeed, 4IR technologies and trends require different types of enablers. For instance, the most important policy areas for 3d printing are R&D and skills compared to skills and infrastructure for logistics 4.0 (Figure 43). Building on these technology-specific enablers, the most critical ones across 4IR trends should be identified and prioritized. These include innovation, education and skills policy as well as ICT infrastructure.

Figure 43: Policy enablers of 4IR trends



Source: Whiteshield Partners

Cross-checking these key 4IR enablers with the policy challenges identified in the diagnostic section allows to identify two main policy areas as priority ones for horizontal 4IR interventions: innovation and education & skills. Indeed, as highlighted during the policy assessment, these areas are some of these most challenged ones with limited progress both in terms of policy design and policy implementation. But they are also central policy areas where challenges are hindering progress for other areas of government as well. An additional central area to consider is SME policy where despite noticeable recent progress, focus should be directed toward linking the SME-support initiatives with the other two policy areas in order to enable greater efficiency of these initiatives.

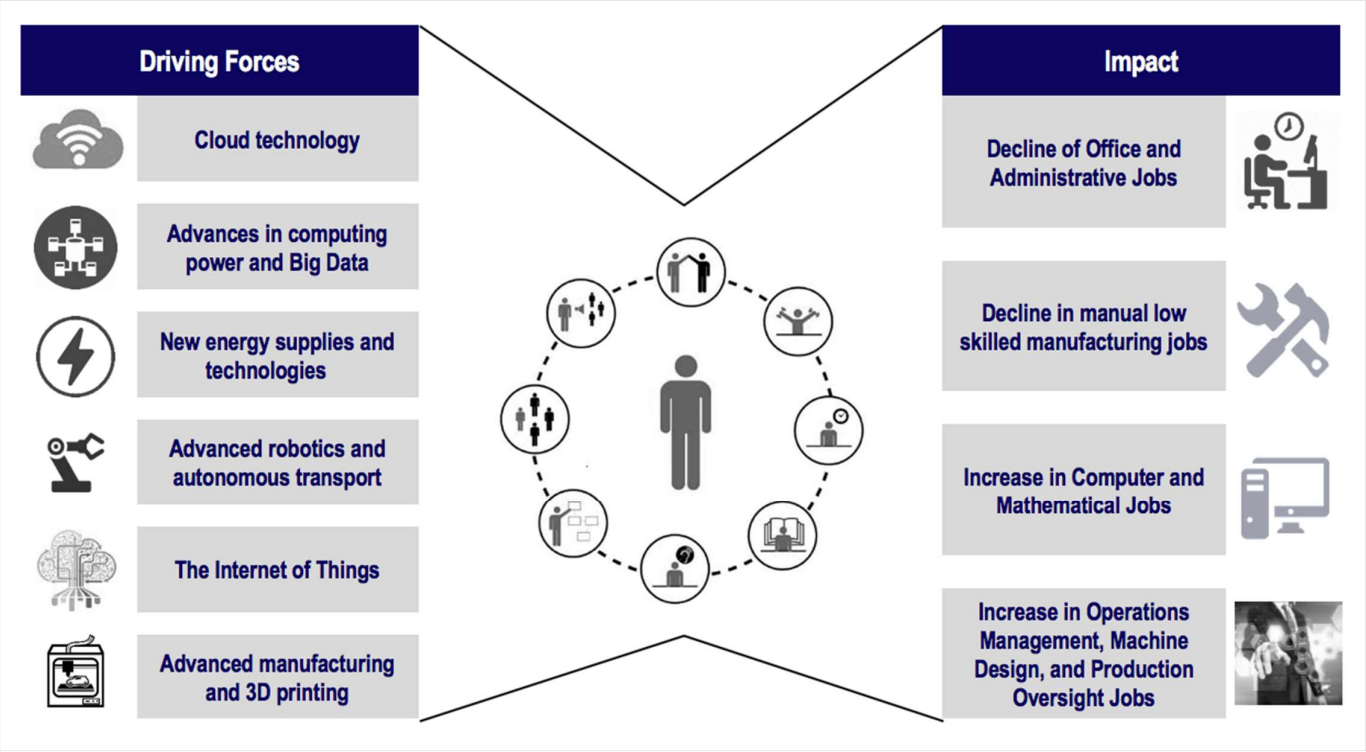
- In terms of education and skills, the focus should be placed on collaborative assessment of current and future skills needs and gaps in order to adapt educational and training content accordingly. The initiatives should adapt the workforce to occupational and skills needs reconfigurations within the manufacturing sector. They should focus on skill needs induced by the 4IR while taking into account the current skill gaps which already represent a major issue for manufacturing firms (Figure 44). More specifically, Egypt should focus on a number of concrete areas
    - Enhancing the supply of knowledge-workers in manufacturing through new higher-education programs dedicated to the future of manufacturing,

- Attracting more talent toward the manufacturing sector especially ICT and digital experts)
- Re-skilling and up-skilling the current workforce in occupations witnessing changing tasks and skills. This can be achieved through lifelong-learning schemes in partnership with private sector as well as anticipating and assisting the professional reconversion of workers threatened by job loss due to automation.

- In terms of innovation and technology, initiatives should enable the emergence of a 4IR innovation ecosystem by linking academia and the private sector but also manufacturing and the digital/ICT sector.

- Finally in SME policy, focus should be placed on more strategic SME-support initiatives by increasing linkages with other policy areas (with innovation through programs dedicated for young innovative companies, with technology through programs assisting manufacturing SMEs in their digital journey, with skills through training schemes targeted at SME employees, with investment policy through SME-FDI linkages programs etc.).

Figure 44: Drivers of the future of work in manufacturing and their impact on jobs



Source: Whiteshield Partners

The expected output from the cross-sectorial approach is a set of policy programs addressing common barriers and enabling the dissemination of specific 4IR technologies in manufacturing firms across sectors. These programs should leverage international best practices and linkages between key policy areas to enable an integrated framework.

3.4 Vertical with horizontal

The fourth pillar of the industrial blueprint focuses on addressing structural and policy barriers common to all manufacturing sectors and sector specific conditions to enhance manufacturing capabilities.

Identifying the priority set of vertical and horizontal enablers to leverage requires first the identification of a driving industrial policy strategy. Industrial policy packages around the world vary significantly from production capacity strategies to innovation and technology policies, investment-focused strategies or export-targeted policy schemes. Investment promotion and more specifically FDIs have come to play an increasingly important role in the new generation of industrial policies aiming at changing production structures. Several studies on the empirical impact of industrial policy packages have confirmed this growing strategic importance of investment for industrial development when compared to other instruments such as export support. These studies follow the rationale that: "Industrial policies through FDI promotion may be more successful than intervention in trade, in part because FDI promotion policies focus on new activities rather than on protecting (possibly unsuccessful) incumbents. If such measures are part of a broader effort to achieve technological upgrading then they may be helpful, whereas if they are implemented in isolation they are likely to fail"[3].

In addition to this strategic role for industrial development, the focus on investment promotion in industrial policy is also justified by the updated diagnostic study. Indeed, as highlighted in the second section of the report, Egypt is challenged by a decreasing trend of inward FDI flows calling for interventions to enhance investment attraction determinants. Moreover, enhancing FDI attraction has the potential to fulfill several objectives of the industrial policy including enhancing manufacturing capabilities, technology intensity and productivity and upgrading along global value chains.

However, it should be noted that several other factors besides the volume of investments condition their positive impact on industrial development. Firstly, the quality of these investments matters just as much as their volume. Enhancing manufacturing capabilities requires attracting higher value-added, higher technology-intensity and higher complexity FDIs to orient the production structure toward knowledge-intensive manufacturing. Best practices follow a "high-road" to Global Value Chains combining both integration and enhancement and build capabilities to adapt to the 4IR paradigm.

Secondly, enhancing the benefits of FDIs for local manufacturing in terms of capabilities requires a focus on FDI-SME linkages. SME-FDI linkages and potential effects materialize in different mechanisms which can be summarized through three types of linkages. Firstly, general linkages: innovation and human capital spillovers can rise when inward investors bring in a new expertise and technology. Such positive externalities can also happen through labour mobility between foreign and domestic firms.

Secondly, supply-customer linkages: local SMEs become suppliers of inward investors which expands market opportunities for SMEs allowing them to integrate in Global Value Chains.

[3] UNCTAD, Investment and new industrial policies, https://unctad.org/en/PublicationChapters/wir2018ch4_en.pdf, Harrison et al. 2010.

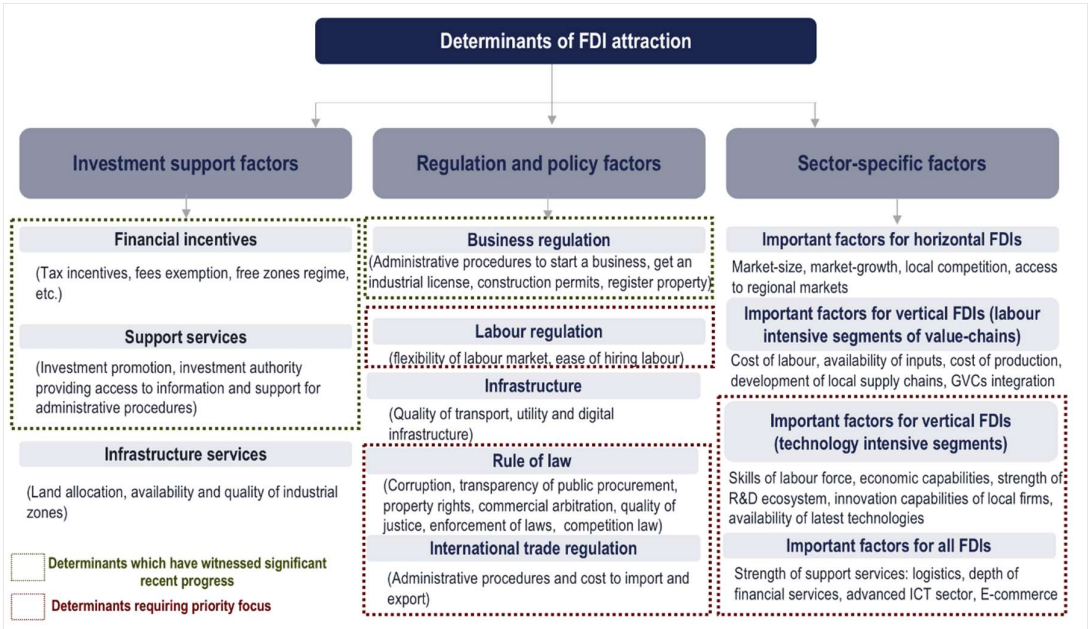
This can also lead to increase SMEs competitiveness with the standards introduced by foreign companies.

Finally, technology-partners linkages: arising when foreign firms and domestic SMEs partner on common projects as part of joint ventures and strategic alliances allowing direct innovation and technology spillovers.

All in all this implies that the vertical with horizontal pillar should focus on three key objectives: (1) Enhancing Egypt's capacity to attract inward FDIs in manufacturing; (2) Focusing on attracting higher value-added, higher complexity FDIs; (3) Increasing linkages between FDIs and local firms to maximize the benefits from these investments.

Fulfilling these three objectives requires a combination of horizontal and vertical interventions (Figure 45). Indeed, attracting more FDIs across sectors calls for a horizontal focus on the remaining regulation and policy challenges impacting the investment environment and the attraction of FDIs across sectors. Among them, labour regulation, international trade regulation and the rule of law in business regulation represent major obstacles still, as highlighted by the policy diagnostic study. Attracting higher-value added investments requires sectorial strategies to enhance skills of the labour force in targeted activities, develop the R&D and innovation ecosystem of these sectors as well as sector-specific incentives. Finally increasing linkages between FDIs and local firms calls for a combination of horizontal (such as SME policies to enhance access to information and provide support on engaging with foreign investors) and vertical policies (such as the development of industry-specific clusters, organized supply chains, etc.). Sector specific linkages programs can also support this third objective. For instance, Singapore provides a relevant example where the Local Industry Upgrading Program incentivizing foreign investors to integrate local SMEs in their supply chain played a historical role in developing its electronics sector.

Figure 45: FDI determinants by type of FDI



Source: Whiteshield Partners

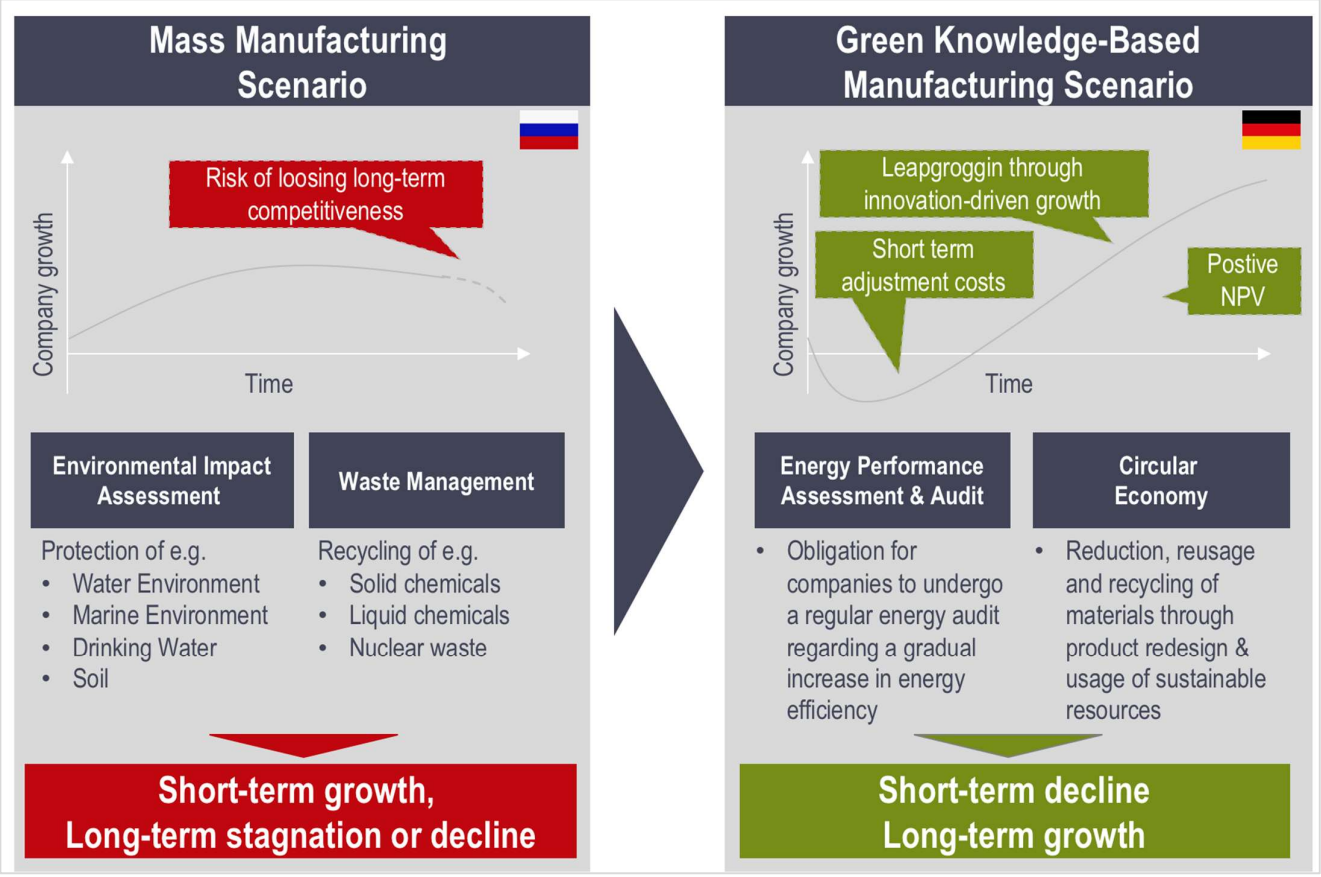
3.5 Clean Production

The fifth pillar of the industrial blueprint aims at addressing two main challenges in the area of green manufacturing and circular economy, namely that:

- Egypt does not yet have a strategic vision to enable the green transition of manufacturing. Initiatives to promote green manufacturing are fragmented and do not follow an integrated framework
- More strategic initiatives are needed to move beyond simple focus on renewables to adapt to the circular economy framework and leverage new technologies for green transitions

In order to tackle these challenges, the green transition needs to be fully integrated in industrial policy and its strategic goals. Sustainability and economic competitiveness/industrialization need to be reconciliated and viewed as mutually reinforcing to enable leapfrogging toward knowledge-based green manufacturing. Indeed, with the emergence of technological solutions for environmental challenges, these countries can skip the massive industrialization phase relying on energy-intensive processes, which industrialized countries all went through, to reach knowledge-intensive technology-driven, environment-friendly manufacturing activities (Figure 46).

Figure 46: Green transitions enabling leapfrogging in manufacturing

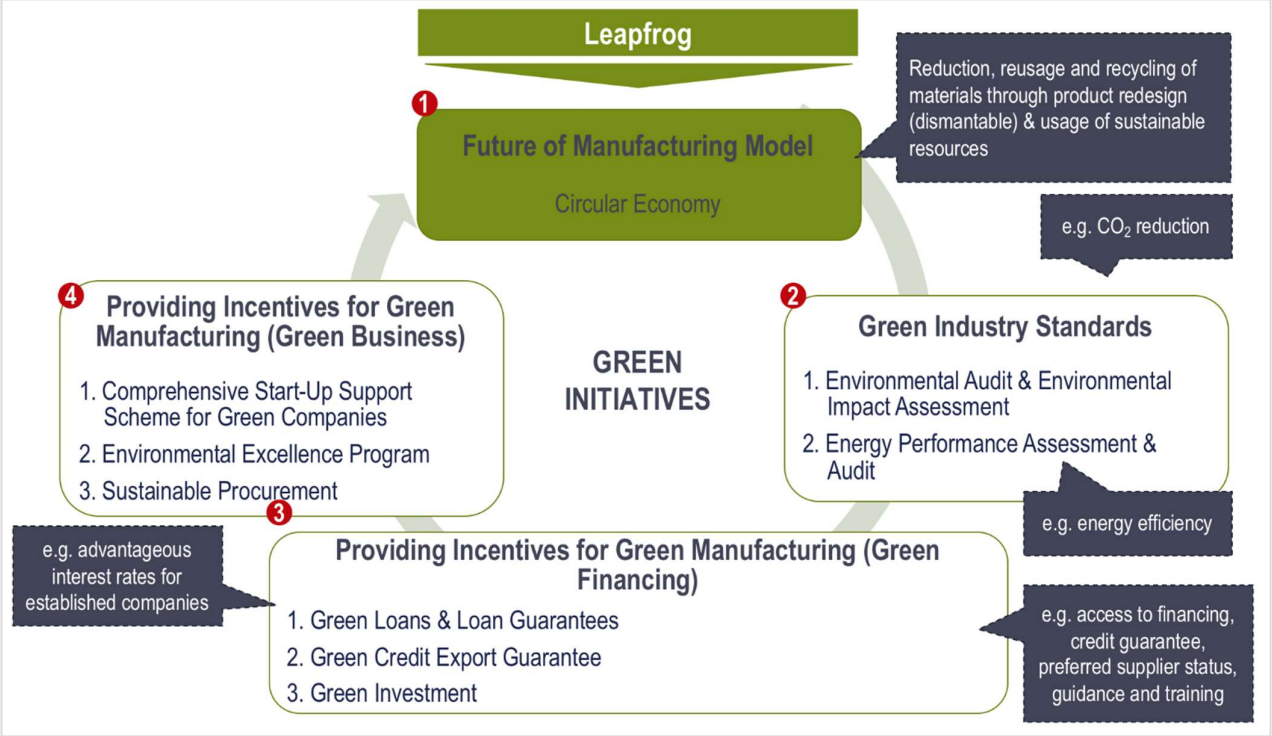


Source: Whiteshield Partners

At the operational level, leveraging this leapfrogging potential requires an integrated policy framework to adopt green manufacturing practices across all segments of value chains (eco-design, alternative materials, renewable energy sources, resources efficiency throughout manufacturing operations notably by leveraging new technologies) while also promoting new business models driving from the circular economy (shifting the focus from manufacturing processes and a traditional linear-chain approach to product lifecycles in order to achieve sustainability synergies across supply chains).

In terms of policy initiatives this means moving beyond the simple promotion of renewable energy use and include circular economy promotion (both through regulation and waste management strategies), energy-efficiency programs, green manufacturing and eco-innovation support (through regulation, financing, green investment, sustainable procurement). (Figure 47). This also requires linking more effective environmental policies and other policy areas such as education (by focusing on jobs and skills needs for green transitions) or SME-support (by providing targeted support for SMEs which face higher constraints in terms of access to information, financing, etc. to face environmental requirements).

Figure 47: An integrated framework for green transitions in manufacturing



Source: Whiteshield Partners

Finally, reconciliating environmental and economic objectives should also happen at the operational level. For example, within the sectorial prioritization, chemicals and plastics emerged as priority sector. Upgrading manufacturing capabilities within this sector should also take into consideration its environmental impact and its new potential in the circular economy as plastics recycling is an integral part of the circular economy concept.

3.6 Zones to Regional Value Chains

The 6th pillar of the industrial blueprint aims at addressing three main challenges: (1) How to adapt manufacturing capabilities upgrading to the specific needs and challenges of regions; (2) How to transition from zones to regional value chains while enhancing complementarity and spillovers between regions; (3) How to leverage smart cities and related infrastructure as catalyzers of regional competitiveness.

Adapting manufacturing capabilities to the specific needs and challenges of regions

In terms of regional differentiation in manufacturing capabilities upgrading, four main clusters of regions can be identified (Figure 48). The most advanced governorates performing above average both in terms of industrial intensity and labour productivity (mainly urban governorates such as Cairo, Alexandria or Suez as well as most advanced governorates from other regions i.e. Damietta and Giza) can focus on strategies around diversification and complexification of their strong industrial base in order to further upgrade in manufacturing value-chains and focus on knowledge-intensive industry. The second cluster (Qalubiya, Port Said, Sharkeya, Gharbeya) includes governorates with strong industrial intensity but low manufacturing productivity and require support strategies focusing on manufacturing capabilities. This can include both skills and talent upgrading but also sectorial strategies to move toward higher value-added segments of value chains. The third cluster (which includes only two regions: Qena and Beni Sueif) is characterized by high labour productivity but low industrialization intensity. This segment requires the attraction of increased investments to increase manufacturing scale. Finally, the fourth cluster includes governorates lagging behind both in terms of manufacturing intensity and productivity and require both increased investments and the upgrading of capabilities.

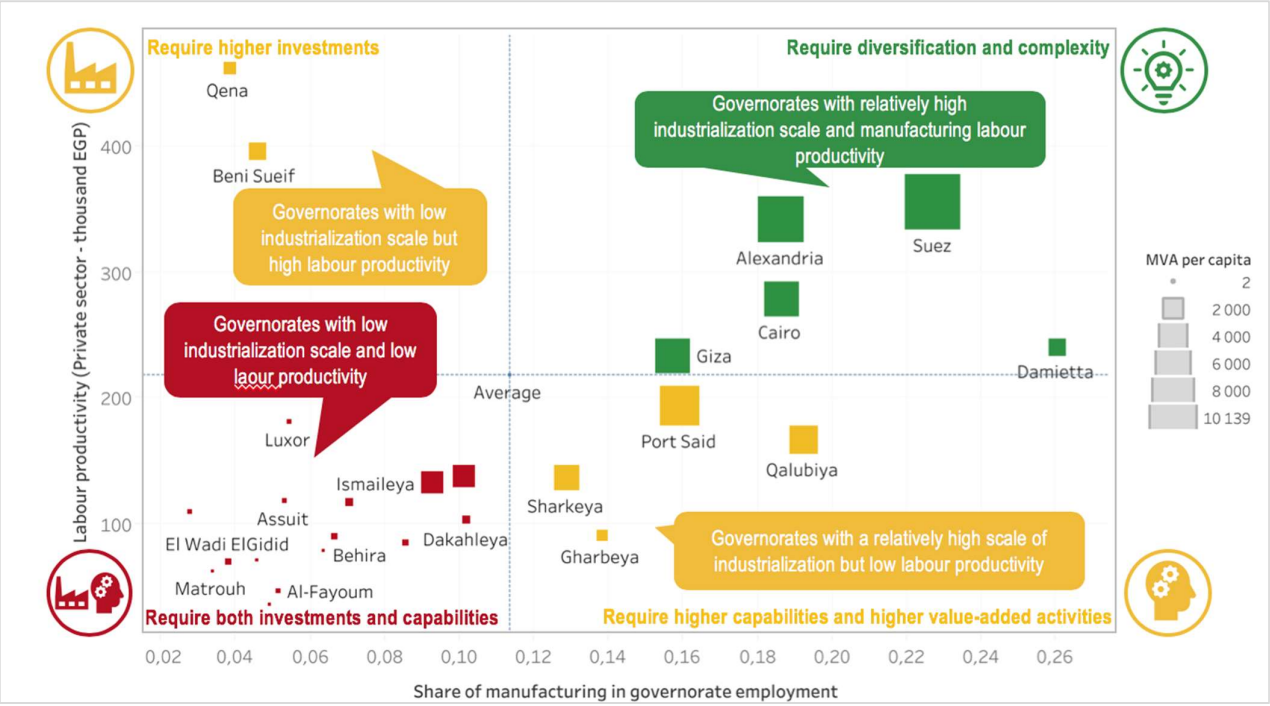
Besides these two dimensions of manufacturing performance, regional differentiation should also take into account policy environment disparities. Indeed, governorates present different stages of progress in policy areas related to manufacturing support. More importantly, there is a significant potential for policy learning between regions. For instance, in business regulation and the ease of doing business, it appears that no city or region has the "perfect" policy mix and policy advantages are dispersed geographically. This highlights the need for regions to collaborate and share their best practices on creating a level playing field for private sector investment in manufacturing.

Leveraging region-specific capabilities to transition from zones to value chains while enhancing complementarity and spillovers between regions

Moving from a territorial-zone paradigm to a network-value chain approach requires two sets of actions. Firstly, from a regional perspective, specific capabilities in terms of RCAs in manufacturing products and sectors at the regional level should be considered and leveraged in industrialization strategies. For instance, Alexandria presents unique capabilities in rubber tires and tubes which should be taken into account in the governorate's industrial strategy. Secondly, from an inter-regional perspective, the complementarity between these region-specific capabilities should be leveraged when possible to connect local value chains and increase linkages between regions. For instance, supply-chain integration between Alexandria (tires manufacturing) and other regions (automotive manufacturing) could be enhanced to support a domestic value-chain. In parallel, enhancing spillovers between regions calls for

meso and macro policies supporting and complementing regional programs and enabling a nation-wide impact.

Figure 48: Mapping of governorates according to industry intensity and capabilities



Source: CAPMAS, Whiteshield Partners

Leveraging smart cities and related infrastructure as catalyzers of regional competitiveness

In terms of leveraging industrial infrastructure to increase regional inclusiveness and regional industrialization two directions should be considered. Firstly, moving toward more strategic infrastructure aligned with the objectives of adapting to global trends such 4IR and green transitions. This can include a focus on smart cities applications as well as sustainable industrial parks.

Secondly, enhancing the effectiveness of these infrastructure projects. This calls for design and implementation considerations. In terms of design, the projects need to be aligned with the differentiated regional capabilities. For example, smart cities projects require a progressive and realistic implementation suitable to the current stage of progress of regions. The least advanced regions should focus on developing the foundations of smart cities by focusing on infrastructure investments, especially to increase ICT access and the quality of transport and utilities infrastructure. Mid-level regional performers which have a stronger infrastructure base can start implementing smart cities models with a focus on technology applications. The most advanced regions should adopt integrated frameworks for smart cities linking infrastructure, regulation and technology (such as smart city planning, neighborhood energy management or integrated waste management plans) to achieve next-level competitiveness and efficiency (Figure 49).

In terms of implementation several factors should be considered to enable an efficient functioning of industrial parks as well as positive spillovers of these industrial infrastructure

on the rest of the region. Management of industrial zones and parks is a fundamental variable for both objectives. It is important to align with international best practices in order to ensure that such infrastructure will indeed enable the expected benefits for the regions. For instance, the selection process of investors is a key management factor playing a fundamental role in the success of eco-industrial zones. Comprehensive selection criteria should take into account the eco-focus of investors, their capabilities and complexity of products. However, it should also assess the ability to provide linkages with the local economy and with foreign investors. These criteria will allow the development of a functional cluster while increasing linkages with the local economy through the focus on backward and forward linkages with neighboring firms outside of the industrial zone/park. Additionally, such infrastructure projects are unlikely to have high positive impact on the local economy if they are not complemented by initiatives to enhance the absorptive capacity of the region especially with a focus on workforce skills and SME/entrepreneurship support.

Figure 49: Priority smart cities applications according to level of progress of cities

Infrastructure Policy/strategy/regulation Technology application Integrated framework	Level 1 Develop the foundations of smart cities	Level 2 Roll out smart cities applications	Level 3 Adopt the integrated smart city paradigm
Smart governance	• Enhance open-data policy • Increase online information sharing • Catch up on digitalized public services offered by more advanced regions	• Smart payment for public services • Online applications and platforms for updated city information • Data sharing between stakeholders of city management	• Smart city planning leveraging real time data from IoT • Engagement of citizens through online applications to gather feedback and communicate on city issues
Smart infrastructure	• Enhance broadband access • Public WIFI • Increase intra and inter-regional mobility infrastructure • Sustainable micro-mobility systems	• Real time public transit information • Intelligent traffic systems • Smart transit payment card system • Electric cars	• Real time traffic monitoring • Smart parking applications • Smart, sensor-embedded public vehicles • Logistics 4.0 regulations
Smart environment	• LED street lighting • Increase use of renewables in public services sector • Environmental awareness campaigns • Increasing access to basic utilities	• Smart street lights • Smart sensors to track water use • Smart electricity meters and grid • Smart waste applications (e.g. smart bins)	• Green building standards • New energy-efficient buildings with integrated renewables source • Retrofitting of existing buildings • Neighbourhood energy management systems
Smart living	• Online information on health facilities • Emergency responses improvement • Online cultural programming	• Online medical appointments, SMS reminders • Telehealth solutions and remote monitoring of patients	• Smart surveillance and real-time crime mapping • Real time monitoring of pollution and air quality • Integrated waste management plan

Source: Whiteshield Partners

4 Industrial blueprint and the PCP

4.1 Selected PCP focus areas

Based the diagnostic study and the strategic directions of the blueprint, 6 focus areas were selected as priorities for the PCP (Figure 50). In addition to the focus areas, the PCP structure is complemented by a set of enablers related to key services offered by UNIDO which would be leveraged across focus areas.

(1) Industrial policy and governance: the 1st focus area aligns with the "Whole of government approach & capabilities" pillar of the industrial blueprint. This focus area relates to the governance structure and projects to be adopted in order to enable an efficient and successful industrial policymaking process. The focus area should also focus on capacity-building initiatives to bridge major capabilities gaps hindering the effectiveness of governance.

(2) Sector focus: Food, Textile and Leather, Furniture, Chemicals and Plastic, Electronics. The second PCP focus area relates to the vertical sector prioritization of the PCP and aligns with the trade to value-added manufacturing pillar of the industrial blueprint. The focus area revolves around the priority sectors selected to support the upgrading of manufacturing capabilities. It should include sector-specific projects to move along value-chains and enhance economic complexity and manufacturing value-added.

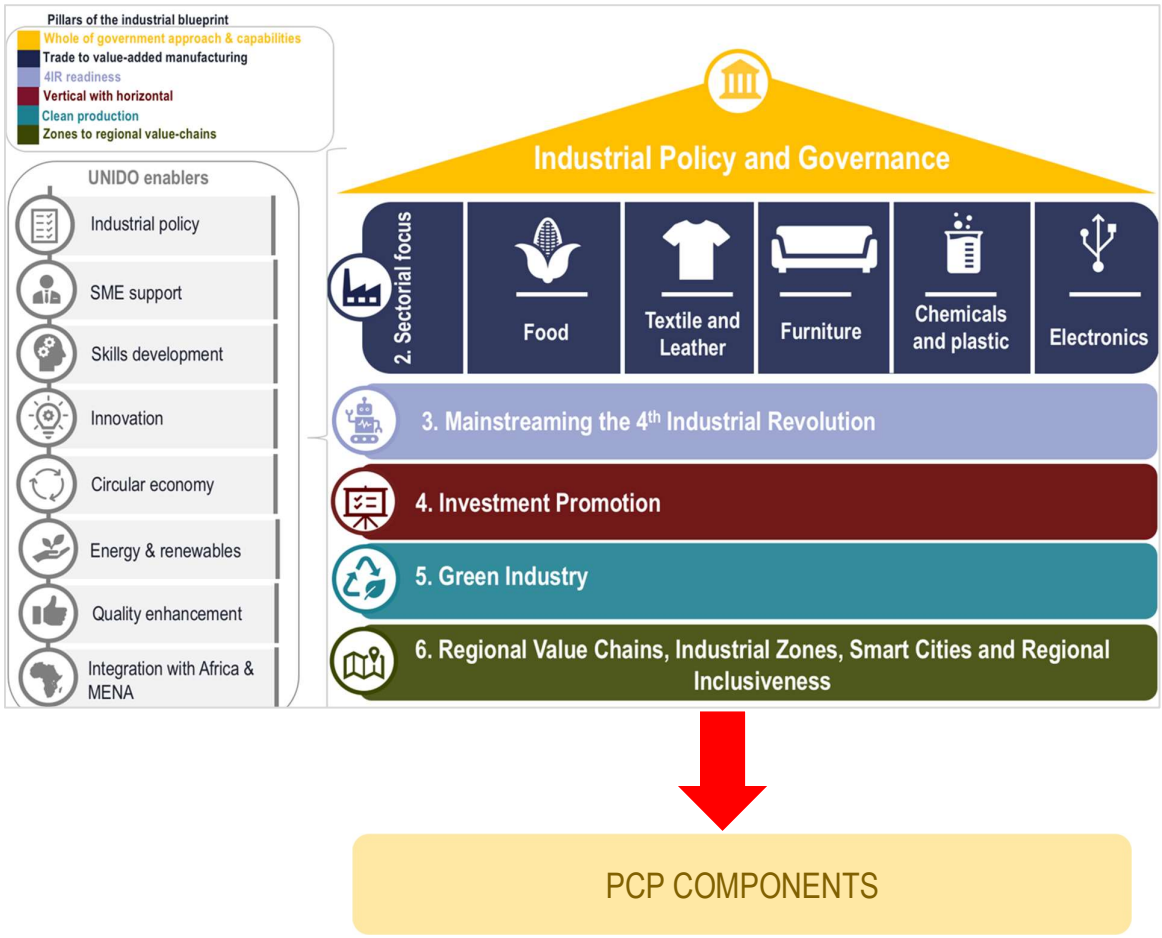
(3) Mainstreaming the 4th Industrial Revolution: the 3rd PCP focus area mirrors the 4IR readiness pillar. The focus area should include the establishment of an integrated strategic roadmap laying the ground for operational initiatives to enable the dissemination of the 4IR in Egyptian manufacturing sector.

(4) Investment promotion: the 4th focus area aligns with the "vertical with horizontal" pillar of the industrial blueprint. The focus area should aim at addressing structural and policy barriers common to all manufacturing sectors and sector specific conditions to enhance investment attraction – in particular FDI – towards the manufacturing sector. The focus should to attract more knowledge-intensive, higher value-added FDIs enabling upgrading along GVCs, enhancement of manufacturing capabilities and supporting 4IR dissemination.

(5) Green industry: the 5th focus area is linked to the "clean production" pillar of the blueprint. Projects of this focus area should build on an integrated framework to enable the green transition of Egypt manufacturing and adapt to the circular economy model linking environmental policy with skills, innovation and technology enablers.

(6) Regional value chains, industrial zones, smart cities and regional inclusiveness: the 6th focus area aligns with the "Zones to regional value-chains" pillar of the industrial blueprint. This focus area depicts the regional approach for manufacturing enhancement by adapting support strategies to the specific needs and capabilities of regions while leveraging their complementarity to support the transition toward regional value chains. The focus area should also utilize infrastructure to enhance regional industrialization and enable green and digital transitions at the regional level (through industrial zones with improved management, eco-industrial parks and SMART cities applications).

Figure 50: Selected PCP focus areas

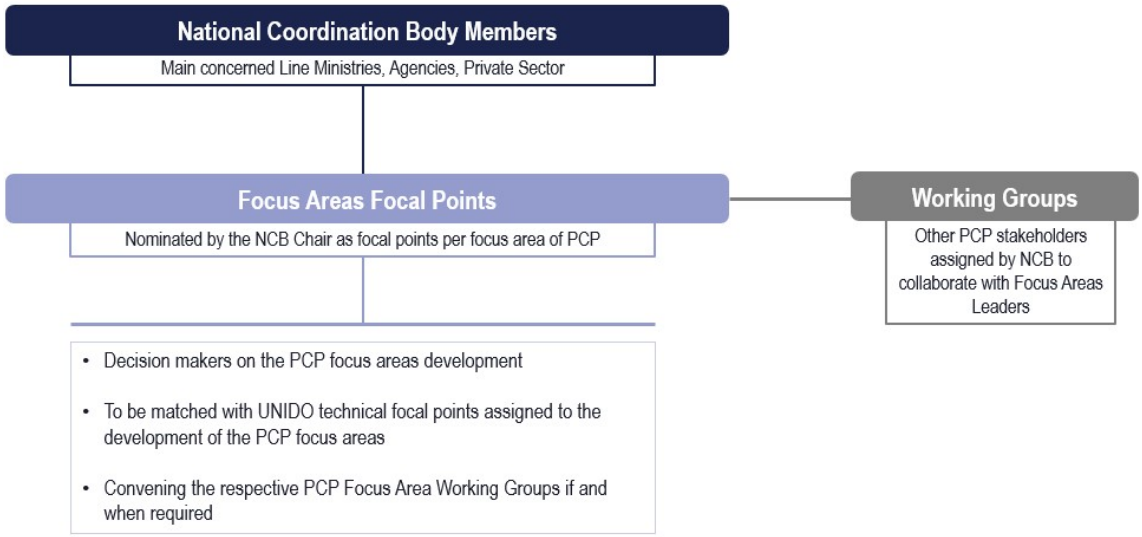


Source: UNIDO, Whiteshield Partners

4.2 The PCP governance

The final dimension of the PCP framework relates to its own governance structure (Figure 51). The implementation of the projects along PCP focus areas will be supported by the National Coordination Body Members, which include the main concerned line ministries, agencies and private sector. The NCB Chair nominates a focal point per PCP focus area. Focus Areas Leaders are the decision makers on the PCP focus areas and are matched with UNIDO technical focal points assigned to the focus areas. The NCB will also be supported by working groups, which would include other PCP stakeholders if and when required and as convened by Focus Areas Leaders.

Figure 51: Proposed PCP governance structure for discussion

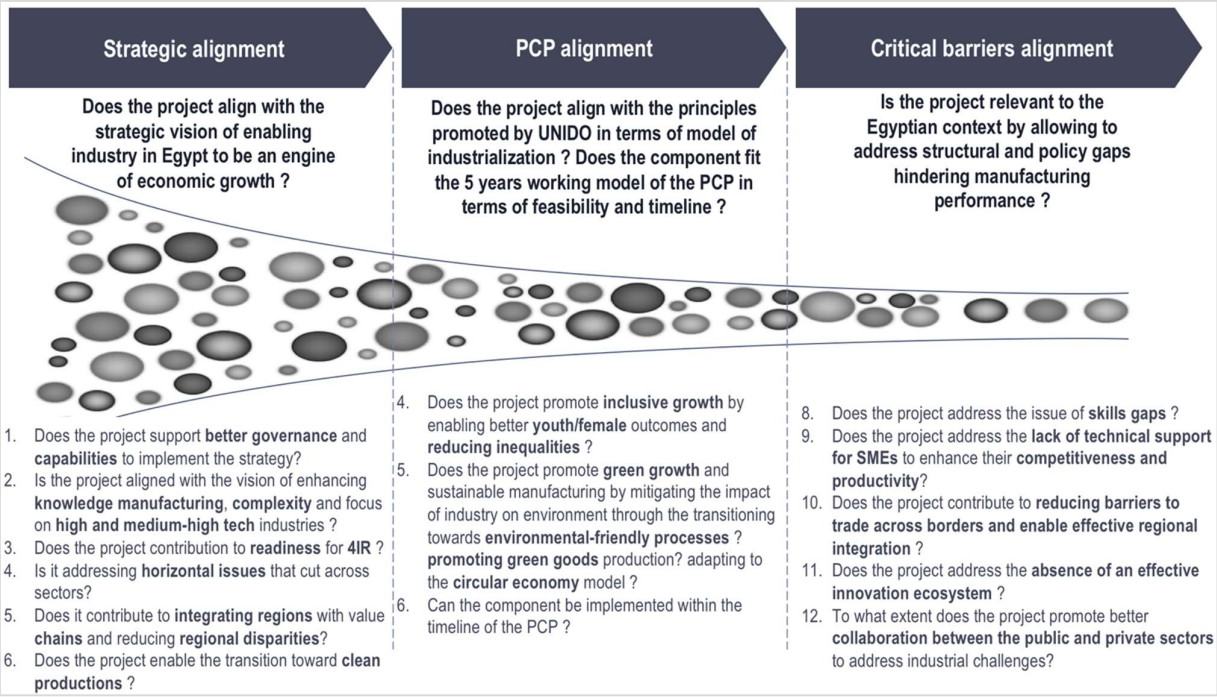


Source: UNIDO

4.3 Filtering of PCP projects

The PCP structure and focus areas exercise was complemented by the design of a 3-steps filtering and scoring approach to facilitate the future selection of projects (Figure 52). The first filter applied relates to the strategic alignment of projects. This dimension aims to score potential projects on their link with the strategic directions of the blueprint ranking them from projects which do not directly align with a specific pillar of the blueprint to projects directly aligning with a strategic pillar. The second filter aims at assessing the alignment of projects with the PCP framework both in terms of principles of inclusive and sustainable industrialization and in terms of pragmatic constraints such as the feasibility and timeline of projects. Finally, the third filtering dimension scores potential projects on their alignment with the Egyptian context of manufacturing by assessing their relevance to the most critical barriers hindering manufacturing performance and identified in the diagnostic study. The detailed filtering process and scoring table for each dimension is provided in the appendix.

Figure 52: Filtering process of PCP projects



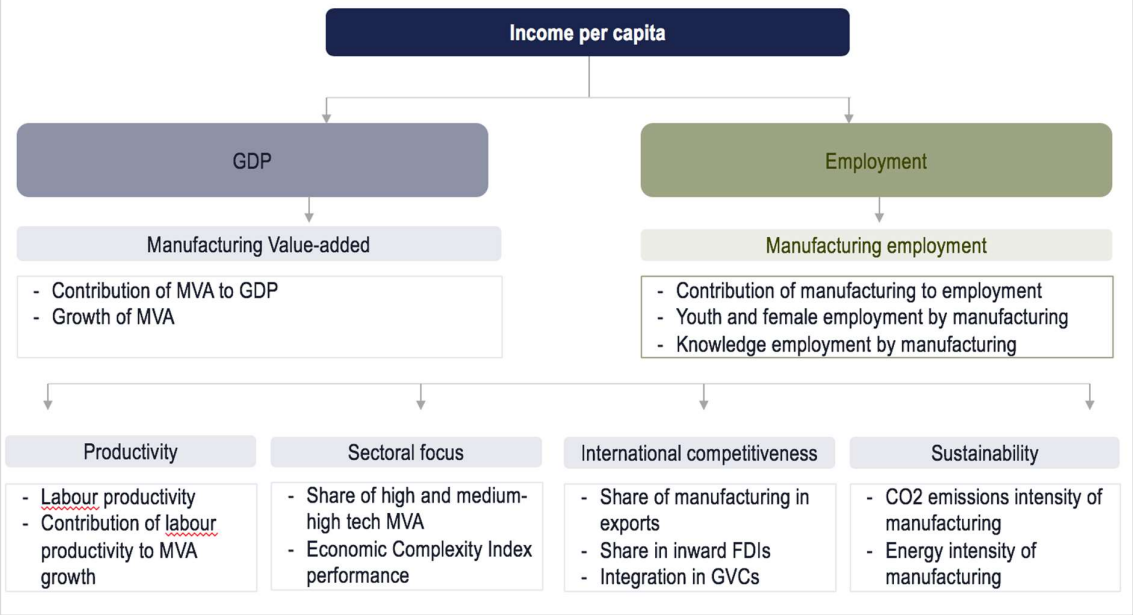
Source: Whiteshield Partners

5 Appendix

5.1 Framework of the diagnostic study

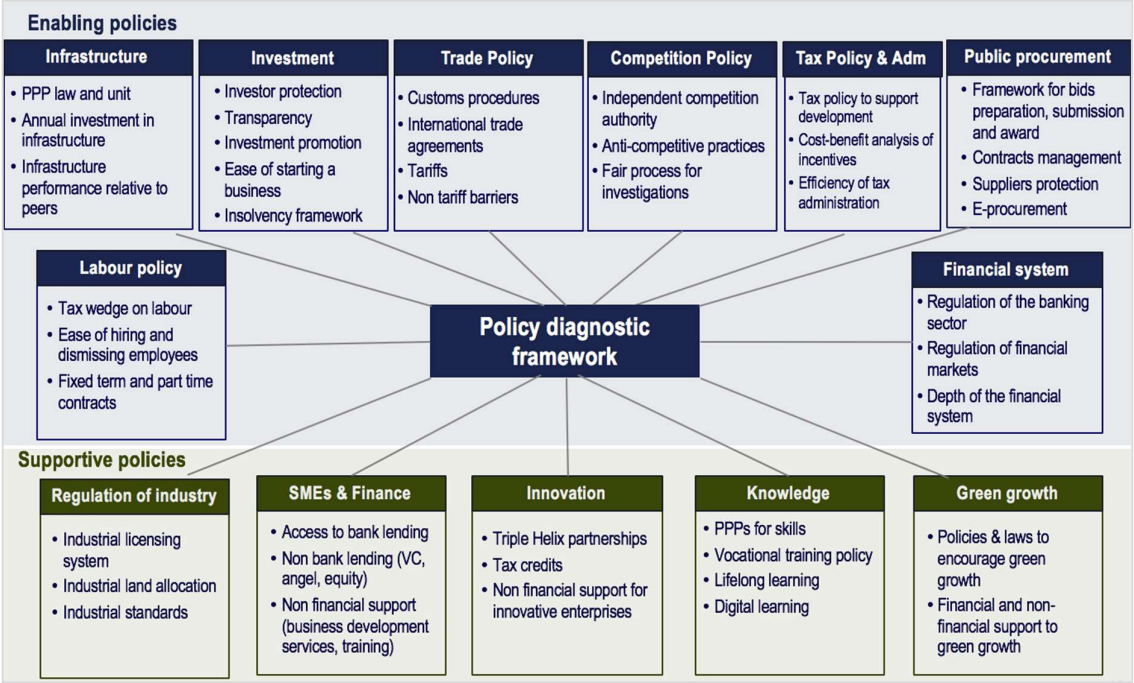
(1) The assessment of the manufacturing performance was based on selected indicators from national and international sources covering social, economic and environmental perspectives according to the following framework (Figure 53).

Figure 53: Framework of manufacturing performance assessment



(2) The assessment of policies for manufacturing support covered 13 policy areas grouped along two categories (Figure 54).

Figure 54: Framework of policy diagnostic



(3) Each policy area was scored along three dimensions. (Figure 55 and 56)

Figure 55: Scoring table of policy areas

Dimension	Methodology	Score of 1	Score of 2	Score of 3
Current situation	• **Question answered:** What are the current strengths and weaknesses of Egypt in this policy area and where does the country stand compared to peer countries ? • **Approach:** Quantitative benchmarking with peer countries • **Source/materials used:** Assessment based on international rankings/ hard data from international organizations when possible. If no indicator is available, the assessment was based on key stakeholders' feedback.	Weaknesses are more significant than strengths, the country performs below peer-countries	Magnitude of strengths comparable to weaknesses, country performs at the average of peer-countries	Strengths are more significant than weaknesses, country performs above average of peer-countries
Policy efforts and initiatives	• **Question answered:** Are there significant initiatives undertaken in this policy area ? Are initiatives/reforms moving in the right direction (sound policy design) ? Are they implemented (implementation stage: planned or currently being implemented or already implemented) ? • **Approach:** Qualitative assessment based on literature review and stakeholders' feedback • **Source/materials used:** reports which include assessment of reforms (international organizations, consultancies, policy papers); official documents including strategies, annual reports of agencies, ministries and agencies' websites; stakeholders' consultations. Please see slide 3 for examples of documents consulted.	No reforms at all or reforms moving in the wrong direction or only small-scale initiatives	Large scale positive initiatives planned or early stage of implementation	Large scale positive initiatives already implemented or at an advanced stage of implementation
Policy efficiency	• **Question answered:** Are initiatives actually leading to tangible progress in the policy area ? • **Approach:** Quantitative time-series assessment to identify last 5 years trend in the policy area • **Source/materials used:** Assessment based on international rankings/ hard data from international organizations when possible. If no indicator is available, the assessment was based on key stakeholders' feedback.	Decreasing 5-years trend	Stagnating or slightly increasing 5-years trend	Increasing 5-years trend
Overall score	• Average of the above three scores	Average score below 2	Average score between 2 and 3	Average score of 3

Figure 56: Details of scores by policy area

Policy area	Sub-areas included	Current situation score*	Policy efforts score*	Policy efficiency score*	Overall score
Regulation of industrial sector	• Industrial licensing system • Industrial land allocation • Industrial standards	1,5	2,5	2	2
SMEs & access to finance	• Access to bank lending • Non bank lending (VC, angel, equity) • Non financial support (business development services, training)	2	2,75	2,5	2,4
Knowledge and skills	• PPPs for skills • Vocational training policy • Lifelong learning • Digital learning	1	1,5	1	1,2
Innovation & technology	• Triple Helix partnerships • Tax credits • Non financial support for innovative enterprises	1,5	1,5	1	1,3
Green growth	• Extent of environmental regulations • Stringency of environmental regulations • Investment and promotion of renewables • Financial and non-financial support for the greening of industry including support for SMEs • Financial and non-financial support for environmental goods and services as well as eco-innovation • Promotion of circular economy • Green jobs and skills policy	1,25	2,75	1,75	1,9

Policy area	Sub-areas included	Current situation score*	Policy efforts score*	Policy efficiency score*	Overall score
Infrastructure	• PPP law and unit, private sector involvement • Public investments • Infrastructure access and quality (utilities, transport, digital)	2	2	2,5	2,2
Investment	• Investor protection • Transparency • Investment promotion • Ease of starting a business • Insolvency framework	2,5	3	2,5	2,7
Trade policy	• Customs efficiency • International trade agreements • Tariffs • Non tariff barriers	1	1,5	1	1,2
Competition policy	• Independent accountable competition authority • Extent of anti-competitive practices • Fair and efficient process for investigations	2	2,5	1,5	2
Tax policy	• Tax policy to support development • Efficiency of tax administration	1	1,5	1	1,2
Public procurement	• Framework for bids preparation, submission and award • Contracts management • Suppliers protection • E-procurement and efficiency • SME involvement	2	2,25	1,75	2
Labour Policy	• Tax wedge on labour • Ease of hiring and dismissing employees • Fixed term and part time contracts • Workers' rights • ALMP policies	1,25	1	1	1,1
Financial system	• Regulation of the banking sector • Regulation of financial markets • Depth of the financial system • Soundness of banks	2	2,5	2	2,2

(4) The current situation and policy efficiency scores were determined based on international indicators and indices. Table 1 provides a list of these indicators and their sources by policy area

Table 1: indicators used by policy area

Policy area	Indicators	Source
Infrastructure	**Quality of transport infrastructure (score)**	**Global Competitiveness Index (WEF)**
	Access to utility infrastructure (score)	Global Competitiveness Index (WEF)
	ICT infrastructure: 4G coverage (%), broadband subscriptions (per million inhabitant)	Network Readiness Index (WEF)
	Infrastructure investment gap (%GDP)	Global Infrastructure Hub
	Infrastructure project finance volume (%GDP)	World Bank
Investment	Ease of Doing Business (score)	Various pillars and indicators from Doing Business ranking of the World Bank
	Resolving insolvency (score)	
	Enforcing contracts (score)	
	Protecting minority investors (score)	
	Registering property (score)	
	Dealing with construction permits (score)	
	Ease of starting a business (score)	
	Extent of director liability (score)	
	Ease of shareholder suits (score)	
	Quality of judicial process (score)	
Trade policy	Ease of trading across borders (time and cost)	Doing Business ranking, World Bank
	Efficiency of customs (score)	Logistics Performance Index (World Bank)
	Mean weighted tariff (%)	UNCTAD
	Prevalence of non-tariff barriers (score)	Global Competitiveness Index (WEF)
Competition policy	Extent of market dominance (score)	Global Competitiveness Index (WEF)
	Effectiveness of anti-monopoly policy (score)	
Tax policy	Ease of paying taxes (score)	Various pillars and indicators from Doing Business ranking (World Bank)
	Total tax and contribution rate (% profits)	
	Postfiling index (score)	
Public procurement	Needs assessment, calls for tender and bid preparation	Score-based assessment of public procurement framework, World Bank Public Procurement Benchmark report
	Bid submission (score)	
	Performance guarantee (score)	
	Content and management of contract (score)	
	Payment of suppliers (score)	
	Bid opening evaluation and award (score)	
Labour Policy	Flexibility of labour market (score)	Global Competitiveness Index (WEF)
	Hiring and firing practices (score)	
	Active labour market policies (score)	
	Labour tax rate (% profit)	Doing Business ranking (World Bank)
	Redundancy costs (week of salary)	
Financial system	Soundness of banks (score)	Global Competitiveness Index (WEF)
	Depth of the financial system (score)	
	Availability of venture capital (score)	
	Market capitalization (%GDP)	World Bank
	Domestic credit to private sector (%GDP)	
	Insurance premium (%GDP)	

SME-support and access to finance	Ease of getting credit (score)	Doing Business ranking, World Bank
	Strengths of legal rights index (score)	
	Depth of credit information index (score)	
	Credit bureau coverage (% adults)	
	Foundations of SME support (definition, statistics, institutions) (score)	OECD SME policy index (various dimensions)
	Nurturing SME growth (business support, support for internationalization, innovation and skills) (score)	
	Investing in entrepreneurial talent (score)	
Knowledge and skills	Prevalence and quality of lifelong learning (score)	Global Talent Competitiveness Index (INSEAD)
	Ease of finding skilled labour (score)	
	Relevance of education system to the economy (score)	
	Skills matching with secondary education (score)	
	Skills matching with tertiary education (score)	
Innovation	Firm level technology absorption (score)	Readiness for the Future of Production Index (WEF)
	Ability to innovate (score)	
	Company investment in emerging technology (score)	
	Multi-stakeholder collaboration in innovation (score)	
	Research intensity (score)	
Green growth	Sustainable orientation (score)	Readiness for the Future of Production Index (WEF)
	Environmental performance	Environmental Performance Index (Yale University)

(5) The policy efforts and initiatives score is based on external consultations as well as available resources including websites and reports of governmental stakeholders and external studies. The list of reports and studies used is provided in the key references.

(6) Governance for manufacturing support was assessed through 5 dimensions grouped along 2 categories (Figure 57). Indicators used in the assessment are listed in table 2.

Figure 57: Framework of governance assessment

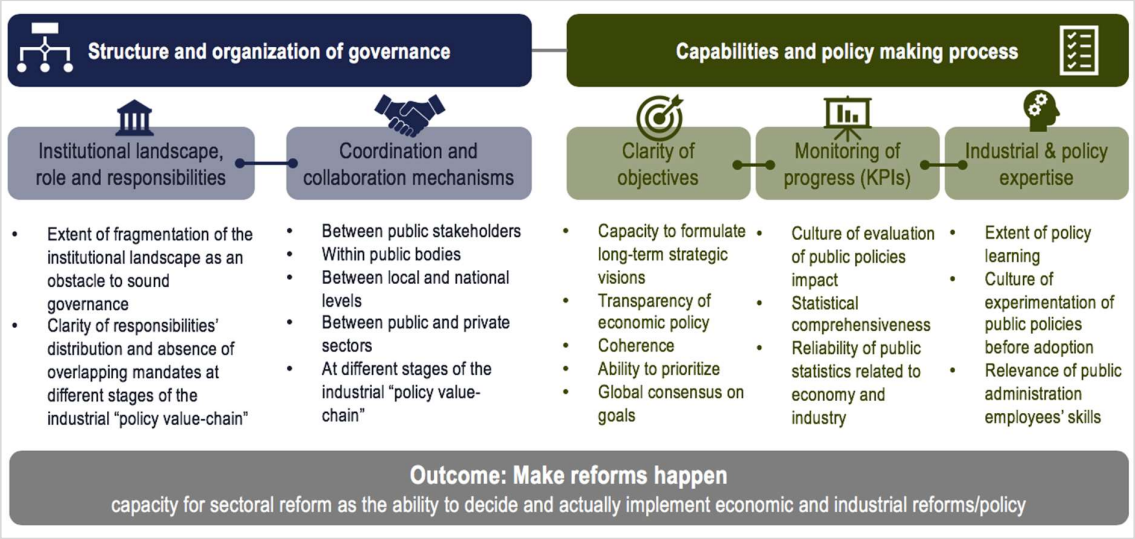


Table 2: indicators used by governance assessment dimension

Dimension	Indicators	Source
Institutional landscape, role and responsibilities	Assessment based on mapping of key stakeholders	
Collaboration and coordination mechanisms	Extent of public private collaboration (score)	Institutional Profile Database
	Extent of public private collaboration at high state level (score)	
	Effectiveness of public-private collaboration (score)	
	Collaboration between public stakeholders (score)	
	Collaboration with local stakeholders (score)	
	Extent of policy coordination (score)	Governance Index (BertelsmannSttiftund_
Clarity of objectives	Adoption of a long-term vision (score)	Global Competitiveness Index (WEF)
	Transparency of policy making process (score)	
	Prioritization in policy making (score)	Governance Index (BertelsmannSttiftund)
	Consensus on goals (score)	
	Coherence of policy making (score)	Institutional Profile Database
Monitoring of progress	Statistical capacity (score)	Statistical Capacity indicators (World Bank)
	Reliability of official economic data (score)	Institutional Profile Database
	Evaluation of public policies practice (score)	
	Communication of statistics (score)	Open data barometer (World Bank)
Industrial & policy expertise	Responsiveness to change in policy making (score)	Global Competitiveness Index (WEF)
	Adaptability of policy making (score)	
	Future orientation of policy making (score)	
	Policy learning capacity (score)	Governance Index (BertelsmannSttiftund)
	Experimentation in policy making (score)	Institutional Profile Database
	Use of technology for governance (score)	E-participation Index (UN)
Outcomes: making reforms happen	Governance effectiveness (score)	World Bank Governance Indicators
	Sectoral reform capacity (score)	Institutional Profiles Database

5.2 Methodology of sectorial prioritization Index

(1) The sectorial prioritization index was built around two dimensions including 13 indicators (Figure 58)

Figure 58: Sectorial prioritization index methodology

5.3 Methodology of PCP project filtering

(1) Potential PCP focus projects would be scored on three dimensions (Figure 59)

Figure 59: Scoring table for PCP focus areas

	Score of 1	Score of 2	Score of 3	Score of 4	Score of 5
Strategic alignment	The component does not directly align with a specific strategic dimension of the industrial blueprint	The component could indirectly contribute to one of the strategic dimensions	The component could directly contribute to more than one strategic dimension but is not directly aligned with one of them	The component is directly aligned with one of the 5 strategic dimensions of the industrial blueprint	The component is directly aligned with one of the 5 strategic dimensions and enables rationalization of efforts by avoiding potential duplication of projects and enabling complementarity between components
PCP alignment	The component could enable inclusiveness and/or sustainability depending on projects included	The component would directly enable inclusive or sustainable industrialization	The component would directly enable inclusive and sustainable industrialization but can not be implemented within 5 years	The component would directly enable inclusive and sustainable industrialization and requires between 4 and 5 years to be implemented	The component would directly enable inclusive and sustainable industrialization and requires up to 3 to be implemented
Critical barriers alignment	The component addresses some barriers of manufacturing in Egypt but not the most critical ones	The component could directly address one of the 5 critical barriers identified	The component could directly address two of the 5 critical barriers identified	The component could directly address three of the 5 critical barriers identified	The component could directly address more than three of the 5 critical barriers identified
Overall priority score (1-5): average of scores in the 3 filtering dimensions					

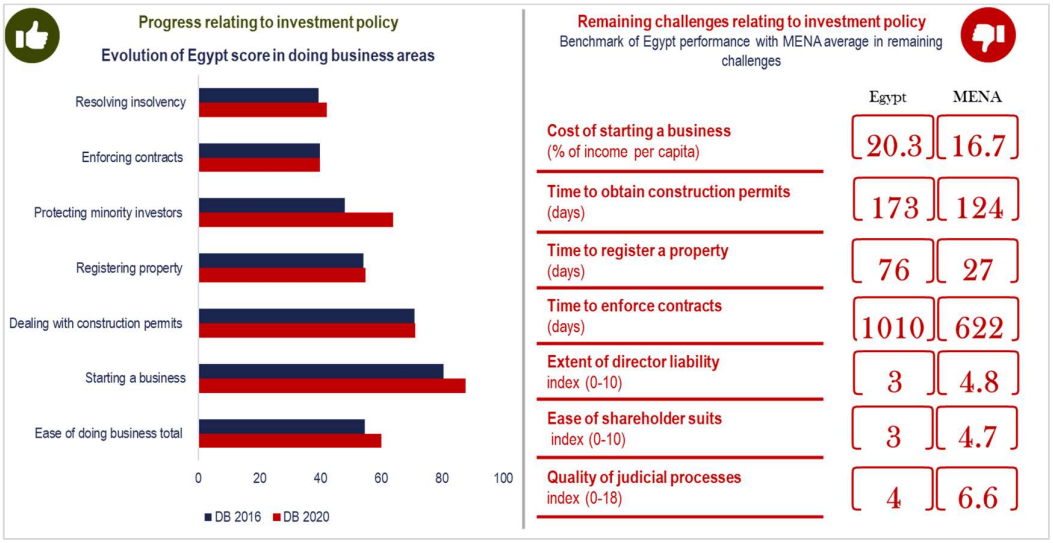
5.4 Detailed policy diagnostic by policy area

5.4.1.1 Enabling policy: Investment (overview)

Global Assessment: **Medium**

Achievements	*Remaining gaps to address*
- **Simplification and streamlining of procedures to start a business** (removed the minimum capital requirement to start a business, removed other requirements such as bank and a non-confusion certificates, improvement of the one stop-shop to start a business, creation of units of liaison with tax and labour authorities, lowered registration fees) - **Increasing investors protection** through enhanced corporate transparency (for instance by requiring independent auditing for transactions prior to their approval or clarifying ownership and control structures), increase of shareholder rights (increased role in corporate decisions) and banning of transactions threatening the rights of minority investors (such as forbidding subsidiaries from acquiring shares issued by parent company) - **Improving the insolvency framework:** a major reform was introduced in 2019 through the reorganization procedure and the clarification of creditors' participation in the procedure - **Investment promotion: New Investment Law** No. 72 of 2017 which grants general incentives to all projects (such as the exemption from various administrative fees, a flat customs duty rate of 2%) as well as specific incentives depending on the region of investment and the sector in the form of a deduction of investment costs from taxable net profit. **New Sovereign Wealth Fund** with the aim of attracting and steering investment toward sectors that the state sees as vital to the economy through different types of partnerships (with private-sector investors in specific industries, with other sovereign wealth funds, with the private sector on specific projects through PPP, JVs and other sub-funds). - Initiative of EGP 100 billion to finance industrial activities specifically.	- Despite efforts to streamline administration procedures for businesses, **bureaucracy** remains a major issue for the business environment particularly in areas such as registering property. It takes on average 76 days to register a property (compared to 22 days in the MENA region). - Some of the reforms aiming at increasing the rule of law in business regulation did not go far enough, especially in terms of **judiciary processes**. For instance, within the protection of investor, the extent of corporate boards' liability remains limited -below MENA region average- as is the ease for shareholders to sue in case of damages. In the enforcement of contracts, the quality of judicial process is also lagging behind the average of the MENA region.

Enabling policies: Investment (analysis)

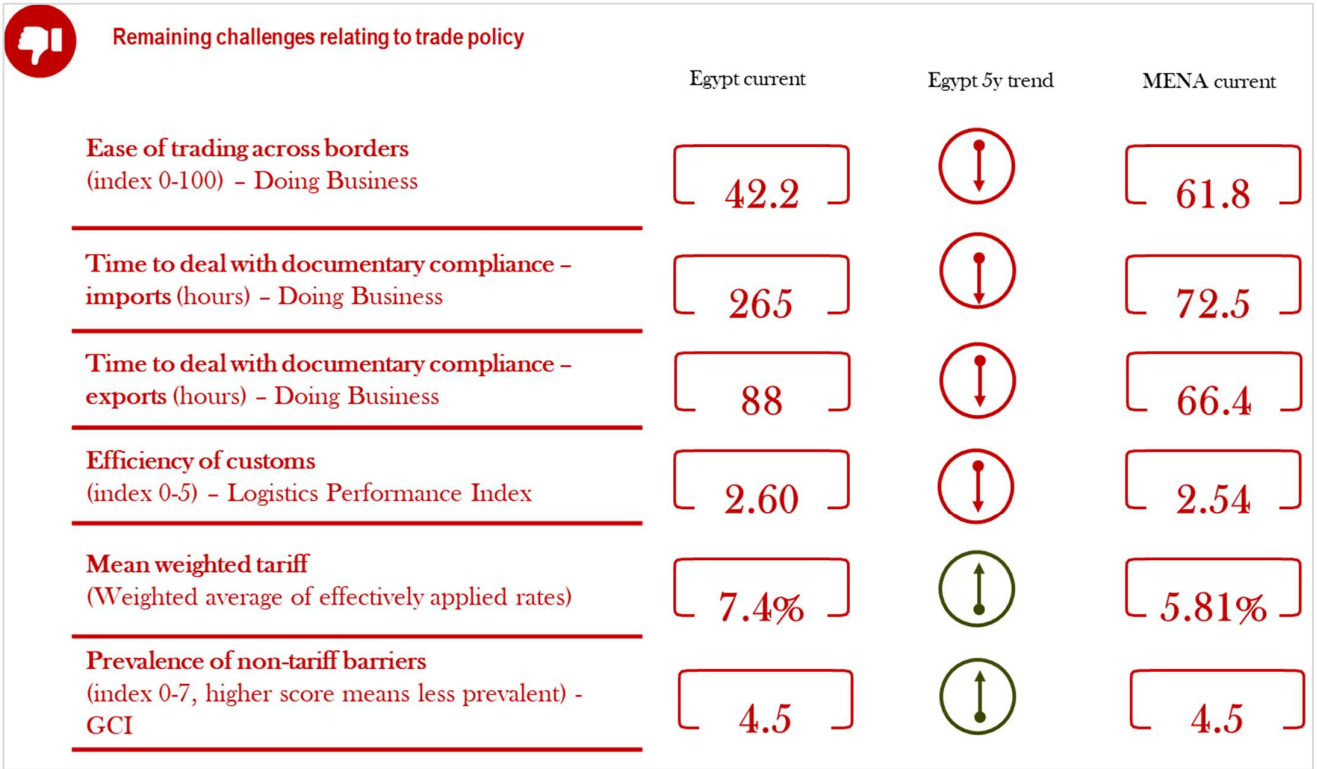


5.4.1.2 *Enabling policies: Trade*

Global Assessment: **Low**

Achievements	*Remaining gaps to address*
- **Customs procedures:** efforts to streamline international trade procedures with the introduction of an electronic system for export and import documents. A Ministerial Steering Council for Egyptian Trade Facilitation (EgyTrade) has been established mainly to move forward with the creation of an Egyptian National Single Window (ENSW) system	- In 2017, Egypt introduced regulatory changes badly impacting the ease of trading across borders by making the **process** of obtaining and processing documents **more complex** and by imposing a **cap on foreign exchange deposits and withdrawals for imports.** - **Over-reliance on export subsidies** leads to a **disincentive** for exporting firms to enhance **innovation and quality** - **High weighted mean applied tariff**

Enabling policies: Trade (analysis)

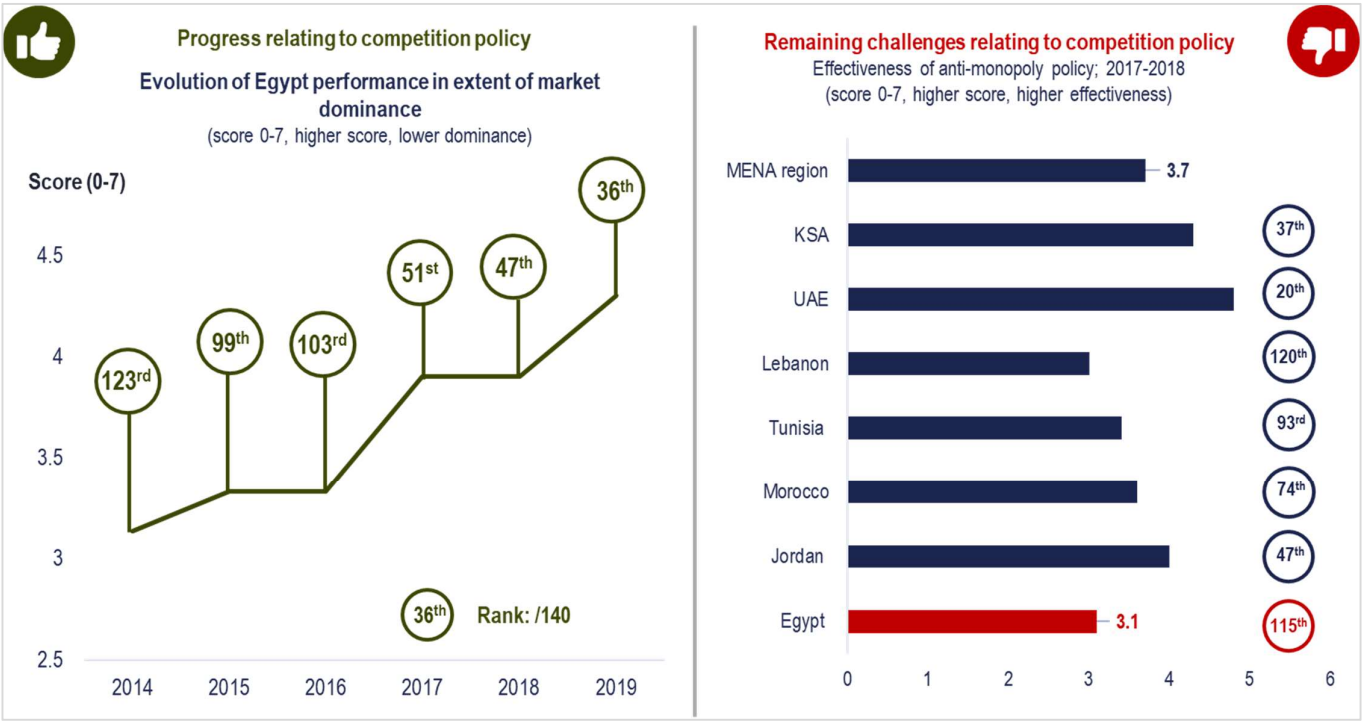


5.4.1.3 *Enabling policies: Competition*

Global Assessment: **Medium**

Achievements	*Remaining gaps to address*
- **Increasing independence, effectiveness and accountability of competition authority:** (1) Law No. 56/2014, passed in May 2014 introducing amendments to the Egyptian Competition Law to strengthen the Egyptian Competition Authority's independence, effectiveness and credibility. (2) New draft law in 2019 to further improve financial, institutional and operational independence of the ECA and increase accountability and transparency - **Increasing consumer protection:** The new consumer law ratified in 2018 replaced the 2006 to enhance the protection of customers, increase their access to information, effectively eliminate misleading advertisement but also update the regulatory framework to adapt it to e-commerce evolutions	- The ECA **does not have direct authority to impose fine or take immediate action**. The authority needs to file a lawsuit which makes the efficiency of its work **conditioned by the efficiency of the judiciary process** which is limited due to **long durations**. - Competition policy does not cover **SOEs and military-owned companies**

Enabling policies: Competition (analysis)

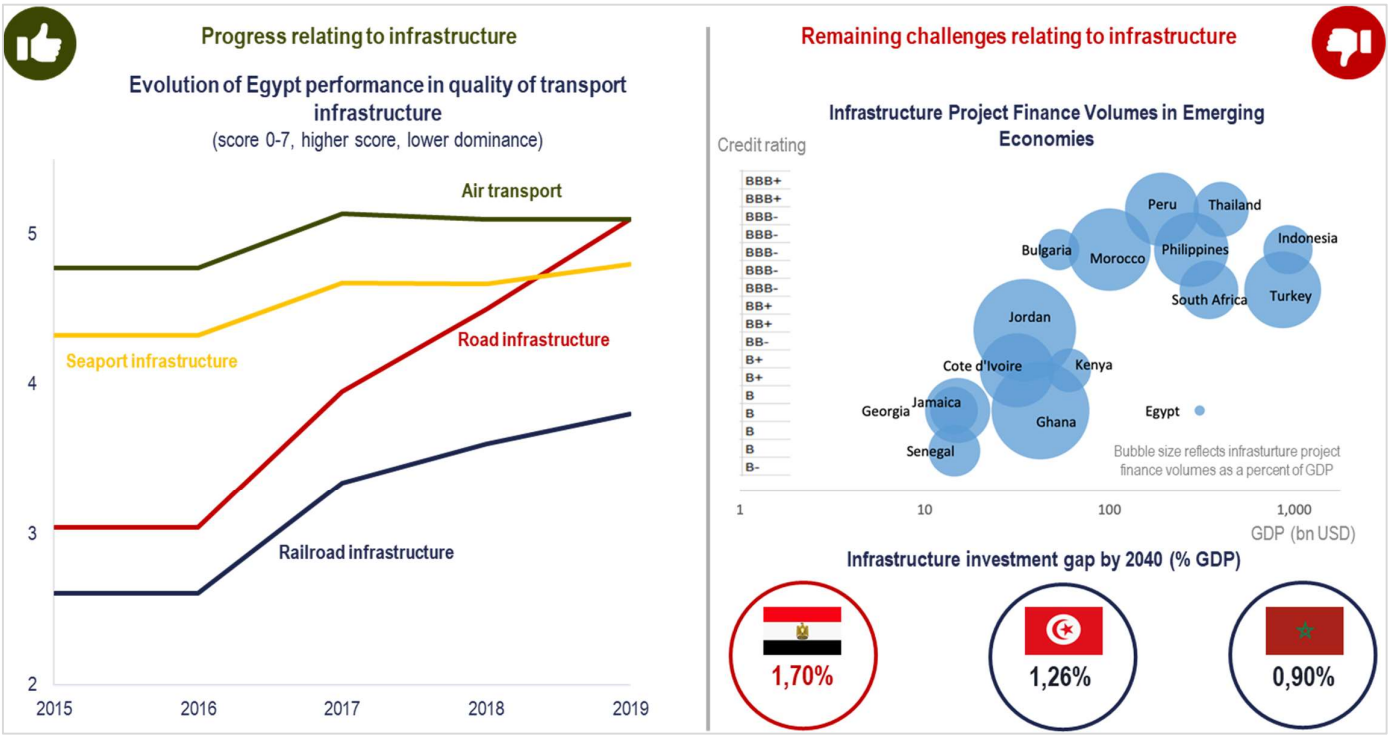


5.4.1.4 *Enabling policies: Infrastructure*

Global Assessment: **Medium**

Achievements	*Remaining gaps to address*
- **Overall infrastructure performance:** Improvement in relative infrastructure performance (increase in the rank of the country from 91st in 2015 to 52nd in 2019 in infrastructure pillar of GCI). - **Quality of transport infrastructure:** Improvement in relative infrastructure quality performance of all transport infrastructure. - **Utility infrastructure:** increase in access to electricity and decrease in exposure to unsafe drinking water. - **Digital infrastructure:** Improvement in the penetration of broadband and corresponding affordability, both fixed and mobile.	- Egypt's use of **infrastructure project finance** is, relatively low compared to peer-countries. - Egypt face an **infrastructure investment gap** of $ 230 bn over the next 20 years, particularly in road and water infrastructure. - **Absence of a clear pipeline of projects** to attract private sector investments especially because of the **fragmented institutional framework** (for instance in the transport sector, planning in each mode is conducted independently). - Egypt is at **its first stage of ICT development**, which is broadband and still performing below word average. The **4G coverage is still significantly low**.

Enabling policies: Infrastructure (analysis)

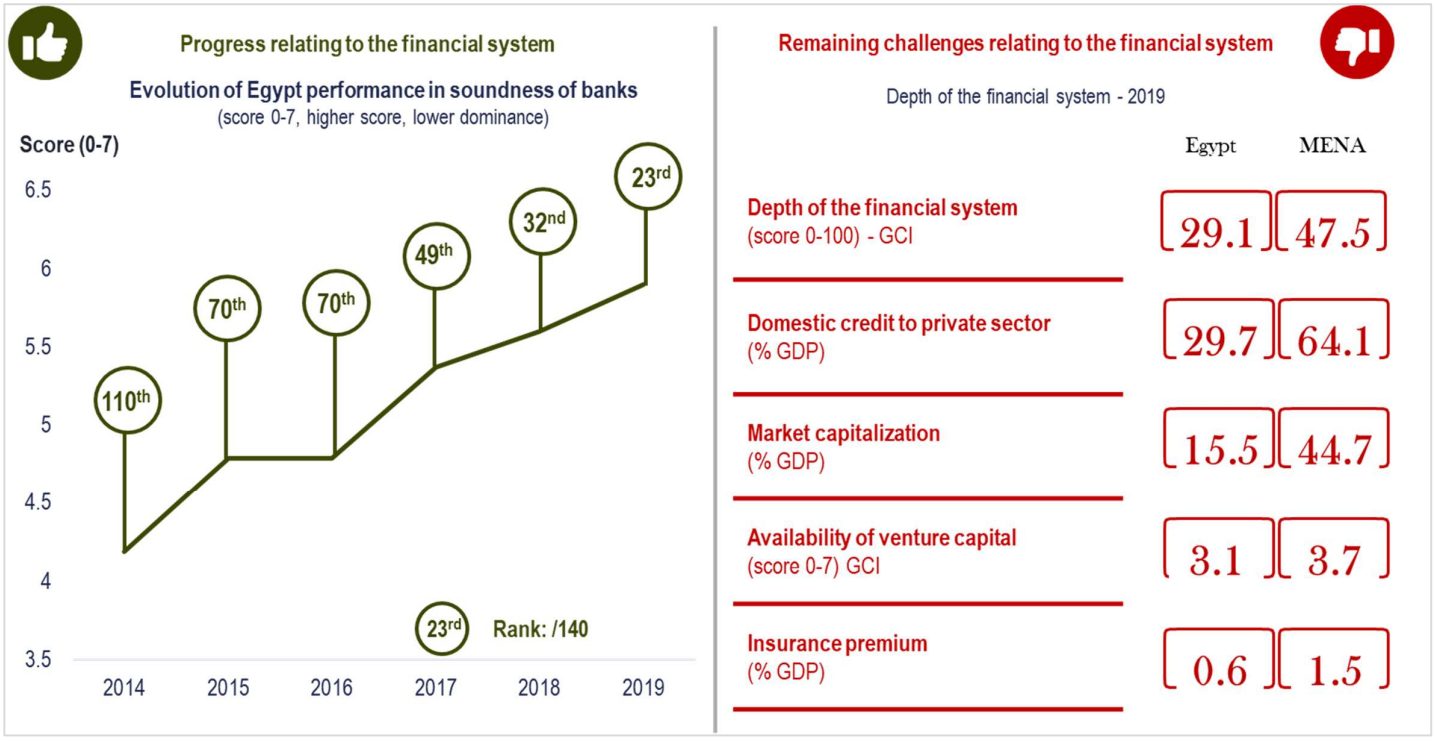


5.4.1.5 *Enabling policies: Finance System*

Global Assessment: **Medium**

Achievements	*Remaining gaps to address*
- **Regulation of the banking sector:** the Egyptian Central Bank issued several circulars updating the banking sector regulation. For instance, the circular issued in April 2019 outlined the requirements and procedures for the management as well as calculation, evaluation and mitigation of concentration risks by banks to effectively follow the second pillar of Basel 2. - **Regulation of capital markets:** several amendments were introduced to update the capital market law passed in 1992 notably to broaden the activities of the Egyptian capital market following the recent evolutions of the industry.	- **Low performance in the share of domestic credit to private sector in GDP**, ranks 101st /140 worldwide. - **Under-developed VC scene** compared to peer countries. Low performance in total number of annual VC deals (ranks 63rd /78, after Tunisia, the UAE, Morocco and Jordan). - **Relatively low market capitalization** compared to other MENA countries –including. KSA, UAE, Morocco, Tunisia, Turkey, Lebanon and Jordan)

Enabling policies: Infrastructure (analysis)

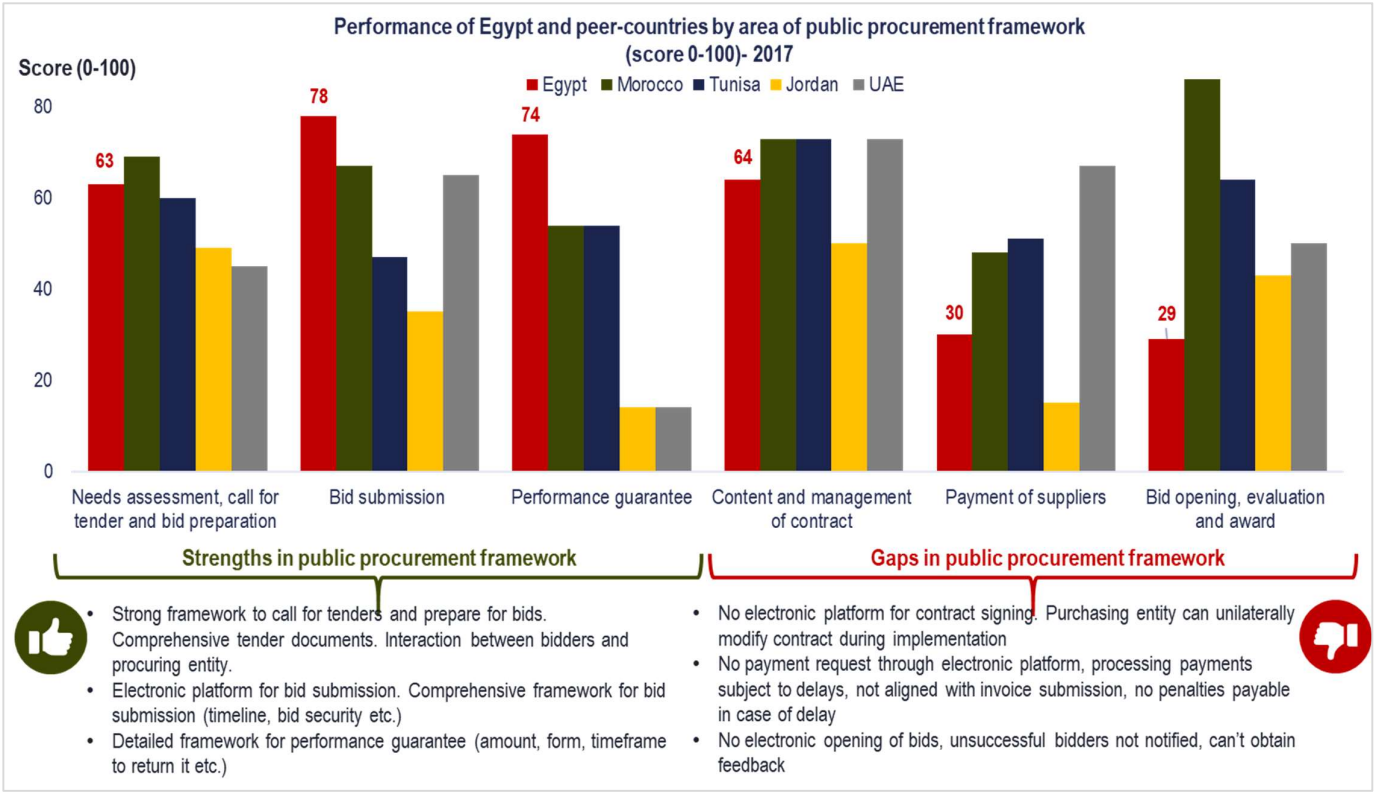


5.4.1.6 *Enabling policies: Public Procurement*

Global Assessment: **Medium**

Achievements	*Remaining gaps to address*
- **Transparent and fair procedures:** new Government Procurement Act was based on international best practices to enable transparency, open and fair competition and improved management of procurement procedures - **Streamlining of the procedure:** Introduction of an online platform for public procurement ensuring increased efficiency in procedure as well as transparency	- **No time limit** for the decision-making committees to meet, make or announce their decision. - There are no time limits for making payment from the date of acceptance of a bid, **nor any provision for implied or automatic acceptance of a supplied good or service.** - **No reference to dispute resolution** - **Weak enforcement** of provisions related to **SME** involvement in public procurement and limited provisions (only 10% threshold compared to 20% in most of the MENA region countries)

Enabling policies: Public Procurement (analysis)



5.4.1.7 *Enabling policies: Labour*

Global Assessment: **Low**

Achievements	*Remaining gaps to address*
No major progress has been achieved in this area.	- Labour law currently in application dates back to 2003 and is generally perceived as favoring employees and being considerably **burdensome to businesses.** However, the **lack of flexibility** is also detrimental to the employees. For example, the **lack of clarity and flexibility in termination procedures** leads to the common practice of employers requesting future employees to sign undated resignation letters before even starting their job. - A **new labour** is currently being discussed in the parliament. It is being largely advertised as a law in clear favor of employees – more than the older one and is expected to be **even more burdensome for businesses**.

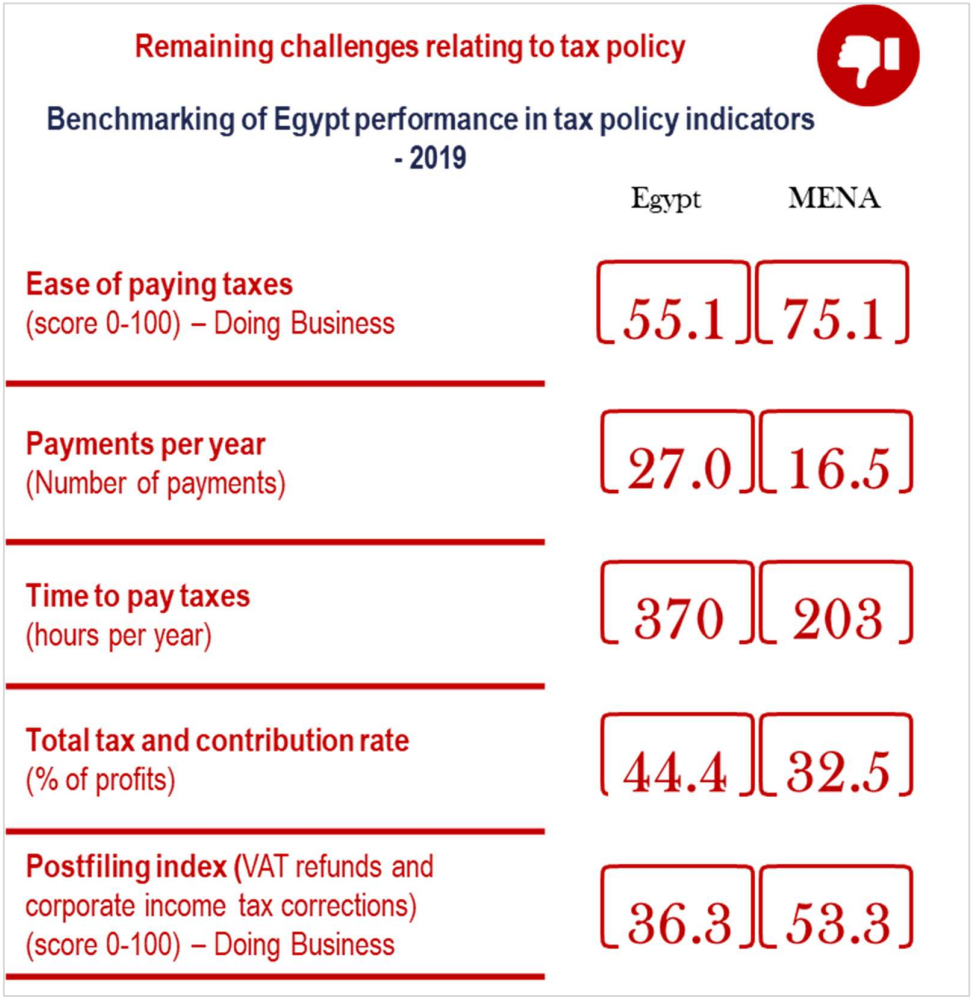
Enabling policies: Labour (analysis)

5.4.1.8 *Enabling policies: Tax and Administration*

Global Assessment: **Low**

Achievements	*Remaining gaps to address*
- **Efficiency of tax administration:** online system for filing and payment of corporate tax and value-added tax introduced in 2019	- **Bureaucracy** still high: 320 hours on average per year - **High total tax and contribution rate** compared to developed and developing countries - Low performance in **post-filing procedures**

Enabling policies: Tax and Administration (analysis)



5.4.1.9 *Supportive policies: Regulation of the Industrial Sector*

Global Assessment: **Medium**

Achievements	*Remaining gaps to address*
- **Streamlining industrial licensing:** Law No. 15 of 2017 for the Simplification of Industrial Licensing Procedures simplifying requirements and shortening the length of procedures for issuing industrial licenses to 7 days for low-risk industries and 30 days for high-risk industries - **Reforming industrial land allocation:** new guidelines replacing the first-come, first-served system by a scoring mechanism prioritizing industrial land allocation on the basis of various criteria which include business plans, technological expertise and export potential - **International recognition of industrial standards:** mutual recognition agreements and Eu-Egypt twinning project on standard issuance with the adoption of a new metrology law harmonizing with EU best practices	- **Ambiguous impact of the land allocation reform** which can open the door to greater discretion in land allocation and might not be adapted to the context of a developing country with limited technical capacity within institutions

5.4.1.10 *Supportive policies: Environmental Policy and Green Growth*

Global Assessment: **Low**

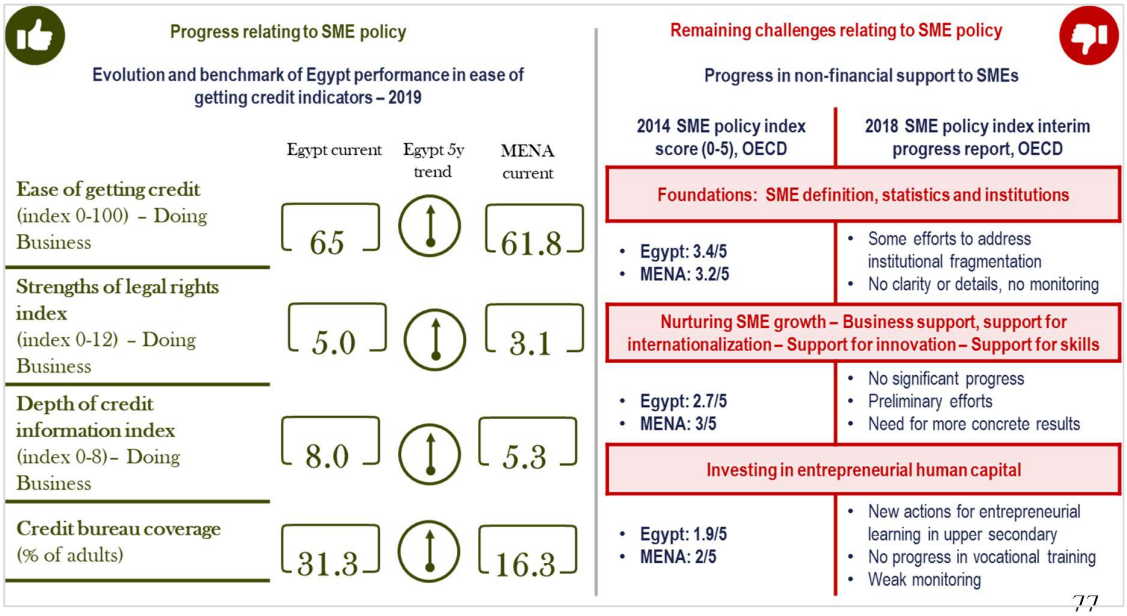
Achievements	*Remaining gaps to address*
- The initiatives of some entities of the Ministry of Trade and Industry particularly the **IMC and the Egypt National Cleaner Production Centre** offering **green economy programs to support manufacturing firms adopt environmental management certifications and environment-friendly processes** - **Renewable energies regulation:** several measures to regulate the sector including: formulating the Supreme Council for Energy; authorizing NREA to operate renewable energy plants; allowing investors to operate renewable energy plants and sell electricity to end-users and government by and announcing the new Feed-in Tariff (FIT) to encourage investment in renewable energy through long-term contracts. - **Use of renewable energy in manufacturing:** governmental agency programs supporting the industrial sector in implementing renewable energy technologies to reduce their energy consumption.	- The "Environmentally Friendly Industrial Clusters" initiative aiming to establish 22 "integrated industrial clusters" **did not lead to the creation of any successful eco-industrial cluster**. - **Significant gap in support eco-innovation** and developing of the **required skills for new green occupations and the greening of existing ones** - No evidence of actively **involving SMEs** in the greening of the industry efforts

5.4.1.11 Supportive policies: SMEs and Access to Finance

Global Assessment: **Medium**

Achievements	*Remaining gaps to address*
- **Improving credit information:** extending the coverage of credit information (with the creation of a private credit bureau in 2008 and the extension of its database coverage) and strengthening individuals and firms' right to access their credit information - **Improving the collateral framework** (by extending security rights granter over movable assets and increasing secured creditors' rights) - **Improving access to finance for SMEs:** Several initiatives were launched by the ECB including (1) A guarantee of EGP 2 billion for the Credit Guarantee Company (2) Mandating a threshold of 20% of SME lending in total loans for national banks (3) Launching a EGP 200 billion initiative to support SME financing over 4 years (4) Creating financing schemes for medium-sized enterprises equipment investing and short-term schemes for working capital (5) The creation of an SME portal providing information on most financial instruments available to SMEs - **Microfinance regulation:** law 141 issued in 2014 regulating microcredit provided by non-bank financiers under the supervision of the Egyptian Financial Supervisory Authority. Ongoing project with the World Bank on Inclusive Regulations for Microfinance. - **Non-financial support to SMEs:** Creation of the MSME Development Agency to coordinate SME-support initiatives and launch of an electronic platform to provide information on all types of support programs available to SMEs. - **Entrepreneurship support initiatives.** - **Informal sector regulation:** SMEs Act currently in Parliament to provide financial and non-financial incentives for SMEs to formalize. - **Export support:** new Export Support Scheme, to which the government commits about $400 million	- **Lack of clarity in the details of new initiatives** created by the MSMEDA as well existing ones which have been absorbed by the new agency. - So far, **insufficient monitoring** of implementation progress, targets and results. - **Transferring the responsibility of supporting manufacturing SMEs from the IMC to the new MSME agency** can help clarify the overlapping mandates of different institutions However, this also means that manufacturing SMEs will not have access to the rather diversified range of services of the center and its network of services providers. A **general SME agency** might not be able to develop all the **technical expertise** to **cater to the specific needs of manufacturing SMEs.**

Supportive policies: SMEs and Access to Finance (analysis)

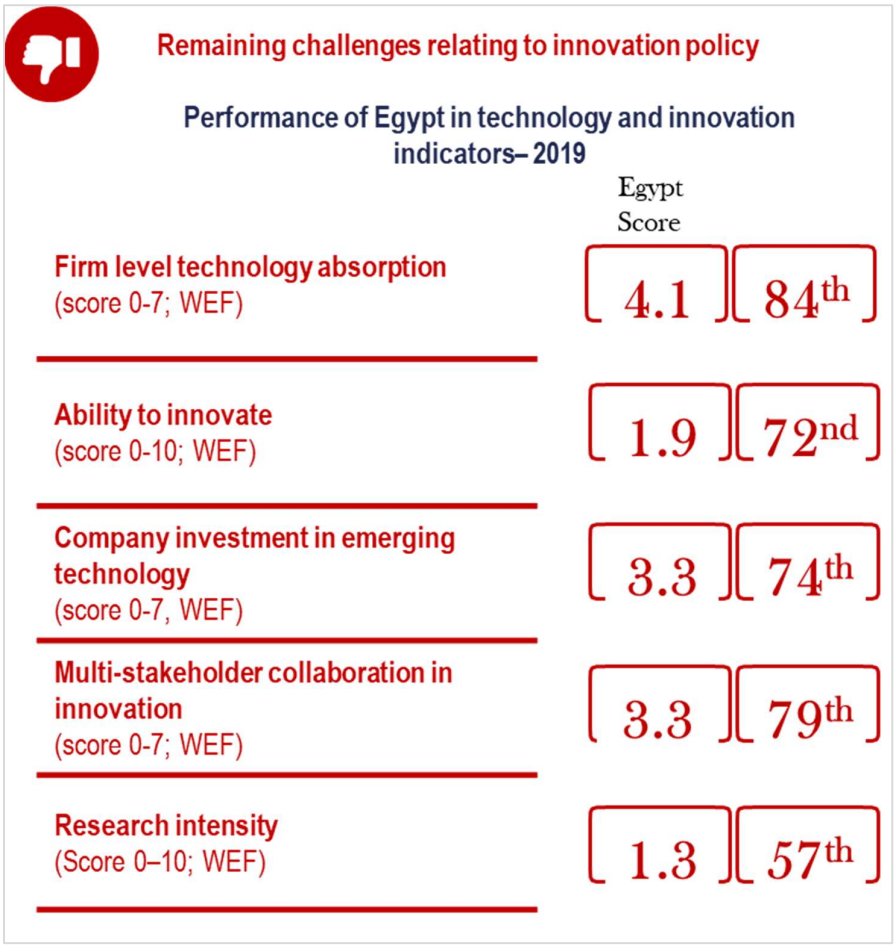


5.4.1.12 Supportive policies: Knowledge

Global Assessment: **Low**

Achievements	*Remaining gaps to address*
- **The key reforms undergoing** currently include the TVET II programme and the National Qualifications Framework led by MoETE in cooperation with the Ministry of Trade and Industry and the National Authority for Quality Assurance and Accreditation of Education	- **No formal assessment of skills** and no **integrated framework to update formal education content to skills needs.** - In the manufacturing sector, the **Industrial Training Council** was the major provider of training for the manufacturing workforce. The council has been **absorbed by the MSMEDA and the future of training provision for manufacturing employees remains unclear**. - **Overlapping of training and TVET provisions responsibilities** and absence of common qualification standards - **Enterprise TVET Partnerships** (ETP) represented a potential model of Sectoral Public-Private Partnership between the employers and the TVET institutions, but **they became inactive with no income and unclear legal status.**

Supportive policies: Knowledge (analysis)

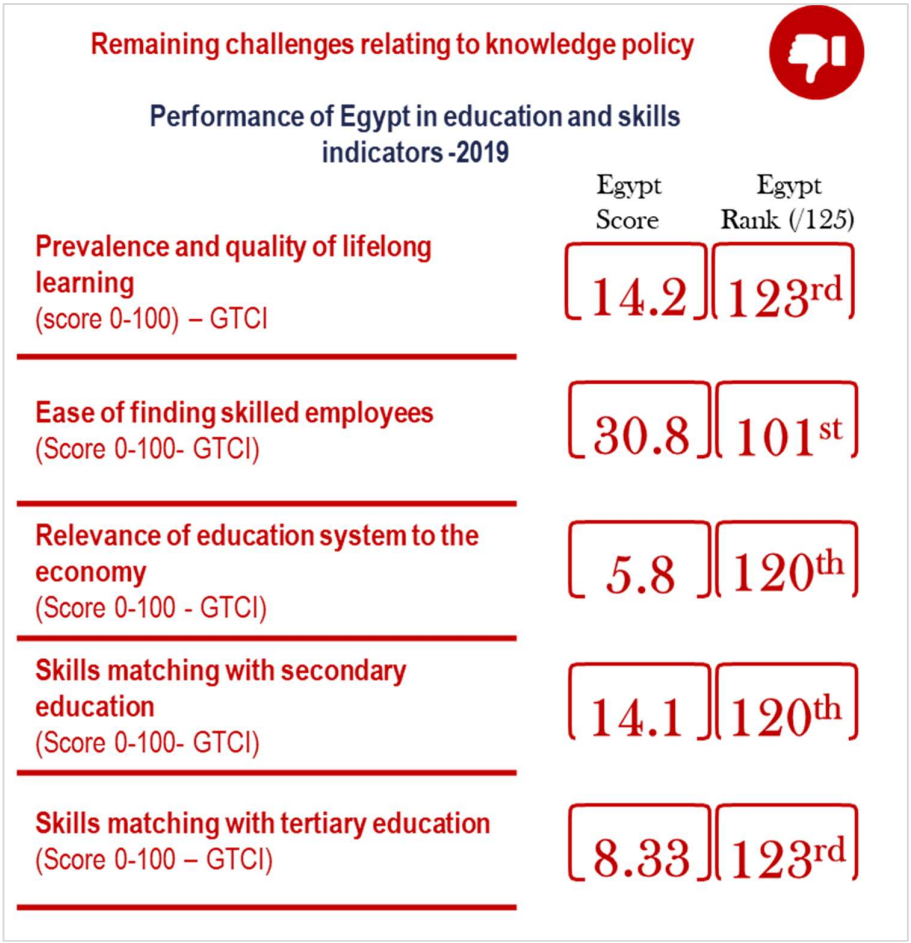


5.4.1.13 Supportive policies: Innovation

Global Assessment: **Low**

Achievements	*Remaining gaps to address*
- **The industrial development strategy** (2016-2020) includes two relevant projects under it first pillar: (1) Technological and Industrial Progression (2) Innovation Development and Linking Industry with Scientific Research. The Ministry of Industry and Tarde in **cooperation with GIZ** prepared a framework for an **industrial innovation strategy** around 4 pillars.	- So far, **no concrete implementation efforts** have followed. - The effectiveness of existing policy instruments in industrial technology and innovation is limited. **The IMC dedicates a very small share of its budget to research services and projects.** The **Technology and Innovation Centers have a small outreach due to limited capabilities.**

Supportive policies: Innovation (analysis)



5.5 Detailed governance diagnostic by dimension

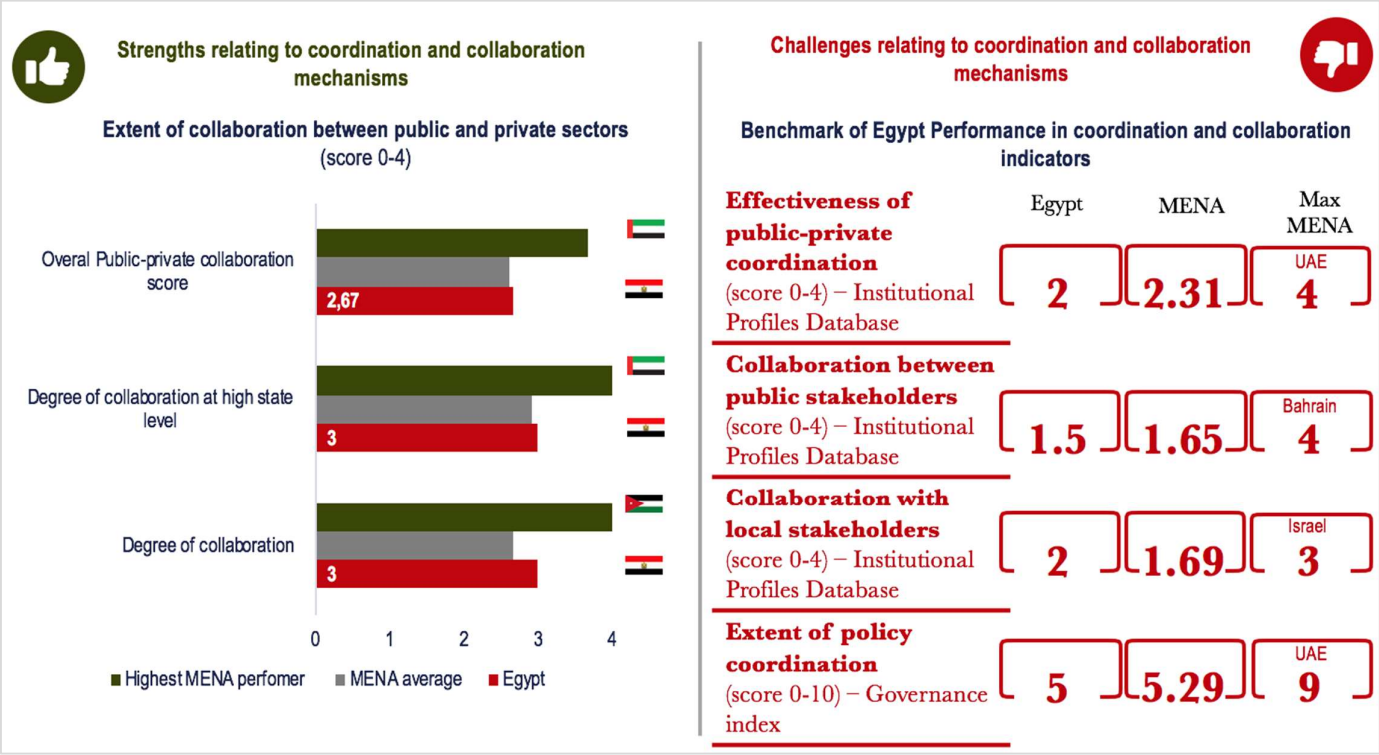
5.5.1.1 Structure and organization of governance: Institutional landscape, role and responsibilities

Strengths & achievements	Weaknesses & gaps
- The fragmentation of the institutional landscape which leads to a fragmentation of the policy landscape and overlapping mandates is a recognized challenge within authorities. - Some efforts have been undertaken to face this issue. For instance, MSMEDA was created to take the lead on SME policy, IDA was granted exclusive authority over industrial land and zones, the Central Bank took control of the Credit Guarantee Company and is leading efforts to facilitate access to finance, the Export Development Agency is effectively taking the lead in export promotion responsibilities.	- The efforts to clarify mandates and responsibilities **didn't not cover all policy areas**. In fact, policy areas which suffer from the largest structural challenges were left behind. No clarification of mandates covered **skills, training and education policy** for manufacturing support nor **innovation and technology policy.** - **Gaps in responsibilities clarification** remain not only across policy areas but also **across stages of the industrial policy "value-chain".** The most striking example is the **monitoring of policy and performance progress.**

5.5.1.2 Structure and organization of governance: collaboration and coordination mechanisms

Strengths & achievements	Weaknesses & gaps
- Some of the reforms introduced to clarify institutional mandates can result in better coordination notably through the **creation of platforms acting as one-stop shops** and providing information on services offered by all stakeholders to beneficiaries. Examples include the MSME platform created by MSMEDA, the SME financing portal created by the Central Bank and the export promotion portal by the Export Development Agency. - The **private sector** benefits from a history of relatively **strong representation** through **associations and organizations** including export councils, industry federation and chambers of commerce and industry which can enable strong collaboration. - There are examples of **promising public-private collaboration pilots** such as the collaboration with Siemens in skills for Industry 4.0 or the collaboration between the MSEA, the federation of Industries and the Egypt National Cleaner Production Centre for energy efficiency in manufacturing.	- Collaboration and coordination within the public and with the private sector remains **limited** especially in fields where it is fundamental. For instance, there is no formal institutional mechanism for collaboration between the relevant ministries in **education and skills policy** including ministries of education, manpower, trade and industry. Similarly, no formal coordination exists between the MIT and ministry of state for environmental affairs for **green growth.** - The **lack of collaboration** is also present at lower levels, **within public bodies**. For instance, there is no evidence of collaboration between the IMC and Technology and Innovation Centers although potential synergies between them are significant. - The **involvement of the private sector** does **not** happen at an **early enough** stage of the policy making process. For instance, there is a high **gap** in the involvement of the private sector in **consultations for skills needs assessments**. Some organizations which presented high **potential** to deliver formal mechanisms of coordination and collaboration became **inactive**. Examples include the Enterprise TVET Partnerships which could have acted as Sectoral Skills Councils or Egyptian Education, Training and Employment Observatory

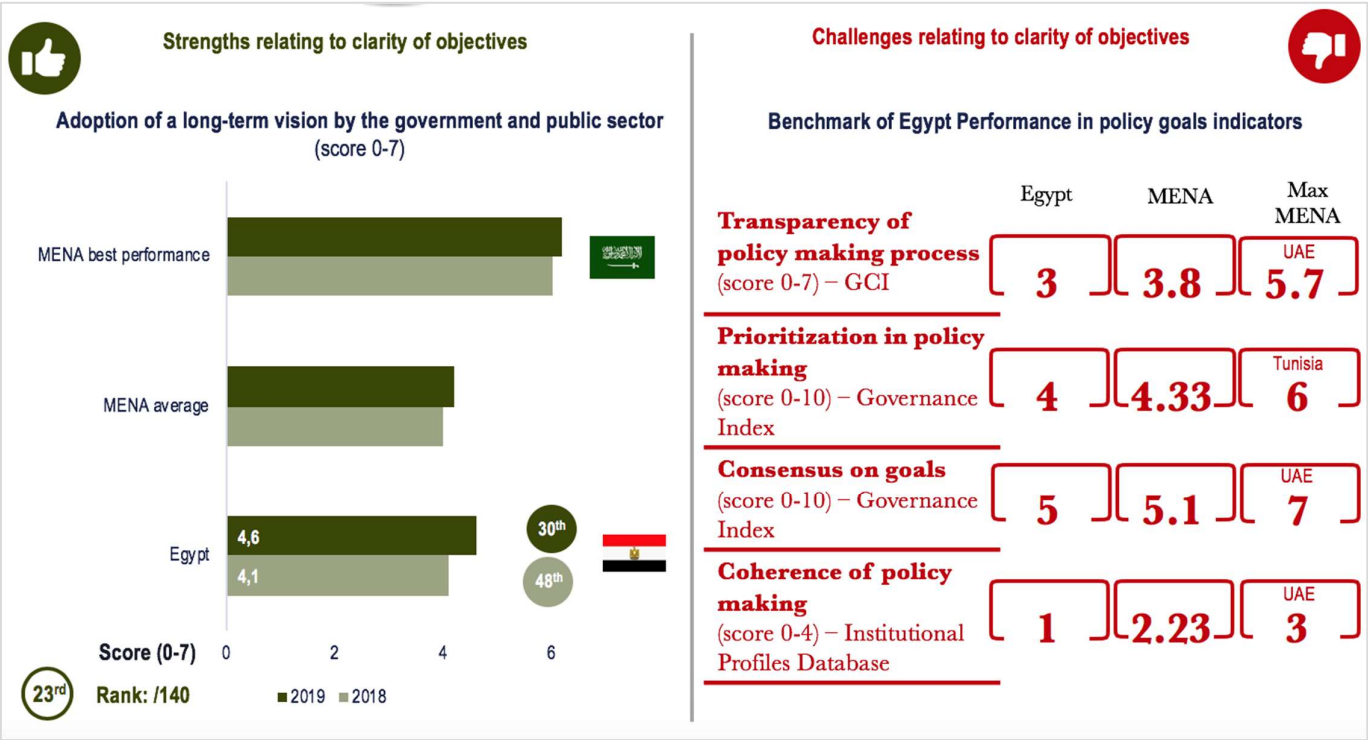
Structure and organization of governance: collaboration and coordination mechanisms (analysis)



5.5.1.3 Capabilities and policy making process: clarity of objectives

Strengths & achievements	*Weaknesses & gaps*
- Egypt shows progress in the adoption of **long-term goals** with the issuance of strategies communicating the **general vision** of the government including Egypt Vision 2030 and the Industrial Development Strategy. - The **Industrial Development Strategy** clearly states the **targets, objectives** and expected output from each of its pillars.	- The **clarity of goals** is demonstrated **only at the higher strategic level**. Moving further into the stages of the industrial policy "value-chain", clarity around goals and how to achieve them through concrete implementation steps is very limited. Consequently, **Egypt performs poorly** in the **transparency of its public policy making process** and its economic strategy. - The strategic frameworks adopted by the country often **present ambitious targets without backing them with concrete implementation steps nor attempting to prioritize them**

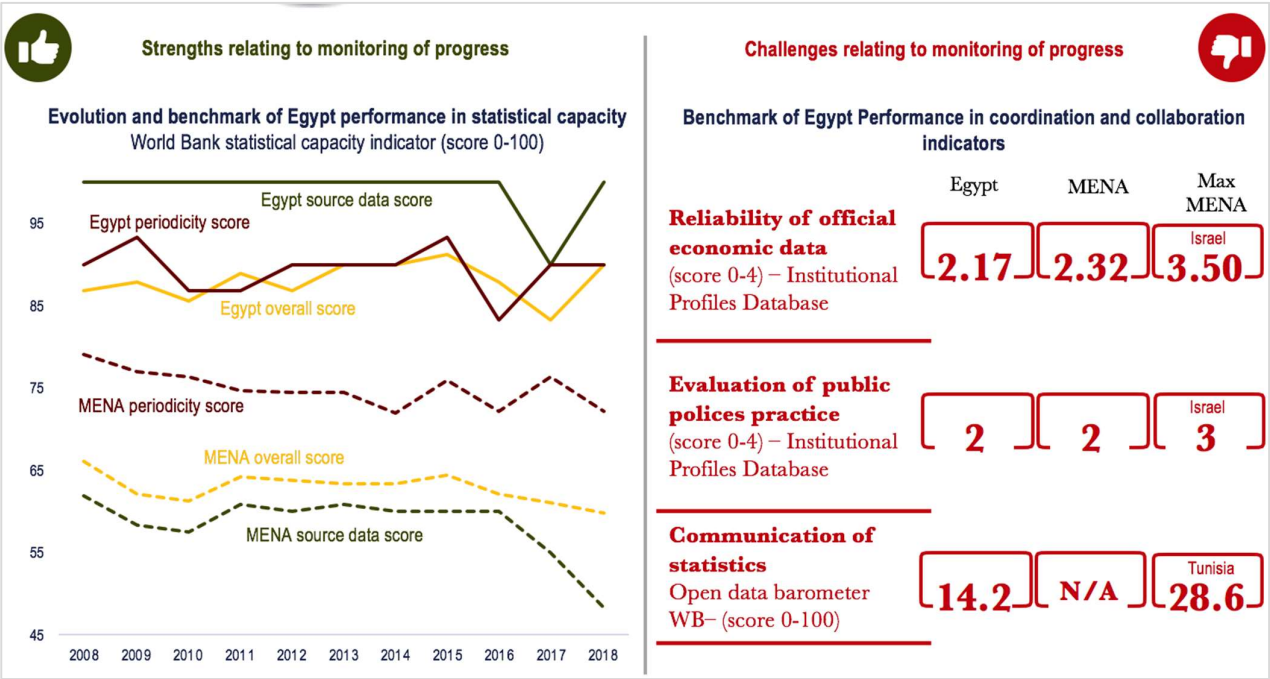
Capabilities and policy making process: clarity of objectives (analysis)



5.5.1.4 Capabilities and policy making process: monitoring of progress

Strengths & achievements	*Weaknesses & gaps*
- The country shows a relatively strong performance in frequent tracking of economic **performance** through **high-level indicators** - Some **progress** has been demonstrated in more detailed **monitoring directly related to policies implemented**. For instance, the MSMEDA started publishing indicators on SMEs benefiting from support on its portal.	- The **methodology in statistical assessment** can be improved since the **reliability of economic statistics** is still relatively **weak.** - **No systematic evaluation of policy impact** has been demonstrated. - The **Industrial Development Strategy** only sets **high level KPIs** and does **not include numerical targets for projects, nor does it assign the responsibility of monitoring policy progress and impact**. - The **dissemination of statistics is weak**.

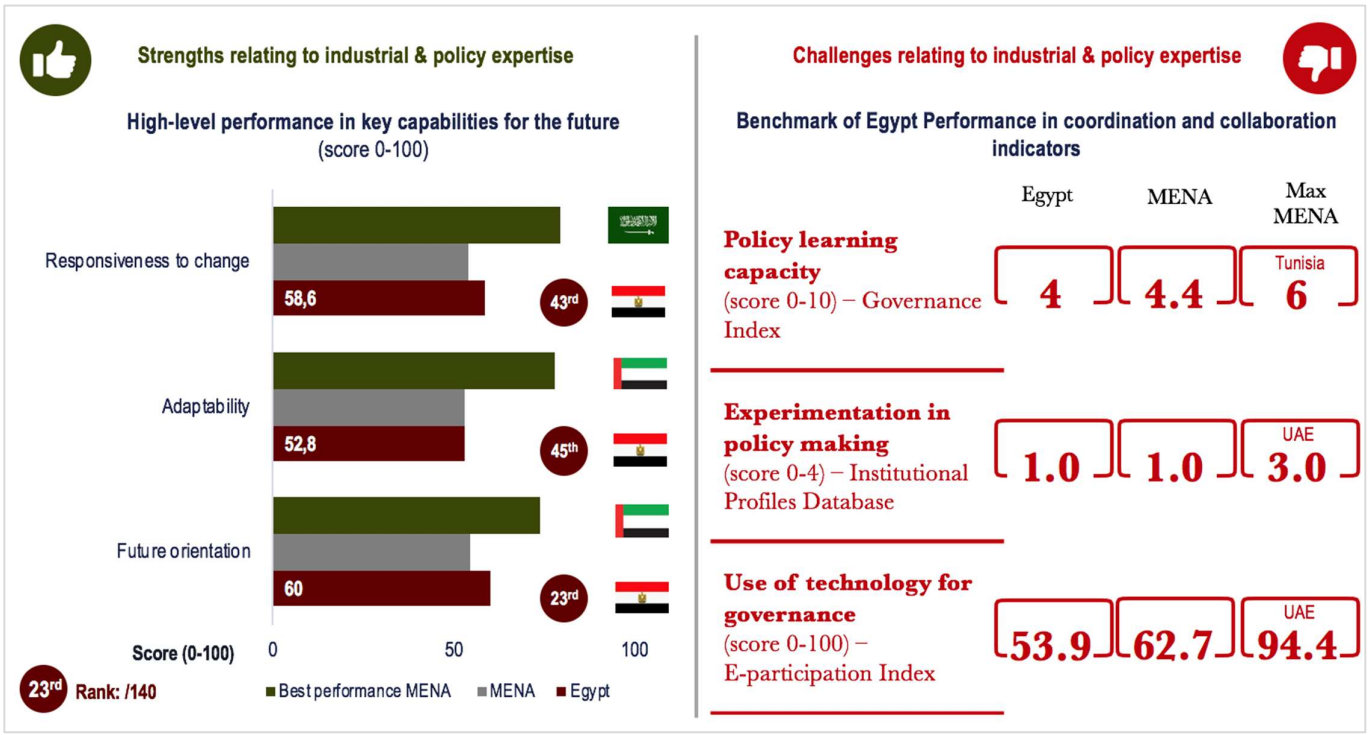
Capabilities and policy making process: monitoring of progress (analysis)



5.5.1.5 Capabilities and policy making process: industrial & policy expertise

Strengths & achievements	*Weaknesses & gaps*
- At the **higher level**, there is evidence of a **relatively strong performance** among governance actors in **key capabilities for the future** such as adaptability or responsiveness to change.	- The performance of governance stakeholders in key **policy capabilities** such as **policy learning or policy experimentation is limited**. Consultation of stakeholders reveals that the **largest expertise gaps** relate to **policy and governance capabilities**. Additionally, governance actors are **not leveraging technology** to support policy making process. - **Technical expertise gaps** strongly **limit the policy performance** of some public bodies such as the **Technology and Innovation Centers**.

Capabilities and policy making process: industrial & policy expertise (analysis)



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