



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION



# COUNTRY BRIEF EGYPT

**Shifting focus towards  
technology-intensive  
manufacturing**

November 2020

explore – compare – analyse – [iap.unido.org](http://iap.unido.org)

## COUNTRY BRIEF EGYPT

SDG-9 Industry Index data indicate an overall decline in Egypt's industrial performance since 2000, alongside moderate progress towards some of the country's SDG-9 commitments. However, Egypt is in the process of executing several ambitious industrial policy initiatives and is committed to prepare the way for Industry 4.0. Traditionally an African industrial powerhouse, the significance of medium- and high-tech industry within the Egyptian manufacturing sector has recently diminished. Preparing firms to absorb new technologies and improving the digital infrastructure are two ways this trend could be adjusted.

# Shifting focus towards technology-intensive manufacturing

Located between the Mediterranean and the Sahara and home to the Suez Canal, Egypt represents an important link between Europe and Africa with great economic potential. However, recent political turmoil and large fluctuations in oil prices have exerted significant pressure on the country. Egypt's manufacturing sector, one of the largest on the African continent both in per capita terms and share of GDP, has not been left unscathed.

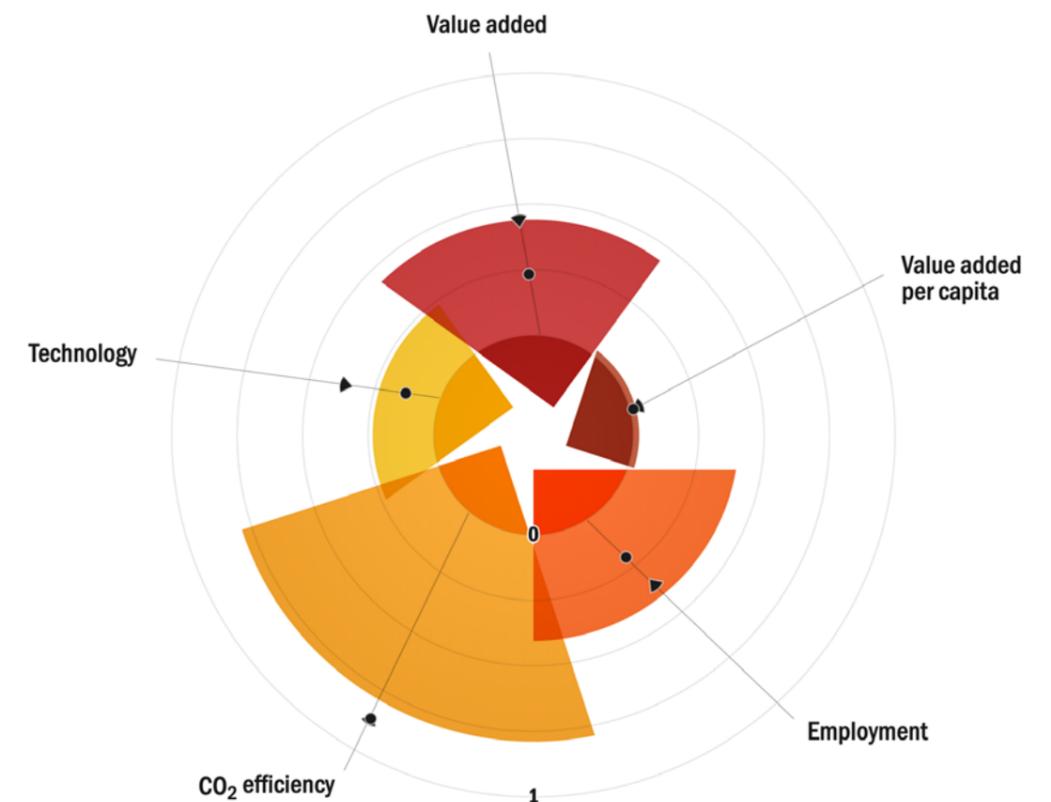
While in 2000 the country ranked 62<sup>nd</sup> in the world in the SDG-9 Industry Index, Egypt has since lost nine positions in the ranking, currently occupying 71<sup>st</sup> place (Figure 1). Meanwhile, other countries in Northern Africa, such as Morocco and Tunisia, have been able to make ground.

Looking at the individual indicators of the SDG-9 Industry Index, we find that Egypt still boasts manufacturing value added and employment shares that are far above the African average. However, when looking at manufacturing value

added (MVA) in per capita terms, the country's performance is significantly less impressive. On CO<sub>2</sub> efficiency, the country falls short of other African countries, probably due to the strong presence of the fuel industry. While Egypt's share of medium- and high-tech (MHT) industries is well above the African average, it is substantially lower than that of the regional comparator country Morocco, which has successfully attracted automotive and electronics production over the last decade.

SDG-9 Industry Index

↓ 71st

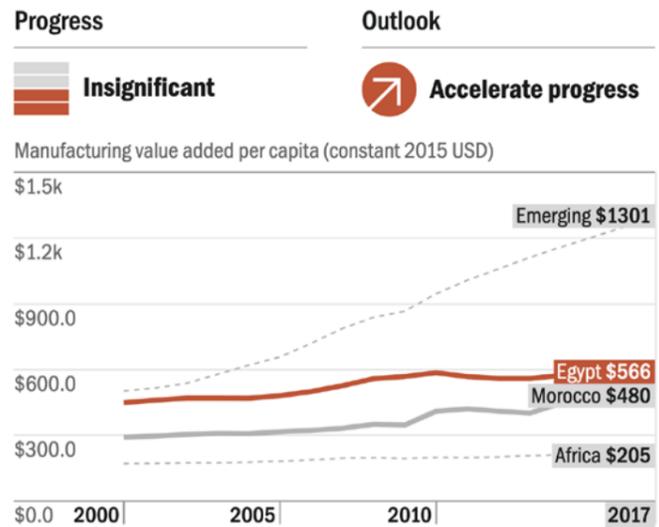


Morocco  
Africa

Show all countries

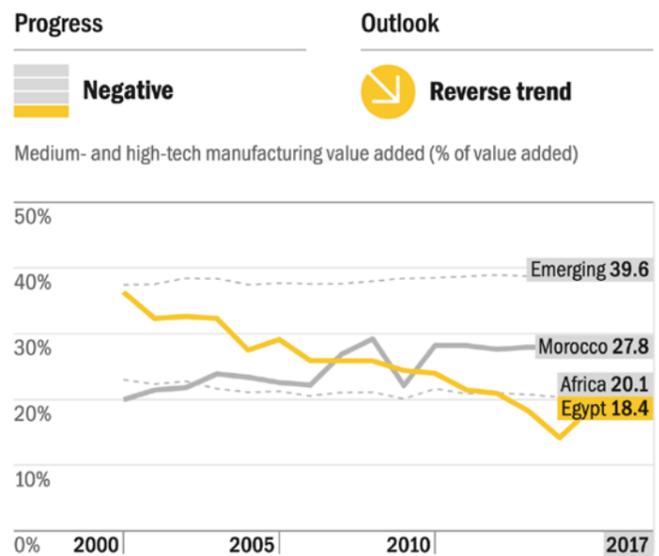
Figure 1: SDG-9 Industry Index for Egypt in comparison to Morocco and Africa (UNIDO IAP)

## Value added per capita ↓ 81st



**Figure 2:** Manufacturing value added per capita, 2000-2017 (UNIDO IAP)

## Technology ↓ 83rd



**Figure 3:** Medium- and high-tech manufacturing value added, 2000-2017 (UNIDO IAP)

## The state of technology-intensive manufacturing

As countries industrialize, they transition from producing low value added products in industries with low technological intensity to the production of more complex products in the same and/or in more technologically advanced industries. Over time, this should lead to rising value added per capita and a rising share of medium- and high-tech industries in total manufacturing value added, which, through R&D intensity, stimulate innovation and productivity across the whole manufacturing sector.

Manufacturing value added per capita in Egypt has exhibited moderate growth since 2000 (Figure 2). Although Egypt was able to increase its manufacturing value added per capita by 27 per cent over the period 2000-2017, growth was sluggish compared to other Emerging Industrial Economies. This suggests that the country needs to focus on switching to higher value-adding activities, thereby increasing the impact of manufacturing on economic growth.

Also of note in this regard has been Egypt's performance in shifting production to industries with higher technology intensity. Egypt's share of manufacturing value added generated in medium- and high-tech industries dropped sharply from 36 per cent in 2000 to 18 per cent in 2017 (Figure 3). As the graph shows, this negative trend is very different compared to those for Africa as a whole, other Emerging Industrial Economies, and the regional comparator Morocco. Looking closer at the SDG-9 Index data, this is noticeably connected to the increasing share of MVA generated in the fuel industry and a fall in MVA within the chemicals industry.

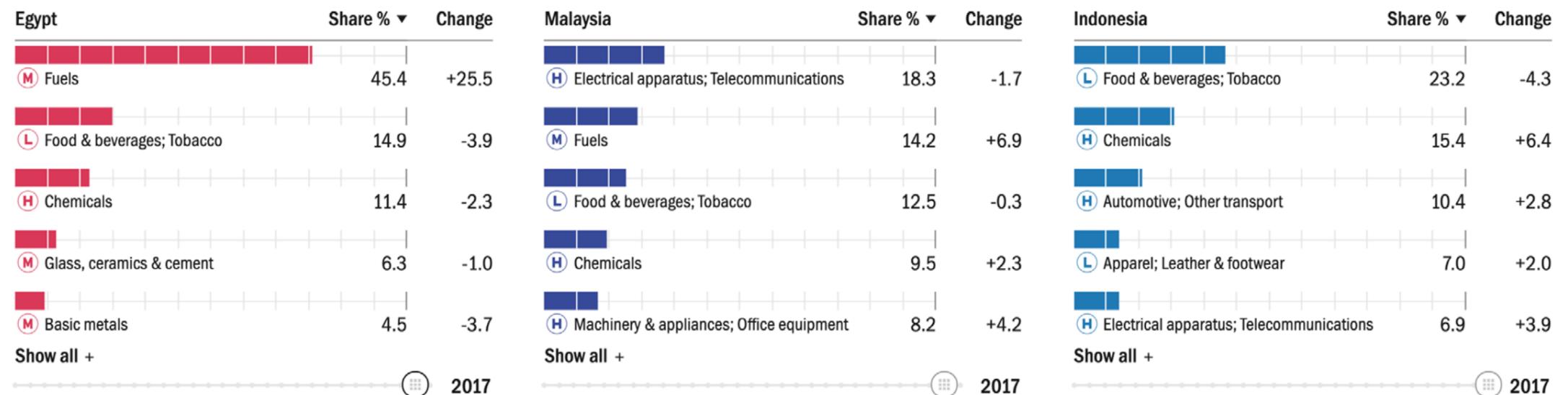
Figure 4 shows Egypt's top manufacturing industries by value added and compares them with benchmark economies from the group of Emerging Industrial Economies that have successfully achieved technological upgrading over the last decades: Malaysia and Indonesia.

Apart from the chemicals industry, which is traditionally strong in Egypt, no medium- or high-tech industry<sup>1</sup> features in the country's top five industries by value added in manufacturing. By contrast, Malaysia and Indonesia each have three MHT industries, including chemicals, electronics, automotive and machinery, among their top five.

Other indicators further support the reading that additional efforts towards technological upgrading are needed. According to ILO statistics, the share of knowledge workers<sup>2</sup> in the total workforce has decreased from 34 per cent in 2012 to 31.8 per cent in 2018. The share among employees in the manufacturing sector is lower, falling from 24.3 per cent in 2012 to 19.2 per cent in 2018. In Malaysia, which was previously used as a benchmark, the share of knowledge workers in manufacturing stands at 23 per cent.<sup>3</sup> According to EBRD calculations, Egypt had a robot density of less than 2 per 10,000 workers in 2016, which is around one fifth of the density seen in Tunisia and one tenth of the density in Turkey.<sup>4</sup>

## Industry share of total manufacturing (%)

Value added Employment Gross output



**Figure 4:** Industry share of total manufacturing value added (%), 2017 (UNIDO IAP)

# THE FUTURE OF MANUFACTURING IN EGYPT



These numbers likely indicate that there is room for Egypt to intensify its preparations for the Fourth Industrial Revolution. Indeed, many companies in Egypt are still not digitized, which prevents them from moving closer to the technological frontier. Nevertheless, the ambitions of the Egyptian government are high. In its Sustainable Development Strategy: Egypt Vision 2030, the government proclaimed that, by 2030, the country aims to become a knowledge-based market economy. It also explicitly mentions the goal of increasing the share of high-technology exports in total manufacturing exports.<sup>5</sup>

However, to make progress on these ambitious targets and programmes, factors that hold back Egypt's transition to mastering high technology manufacturing need to be addressed. Below, we briefly discuss three of the key factors:

## Institutional capacity and legislation

Switching from low value-adding activities to more complex industrial production is a difficult process for many firms, particularly for micro, small and medium-sized enterprises (MSMEs). These companies often only have limited access to knowledge and capital, and rely on targeted assistance in technology transfer to manage

the transition successfully. Egypt would have to invest in building the capacities of public institutions to sufficiently support companies during the process.

While laudable efforts have been made to simplify procedures in areas such as starting a business, industrial licencing and land allocation, other areas such as trade policy still act as major obstacles to forming a virtuous circle of increasing both innovation and productivity.

## Industrial skill development

Embracing modern technologies is not possible without the presence of an adequately skilled workforce. Judging by common data indicators, Egypt still appears to be underperforming in the area of high-end skill development. According to UNESCO data, tertiary school enrolment was 35 per cent in 2017, slightly below the value for Indonesia (36 per cent) and well below that of Malaysia (44 per cent) and the MENA region as a whole (41 per cent).<sup>6</sup> Similarly, the number of researchers among the Egyptian population is low compared to other Northern Africa countries such as Tunisia and Morocco, as well as benchmark countries like Malaysia and Turkey.<sup>7</sup>

## Targeted investment mobilization

For developing countries, attracting foreign direct investment is a key mechanism for gaining access to advanced technologies and knowledge on more efficient industrial processes. While, overall, Egypt has been relatively successful in attracting foreign capital, UNCTAD data shows that net inflows are highly volatile, reaching their peak in 2006 before dropping into negative territory during the Arab Spring protests of 2011. While investment has since recovered, coming in line with benchmark countries in terms of GDP share, absolute inward FDI flows are lower than in Indonesia, Malaysia or Turkey.<sup>8</sup>



# Getting back on track

## UNIDO Programme for Country Partnership (PCP) Egypt<sup>17</sup>

The Programme for Country Partnership (PCP) is a comprehensive partnership between a host country and UNIDO that is aligned with the national development agenda and focused on sectors with particularly high potential for growth. The PCP between UNIDO and Egypt, which started in 2019, addresses key issues for Egypt's high-tech industries. "Mainstreaming Industry 4.0" is a priority area, helping Egypt increase the integration of Industry 4.0 technologies in key industrial sectors to enhance the contribution of manufacturing to national economic, environmental, and social development. To this end, UNIDO aims to support the Government of Egypt in developing technical programmes in the areas of institutional capacity strengthening, knowledge transfer and technological upgrading. One of the first pilot initiatives will focus on the electronics industry, with targeted interventions implemented to address industry-specific barriers to applying advanced production technologies.

The Egyptian government has demonstrated strong commitment to tackling existing bottlenecks on industrial development. Recent reforms aimed at improving the business climate are already showing results, with the country improving its position in the Doing Business ranking by six places and mentioned as one of the top 25 countries in the world in terms of number of reforms.<sup>9</sup>

Egypt has also made considerable progress in the area of infrastructure via investment in mega projects and wide-ranging reform of transport and utility infrastructures, particularly electricity. The construction of new facilities for energy generation and distribution, such as power plants and gas pipelines, has contributed to higher energy security for the country's industry. In addition, significant investment in Egypt's roads, ports and railroads has been undertaken.<sup>10</sup> Egypt now offers a higher quality of trade and transport-related infrastructure, as measured in the World Bank's Logistics Performance Index, than the MENA average—surpasses benchmark countries such as Morocco, Tunisia and Indonesia.<sup>11</sup>

While an optimized regulatory environment and infrastructure are key to stimulating investment in high-technology industry and industrial growth, additional targeted policies will be needed to build capacity in the area of Industry 4.0 and achieve higher levels of value addition across different industries.

A range of policies can be deployed to tackle the identified bottlenecks in skill development. Reforming the existing technical and vocational education and training (TVET) infrastructure in line with the needs of new technologies can secure qualified labour for industry. Second, the promotion of STEM fields across all levels of education can lay the ground for future innovation. This can be done with a specific focus on young girls and women, simultaneously addressing the issue of low female labour force participation and high unemployment among young women.<sup>12</sup> Third, as long as the availability of highly skilled workers on the domestic labour market is limited, softer regulation on recruitment of foreign skilled labour is an effective way of ensuring investor access to essential staff.

### Attracting FDI to break into global value chains: Evidence from the electronics industry

Investment lies at the core of any ambitious upgrading strategy. As mentioned, foreign direct investment is of particular importance in this context. Strategic mobilization of high-tech FDI in industries with strong growth potential can ensure that investment is most effective.

The electronics industry has been called both a priority sector and a pilot sector

for the integration of Industry 4.0. It is also being targeted by the national presidential initiative Egypt Makes Electronics (EME), which aims to make the sector one of the key drivers of growth in the coming years. Egypt has already successfully attracted investment from major multinational enterprises such as LG and Samsung to the Suez Canal Economic Zone (SCZone).<sup>13</sup> Moreover, so as to ensure adequate skill development for local industry in the context of Industry 4.0, Siemens and GIZ have opened the Egyptian-German Technical Academy, a vocational training centre located in Ain Sokhna focusing on industrial mechanics, electrical, electronics and control and automation.<sup>14</sup>

In light of growing tensions in the global trade system and the ongoing COVID-19 pandemic, Egypt has been cited as a potential beneficiary of nearshoring, the projected medium- to long-term trend towards regionalization of existing value chains.<sup>15</sup> With European companies reducing their exposure to China and other Asian economies, Egypt could exploit untapped export potential estimated at US\$ 14.5 billion, much of it in MHT industries such as electronics, pharmaceuticals, machinery and plastics and rubber.<sup>16</sup> However, whether Egypt will realize its potential critically depends on the country's commitment to formulate ambitious industrial strategies and put their implementation at the core of the national development agenda.

## References

- 1 In this table, medium-(high) and high-technology (MHT) industries are labelled “H”, with “M” denoting medium-low technology industries.
- 2 Knowledge workers comprise the ISCO categories 1, 2 and 3 (“Managers”, “Professionals” and “Technicians and associate professionals”).
- 3 ILO, 2020. ILOSTAT (Indicator: Employment by economic activity and occupation). Available at: <https://ilostat.ilo.org/data/>.
- 4 EBRD, 2018. Transition Report 2018-19. Work in Transition. London: EBRD
- 5 Egypt, Ministry of Planning, Monitoring and Administrative Reform, 2016. Sustainable Development Strategy: Egypt Vision 2030. Cairo: Egypt Ministry of Planning, Monitoring and Administrative Reform.
- 6 UNESCO Institute for Statistics, 2020. UIS.Stat (Indicator: Gross Enrolment Ratio for Tertiary Education by Sex). Available at: <http://data.uis.unesco.org/>.
- 7 UNESCO Institute for Statistics, 2020. UIS.Stat (Indicator: Researchers (in Full-Time Equivalent) per Million Inhabitants). Available at: <http://data.uis.unesco.org/>.
- 8 UNCTAD, UNCTADstat (Indicator: Foreign direct investment: Inward and outward flows and stock). Available at: <https://unctadstat.unctad.org/>.
- 9 Moneim, D.A., 2019. Egypt Moves Up Six Spots in World Bank's Doing Business Report 2020. Ahram Online, 24 October 2019. Available at: <http://english.ahram.org.eg/NewsContentP/3/354585/Business/Egypt-moves-up-six-spots-in-World-Bank%E2%80%99s-Doing-Bus.aspx>.
- 10 Oxford Business Group, 2020. Investment in infrastructure boosts Egypt's construction sector. Available at: <https://oxfordbusinessgroup.com/overview/stable-position-steady-stream-investment-infrastructure-and-urbanisation-projects-should-help-sector>.
- 11 World Bank, 2018. Logistics Performance Index 2018. Available at: <https://lpi.worldbank.org/>.
- 12 ILO, 2020. ILOSTAT (Indicators: Labour force participation/Unemployment rate by sex and age). Available at: <https://ilostat.ilo.org/data/>.
- 13 Egypt Today, 2019. “LG, Samsung to expand investments in Egypt”. Egypt Today, 28 February 2019. Available at: <https://www.egypttoday.com/Article/3/66349/LG-Samsung-to-expand-investments-in-Egypt>.
- 14 EGT Academy homepage: <https://www.egtacademy.com/en/home/>.
- 15 OECD, 2020. Investment in the MENA Region in the Time of COVID-19. Paris: OECD.
- 16 Egypt, Ministry of Planning and Economic Development, 2020. Futures in the Time of Covid-19. Results of a Strategic Foresight Exercise on the Manufacturing Sector in Egypt. Available at: [http://businessmed-umce.org/en/ressources?qt-tabulation\\_resource=2#qt-tabulation\\_resource](http://businessmed-umce.org/en/ressources?qt-tabulation_resource=2#qt-tabulation_resource).
- 17 UNIDO, 2020. Programme for Country Partnership Egypt. Available at: <https://www.unido.org/who-we-are-programme-country-partnership/programme-country-partnership-egypt>.

## Acknowledgement

This country brief has been developed by UNIDO's Industrial Analytics Platform team.

It has benefited from valuable inputs from Ahmed Rezk, Deputy UNIDO Representative in Egypt.

We thank Joseph Twomey and Niki Rodousakis for their editorial guidance.

© UNIDO 2020. All rights reserved.

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” or “developing” are intended for statistical convenience and do not necessarily express a judgement about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.



explore – compare – analyse – [iap.unido.org](http://iap.unido.org)

## UNIDO's Industrial Analytics Platform

The [UNIDO Industrial Analytics Platform \(IAP\)](http://iap.unido.org) is a data-driven knowledge hub which provides novel insights into industrial development around the world. The online platform combines state-of-the-art data visualisation tools with policy relevant expert analysis.

The [SDG-9 Industry Tracker](http://iap.unido.org) helps monitor and benchmark countries' performance and progress towards SDG-9 industry-related targets. The Tracker is built upon UNIDO's SDG9 Industry Index, a novel composite index describing different dimensions of inclusive and sustainable industrial development.

To learn more about the tool visit [iap.unido.org/data](http://iap.unido.org/data).

You can contact us at [iap@unido.org](mailto:iap@unido.org).

