INTERSESSIONAL PANEL OF THE UNITED NATIONS COMMISSION ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)

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Contribution by ESCWA

to the CSTD 2021-2022 priority theme on "Industry 4.0 for inclusive development"

PRIORITY THEME 1: Industry 4.0 for inclusive development

United Nations Commission on Science and Technology for Development (CSTD)

1. Could you share national strategies, policies, laws, programmes and initiatives concerning Industry 4.0 concerning your member countries?

   Several Governments in the Arab region have taken steps in 4IR especially GCC. The United Arab Emirates (UAE) appointed the world's first artificial intelligence minister and developed the Emirati Strategy for Artificial Intelligence for the period 2018-2031[1]. Saudi Arabia (KSA) has also launched its AI strategy in 2021[2] and Qatar launched it as well in 2020[3]. Many Arab countries such as Tunisia, UAE, KSA and Kuwait developed applications relying on 4IR technologies during COVID-19 to support citizens. Additionally, UAE launched anumber of specific strategies for 4IR technologies such as IoT strategy, 3D strategy and blockchain strategy. There are also many countries that launched initiatives for AI and 4IR in the Arab region namely in Egypt, KSA, Morocco and UAE[4].

   ESCWA provided its technical assistance to its member states to develop policies and strategies related to the 4th Industrial Revolution. Examples: AI policy in Jordan, AI policy in Palestine, AI strategy in Lebanon, Digital Transformation strategy in Syria, Big Data readiness assessment in Palestine, Cloud computing policy in Jordan.
   In addition, ESCWA conducted in cooperation with national entities capacity building workshops in related topics, such as Big Data, AI, Blockchain, and Digital transformation. Those activities were conducted in: Morocco, Palestine, Qatar.
   ESCWA is also anaylsing the legal framework for some member countries to identify the needed amendments to cope with the requirements of such technologies. These activities are work in progress in: Libya, Morocco, and Jordan.

   To analyse the situation of 4IR and discuss it opportunities and challenges for the Arab region, ESCWA prepared a specific study on the fourth industrial revolution in 2019[5], additionally it prepared in the same year the "Arab Horizon 2030: innovation Perspective for the Arab region" sthat identified the five most relevant emerging technologies for the Arab region[6] namely AI, IoT, Big Data, Blockchain and 3D printing.
   To support the formulation of AI strategy, ESCWA also prepared national guide in 2020[7] and applied it for preparing a draft of AI strategy for Lebanon[8].

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[1] https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/federal-governments-strategies-and-plans/uae-strategy-for-artificial-intelligenc

[2] https://ai.sa/index-en.html

[3] https://www.motc.gov.qa/en/documents/document/national-artificial-intelligence-strategy-qatar l

[4] https://www.oecd.ai/dashboards

[5] https://www.unescwa.org/publications/impact-fourth-industrial-revolution-development-arab-countries

[6] https://www.unescwa.org/publications/arab-horizon-2030-innovation-perspectives-achieving-sdgs-arab-region

[7] https://www.unescwa.org/publications/developing-artificial-intelligence-strategy-national-guide

[8] https://www.unescwa.org/events/artificial-intelligence-strategy-lebanon

2. What are the challenges that governments have faced or may face for promoting Industry 4.0, to contribute to national development priorities and accelerate the progress towards the SDGs?

- Lack of awareness about the positive impact of such technologies
- In-appropriate level of RDI in the Arab countries, which might hinder the development of 4IR and their applications
- Rigid legal framework
- Limited technical skills to develop applications using 4IR technologies
- Non suffient funding for the 4IR development in many countries (except GCC)
- In-sufficient collaboration between research centers and private sector

3. What should governments, the private sector, labour unions and other stakeholders do so that developing countries can benefit from these technologies?

- Prepare and launch national strategy/program or initiatives for the most relevant 4IR technologies for the country
- Build local capacities
- Develop testbeds and sandboxes to test these technologies and assess their impact
- Enhance/modernize the national legal framework
- Strengthen the PPP to develop applications and solutions using 4IR
- Develop the national innovation ecosystem to allow entrepreneurs and young graduates to develop their own businesses in such field smoothly
- Provide incentives for private sector and entrepreneurs to use and develop applications using 4IR technologies
- Facilitate the acquiring of hardware, softwares and tools needed 4IR

4. What actions can the international community, including the CSTD, take to help countries take advantage of Industry 4.0 for inclusive and sustainable development?

- Provide support on the formulation of national strategy/program for 4IR technologies
- Promote the knowledge and technology transfer between developed and developing countries on 4IR te,chnologies
- Contribute to capacity building activities at national and regional levels on 4IR technologies
- Encourage South-South cooperation to exchange knowledge and best practices
- Provide guidelines for the adoption of 4IR technologies
- Collect success stories demonstrating the impact of 4IR technology
- Suggest global and regional frameworks on ethic for AI and other technologies
- Continue to provide assistance to countries on combating cyber threats and attacks in the 4IR

5. Could you suggest some contact persons responsible for projects/policies and international collaboration in this context as well as any experts (from academia, private sector, civil society or government) dealing with projects in this area? We might contact them directly for further inputs or invite some of them as speakers for the CSTD inter-sessional panel and annual session.

- Ms. Nibal Idlebi, Chief of Innovation Section, UN-ESCWA, email: idlebi@un.org
- Mr. Nawar Al Awa, Regional Advisor on Technology for Development, UN-ESCWA, email: alawa@un.org

6. Do you have any documentation, references, technological assessments, future studies or reports on the priority theme?

- https://www.unescwa.org/publications/impact-fourth-industrial-revolution-development-arab-countries
- https://www.unescwa.org/publications/arab-horizon-2030-innovation-perspectives-achieving-sdgs-arab-region
- https://www.unescwa.org/publications/developing-artificial-intelligence-strategy-national-guide
- https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/federal-governments-strategies-and-plans/uae-strategy-for-artificial-intelligenc
- https://ai.sa/index-en.html
- https://www.motc.gov.qa/en/documents/document/national-artificial-intelligence-strategy-qatar l
- https://www.modee.gov.jo/ebv4.0/root_storage/en/eb_list_page/cloudpolicy-2020-english.pdf
- https://www.modee.gov.jo/ebv4.0/root_storage/en/eb_list_page/ai_final_-_english_version.pdf