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Contribution by ESCWA

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PRIORITY THEME 2: STI for sustainable urban development in a post-COVID world

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

1. Can you give examples of projects/policies in your organization helping countries undertake transition towards urban sustainability so that cities are productive, inclusive, and liveable? What are the main challenges confronted while trying to implement these projects/policies?

    - Project on the Inter-regional cooperation for the implementation of the New Urban Agenda
    - Project on Building Urban Economic Resilience During and after COVID-19 (https://www.unescwa.org/events/building-urban-economic-resilience-during-and-after-covid-19)
    - Policy brief on the use of "Technology as a tool to make cities safe and combat violence against women" (https://www.unescwa.org/publications/technology-tool-make-cities-safe-and-combat-violence-against-women)

    The main **challenges** include:

    - Scarcity of reliable data disaggregated at sub-national and local levels
    - Drop in real GDP and unsustainable level of debts and low tax revenue
    - financial environment of countries in the region and increased difficulty of economic and social investments
    - Lack of economic resilience, particularly urban economic resilience noting that cities are major centers of economic activities
    - Scope and quality of city planning
    - Being one of the most rapidly urbanizing regions in the World, Arab cities are becoming more vulnerable to experiencing a series of challenges related to growth, competitiveness, performance, and residents' livelihood, including the possible pressure on cities' services and their infrastructure. A direct link between the development of infrastructure and fostering the implementation of Goal 11 of the SDGs and the NUA exists.
    - Urban sprawl, inadequate infrastructure and services, increased poverty and social exclusion, wealth disparities, youth unemployment, gender inequality, unequal access to land and property, limited access to public services, traffic safety and congestion, unsustainable patterns of water and energy consumption, beside many other challenges. These are aggravated by conflicts and result in large scale damage and massive displacement in some sub-regions and countries

2. In your organization's view, how has the Covid-19 pandemic so far impacted on sustainable urban development, and what lessons could we draw from the Covid-19 pandemic on sustainable urban development?

    - Conflicts and rebuilding cities stand at the forefront of the challenges facing urban development in the Arab region and the implementation of the related strategies, policies, programmes and action plans. It is to be noted that the urban infrastructure being under pressure and conflicts had worsened the situation. The recovery of infrastructure faces diverse obstacles, namely, the availability of funds, loss of urban properties due to destruction, the loss of skilled human capacities in governmental entities mainly because of war and migration.

    - Generally, challenges facing the implementation of urban related policies in the Arab region could be categorized into financial, legal, ethical, and political obstacles.

    - Many countries in the Arab region are now seeking d*igital transformation and resorting to the use of "Enterprise resource planning systems (ERP)" to enhance their strategies and address*

their technical deficiencies, thus leading to higher productivity and increasing the ability to withstand future shocks and challenges

- the use of advanced technologies depends on the economic level, available financial resources, and the readiness level of existing digital infrastructure of each Arab country. These smart digital solutions help in maintaining social distancing (e.g. in public areas, workplaces and banks), isolating and tracking infected people, monitoring streets during lockdowns, identifying possible new COVID-19 cases, sharing awareness messages (i.e. text, voice and video messages), facilitating the use of digital payments and contributing in developing related mobile phone applications (e.g. for tracing infected persons and providing virtual healthcare systems).

3. Could you share specific examples, projects or initiatives that have used science, technology, and innovation (STI), including frontier technologies (e.g., AI, drones, blockchain, 3D printing, etc.) or other forms of innovation in general in addressing the above challenges in relation to urban sustainability transition?

- The Economic and Social Commission for Western Asia (ESCWA) developed a "Diagnostic and Planning Tool for Urban Recovery and Resilience". This tool has a two-fold objective: (1) to help cities understand the strengths and weaknesses of their institutional and operating arrangements from the perspective of economic recovery and resilience building as well as to assess the structure and functioning of city economies to get a clear understanding of the economic performance/standing of each city and how this defines vulnerability and resilience; and (2) to define a process for the design and implementation of recovery plans/strategies to address the identified gaps, accelerate better recovery and improve longer-term resilience. The planning tool/component addresses "What"- key components of recovery planning and "How"- process for designing and implementing a recovery plan. Consequently, the DPT consists of two parts. The first part describes the diagnostic whereas the second part focuses on the planning aspect noting that one of the main components of urban economic resilience as defined in the tool is "Infrastructure" which includes a technological component.

- ESCWA developed a technical paper on "**Smart Sustainable Cities (SSCs) and Smart Digital Solutions for Urban Resilience in the Arab Region: Lessons from the pandemic".** This paper presented definitions of the concepts of urban economic resilience and Smart Sustainable Cities (SSCs), along with introducing the interlinkages among urban economic resilience, SSCs and SDG 11. It explored the status of the Arab region in relation to urban resilience, SSCs and SDG 11, the socioeconomic impact of COVID-19 in the Arab region and pandemic resilience and discusses how smart digital solutions can help achieve safety and inclusion through resilient services. Selected global and regional smart digital solutions adopted in response to the pandemic are presented in this paper too followed a set of recommendations for Arab urban policy makers and planners. Below are selected good practices listed in the paper:

    - AI and big data have helped in tracking people in several countries, reducing the spread of infection. For example, to help disrupt virus transmission, Chinese authorities used AI and big data tools, such as migration maps, to collect real-time data on location of people who had visited the Wuhan market, the epicentre of the pandemic. The maps collected data from transportation records, mobile phone numbers and online payment records.
    - Singapore has launched a mobile phone application called "TraceTogether" to reduce transmission. The application exchanges short-distance Bluetooth signals between mobile phones to detect other users of the "TraceTogether" when individuals are in

proximity to each other. Collected data are stored in mobile phones for 21 days. The Ministry of Health uses these data to identify contacts of any person diagnosed positive and sends warning messages to enable them to take appropriate precautions.

- AI-based thermal and HD cameras, designed to raise an alarm when the temperature of a person reaches a dangerous level, were used in China and the United Kingdom to scan public spaces for potentially infected individuals.
- Drones were widely deployed to spray disinfectants on public spaces in China, Honduras and Spain and to deliver groceries to quarantined areas in Australia, China and the United States, and to restrict movements of citizens in Belgium, China, France, Italy, Spain and the United Kingdom.
- In the Arab region, depending on the level of development of the country, Governments have been deploying sophisticated technologies to ensure social distancing and limit movement during lockdowns, using drones, digital and HD cameras, and robots. Some Arab governments have used location-based contact tracing applications and devices to monitor individuals who have tested positive and limit their contact with others. Online platforms have also been used to guarantee continuity of work and learning, while mobile phone applications have been deployed to send citizens awareness raising messages about the pandemic.
    - With the aim of increasing public safety during the pandemic, the Jordanian government launched the 'Mouneh' platform, which is essentially an electronic directory of licensed companies and applications that provide goods delivery services to households across the country using electronic ordering.[1]
    - Drones have been used in the United Arab Emirates to spray disinfectant on public spaces; in Jordan, Kuwait, Saudi Arabia, and the United Arab Emirates to restrict population movements; in Saudi Arabia to measure body temperature of people (Ibrahim, 2020, p. 3); and in Qatar to spread awareness messages in several languages using loudspeakers asking residents to adhere to safety measures and urging them to stay home.[2]
    - Electronic wristbands or bracelets have been deployed in Algeria, Bahrain, Jordan, Kuwait, Oman, Saudi Arabia, and the United Arab Emirates to ensure that individuals diagnosed with COVID-19 stay at home for the duration of their quarantine or isolation.

4. Can you provide examples of policies/projects/initiatives specifically aimed at strengthening national STI capabilities to promote urban sustainability transition?

- Science, Technology and Innovation for Sustainable Urbanization (https://unctad.org/webflyer/science-technology-and-innovation-sustainable-urbanization)
- Significant and Basic Innovations in Urban Planning (https://iopscience.iop.org/article/10.1088/1757-899X/262/1/012117/pdf)
- Role of Science, Technology & Innovation in Urban Frameworks: Enhancing the Science-Policy-Practice Interface for Resilient Cities (https://sustainabledevelopment.un.org/content/documents/1007454_Guttieres%20et%20al._Role%20of%20Science-Technology%20&%20Innovation%20in%20Urban%20Frameworks%20Enhancing%20the%20Science-Policy-Practice%20Interface%20for%20Resilient%20Cities.pdf)

5. Could you share case studies of regional and international cooperation that have strengthened STI capacities of developing countries in dealing with urban sustainability transition?

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1 The Jordanian Times. https://www.jordantimes.com/news/local/govt-launches-delivery-platform.
2 OECD, OPSI. https://oecd-opsi.org/covid-response/drones/.

- FOSTERING INNOVATION In Urban Programmes and Projects (https://unhabitat.org/sites/default/files/2021/01/innovation_guidance_note_final.pdf)

6. Could you suggest some contact persons responsible for projects/policies, related technologies and international collaboration in this context as well as any experts 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.

    - Sukaina Al-Nasrawi, Lead of Smart, Safe and Resilient Cities in the Arab region project, email: al-nasrawi@un.org