

**United Nations Commission on Science and Technology for Development intersessional panel meeting**

**Draft Issues Paper on *'Science, Technology, and Innovation for Sustainable Urban Development in a Post-COVID World'***

**18 November 2021 in the Palais des Nations, Geneva**

**Discussant comments from Prof Ivan Turok, South Africa**

Prof Turok endorsed UNCTAD's effort to draw together the evidence on different science, technology and innovation solutions to the challenges of sustainable urban development. This includes their comprehensive analysis of 12 socio-technical systems which are threatened by current urbanization trends, including water, energy, jobs, housing, health, education and mobility. The report compiles valuable ideas and information on a wide range of technological developments and innovations that could help to address these pressing global problems.

Prof Turok also raised three qualifications and question about the report. First, the report does not indicate how the 12 socio-technical systems fit together. They should not be portrayed as independent systems because they are inherently connected and need to be addressed in an integrated manner. For example, the physical systems associated with land, infrastructure and the built environment are interdependent and constitute the foundation for a functional city. If these systems are disjointed or poorly coordinated, this is a recipe for a dysfunctional city, with congestion, infrastructure bottlenecks and many inefficiencies. Urban land is scarce resource and therefore vital that it is managed well for productive, inclusive and green cities. The report does not pay sufficient attention to the efficient use and effective governance of urban land to ensure that the physical footprint and structure of urban development is sustainable and resilient.

Second, the report does not provide sufficient depth of analysis of many of the 12 socio-technical systems and their challenges. It moves too quickly from a description of the symptoms of these issues to offering technical solutions to them, without fully addressing the root causes of the problems. Similarly, by analyzing these 12 issues separately, it tends to put forward fragmented initiatives and disconnected actions as the appropriate response, rather than more coherent and holistic strategies to address the wide-ranging and profound challenges of unsustainable urban development. The focus on technology tends to ignore the underlying institutional arrangements, economic circumstances and political/power dynamics of the city. These require a deeper understanding of the local context, and how socio-technical systems are embedded in wider political and economic attributes of the place.

Third, the report tends to underestimate the scale of global imbalances in the capacity of science, technology and innovation systems. Sustainable urban development in low income countries should involve much more than the transfer and application of technologies designed and produced in the global North. This could simply benefit multinational corporations in the North and leave Southern countries dependent on costly technologies

produced elsewhere. Capacity building is required in the South to design, develop and adapt technologies to suit their own circumstances and affordability constraints. Simple, low tech solutions may be just as important as the latest and most advanced, high tech methods.

Prof Turok illustrated these concerns by talking about two of main themes of the report. First, the housing problem is appropriately described in the report as one of quality and affordability. However, the solutions are restricted to digital design and fabrication, such as 3D printing. The emphasis on smart building technologies may be appropriate for niche markets in middle and high income countries, but it is hardly a suitable solution to the massive problems of makeshift dwellings in the global South. Solving the huge housing shortfall requires wide-ranging strategies to improve the functioning of housing markets and systems, ranging from increasing the supply of well-located land to strengthening the demand for housing and boosting investment in the supply of affordable housing. This is much more than a question of applying new technologies.

Second, the report criticizes “defective urban planning systems”. The solutions are mostly about digital technologies to increase public participation in planning and to encourage collaboration. This is very important to challenge planning for political and economic elites. However, it is not sufficient. Science, technology and innovation are also required to improve systems of urban land registration and land transactions, to streamline and simplify the regulation and governance of land, and to improve the efficiency and responsiveness of development control and building regulations. Greater coordination between spatial planning and infrastructure financing will improve the effectiveness of planning and help to ensure that the uplift in land values that accompanies urban development can be captured for reinvestment in urban infrastructure to make urbanization financially sustainable.

Summing up, Prof Turok said the report was instructive and full of interesting insights and ideas about the role of science, technology and innovation in the urban arena. However, new technology is not a panacea for the multi-faceted problems facing urban areas. Science, technology and innovation need to be embedded in local and national contexts.