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Scientific and Efficient Establishment of Urban Environmental and Resource Management System

By Youba Sokona

Transformation in urban areas needs to happen now to achieve sustainable development and fight against climate change. This transformation needs to be inclusive by focusing on social justice, power asymmetries and vulnerable populations; and requires all actors at the national and international level to collaborate in order to exchange information, generate and work with accurate data, develop technology and provide the financial resources for the implementation of the right programs and policies. These are messages of the keynote speech by Prof. Youba Sokona, South Centre Senior Adviser on Sustainable Development and Intergovernmental Panel on Climate Change (IPCC) Vice-Chair, at the “Forum on the Implementation of the 2030 Agenda for Sustainable Development”. He also highlighted the main take-aways from the recently released IPCC Special Report on Global Warming of 1.5°C.



Dr. Youba Sokona delivering his keynote speech on Scientific and Efficient Establishment of Urban Environmental and Resource Management System at the Forum on the Implementation of the 2030 Agenda for Sustainable Development.

The forum of the establishment of the Shenzhen National Innovation Demonstration Zone for 2030 Agenda for Sustainable Development labeled as the “Forum on the Implementation of the 2030 Agenda for Sustainable Development” was held in Shenzhen, China on the 15th of January 2019 and gathered more than 200 participants including government leaders from the national, provincial, and city levels; high-level guests of international institutions; experts, scholars and entrepreneurs; and representatives from research institutes, enterprises and industry associations. The forum was organized by the Science, Technology and Innovation Commission of Shenzhen Municipality, Southern University of Science and Technology, with the support of Shenzhen Municipal People’s Government, and under the guidance of the Ministry of Science and Technology, People’s Government of Guangdong Province.

The forum is the first step activity of the State Council approval of the establishment of a national demonstration zone in Shenzhen for implementation of the 2030 Agenda for Sustainable Development on 13th February 2018.

The concept for the forum in Shenzhen reflects the spirit of the Communist Party’s 19th National Congress and President Xi Jinping’s “new era of socialism” - a guide that promotes the new development concepts of innovation, collaboration, green environmental

consciousness, openness and sharing. In that spirit, the forum focuses on interconnected global demand for sustainable development, supply side opportunities, new requirements for reform, and new opportunities for urban infrastructure and industrial transformation and upgrading. The strategic mission for the forum is to build a platform for promoting sustainable development and the exchange of knowledge. The forum will become an important window for demonstrating China's sustainable development achievements, and an important vehicle for exchanging sustainable development experience and innovations.

The objectives of the forum were to: 1) Extensively explore theoretical and practical challenges and opportunities in the field of sustainable development; 2) Document the execution of the sustainable development goals (SDGs) including its implementation issues and innovations; 3) Summarize Shenzhen's experience and share it in China and around the world.

Scientific and Efficient Establishment of Urban Environmental and Resource Management System

These are difficult times for developing countries and for the world at large. The effects of climate change are more noticeable each day. All these have costly impacts on cities' basic services, infrastructure, housing, human livelihoods and health. These past few years, heatwaves and wildfires have struck urban areas across different continents, severe floods due to unusually high rainfall have affected India and many developing countries have faced extreme weather events. These events have shown the risks to lives and livelihoods of people in urban regions, particularly to those vulnerable sectors of the population.

Urban development has provided the population with job opportunities and triggered economic growth. Still, with more than half of the world's population living in cities, urban concentrations are major contributors to climate change through significant amounts of carbon dioxide and other greenhouse gas (GHG) emissions. It is estimated that cities are responsible for 75 percent of global CO₂ emissions, with transport and buildings being among the largest contributors.

Cities, however, have the potential to be major catalysts of change in implementing actions to address climate change. Cities are not only the center for economic development but also the birthplace of ideas, knowledge and innovation. Therefore, cities are crucial contributors to the national efforts aimed at fulfilling international commitments to fight

against climate change, such as the Paris Agreement and the 2030 Sustainable Development Agenda.

The role of urban settlements as both major GHG emitters and facilitators of change has been recognized and championed, respectively, by the Intergovernmental Panel on Climate Change (IPCC). The IPCC identifies the need to reshape urbanization and infrastructure development towards more sustainable and lower to zero carbon pathways. Institutional capacity and political will are referred by the IPCC as essential elements to align the right policy instruments to specific spatial planning strategies. Limited governance, technical, financial and institutional capacities are among the main obstacles for the creation and implementation of urban re-shaping schemes.

Urban climate adaptation provides the opportunity for a transformative and incremental development. A resilient and sustainable development is possible in those cities where multilevel governance generates the right adaptation policies. Furthermore, urban adaptation can enhance the economic comparative advantage of a city through risk reduction to enterprises, communities and households. Implementing effective urban adaptation is possible but requires building human and institutional capacity. Moreover, effective adaptation policies cannot be done without scientific evidence. Technology and technical experts are essential to conduct risks and vulnerabilities assessments for each particular urban center.

Nevertheless, due to knowledge gaps, the catalytic potential of urban areas is constrained. Existing scientific development and information cannot be fully exploited in favor of climate adaptation, due to gaps in methodology and understanding. This has to be added to the complexity and multilayered urban settlements.

We have to look at cities through a systems approach. That is, we have to recognize that cities are open, complex, self-organizing, adaptive and evolving formations that are embedded in broader social, ecological, economic, technical, institutional, and governance structures. Cities are also interdependent with their region and their countries. Therefore, any effective climate policy must allow various issues to be addressed simultaneously and must aim to create balanced solutions.

Design and implementation of effective climate policies must include all different levels of governance: state actors, the scientific community, businesses, non-governmental organizations and communities. Moreover, all aspects of climate change risk, impact,

vulnerability and response options are influenced by scales and scales interactions. That is, knowledge can be comparable across spatial scales and regions while remaining meaningful at the local scale. Similarly, policies have different implications and outcomes if implemented at different scales. Therefore, it is important to have observations, models and scenarios at relevant spatial and temporal scales.

The possession and the right use of knowledge is the cornerstone of effective climate action. However, even with current scientific development, further research and action are needed to fill some knowledge gaps.

- First, we have to understand how climate change impacts informal settlements and slums, as population in those areas are particularly vulnerable.
- Understanding the relationship between climate change and informal economy leads to healthier adaptation policies.
- Urban planning and design studies must develop a more rigorous understanding of the connections between urban infrastructure and climate change adaptation and mitigation.
- Understanding the benefits of incorporating blue/green infrastructure to go beyond gray infrastructure is fundamental for transformational climate solutions in urban areas.
- It is vital to go further in the understanding of full-cycle implications of urban economic structures, modes of production and the role of human consumption in climate change. This will lead to a more effective policy making by including modifications of manufacturing processes and an urban lifestyle with a lower carbon footprint.
- Research to developing frameworks and tools to integrate climate considerations into fiscal and financial-decision making at the city level, understanding the role of public and private finance and exploring how resources can be strategically used, are key for the success of the implementation of climate policies.
- Finally, climate policy involves risk and uncertainty. Deeper research would help to develop methodologies to identify sources of uncertainty and to help to understand and reduce it.

Knowledge has to be at the service of society. Researchers and policy communities must work together to co-design, co-produce and share knowledge and information. Furthermore, all sectors of the population must participate in this process. That is, knowledge co-design and co-production must include indigenous people, local communities, practitioners, city networks, policy-makers and researchers from all

disciplines.

Cities need to be empowered both financially and politically to take action. Climate action at the city level will allow national governments to implement the policies needed to fulfill their international commitments. This requires effective collaboration between national, subnational, municipal and local governments. Furthermore, collaboration between the science and policy communities in the long run, and not only short term, is essential for the success of climate action.

Knowledge is also asymmetric between developed and developing countries. While developed countries have enough capacity to invest in technology for green cities and to mitigate the impacts of climate change, developing countries are struggling with the lack of resources and data. Therefore, collaboration towards effective urban climate adaptation must be accomplished by sharing information at regional and international levels.

Transformation in urban areas needs to happen now to achieve sustainable development and fight against climate change. This transformation needs to be inclusive by focusing on social justice, power asymmetries and vulnerable populations; and requires all actors at the national and international level to collaborate in order to exchange information, generate and work with accurate data, develop technology and provide the financial resources for the implementation of the right programs and policies.

Urbanization can mean a better quality of life at a lower carbon footprint if we start walking the path of transformation now. Efficient infrastructure and planning are a good first step. However, if we really want to achieve development while caring for the environment, we need to re-conceptualize what cities are and the main purpose of urbanization, which ultimate goal must be the provision of a better quality of life to all the population, including the correct coexistence with the environment.

Let me end by highlighting key take-aways from the IPCC recently released Special Report on Global Warming of 1.5°C.

As you know the Paris Agreement on Climate Change calls for global warming to be kept well below 2 degrees Celsius above pre-industrial levels while pursuing efforts to limit it to 1.5 degrees Celsius. So, governments then asked the IPCC to tell them what science knows about the impacts of global warming of 1.5°C , the emissions pathways that would enable us to keep warming to that level, and the differences in terms of both action and

impacts between warming of 1.5 and 2 degrees Celsius.

We worked in record time to get the report ready for the 24th United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP24) in Katowice, Poland when governments met to finalize the Paris Agreement Work Program. If I had to sum it up in a few words I would say:

- Every bit of warming matters, and
- Every bit of human action matter.

Let me give you four key take-aways from our special report:

- Firstly, climate change is already affecting people, ecosystems and livelihoods all around the world;
- Secondly, limiting global warming to 1.5 degrees Celsius is not impossible – but it would require unprecedented transitions in all aspects of society;
- Thirdly, there are clear benefits to keeping warming to 1.5 rather than 2 degrees Celsius or higher. As I said: every bit of warming matters;
- And finally, limiting warming to 1.5 degrees Celsius can go hand in hand with achieving other world goals such as poverty eradication and achieving the Agenda 2030 for Sustainable Development Goals.

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