

## Financing Resilient Infrastructure in an Urbanizing World

The session was chaired by Mr Dipak Dasgupta, Distinguished Fellow, TERI.

In light of some recent disasters and events that led to damage of existing infrastructure in urban areas, it is increasingly significant to deliberate on concerted efforts to systematically leverage all sources of finance, expertise, and solutions for sustainable growth. The discussions of the session were steered towards the merging of national and international perspectives, and finding solutions towards maximizing finance for resilient and sustainable infrastructure development.

Ms Sumila Gulyani, Program Leader, World Bank, presented a framework for diagnostics and decision-making to inform investments and prioritise the areas or sections that need improvement (in terms of improving access). The results can then be compared across states/cities/sectors. There is a big gap between nominal and effective access. There is a possibility that governments and infrastructure investors are only focusing on nominal access or coverage and not considering effective access. The cost of resilient/ effective access depends on the goals and standards being set. The minimum goal that should be set is effective access for all. The next step would be resilient infrastructure access for all.

To deliver either effective or resilient infrastructure for all, Ms. Gulyani noted that we need to move beyond just having a focus on finance, to having bankable institutions which are able to deliver. There is a need for institutions that can deliver services. The major challenges that cities in the country face are related to governance, finance and planning. There is a need to understand whether cities have the capacity and man power for management.

World Bank has partnered with certain governments to address some of the aforementioned problems: (i) Creation of corporatized utility for water provision in the city of Shimla (ii) Building a resilient Kerala by enhancing institutional and financial capacity - River Basin Management Authority.

The Kerala example highlights the need to shift from post-disaster response to building bankable institutions that will allow Kerala to be resilient to future disasters. There is a need for strong institutions to deliver resilient infrastructure, and therefore finance will not be a problem.

Ms Supriya Krishnan, National Disaster Management Authority (NDMA), mentioned how under the Smart Cities Mission, the urbanization projects initiated in the cities need to specifically address disaster management and climate resilience, as most of the cities face high climate risks. Ms. Krishnan highlighted that re-building public infrastructure post disastrous events has the highest direct or indirect costs. Focusing on the importance of maintaining a balance between urban development and the environment, she emphasized the need for clarity in identifying and addressing climate risks in India. Adequate guidelines and basic data architecture need to be provided to ensure ownership of risks along with developing an effective index to measure the intensity of the risks. The existing urban planning standards need to be streamlined to ensure capacity development and inter-

departmental coordination for quick recovery and reconstruction processes, and mainstreaming of climate resilience in urban policies.

Ms. Krishnan further elaborated on the Coalition for Disaster Resilient Infrastructure (CDRI) which was announced by the Prime Minister in the Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR) in 2016. It is India's step towards a knowledge partnership for deliberating on issues for better risk assessment, standards and financing mechanisms for resilient development. Such a coalition between different stakeholders and country representatives would encourage the national and state governments to incorporate disaster risk reduction as an integral component in the budgeting process rather than address it separately. The four pillars of the coalition include ways in which risk assessment is done and understanding matrices for measuring risks; standards and regulations that determine the path of infrastructure development along with its operation and maintenance; developing prioritized recovery and reconstructions processes; and having accountable financing and investment mechanisms that would help achieve the loss reduction targets. There is thus a need for an integrated planning system that acts as a middle ground between the economy and the environment to ensure sustainable growth. Mr. O P Aggarwal, CEO, World Resources Institute, India, predicted that 90% of the future urbanisation is going to occur in Sub-Saharan African and Asian developing countries. With growing densities in urban areas, the magnitude of damage caused by risk is going to be much higher.

Mr. Aggarwal noted that risk assessments are complex and have many linkages that need to be understood. WRI has developed a framework to carry out risk assessments in a systematic and scientific manner. This tool was used in the city of Surat, wherein 75% of the respondents said that there were severe health hazards due to extreme heat and waterlogging. The application of a systematic tool for risk assessment and subsequent stakeholder consultations can provide local solutions that are viable for that particular region. The example of Surat highlights the very same.

The country needs about 4 lakh crores on an average a year for urban infrastructure development. The public finance that is available for infrastructure development is limited. There is a need for internalising these costs, and there is definitely a need for bankable institutions to deliver. He remarked that if the cost of building resilient infrastructure is integrated into the design projects and taking these projects into a bankable form and not merely depend on government resources.

In the face of the adverse effects of heat and water logging, the people were willing to put in money and labour to alleviate these effects. He pointed out that capacity building in all forms, and integration of resilience planning in curricula of academic programs is necessary. It is also imperative to have context based research for India, in building resilience for cities. He concluded by saying that the country partnerships that World Bank has developed could be used to set the tone for building resilience and in infrastructure planning.

Mr Damandeep Singh, CDP, India, provided insights on innovative data management tools and finance mechanisms that address urban resilience in cities. CDP (previously the Carbon Disclosure Project) has the largest primary database of 628 cities and 122 states and regions for climate change data, and it captures data through an annual survey. Many cities from this database are slowly disclosing their carbon footprint along with their emission

reduction targets and have developed plans for moving towards a low-carbon and climate resilient future. Moreover, Mr. Singh emphasized that over 100 cities across the world now acquire 70% of their electricity from non-renewable sources of energy. However, Nairobi, Kenya, is the only city that belongs to this category from the developing countries. So there is a need for knowledge sharing between cities and learning from each other to advance urban development.

In order to address urban resilience through innovative finance mechanisms, CDP along with EIT Climate-KIC's Low Carbon City Lab (LoCaL) Flagship Programme are working on a project called Matchmaker. It is a dashboard that showcases climate projects of cities and provides a platform for connecting urban sustainability initiatives with investors, consultancies and engineering firms. It helps in creating bankable institutions and projects and advancing implementation and monitoring of initiatives under these institutions. Such initiatives ensure adequate access of cities to data and information, as well as access to private capital and business development opportunities for financing urban resilience.