

Thematic Session 2-A

**Large Investments in
New Infrastructure**

14:45 – 16:30

Tuesday, 19th March 2019

Taj Mahal Hotel, New Delhi

IWDRI 2019

The Panel

Chair

- NITI Aayog, India

Moderator

- South Africa

Speakers

- Prof Ila Patnaik, National Institute of Public Finance and Policy
- National Institute for Urban Affairs
- Nigeria
- Argentina

Discussants

- Mexico
- China

Session Format

This is a breakout session as part of Thematic Session 2.

It will have presentations by speakers of 10 minutes each followed by a joint moderated discussion.

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Overview

Infrastructure has the power to enable smooth functioning of economies. This session addresses economies where a large amount of investment is expected in building new infrastructure. The focus in these contexts is on putting in place the regulatory and governance structures that would be required to ensure the construction and maintenance of resilient infrastructure.

This session will present the big picture of the policy discourse and governance mechanisms that are aiding and ailing decision making for key infrastructure sectors, mainstreaming disaster risk management and harmonization of related policies. The session will advance thinking on these issues for a specific typologies of economies with particular geographical and socioeconomic characteristics. The joint panel discussion will reflect on gaps and opportunities for knowledge exchange between the groups.

The session will address the following questions:

1. What are good examples where leadership of the national or regional government is providing a coherent basis for decision-making to inform investment in risk informed investments in developing and maintaining infrastructure?
2. How is resilience to infrastructure approached in difference economic and geographical contexts? What are the critical issues in governance systems that drive this decision?
3. What are the potential areas of partnerships between countries that may be forged under the CDRI to address these issues and improve practices?

Emerging economies and developing countries are poised to invest in a lot of new infrastructure. In countries like India – the growing middle class, steady economic growth and a favourable demographic dividend require the nation to build the foundational physical infrastructure that will serve as the basis of growth and development for decades to come. Some estimates about India say that the nation may need to build more infrastructure in the next 20 years than it has built in the last 200 years. This means that majority of the infrastructure required to meet the current and future demands is yet to be built. This is true for a majority of the emerging nations in Asia, Africa and the Americas.

This situation presents a unique opportunity to 'get it right'. There is an urgent need to address the structural issues that underpin this development and put in place risk estimation, standards and governance arrangements, to ensure that all new infrastructure development is resilient to climate change and disasters impacts.

Challenges and opportunities in addressing new infrastructure:

1. Climate change and changing risk profiles:

Changing climate patterns around the globe are increasing the intensity, frequency and uncertainty of extreme weather events. New infrastructure built in this context of high uncertainty requires a careful and integrated approach to ensure that these investments are safe in the longer term. The constantly changing nature of climate and disaster risks, the high volume of initial investment required, and the long life-cycles of infrastructure projects necessitate the continuous monitoring of risks and the development of adaptation strategies that are responsive to the changes in the risk profile.

2. Rapid pace of urbanisation:

Today, more than half of the population live in urban areas and 1.5 million people are added to the global urban population every week.¹ About 90% of this urban population growth will take place in emerging the economics of Africa and Asia with rapid urbanisation placing huge demands on infrastructure,

¹ <https://esa.un.org/unpd/wup/Publications/Files/WUP2014-Highlights.pdf>

services, climate and environment. Combatting these challenges of rapid growth, and achieving sustainable development requires fresh regulatory and planning approaches, technologies and capacity development.

3. The lack of an integrated approach

Ensuring adequate resilience in individual infrastructure assets may not always translate to systemic risk reduction, unless processes for regional planning are also developed and implemented. When building the same infrastructure (e.g. a bridge) in two geographically different locations, both the built and natural environment at each location plays an important role in terms of whether the infrastructure chosen standards are sufficient. An integrated approach is therefore needed, where both the type of infrastructure as well as the environment it is being built in, is considered. Here, developing the capacity and regulatory framework for integrated infrastructure development is a prerequisite. There may be a need to develop national level bodies and plans that consider all the interlinkages and interdependencies between sectors. Such a body could regulate regional infrastructure development and coordinate the actions of various ministries and departments that usually work in silos.

4. Need for regulation of professionals and capacity building at all levels

The construction and maintenance of resilient infrastructure will require capacity building of professionals and workers at all levels. At the grass-roots this may entail putting in place local vocational training programs to continuously develop and update the skills of construction workers. At the national levels, the development of statutory regulators for professions like engineering and planning would help reduce risk by setting educational requirements and developing systems for licensing professionals. Licensing would allow for vetting the skills of the professionals, and continuous updates of these skills. This would, in turn, increase accountability of safety outcomes.

5. Technological evolution

Most emerging nations lack the experience of constructing and sustaining large scale infrastructure systems. The research base on the interactions between the various interconnected infrastructure systems, and their effects on population they serve, is still being built. Emerging technologies like sensors, big data, machine learning and robotics present an opportunity for these nations to accelerate their learning curve and put in place state of the art systems to ensure infrastructure resilience.

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The rapid evolution of material sciences, building technologies, and energy sources also requires the planners of infrastructure to avoid getting locked into specific technologies or materials. There is a need to move from prescriptive standards that specify designs and material specifications to standards that define only the performance required from the infrastructure and allow for the designs and material selection to evolve and innovate. Further research is required on the use of new materials, building designs, energy sources and nature based solutions and their effect on the resilience infrastructure systems.

6. The need for urgent action

The high volume and rapid pace of growth in emerging economies is happening within the context of insufficient research, low human resource capacity, and a lack of integrated regulatory mechanisms for infrastructure development. To ensure that this growth builds-in 'resilience' instead of 'risk' requires urgent actions to develop the requisite capacities and systems. The current time presents an opportunity for emerging nations to learn from the past mistakes of advanced nations and in a way 'skip to the end' and adopt solutions that have proven results.

While global best practices serve as a good guide for building the required systems, each nation will have to understand its own context thoroughly before adapting and adopting approaches that have worked in advanced nations.
