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session 5

UNESCAP

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Topic: "Building Resilient and Sustainable Infrastructure"

Question: "What would be your advice for countries willing to streamline sustainability elements into their infrastructure development? For instance, do you think it would be useful to develop tools to assist countries in quantifying the impact of infrastructure projects on the three dimensions of sustainable development (i.e. economic, social and environmental)? Is there a need for market incentives to drive more sustainable infrastructure development?"

1 Introduction

The ability to achieve the three dimensions of sustainable development: economic, social and environmental require a multi- faceted approach to infrastructure development, particularly where infrastructure needs are huge and resources (human, technical and financial are limited:

- Project identification and prioritisation - to invest in the projects likely to produce the greatest benefit
- Project preparation, including structuring and funding analysis
- Creating incentives, through regulation or market mechanisms, to encourage environmentally sustainable development.

None of these aspects are straightforward:

- How do you prioritise when then may be conflicts between economic and social outcomes (eg. City v rural)?
- How do you create capacity to fund, or pay for infrastructure in developing countries?
- How do you encourage a focus on environmentally friendly projects without increasing costs to make them unaffordable?

related disasters

- Where in your planning do you include investment in catastrophe mitigation - particularly where the required infra is costly?

2 Focus on outcomes, not inputs

Start with over-arching policy objectives. What are the "must have" outcomes required from your infrastructure development program? And take a strategic approach to prioritising projects:

- Regional development
- Provision of low cost, environmentally friendly energy (eg renewables, energy storage, smart grids etc.)
- Delivery of clean transport solutions to improve connectivity and facilitate economic activity (rail v road, clean vehicles)
- Resilience – protection against catastrophic events

3 Establish robust measurement systems to assess infrastructure investment:

- Economic cost benefit
- Regional employment, GDP per capita, other social outcomes
- Cost v benefit of investment in resilient infrastructure – in both economic and social terms

4 **Assess infrastructure investment plans by reference to funding capacity and affordability:**

- Funding sources (inc. asset recycling and value capture)
- Prioritise based on objective assessment of benefit v cost
- Carefully prepare projects to maximise potential for actual delivery
- Identify and manage risks (and bear in mind some may be government created – eg excessive regulation) – G20 Risk matrix, standard cotracts etc.

5 **Think about how regulation can be used to manage inputs but also influence users' behaviour:**

- Environmental approvals, but this must be balanced to enable infrastructure development to proceed
- User pricing (which can also manage peak demand and potentially defer investment)
- Requirements necessary to attract Green Financing

6 **Think about how to integrate technology into infrastructure planning:**

- Transport and energy modes, above
- Improve connectivity through communications technology – potentially reduces the need for physical infrastructure
- Extend the life of existing infrastructure assets through technology enabled asset management
- Smart Cities

7 **For many smaller countries, such as Small Island Developing States:**

- How to bundle projects to make them more efficient and attractive for private sector participation