Principles for Resilient Infrastructure & Stress Testing of Critical Infrastructure
Principles for RESILIENT INFRASTRUCTURE

Final version available: https://www.undrr.org/publication/principles-resilient-infrastructure
Developed to address

- Lack of understanding and consensus on “resilient infrastructure”
- Infrastructure investment and planning do not take into account the systems approach or complex nature of risks
  - “think resilience” approach is needed
- Accelerate implementation of the Sendai Framework and the Sustainable Development Goals.
Sendai Framework Target D
Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.
The Six Principles for Infrastructure Resilience

1. Environmentally integrated
2. Socially engaged
3. Shared responsibility
4. Continuously learning
5. Proactively protected
6. Adaptively transforming
Next steps

- Development of Handbook/Playbook for implementation of the principles - with the advisory and guidance of Expert Group

- Country implementations to strengthen regulations, build capacity, engage national infrastructure stakeholders through technical support and partnership.

- ISO standard
Implementation of the Principles will allow

- Make sure everything we do in terms of infrastructure includes resilience – net resilience gain
- Mindset shift to integrate resilience in design, project, investment, intervention etc,
- De-risking investments and greater investor confidence
- Resilience being mainstreamed and embedded in policy and regulations
- Contributions to positive social, economic and environmental outcomes
- Greater continuity of services, and reduced inconvenience, disruptions and outages
- Less environmental harm and less wasted resources
- Prioritizing of resources
Implementation

Assessment on state of infrastructure
• Stress testing
• Identification of threats, bottlenecks and vulnerabilities
• Better understand the interlinkages/ inter-dependencies (e.g. water -> energy);

Implementation of key actions
• Regulatory reviews and updating based on findings
• Develop implementation plan
• Identify interventions for the different key stakeholders
• Agree on KPIs based on interventions

Monitoring & Evaluation
• KPI baseline and reporting for monitoring progress
• Identify lessons learned
• Recommendations to inform next round of interventions
Stress test

Stress Testing critical infrastructure can support decision makers in:

- Base policy decisions and investments on factual and up-to-date information on the status of resilience of infrastructure systems;

- Identify threats and vulnerabilities and gain insights regarding the performance of critical infrastructure against various stressors;

- Better understand the interlinkages between infrastructure systems and networks (e.g. water -> energy);

- Prioritize investments and actions in the face of tight budgets.
Expected Outcomes

- **Tier 1:**
  - Fast results, identifying which infrastructure systems are at-risk to disruption from hazards, and a coarser view of how infrastructure systems may fail;
  - Operates as a process-level assessment that illustrates basic interactions of infrastructure and other sectors.

- **Tier 2 (identified sectors through Tier 1 assessment):**
  - Allows policymakers to consider how changes in policy may impact critical infrastructure systems;
  - Allows identifying bottlenecks when the demand on, or resources of, a component of the system is stressed;
  - Points to opportunities for improvement of a multi-system analysis to create a well-informed resilience strategy.
Stakeholders to be engaged

It is recommended that all infrastructure and services relevant ministries and agencies be engaged in this process, including:

- Ministry of infrastructure/ Ministry of public works
- Ministry of economy/ Finance ministry
- Ministry of environment
- Ministry of transport
- Ministry of energy
- Ministry of telecommunications and other sectoral ministries
- National Disaster Risk Reduction Agency
- Sendai Framework Focal Point
- National statistical agencies
- Local level administrators (where applicable)
Process

**Tier 1**
- Stakeholder process created and initiation of a working group
- Data collection through individual interviews/questionnaire
- Data input and preliminary analysis
- Workshop with stakeholders to validate and confirm data and discuss results and next steps

**Tier 2**
- Data collection through individual interviews/questionnaire
- Data input and preliminary analysis
- Workshop with stakeholders to confirm data and discuss results and next steps
- Specific recommendations provided
Supports Council Recommendations on Critical Infrastructure

- The Principles for Resilient Infrastructure and stress testing support and align with the new Council Recommendations on Critical Infrastructure for the EU:
  - "The Commission encourages Member States to conduct stress tests of entities operating critical infrastructure, based on a common set of principles developed at Union level."

We look forward to working with you.
Thank you