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BUILDING REGULATION FOR RESILIENCE

DRAMATIC EXPANSION OF LOSSES OF LIFE & PROPERTY

IZMIT, 1999



BHUJ, 2011



CHENGDU, 2008

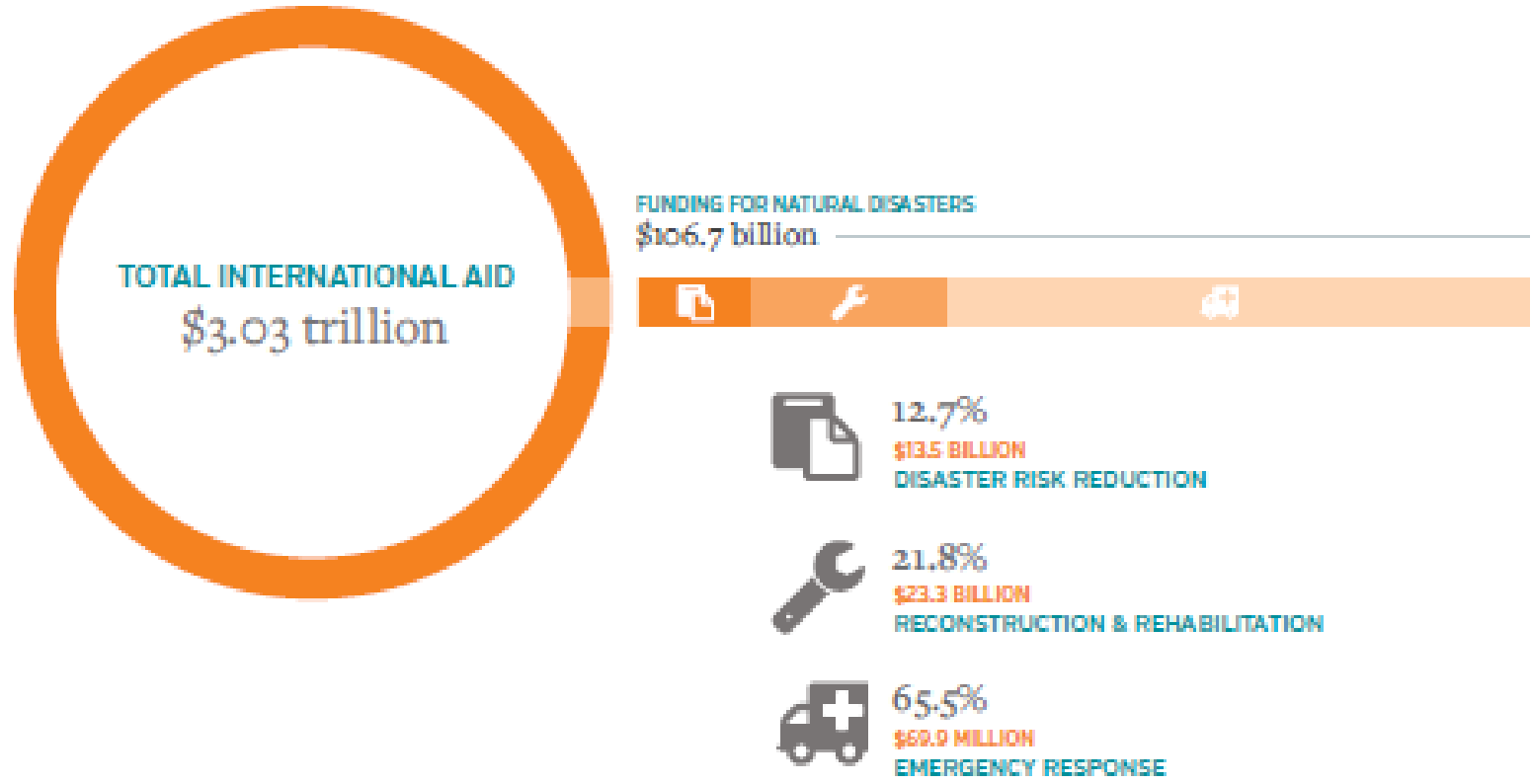


Uphaar cinema, DELHI, 1997



- 85% of fatalities in low-income countries
- \$1.2 trillion economic losses in last 30 years in poor countries
- Poor people suffer disproportionately

Disaster financing as a proportion of total international aid, 1991-2010



THE FINANCIAL ARGUMENT FOR GOOD REGULATION

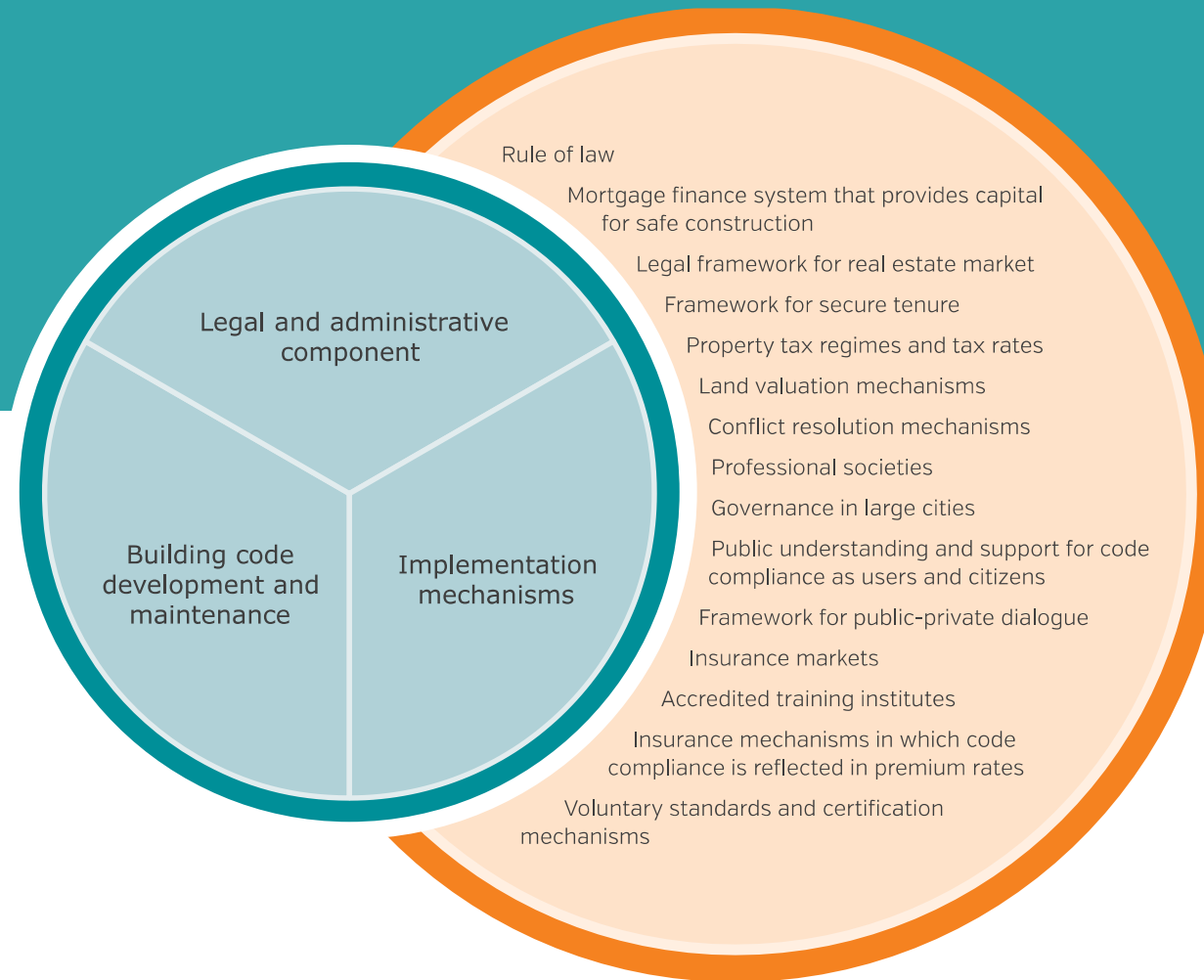
Disaster & chronic loss reduction

Continuity & growth of public revenues

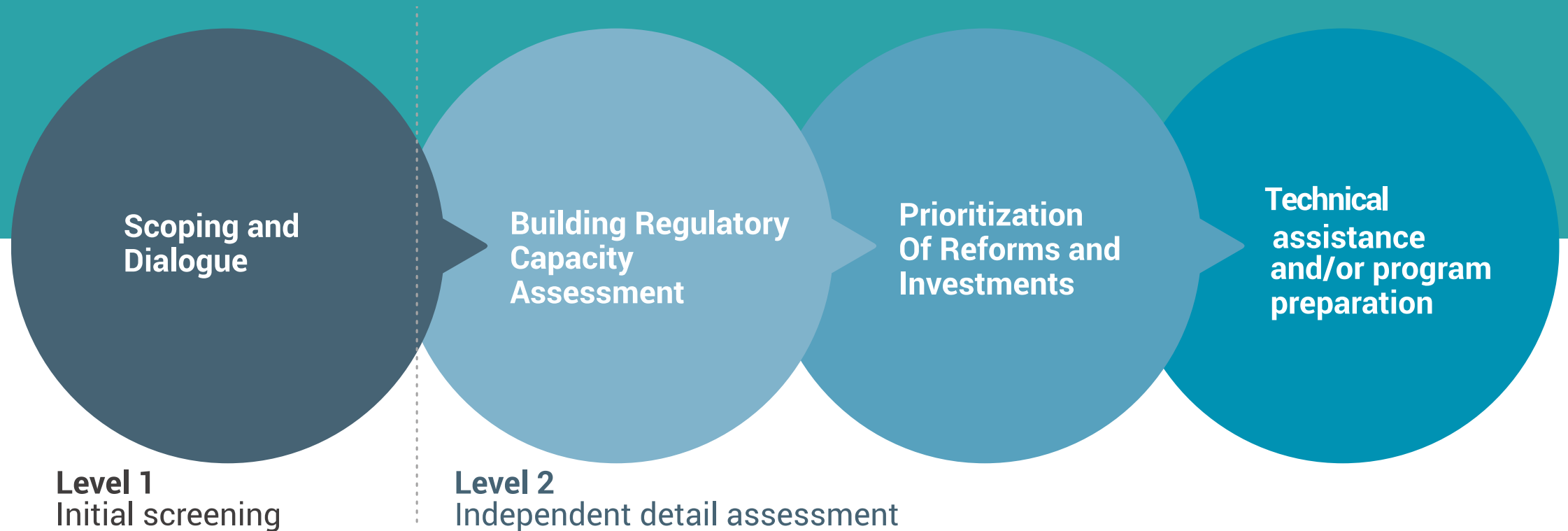
Improved investment attraction

**Regulatory process = At a cost of about 1.5
% of construction cost, on average, in
OECD countries**

THE NECESSARY SUPPORT ENVIRONMENT



PROCESS OF PROJECT DEVELOPMENT



PRODUCTS & SERVICES OFFERING

Technical Assistance

Functional Diagnostics & Capacity Assessment

- Projected physical damage & loss estimations in the built environment
- Evaluation of risks in existing buildings structures
- Building Regulatory Capacity Assessment (BRCA)

Legal & Regulatory Foundations for Building Safety

- Legal advice and technical review for building legislation and building codes (participatory process and local relevance)
- Qualification requirements, plan reviews, inspection, permitting, certification & accreditation of design professionals and testing laboratories
- Support to enabling environment (insurance, incentives, mortgage finance, etc.)

Capacity Building of Regulators, Building professionals & Builders

- Accreditation of control organizations, incl. building departments and soil, building materials testing facilities
- Development of training for building professionals & construction workforce.
- Development of informal sector strategy

Investment

Instrumentation & Laboratories

- Instrumentation for monitoring of seismic, wind and flood events
- Laboratories & testing equipment for building materials, building products & assemblies
- Equipment for on-site inspection and nondestructive testing

ICT Infrastructure

- Improved efficiency in communication with permit applicants and effective record keeping
- ICT infrastructure & software equipment to support automation of building departments and multi-agency approval processes

Retrofitting of Critical Facilities

- Evaluation and retrofit of vulnerable facilities critical to disaster response and recovery
- Developing of retrofitting technologies



OTHER PRECEDENT: ISTANBUL SEISMIC RISK MITIGATION PROJECT

Timeline: May 2005 – Dec 2015

Total Envelope: USD 563 Million

Objective: To assist the Borrower improve the city of Istanbul's preparedness for a potential earthquake, through:

- ❑ Enhancing the institutional and technical capacity for disaster management and emergency response,
- ❑ Strengthening critical public facilities for earthquake resistance, and
- ❑ Supporting measures for better enforcement of building codes.

Results:

Over 800 buildings retrofitted

3,600 civil engineers trained on retrofitting building code

Streamlining of regulatory process for building permits and land use in 2 pilot municipalities

(Introduction of e-permitting system: Permit review reduced from 90 days to 10 days)



references

Building regulation for Resilience Report

<https://openknowledge.worldbank.org/bitstream/handle/10986/24438/Building0regul0sks0for0safer0cities.pdf>

Building Regulation for Resilience – Executive Summary

<https://www.gfdr.org/sites/default/files/publication/BRR%20Exec%20Summary.pdf>

Building Regulation for Resilience : Brief Program Brochure

https://www.gfdr.org/sites/default/files/publication/Building_Regulation_for_Resilience_Managing_Risks_for_Safer_Cities.pdf