Addressing Disaster Risk through Improved Indicators and Land Use Management

Inception Phase Findings and Linkages to the Green Cities Initiative

Asian Development Bank
Integrated Urban Planning Workshop
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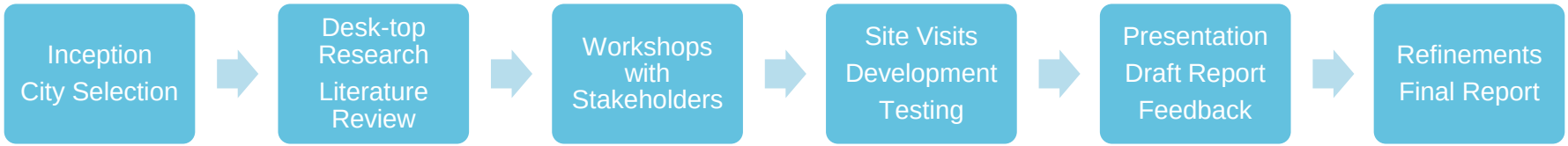
Disaster Risk Reduction and Land Use Management: TA Project Overview



1. Develop guidelines and sector notes to help member DMCs incorporate risk-sensitive land use management into sectoral development projects

2. Identify 6 cities to be used as case studies for their urban DRM practices; 3 of the 6 project cities will be selected for further study on their experiences in designing and implementing incentives for risk-sensitive land use management

3. Develop disaster risk indicators to be incorporated into a larger set of indicators used to assess the level of access, equity and efficiency of ADB projects in the urban sector

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Urban Disaster Risk Management in Asia: Project Status

- Kickoff Meeting held in Manila on September 2–3, 2013
- In-depth desk research undertaken on the following cities:
  - Khulna, Bangladesh
  - Chongqing, China
  - Chengdu, China
  - Wuzhou, China
  - Kathmandu, Nepal
  - Barangay Rizal, Makati City, Philippines
  - Naga City, Philippines
  - Bangkok Metropolitan Area, Thailand
  - Da Nang, Viet Nam
  - Ho Chi Minh City, Viet Nam
- Inception Report prepared and submitted
- Recommendations for 6 study cities under review by ADB

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Urban Disaster Risk Management in Asia: Current State of Urban DRM

- Countries are increasingly aware of the need for improved DRM practices

  National frameworks have been put in place in many countries, e.g. the approval of the National Strategy for Natural Disaster Prevention in Vietnam, the establishment of national-level Ministry of Disaster Management and Relief in Bangladesh

- But urban DRM measures are planned and implemented in a piecemeal manner

  While mandates in some countries require that DRM be included in urban and sectoral plans, by and large governments lack the technical capacity to do it well. Urban interventions rely heavily on civil engineering.

- Despite obvious linkages, land management rarely plays a major role in urban DRM

  Many cities do not take risks into account when planning; others do separate DRM plans and regular urban development plans (DRM is not mainstreamed); others still have the measures on paper but fail to implement.

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Urban Disaster Risk Management in Asia: Why are Cities Vulnerable?

- Siting of urban development and important infrastructure and facilities in high risk areas
- Poor enforcement of zoning requirements and construction standards
- Prevalence of buildings that cannot resist natural hazards: structurally unsound, lacking basic disaster-resistant components (e.g., roof straps), wrong design (buildings sitting on the ground in flood-prone areas)
- Local governments lack the technical and managerial capacity to do DRM-sensitive land management

Recipe for Disaster: Bangkok on the Eve of the 2011 Floods

Weak and fragmented urban DRM management

- Many different agencies were responsible for building dykes and other water management infrastructure. There was no unified approach and disagreements with local communities were common.
- Regulations on water resource management were obsolete
- Poor enforcement of urban plans and development control regulations

Building protective structures without taking into account the “ways” of the natural environment

- Upstream towns, industrial parks and housing estates all built retaining walls and other barriers that narrowed rivers, changed natural drainage patterns, and disrupted floodways passing in or near their jurisdictions
- The civil works increased flooding pressures on adjacent, less projected areas

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Recipe for Disaster: Bangkok on the Eve of 2011 Floods

The lack of integrated DRM for the urban core and the metropolitan periphery

- The emphasis on protecting central Bangkok with protective barriers contributed to severe flooding in the city's outskirts

The inability to act efficiently and systematically on information

- The information provided Thai Meteorological Department was not well coordinated among agencies and not well-understood by the public
- Different bodies and politicians disseminated early warning information in mixed messages and emergency management instructions were haphazard

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How to Do It Better: Some Examples of Good Urban DRM Practices

Matching land use with risk profiles by district

- Relocating inhabitants in risk-prone areas and planning future development in lower risk areas
- Change zoning requirements and modify urban layouts and forms according to exposure to risks; e.g. street widening, clearance of structures that encroach on the sidewalks and roads, prohibition on parking on certain streets etc.

Incorporating low impact development practices to promote resilience

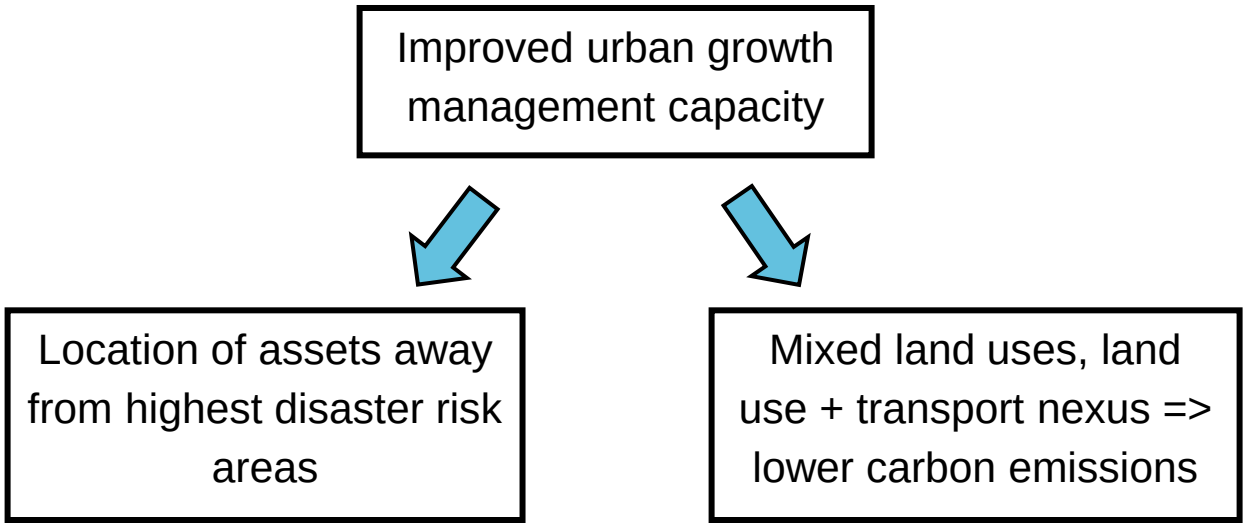
- E.g. letting streams flow through natural environments rather than channelizing them
- Locating public parks on flood-prone land
- Permeable surfaces to limit stormwater run-off

Integrating Community-Based DRM (CBDRM) measures

- Community participation is key to effective vulnerability assessment – e.g. Da Nang, Viet Nam
- Effective CBDRM is key to raising disaster preparedness and resilience at the community level
- Training community members to monitor and prevent construction in hazard-prone areas

DRM-Sensitive Land Management and Green Cities: Urban Growth Management Capacity is Key

- Both are multidisciplinary undertakings that require coordination and collaboration among stakeholders and across government departments
- Both rely on effective urban land management systems that all parties have to buy into



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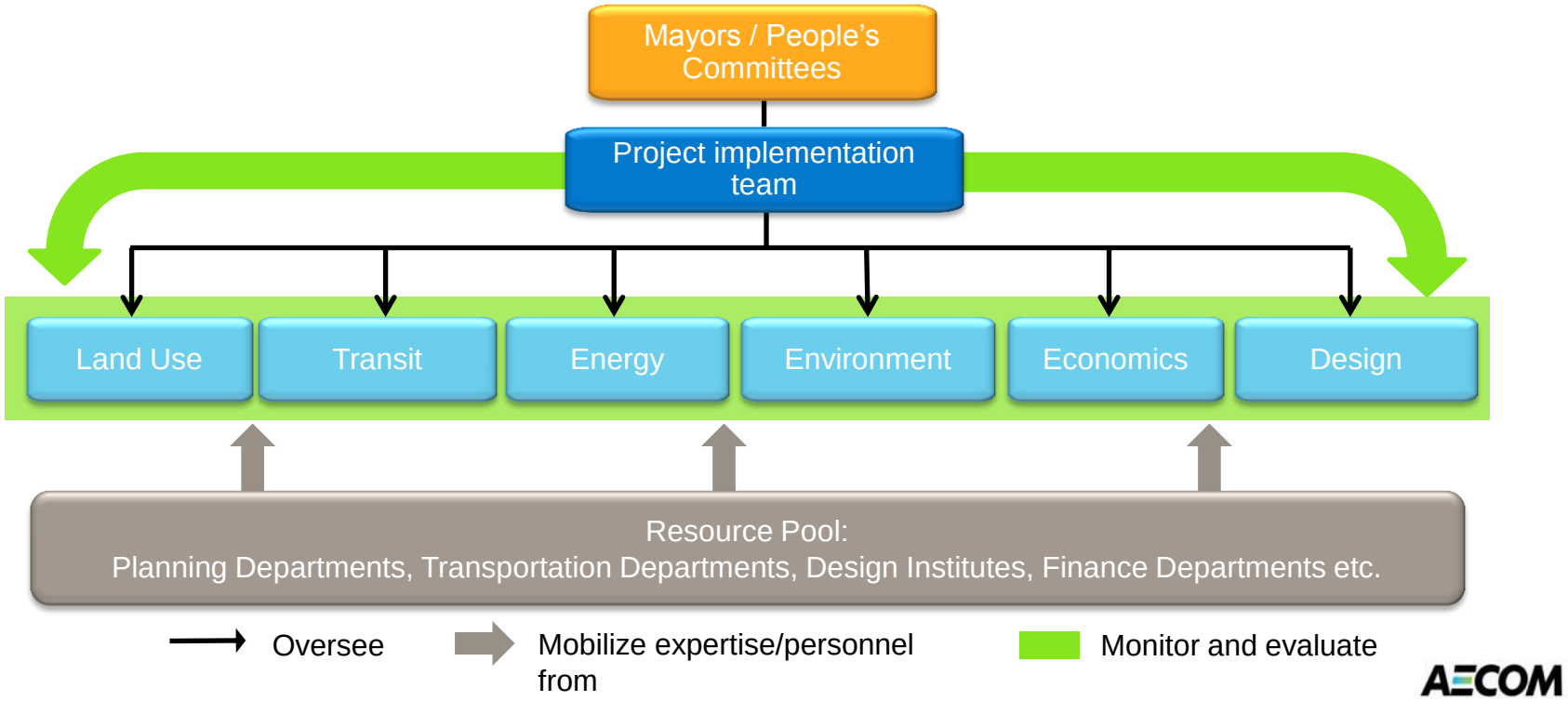
DRM-Sensitive Land Management and Green Cities: The Development Control Challenge

- On the ground, both efforts require effective development control. It is not enough to understand the problem and make a good plan: individual development actions have to be undertaken in a way that is consistent with plans and regulations.
- Host of obstacles: technical and managerial capacity of development control departments, low pay of lands officers, corruption, political interference
- In the medium term, political commitment, the right kinds of incentives, and the creativity and perseverance to forge win-win situations with stakeholders are needed
- In the long run, a tradable land development rights system goes a long way to making sustainable land development economically feasible

DRM-Sensitive Land Management and Green Cities: Institutional Arrangements for Implementation

- Managing land use for better DRM results requires the mainstreaming of risk-sensitive approaches into planning systems and procedures
- Green Cities requires the integration of existing actors and responsibilities into an integrated framework



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How Can the Outputs of the DRM Study Contribute to the Green Cities Initiative

- By introducing guidelines on DRM-sensitive land use management that can be included in city-wide planning methods and practices for Green Cities (DRM dimensions are subsumed into the overarching Green approach and methodology, whether the focus is land, infrastructure or buildings)
- By contributing guidelines and tools for DRM practices that are also environmentally sound:
  - Incentives for building with permeable surfaces, which reduce flooding risk and help preserve aquifers.
  - How to align land uses and development intensity with the environmental carrying capacity of a district, e.g., don't built on steep slopes in order to reduce landslide risk and erosion
- By defining a broad set of measures of urban resilience, from power systems that function during storms to residential neighborhoods that resist hazards and do not require redevelopment and extensive investment

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