



Session 19: Increasing Resilience and Scaling Human Settlements

Adaptation Perspectives on Urban, Rural, and Coastal Human Settlements

Exhibition Hall Room 1

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environmental affairs

Department:
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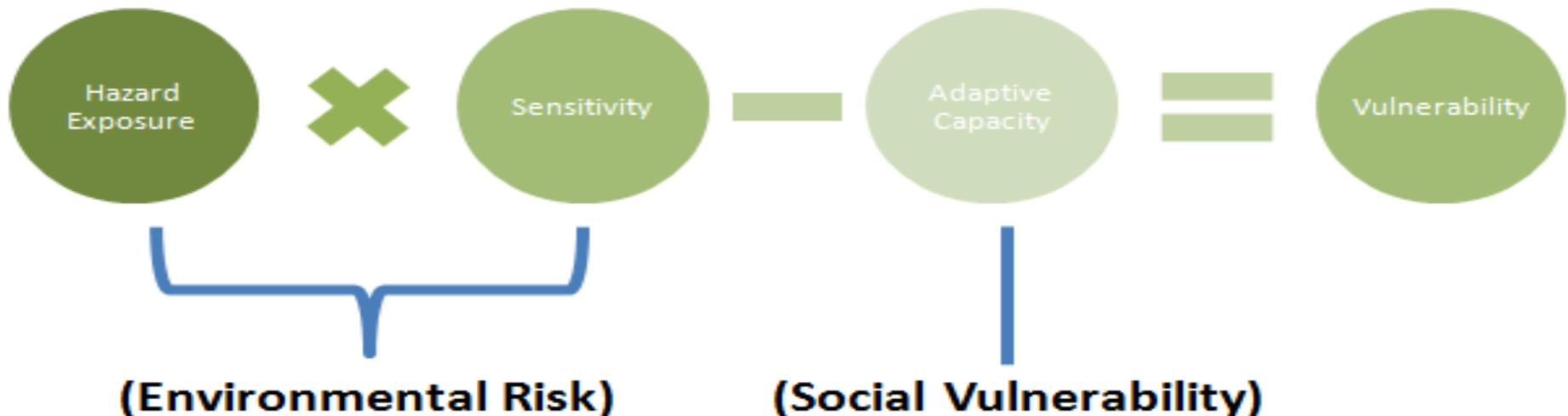
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INTERNATIONAL PANEL ON
CLIMATE CHANGE




Climate Action Now!
Save the future

Introduction

- ***Climate Change Impacts on Human Settlements***- Environmental risks & interaction with social vulnerabilities inc: *Urban, Rural and Coastal Settlements*
- ***Climate change impacts on migration and human conflict***- domestic and sub-regional migration and displacement of peoples as a consequence of climate change, and the potential for conflict.
- ***Climate change adaptation responses***- adaptation responses, dependent on particular scenarios and development trajectories.
- ***Climate modelling*** from Phase 1 provides the basis for analysis of hazard exposure
- ***HS LTAS focus***- unpacking sensitivities of human settlements and identifying drivers of social vulnerability and adaptive capacity



Context & Development Aspirations

- **Reform current planning system-** *entrenched apartheid spatial form*
- Unlocking well located land, especially state owned land for **affordable housing** by 2030 (strategic priority).
- Upgrade 400 000 households in well located **informal settlements** by 2015;
- **Food and nutrition security**-small-scale farmers or households.
- Upgrade **public transport infrastructure and systems**
- Develop several new **water schemes to supply**
- Introduce a **spatial development framework and norms,**
- National observatory for **spatial data** and analysis;
- **Densify cities** and allocate resources accordingly;
- **Proportion of adults in rural areas working** 29 % - 40 %.
- Creation of “**sustainable human settlements**” as defined in the National Housing Code.
- Functional regulatory regime supporting sustainable settlements
- Effective horizontal and vertical integration

Key indicators of the development trajectory with regards to CC

1. **“Spatial Justice”** which includes overcoming inequitable apartheid based historic planning;
2. **“Spatial Sustainability”** which is the promotion of sustainable patterns of consumption and production to reduce environmental impacts;
3. **“Spatial Resilience”**, being the reduction of vulnerability to environmental degradation, resource scarcity and climatic shocks. Ecological systems should be protected and replenished. This should include the development and planning of human settlements in such a manner that they are more resilient to climate change impacts.
4. **“Spatial Quality”** being the improvement of aesthetic and functional features of housing; and
5. **“Spatial Efficiency”** being the support of productive activity and jobs as well as efficient commuting patterns.
6. Transformative development

Towards Appropriate Responses

Urban settlements

- **Leverage opportunities** presented by urban densification to build climate resilient urban infrastructure .
- Implement of low cost housing which ensures **access to use climate resilient technologies.**
- Developing effective **information monitoring and assessment tools** to evaluate city resilience,
- Lessons learnt and **scaling up** responses.
- Enhancing **decision support tools and systems-** integrated planning tools
- Developing water sensitive urban **designs**
- **Downscaling climate models** to local level, and climate services and information

Are our cities position to be impacted and respond to CC?

Coastal Settlements

- Ensure the relevant coastal management plans incorporate relevant climate information and GIS
- Adopt a **risk based approach to planning** that anticipates the consequences of continued migration into high risk coastal areas.
- Accounting for the potential of **sea level rise & intense weather events on infrastructure** development and investments.
- **Protect & rehabilitate** natural systems that act as important coastal defenses such as mangrove swamps.
- **DRR-M** incorporating coastal **climate risks.**
- **On-going research** on climate change implications to coastal livelihoods

Towards Appropriate Responses

- **Rural Settlements**

- Provision of soft infrastructure for rural development,
- Investment to support **regional and local food production**,
- **Protection of rural livelihoods**, expansion of agro processing jobs in rural areas,
- **DDR-M** inc emergency preparedness, effective response & post disaster recovery, safety nets .
- Constraints and opportunities for small scale farmers
- Local adaptation strategies and **IKS**
- Economic and livelihood diversification programmes in rural areas.
- **Technologies for climate change adaptation** inc low water use irrigation systems, rainwater harvesting strategies & drought resistant seed varieties.
- **Seasonal climate forecasting** and assessing local vulnerabilities

Adaptation options

First resort – no regrets options	Second resort – “additional” institutional measures	Third resort – additional biological measures	Last resort – additional physical measures
<ul style="list-style-type: none"> ▪ No further land reclamation from the sea ▪ No further wetland and estuary degradation ▪ No further dune degradation and development ▪ Maintain storm water infrastructure ▪ Integrate sea-level rise into spatial planning ▪ Incorporate with disaster risk management ▪ Decentralise strategic economic infrastructure and services 	<ul style="list-style-type: none"> ▪ Enforce coastal buffer zone – blue line ▪ Early warning system ▪ Correct insurance market failures and under-pricing of sea-level rise risk ▪ Managed retreat where necessary ▪ Social and geographical vulnerability mapping ▪ Risk communication ▪ Apply the requisite legislation ▪ Prevent sand mining of coastal dunes ▪ Additional research into rates of change and causes 	<ul style="list-style-type: none"> ▪ Dune stabilisation and planting ▪ Proactive estuary and wetland rehabilitation ▪ Kelp bed protection and ensuring kelp remains on exposed beaches at key times 	<ul style="list-style-type: none"> ▪ Beach and dune replenishment ▪ Sea walls ▪ Barrages and barriers ▪ Raising infrastructure ▪ Revetments, dolosse, rock armour ▪ Beach drainage ▪ Off-shore reefs

Cross-cutting dimensions of analysis

Rural livelihoods	Informal settlement upgrades	Urban densification
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Land/tenure/ownership

Regulatory and planning regimes
Spatial dynamics

Governance and community
Community centric approaches
Technical and institutional capacities

Infrastructure and services

Housing

Economy and livelihood

Climate Finance and targeted investments

Programmatic approaches/Initiatives
Macro and micro Initiatives
Partnerships and networks, NIE

Adaptation responses need to be tailored to settlement types!
MRV, MRV, MRV

Adaptation scenarios: System Perspective

