



Presentation from  
**2015 World Water  
Week in Stockholm**

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Marcus Moench  
Founder, ISET-  
International

# Building Climate Resilience

## Adaptive Responses Across Scales



# The challenges

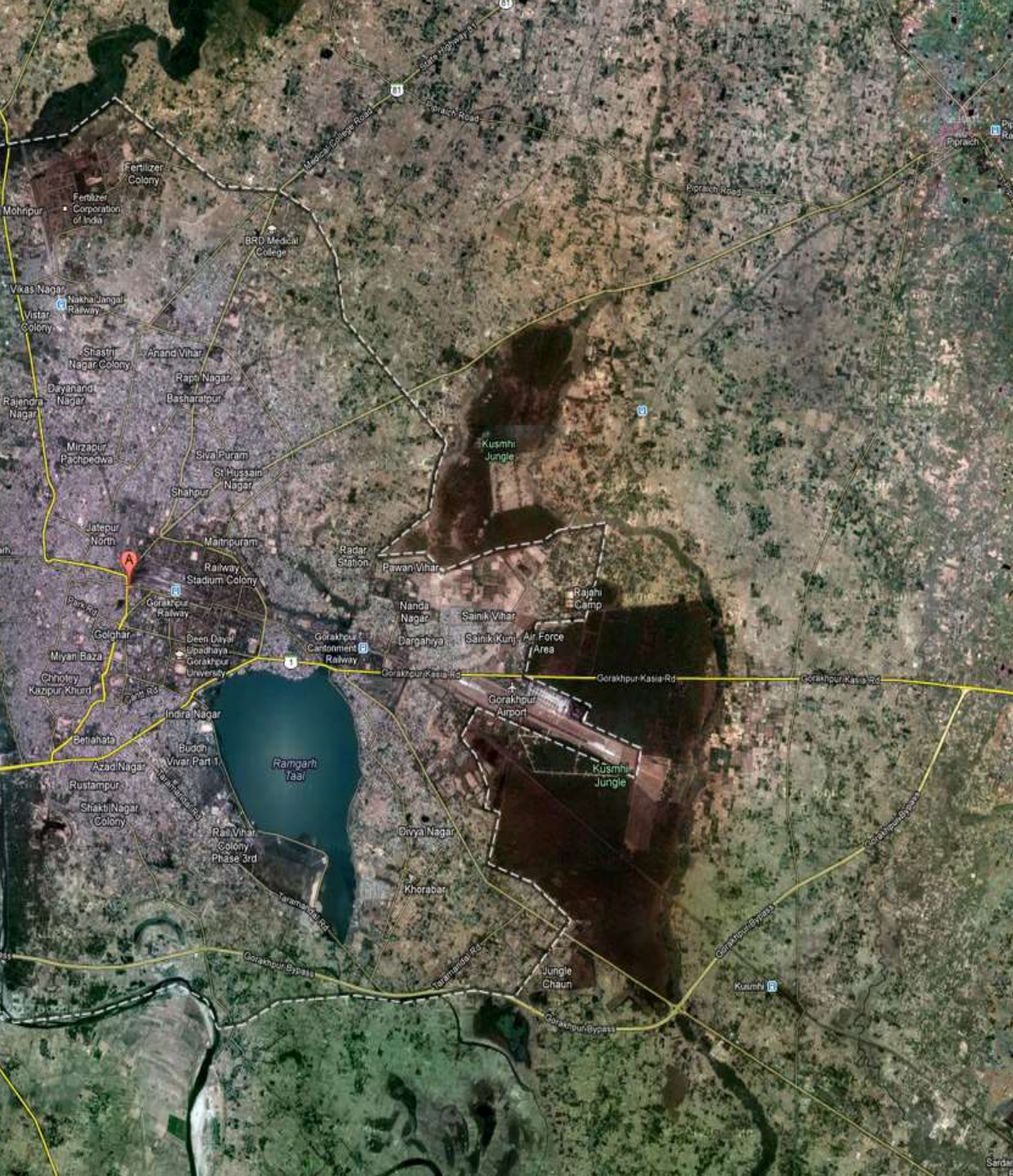
- Coastal and Riverine Cities: A Future of Estuaries and Wetlands
- Competition: A Future of Scarcity
- Variability: A Risk of Cascades
- Equity: Water for All

# Complex Realities: Require an Adaptive process



# The Upwardly Mobile City

- Coastal and Riverine Retreat: A recipe for massive conflict
- Emergent Behavior: Move upward, keep water in the public space
  - Bangkok, Thailand
  - Da Nang, Vietnam
  - Gorakhpur, Uttar Pradesh, India
  - Lyons, Colorado
  - Netherlands
- The Questions We Face: Do we want to live in Swamps or Villages? Ecosystems

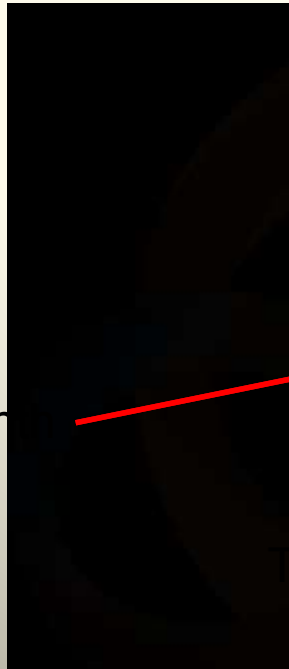




RCC Roof

Double Roof

## What people do: Autonomous Adaptation



Raised plin

The space where house was built

# Shelter Resilience – A Global Strategy





# The Growth of Water Markets

- Utilities: Waste, Conflict and Inequity
- Emergent Behavior: Formal and Informal Markets, the Tanker and Bisleri culture
  - Kathmandu
  - India
  - Yemen
  - California
- The Quest for a Regulatory Regime

# Scarcity





PURE DRINKING WATER

PHONE 572  
1433

TOOL  
BOX

वसागर



# Partial Solutions?



# Ways Forward?

- Emergent Opportunities
  - Sanitation: Transform waste to energy - Don't shit in champagne
  - Flood management: Buffer and rise above it, manage wetlands and estuaries
  - Water supply: Diversify sources
  - Enable Autonomous: Build off-regional responses
  - Incentivize: Create market mechanisms
- The question: Will our financial models continue to work?
- Water Governance: Local level balances more important than government service delivery.

# Core Arguments

- Conventional models face fundamental challenges in the face of climate change, urbanization and economic development;
- Emergent adaptive strategies are important
- Particular opportunities may lie in three areas that build off existing adaptive responses:
  - The formalization of existing responses (e.g. institutionalization and excess)
  - Recognizing and supporting existing responses and incentives, identifying actors; and
  - Institutional changes that support distributed organizations and distributed responses, and the application of information technologies



**MANY THANKS!**

For more information, please visit:

**[www.i-s-e-t.org](http://www.i-s-e-t.org)**

