



# Better Late than Never: A Study on Shanghai's Strategy for Sea Level Rise

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The future if we do nothing...



Source: Shanghai: Sea Level Rise by 20 m, *China National Geography*, Issue 4 2010

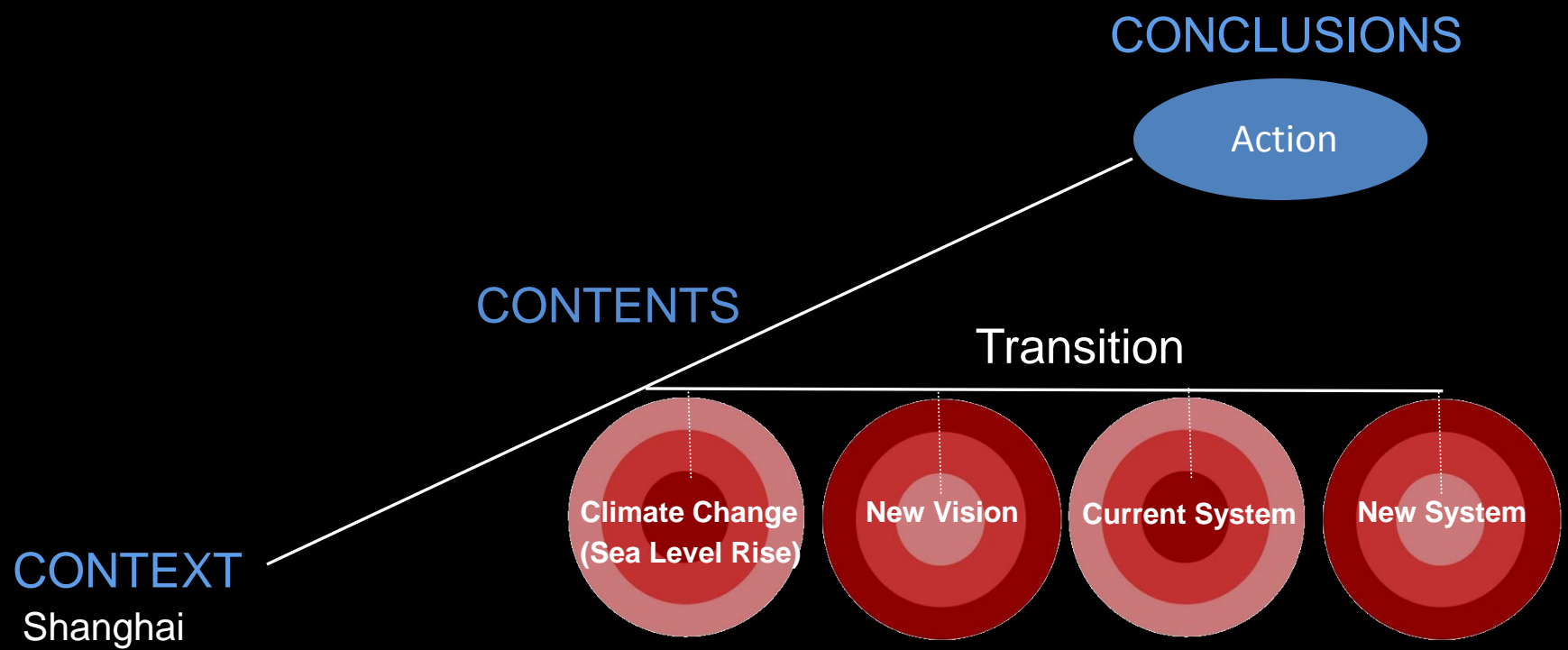
## What science tells?



Figure 1: Sensitivity Ranking of Mega-cities in Asia  
Source: WWF (2009) *Mega-Stress for Mega-Cities: A Climate Vulnerability Ranking of Major Coastal Cities in Asia*



Figure 2: Overall Vulnerability Ranking of Mega-cities in Asia  
Source: WWF (2009) *Mega-Stress for Mega-Cities: A Climate Vulnerability Ranking of Major Coastal Cities in Asia*



# CONTEXT



Shanghai Global Location



City of Shanghai

Area: 6340.5 km<sup>2</sup>  
Population: 19.213 Million (2009)  
Source: Shanghai Statistics Bureau



Shanghai National Location

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### Climate Change

#### Tough Situation

- *Temperature Increasing*
- *Extreme Weather Events*
- *Sea Level Rise*

### New Vision

#### Post-EXPO Era & Towards an International City

- *Financial Centre*
- *Shipping Centre*
- *Economic Centre*
- *Trade Centre*

### Current System

#### Policy Foundation & Practice

- *Researches*
- *Low Carbon Economic Practice Area Scheme (LCEPA Scheme)*
- *Shanghai World Expo*

### New System

#### Enhanced Policies & Planning

- *The 12<sup>th</sup> Five-Year Plan (Proposed)*
- *Promoting the Role of Planning*

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# Climate Change

## Tough Situation

- Temperature Increasing
- Extreme Weather Events
- Sea Level Rise

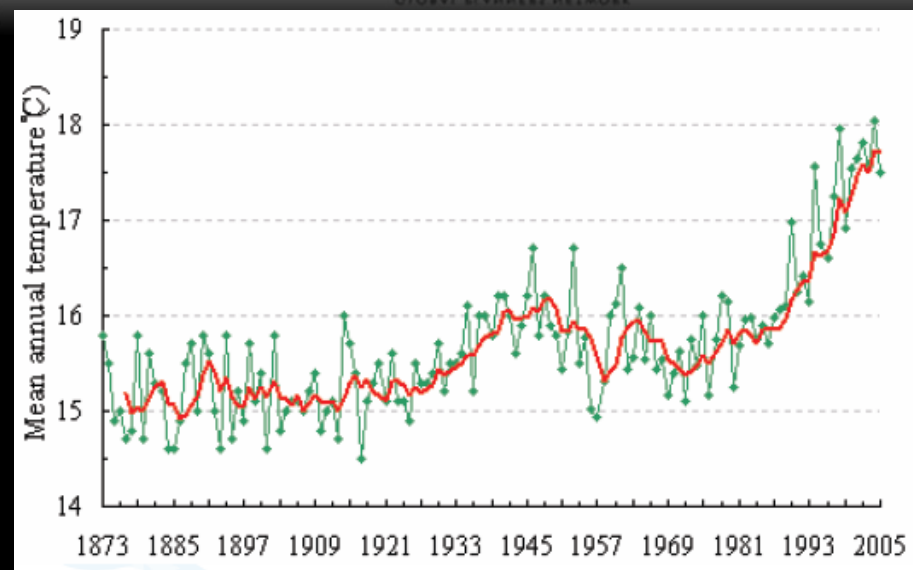


Figure 3: Mean Annual Temperature of Shanghai (1873-2005)  
Source: Jun Shi (2006) Urbanisation and Climate Change in Shanghai and the Yangtze River Delta Area

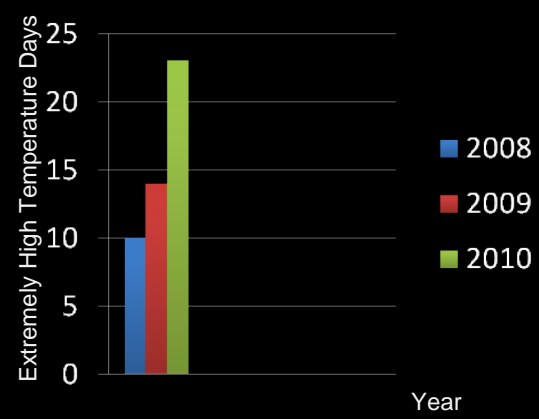


Figure 5: Extremely High Temperature in Shanghai (2008-2010)  
Source: Shanghai Meteorology Bureau

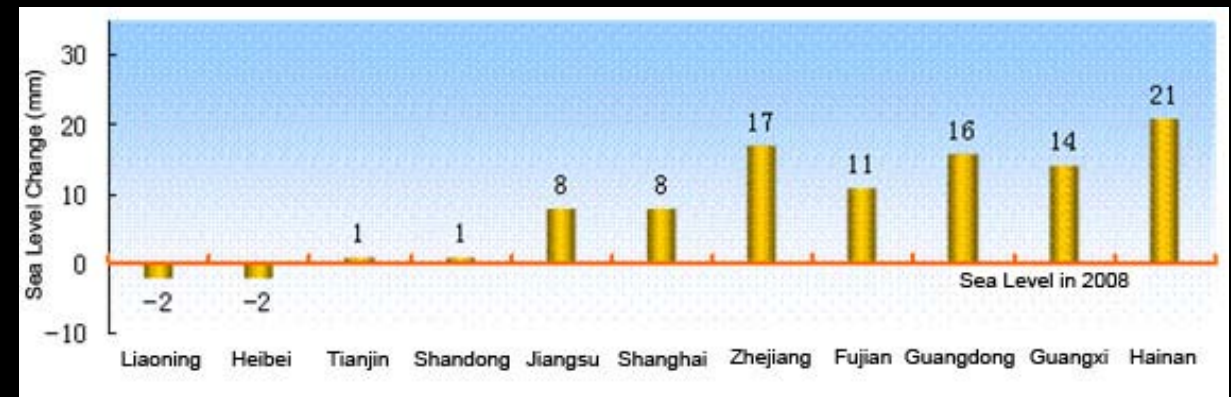


Figure 4: Sea Level Change Compared to 2008 of China Main Coastal Provinces and Municipalities  
Source: State Oceanic Administration of China, 2010

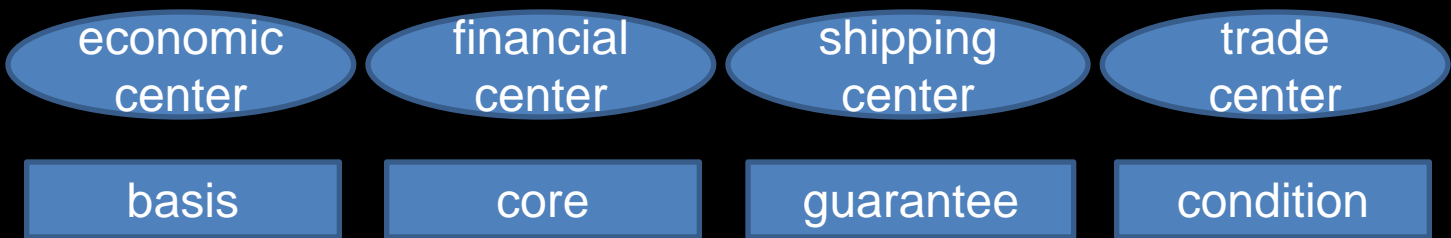
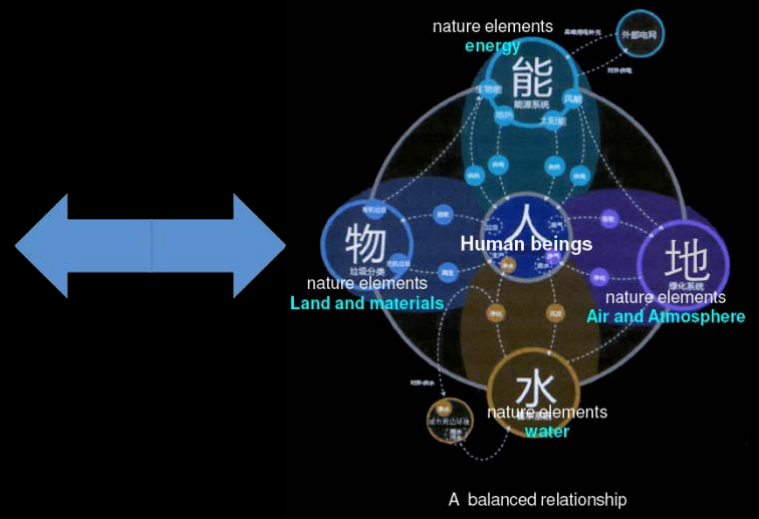
# New Vision

Post-EXPO Era & Towards an International City

- Financial Centre
- Shipping Centre
- Economic Centre
- Trade Centre



Figure 6: Site Plan of Shanghai World Expo 2010  
Source: <http://www.expo2010.cn>



## New Vision

### Post-EXPO Era & Towards an International City

- Financial Centre
- Shipping Centre
- Economic Centre
- Trade Centre



Financial Centers Layout

Source: <http://dfdaily.eastday.com/d/20090326/u1a552651.html> & Google Earth



Shipping Center Layout

## Current System

### Policies

Year	Policies Related to Climate Change Released by Shanghai Municipal Government
2010	Implementation Opinions for Carrying out State Council Announcement of Ensuring Realising the Carbon Reducing Goal in the 11 <sup>th</sup> Five Years in Shanghai
2010	Key Work Arrangement for Energy-saving, Carbon Reducing, and Climate Change in Shanghai in 2010
2009	Key Work Arrangement for Energy-saving and Carbon Reducing in Shanghai in 2009
2008	Schemes and Methods for Energy Saving Calculation Monitoring and Evaluation
2007	The 11 <sup>th</sup> Five Years Plan of Environmental Protection and Eco-construction of Shanghai
2006	The 11 <sup>th</sup> Five Years Plan of Energy Saving of Shanghai

Table 1: Policies Related to Climate Change Released by Shanghai Municipal Government  
Source: Collected from the Official Website of Shanghai Municipal Government

### Practice

- Chongming Island – *Low Carbon Eco-Practice Area*
- Lingang New City – *Low Carbon Development Practice Area*
- Hongqiao Hub – *Low Carbon Business Practice Area*

### Measures for Dealing with Sea Level Rise

- Mitigate Pollution by Developing New Energy
- Promote Green Transport System
- Underground Water Recharge
- Water Lock Construction

## Policy Foundation & Practice

- *Researches*
- *Low Carbon Economic Practice Area Scheme (LCEPA Scheme)*
- *Shanghai World Expo*

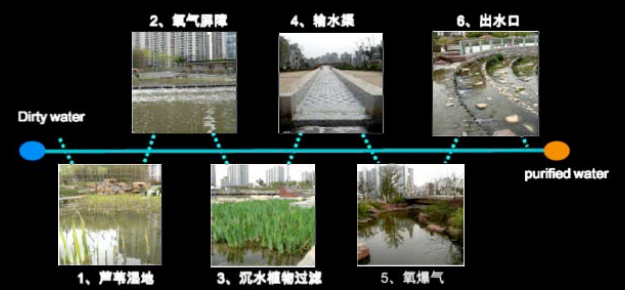
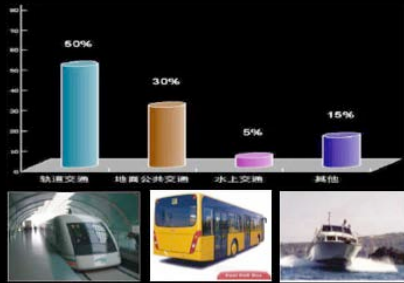
## New System

### Enhanced Policies & Planning

- The 12<sup>th</sup> Five-Year Plan (Proposed)
- Promoting the Role of Planning

- | No. | Action Tasks  |
|-----|---|
| 1   | Improve Urban Planning and Development Mode   |
| 2   | Enhance Urban-rural Eco-environmental Construction  |
| 3   | Adjust Industrial Structure of Shanghai   |
| 4   | Promote Feasibility Study of Urban Engineering Construction Climate                                     |
| 5   | Adjust the Allocation and Standard of Urban Life System   |
| 6   | Improve Urban Buildings and Transport   |
| 7   | Enhance the Protection of Oceanic Eco-system and the Proper Development of Tidal-flat Area              |
| 8   | Protect Coastal Lines and Enhance the Strategies in Adaptation of Sea Level Rise                        |
| 9   | Optimise Urban and Rural Integrated Green System  |
| 10  | Improve the Overall Disaster Prevention and Response Capability   |
| 11  | Enhance Public Sanitation System Construction   |
| 12  | Build Agricultural Disaster Monitoring System   |
| 13  | Build A Water-saving Society, Optimise Waster Resources Management and Monitor the Salt-water Intrusion |

Source: The 12<sup>th</sup> Five-year Plan of Energy-saving and Responding to Climate Change of Shanghai (Proposed Version), Shanghai Municipal Development and Reform Commission, 2010



Source: Shanghai World Expo Site Plan

## CONCLUSIONS

### Action

- Shanghai suffers greatly from the effects of climate change such as sea level rise
- A number of measures have been developed to response to climate change issue in Shanghai
- The 12<sup>th</sup> Five-Year Plan sets a milestone for the role of planning in fighting against climate change
- Facing such an urgent situation, joint efforts of actions are important.



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Thank you for your attention!