Harnessing Co-Benefits of Urban Adaption to Climate Change

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Harnessing Co-Benefits of Urban Adaptation

- Climate Mitigation and Adaptation in Transportation
- Co-Benefits and Co-Cost
- Policy and Research Agenda
Harnessing Co-Benefits of Urban Adaptation

- Climate Mitigation and Adaptation in Transportation
- Socioeconomic and Environmental Repercussions of Climate Change
- Cost of Inaction
Socioeconomic and Environmental Repercussions of Climate Change

Emissions Allocated to Economic Sectors

Note: Does not include U.S. territories.

Socioeconomic and Environmental Repercussions of Climate Change

- Sea Level Rise due to Melting Glaciers
  *Several Millennia*
- Sea Level Rise due to Thermal Expansion
  *Centuries to Millennium*
- Temperature Stabilization
  *Several Centuries*
- CO₂ Stabilization
  *100 - 300 Years*
- CO₂ Emissions

Intergovernmental Panel on Climate Change 2007
The Cost of Inaction

Infrastructure and Economy

Coastal and Riverine Flooding

Direct Damages to Infrastructure
The Cost of Inaction

Infrastructure and Economy

Coastal and Riverine Flooding

Direct Damages to Infrastructure
The Cost of Inaction

Infrastructure and Economy

- Coastal and Riverine Flooding
- Direct Damages to Infrastructure
- Loss of Economic Performance

Transportation Impacts
The Cost of Inaction

Infrastructure and Economy

Coastal and Riverine Flooding
Direct Damages to Infrastructure
Loss of Economic Performance
Public Sector Deficit
Transportation Impacts
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- Climate Mitigation and Adaptation in Transportation
- Co-Benefits and Co-Cost

- Mitigation-Adaptation Dichotomy
- Illustrations
The Mitigation-Adaptation Dichotomy

Mitigation
Global Benefits
Local Benefits
The Mitigation-Adaptation Dichotomy

**Mitigation**
- Global Benefits
- Local Benefits

**Adaptation**
- Local Benefits
- Global Benefits
Harnessing Co-Benefits
Illustrations

- Land Use and Energy Reliability
Harnessing Co-Benefits
Illustrations

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Harnessing Co-Benefits Illustrations

- Land Use and Energy Reliability
- Urban Infrastructure, Ecosystems and Health
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Climate Change as a
- Threat Multiplier
- Need Magnifier
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Harnessing Co-benefits of Urban Adaptation

1. The State of the Art
   - Concentration on Select Benefits
   - Call for High-resolution Climate Data
   - Capital Stock and Institution Lock-in
   - Orientation towards Established Economic Goals
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   - Concentration on Select Benefits
   - Call for High-resolution Climate Data
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2. Going Beyond the State of the Art
   - Multi-criteria Approaches
   - Theory-injection and –extraction
   - New Economic Performance Measures
For more information...

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