

# LAND MANAGEMENT AND CLIMATE CHANGE

WORLD BANK ACTIONS AND OPPORTUNITIES IN ASIA AND THE  
PACIFIC

Dialogue on Sustainable Digital Transformation in Asia and the Pacific  
ITU Webinar, 19 October 2021

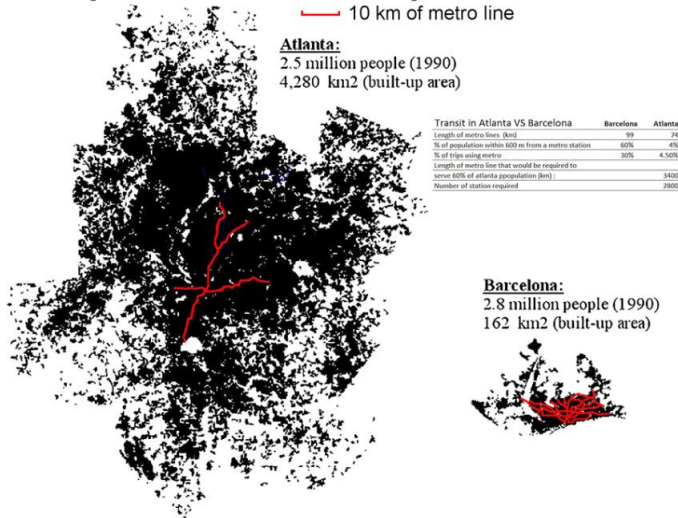
# CITIES – CRUCIAL ROLE FOR SUSTAINABLE DEVELOPMENT

Urban areas are responsible for 70% of the world's carbon emissions.

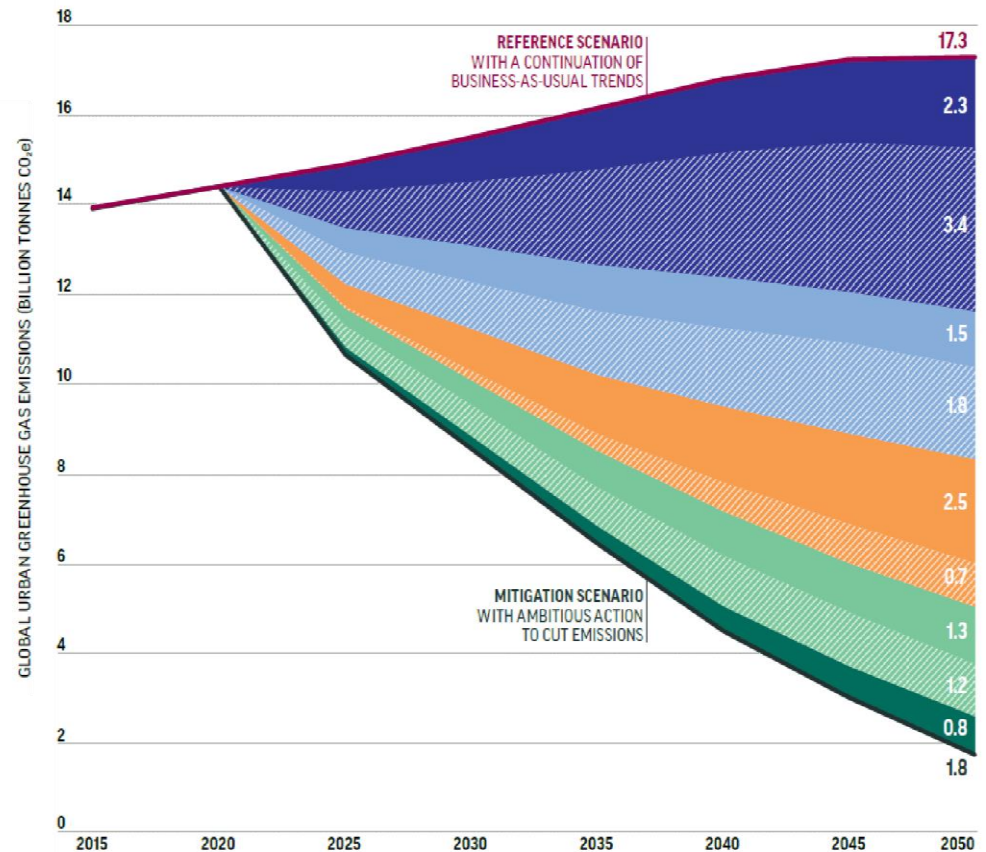
Cities can reduce emissions to nearly net-zero.

Density, form and infrastructure “lock in” urban carbon emission levels.

The Built-up Area of Atlanta and Barcelona Represented at the Same Scale



## HOW TO ACHIEVE 90 % REDUCTION IN URBAN EMISSIONS BY 2050

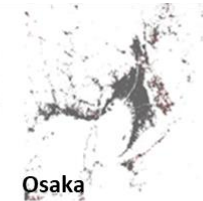
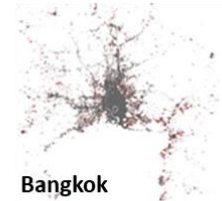
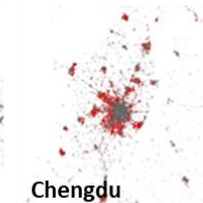
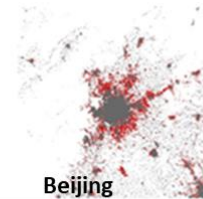
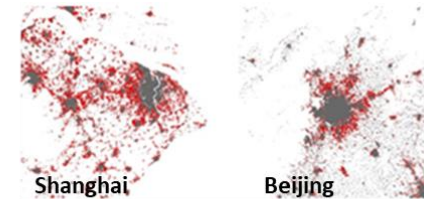
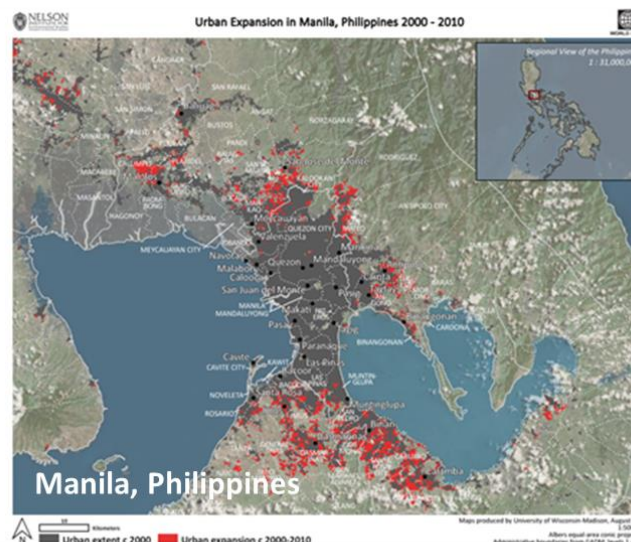
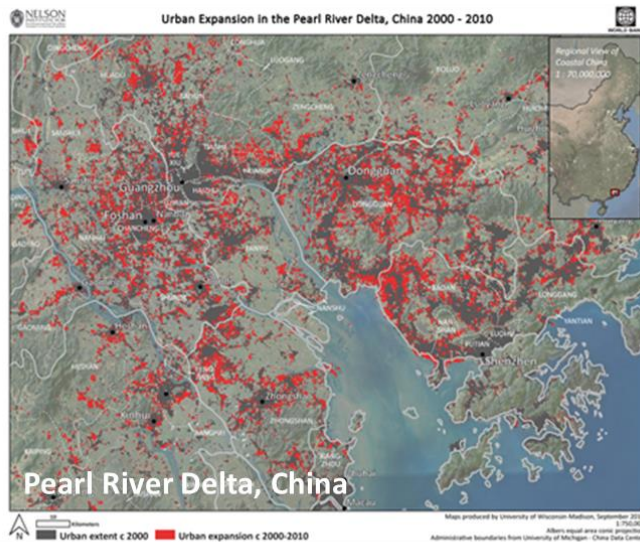


Source: Stockholm Environmental Institute for the Coalition for Urban Transitions, 2019

# SPATIAL EXPANSION OF URBAN LAND USE

East Asia is expected to account for over a quarter of urban land expansion over the 21st century

Compact, mixed-use spatial growth of cities can reduce carbon emissions, enhance economic agglomeration effects, and improve health outcomes



■ URBAN EXTENT c 2000    ■ URBAN EXTENT c 2010



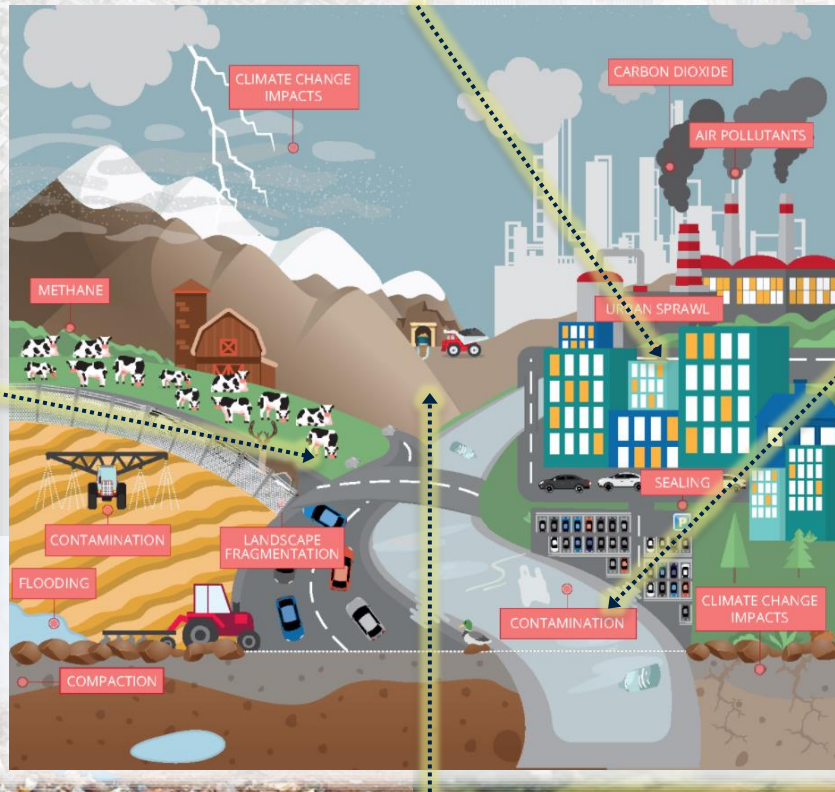
# LAND USE PLANNING AND CLIMATE CHANGE



EAP forecasts 33% increase in **urban population** which will require 600 million new housing units and 80% increase in **urban land** by 2050.



**Unplanned land use conversion** destroys floodplains, forests, wetlands and natural ecosystems and affects food security.



Unplanned urban areas are unhealthy, insecure and **vulnerable to climate hazards**. Informal settlements and poor infrastructure expose settlements to fire, floods and landslides.



**Informal rural – urban conversion** increases deforestation, consumes highly productive agriculture land, and increments pollution and waste.



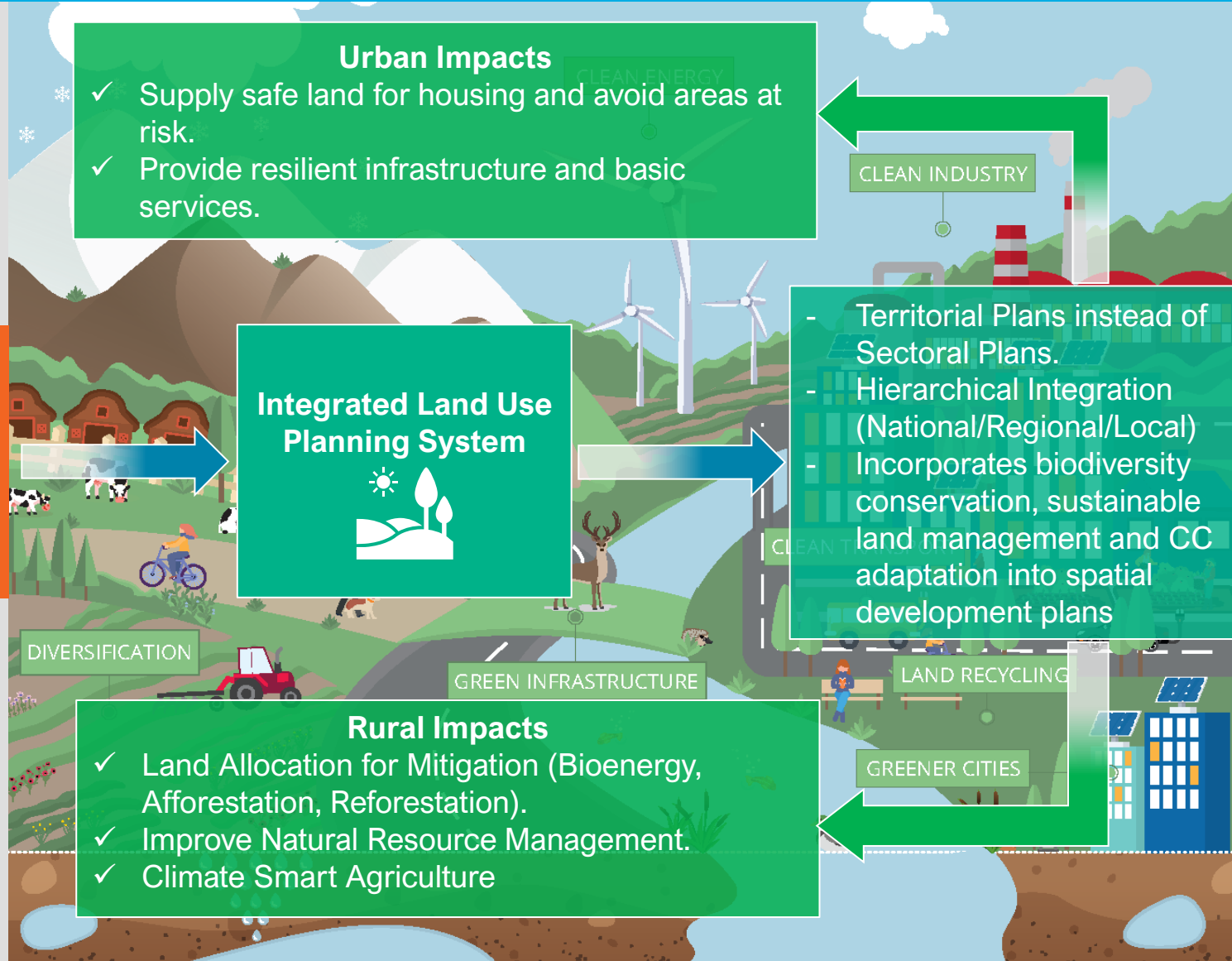
# LAND USE PLANNING AND CLIMATE CHANGE

Ineffective, fragmented, top-down designed, expensive and unmonitored.

## Current Land Use Planning Systems

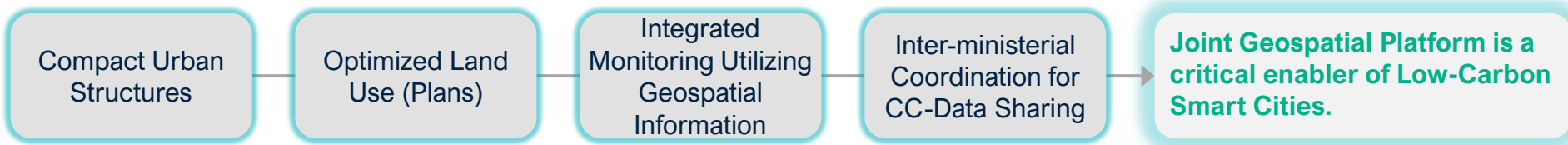


Do not provide full mitigation and adaptation benefits





# LOCATION-BASED INFORMATION FOR LOW-CARBON SMART CITIES

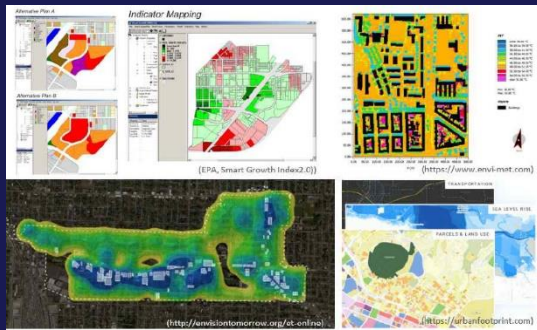


# LAND AND GEOSPATIAL INFORMATION FOR CLIMATE ACTIONS

## Parcel-based GHG Measurement

Land Use, Land Use Change and Forestry (LULUCF)

\* IPCC Guidelines for National Greenhouse Gas Inventories

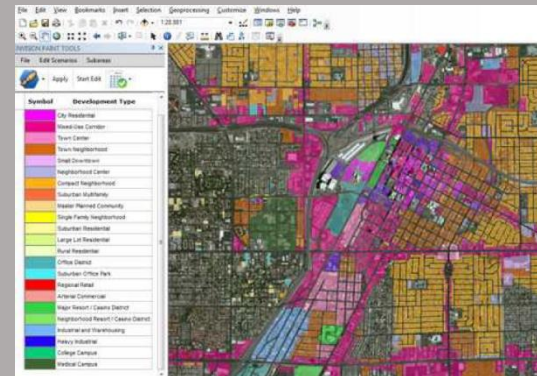


Parcel-based

- Forest land
- Cropland
- Grassland
- Wetlands
- Settlements
- Other land use

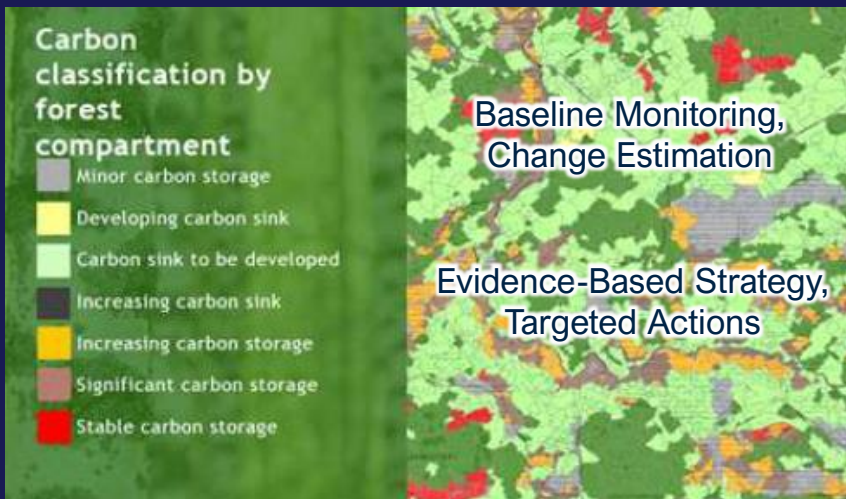
## Land and Geospatial Infrastructure

Geospatial information systems



- Comprehensive, precise analysis
- Risk assessment
- Response planning to disasters
- Permitting
- Development controls

## Advanced Land Use and Carbon Classification



Carbon classification by forest compartment

- Minor carbon storage
- Developing carbon sink
- Carbon sink to be developed
- Increasing carbon sink
- Increasing carbon storage
- Significant carbon storage
- Stable carbon storage

Baseline Monitoring, Change Estimation

Evidence-Based Strategy, Targeted Actions

## Repository of Land, Land Use, Assets and Values



- Rights, assets, values and owners, and land use analysis
- Repositories for disaster response, compensation and insurance
- Landscapes management, monitoring and change detection



# TENURE SECURITY AND ADAPTATION

➤ Annually 19 to 25 million people are displaced by climate-disasters (2015-2019) accumulating to **up to 1 billion displacements by 2050**.

➤ **Landholders with insecure tenure are generally:**

- Most exposed to climate-disasters;
- Most sensitive to climate-disasters;
- Having low adaptive capacity against climate-disasters.

➤ **Disasters can destroy property boundaries and records.** In Banda Aceh after 2004 tsunami:

- 170,000 deceased, 500,000 people displaced, 250,000 properties damaged, and 53,795 land parcels destroyed.
- Land ownership documents and property boundaries lost.
- 28.5 million US\$ WB grant helped to reconstruct property rights and records.
- Customary courts resolved disputes and inheritance claims.

## Recognizing, registering, and digitizing property rights

Protects rights and their owners during disasters, enables targeted relief and faster reconstruction



# LAND IS KEY FOR CLIMATE ACTION



# Thanks for listening

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