

12<sup>th</sup> Asia- Pacific Eco-Business Forum

# REDUCING ENVIRONMENTAL BURDEN IN BANDUNG CITY



**Bandung City Government**

2016

# Bandung City

Bandung city is the capital of West Java Province in Indonesia, the country's third largest city with the population of 2.5 million in 2013.





# Bandung City

Located 768 metres above sea level, approximately 140 kilometres south east of Jakarta, Bandung has cooler temperatures year-round than most other Indonesian cities.

The city lies on a river basin surrounded by volcanic mountains.



# **CHALLENGES, GAPS AND CONSTRAINTS OF BANDUNG CITY**



# GHG Emission from Transportation and Uncontrolled Solid Waste Management

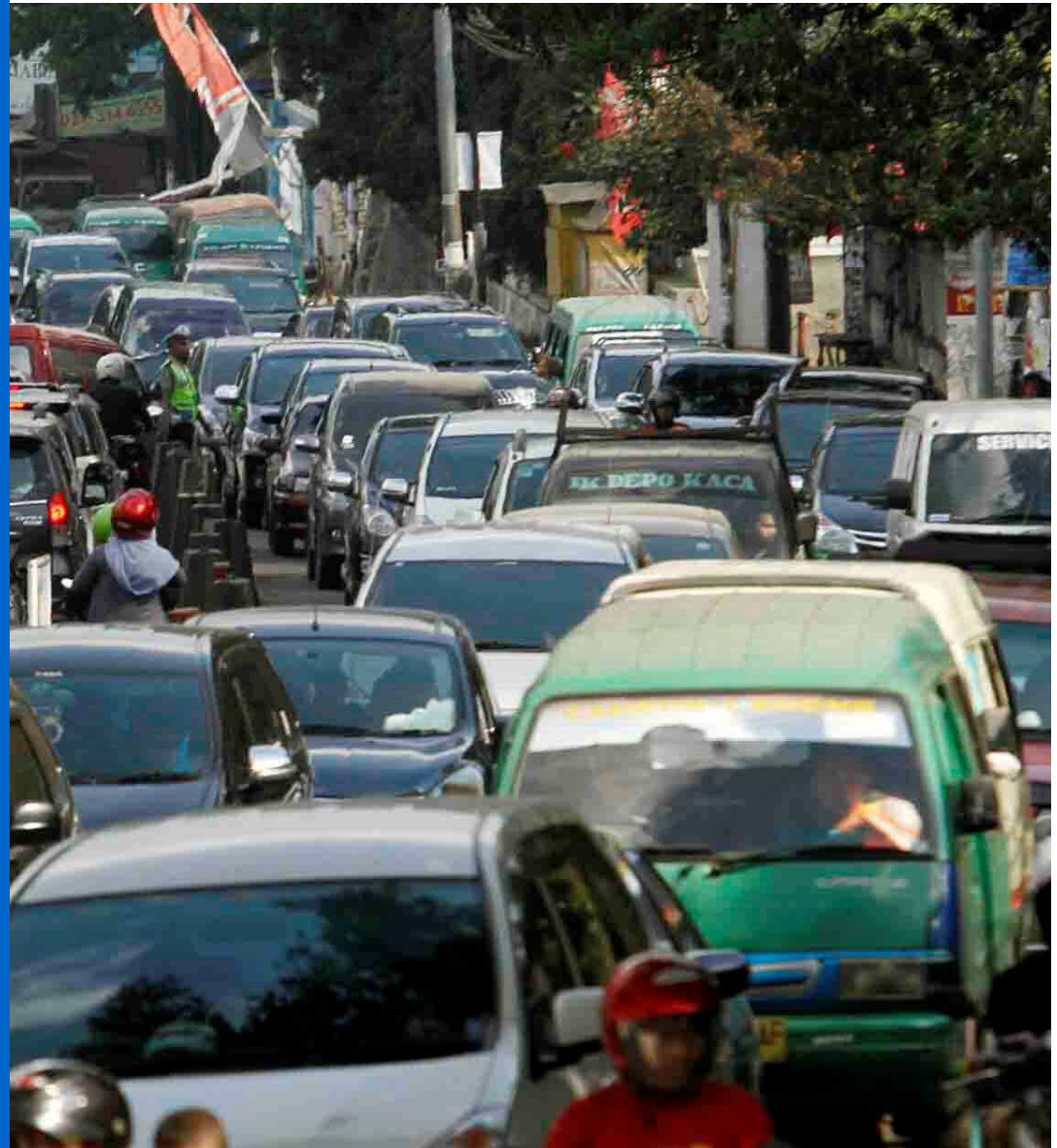


Large urban agglomerations in Bandung inevitably lead to GHGs emission from transportation sector.

# GHG Emission from Transportation and Uncontrolled Solid Waste Management

Number of vehicles in 2014 was 1,443,217 units:  
Motorcycles (1,041,421 units, 72%)  
Passanger Cars (330,082 units, 23%).

The growth in vehicle traffic volume is between 10 - 15 percent per year.





# GHG Emission from Transportation and Uncontrolled Solid Waste Management

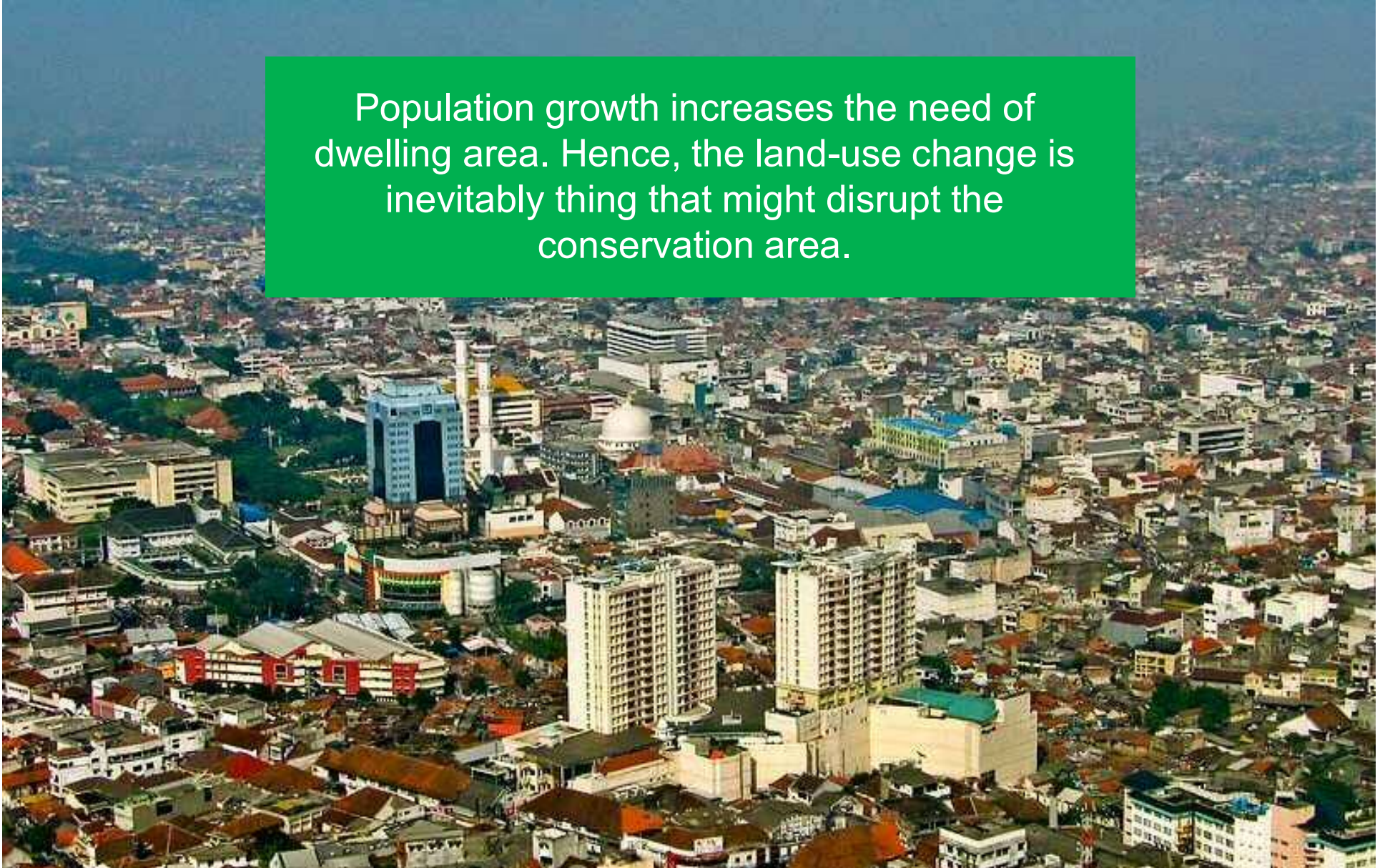
Total emission from uncontrolled solid waste management is predicted about 17,000 ton CH<sub>4</sub> per year.





# Land-Use Change

Population growth increases the need of dwelling area. Hence, the land-use change is inevitably thing that might disrupt the conservation area.





# Land-Use Change

For instance, North Bandung area that is defined as water catchment and should be protected due to its important function, has been changed to residence area.

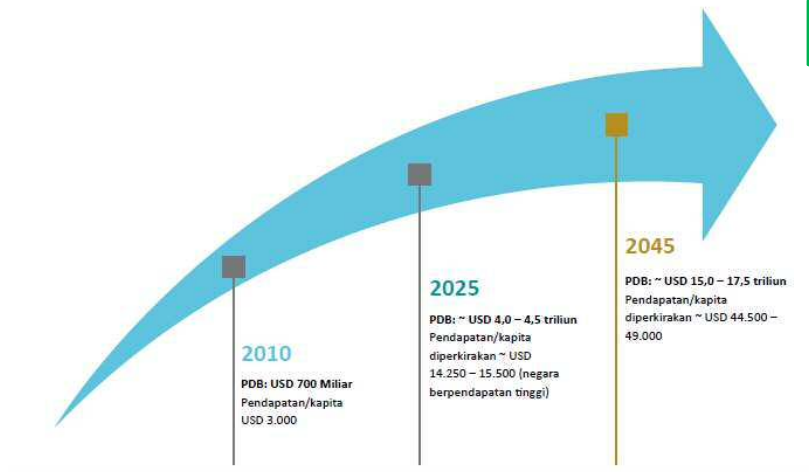
This affects the ecological function of the forest not only for water preservation but also for producing fresh air and neutralizing the air pollution.



**CONCEPT OF BANDUNG CITY  
FOR REDUCING  
AERIAL ENVIRONMENTAL BURDEN  
THROUGH  
ECO-CITY AND ECO-VILLAGE  
IMPLEMENTATION**



# Background: Control Environmental Impact



## Indonesia Economic Growth



## Environmental Impact

### Environmental Impact

Environmental Pollution and Damage

Natural Resources Shortage

Vulnerability from Climate Change Risk

Economic Impact from Climate Change Risk

# Bandung as Eco-City

**1** : Co-benefit and environmental innovation

**2** : *Green policy, green economy* and low carbon societies

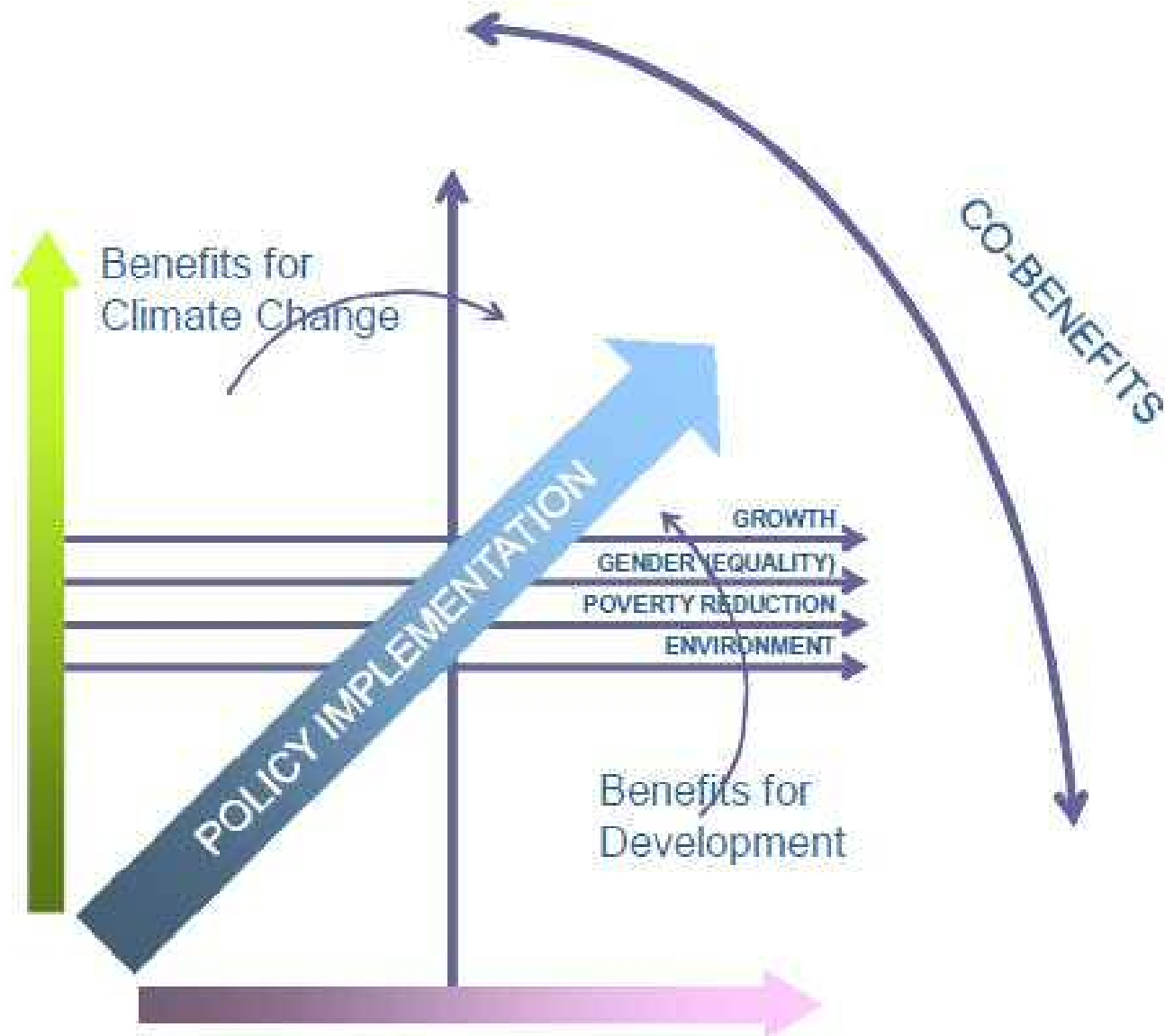
**3** : Climate Change Resilience



# Eco-City Indicator

- Co - benefit analysis  
To maximize the environmental benefits of each policy by integrating the completion of environmental issues with economic growth
- Environmental Innovation ( green technology ) :  
Implementation of innovation and environmental technologies in industry and community level
- Implementation of Action Plan for the Regional Greenhouse Gas Reduction
- Implementation of Vulnerability and Climate Change Risk Assessment and *Program Kampung Iklim* (Proklim)
- Implementation of Green Policy and Green Economy

# Co-benefit





# Bandung City promote *Green Technology*



## **Pollution management:**

- Air pollution control
- Wastewater and solid waste management
- Remediation and clean-up of soil and water
- Noise and vibration abatement
- Environmental monitoring analysis and assessment



## **Cleaner technologies and products:**

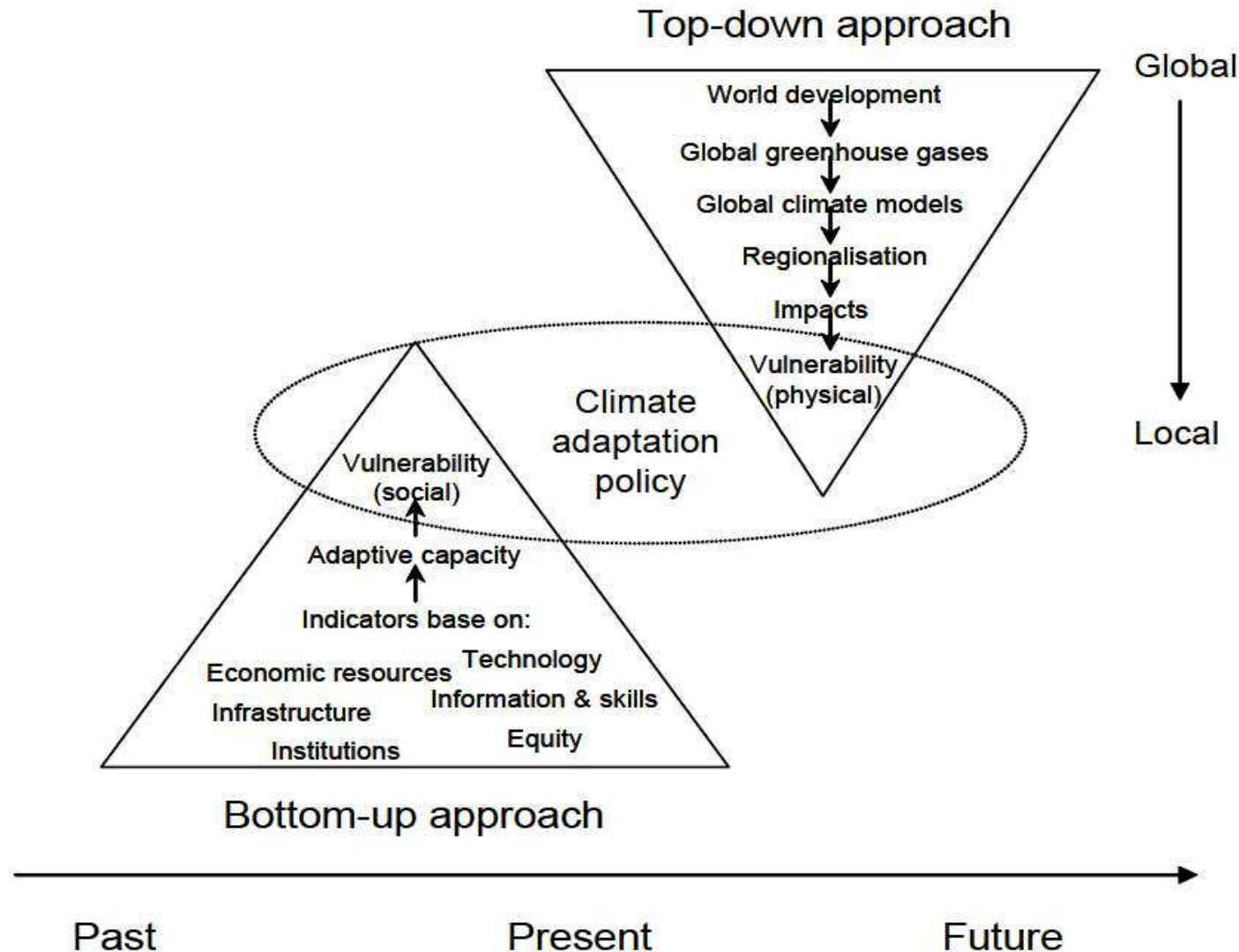
- Cleaner/resource-efficient technologies and processes.
- Cleaner/resource-efficient products.



## **Resource management:**

- Water supply
- Recycled materials
- Renewable energy plant
- Heat/energy saving and management
- Sustainable agriculture and fisheries
- Sustainable forestry
- Natural risk management
- Eco-tourism.

# Bandung city implement top-down and bottom-up approach in climate change adaptation







# Eco-Village

Eco village is the concept of spatial and area residents who pay attention to quality and ecological quality holistic because it involves all dimensions of life of living beings.

Eco village is considering the development of rural areas achieving quality individuals, families, communities and sustainable quality of the natural environment.

07/01/2013

# Sustainable Transportation

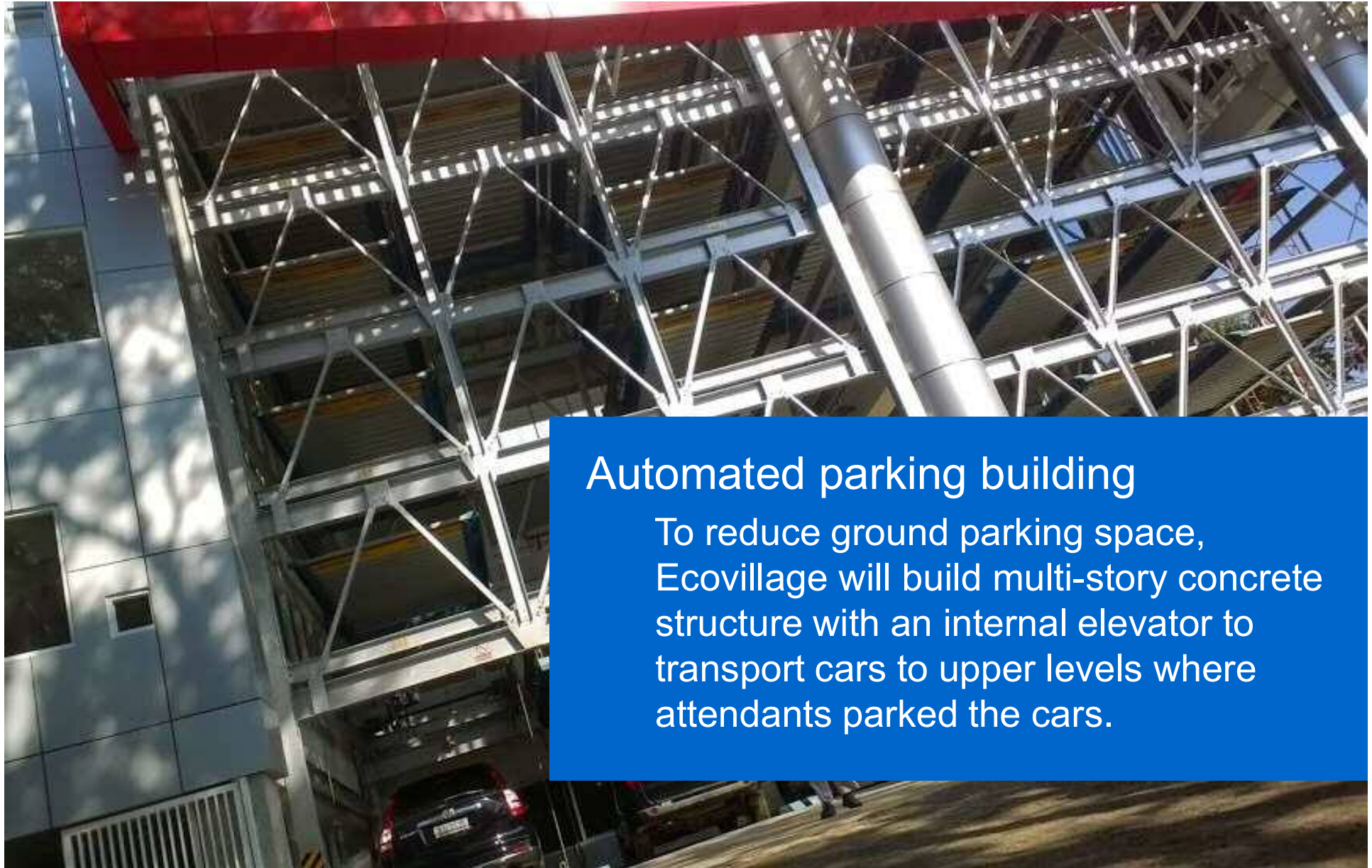
## Bike Sharing

Bandung Ecovillage#1 has provided bicycle sharing system that is a service in which bicycles are made available for shared use to individuals on a very short term basis.





# Sustainable Transportation



## Automated parking building

To reduce ground parking space, Ecovillage will build multi-story concrete structure with an internal elevator to transport cars to upper levels where attendants parked the cars.



# Sustainable Transportation



## BUS

Bandung has developed Mass Rapid Transportation facilities. Bandung Ecovillage program will increase amount of bus in Bandung.

# Sustainable Transportation



## Skywalk

To increase bike user and walking habit, Ecovillage will provide Skywalk, a steel bridge along Jalan Tamansari-Cihampelas road.



# Car Free Day

Every Sunday morning from 06.00 am to 10.00 am.

Located in 3 main street in Bandung.

Will be added 30 more streets in whole Bandung (equal to one main street in every district).





# Clean Emission Zone for Parking Area



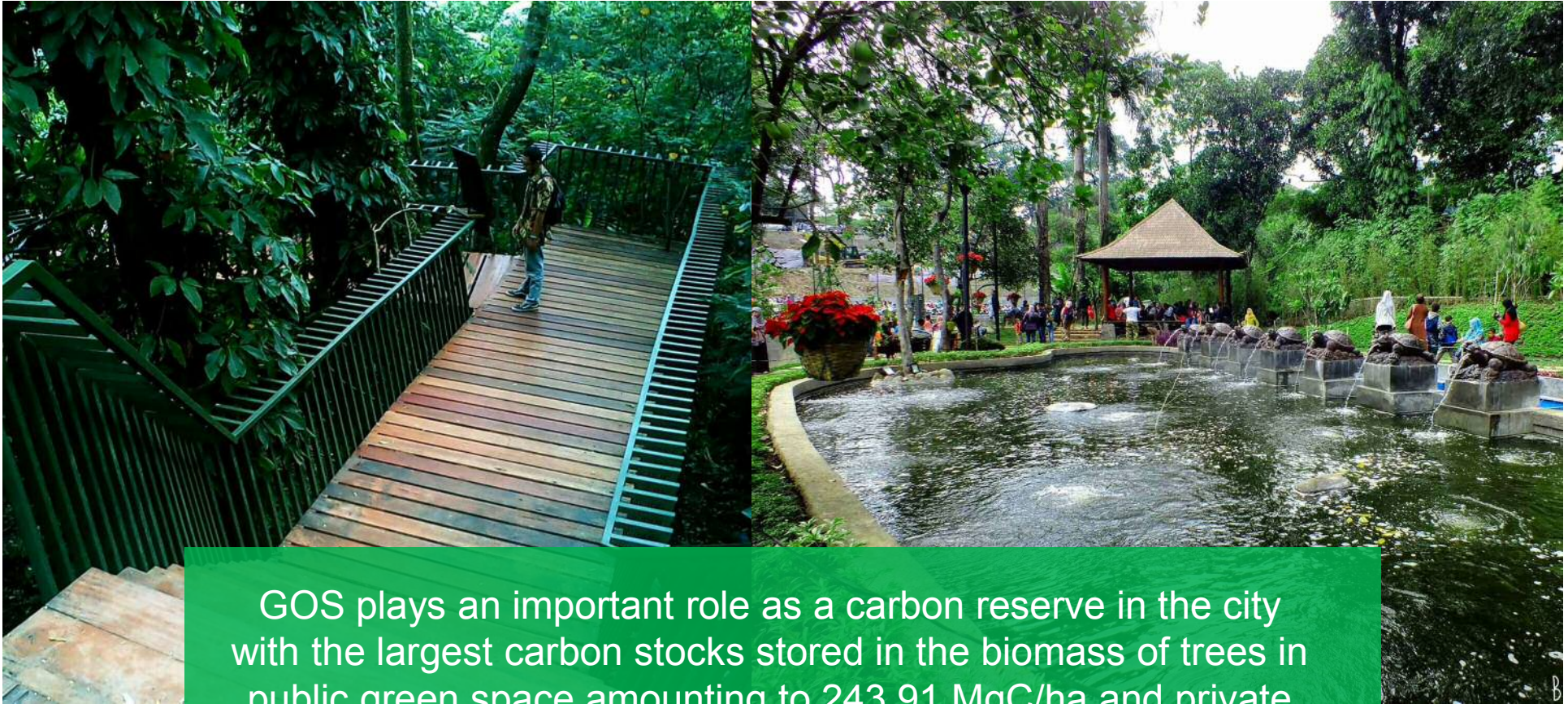
Clean Emission Zone determined as a zone which can only access by low emission vehicles or vehicle which had passes the efficient emission test.

Several Government Office, Public Parking site, City Park and several Mall and Corporate Official Site were participate in regulating Clean Emission Zone Programs.





# Green Open Space (GOS)



GOS plays an important role as a carbon reserve in the city with the largest carbon stocks stored in the biomass of trees in public green space amounting to 243.91 MgC/ha and private green space Bandung at 81.74 MgC/ha.

The average carbon stock GOS Bandung is 183.10 MgC/ha. Carbon stocks in each type of green space is potential to be improved.



# Trash Pick Movement



Trash Pick movement is an effort in order to maintain cleanliness in the environment by providing 10 to 30 minutes.

The Movement held three days a week, every Monday, Wednesday , and Friday at schools and offices.



# Renovation of River banks



Riverbanks are frequently used by the public as a garbage dump.

Improvements along the river make this location is clean, free from the garbage and comfortable.

The pedestrian pathways are also provided so that many people are encouraged to come along and do some activities around the rivers.

# Renovation of Pedestrian Pathways



Pedestrian pathways repair will add comfort for people to walk in reaching their destinations.

This effort will reduce the use of vehicles in the city because people have more options to travel. The traffic jam can be also avoided and reduced.

Hence, the air pollution can be minimized gradually.



# Thematic Parks (Improving Green Open Space)



Theme parks are built and used by the Bandung city government to attract more people to do outdoor activities in public space.

While enjoying the fresh air, green trees and clean space, the government also want to use the parks as media and venue for socializing programs of air quality management activities as well as promoting the activities of clean air within the communities.

# Free School Buses



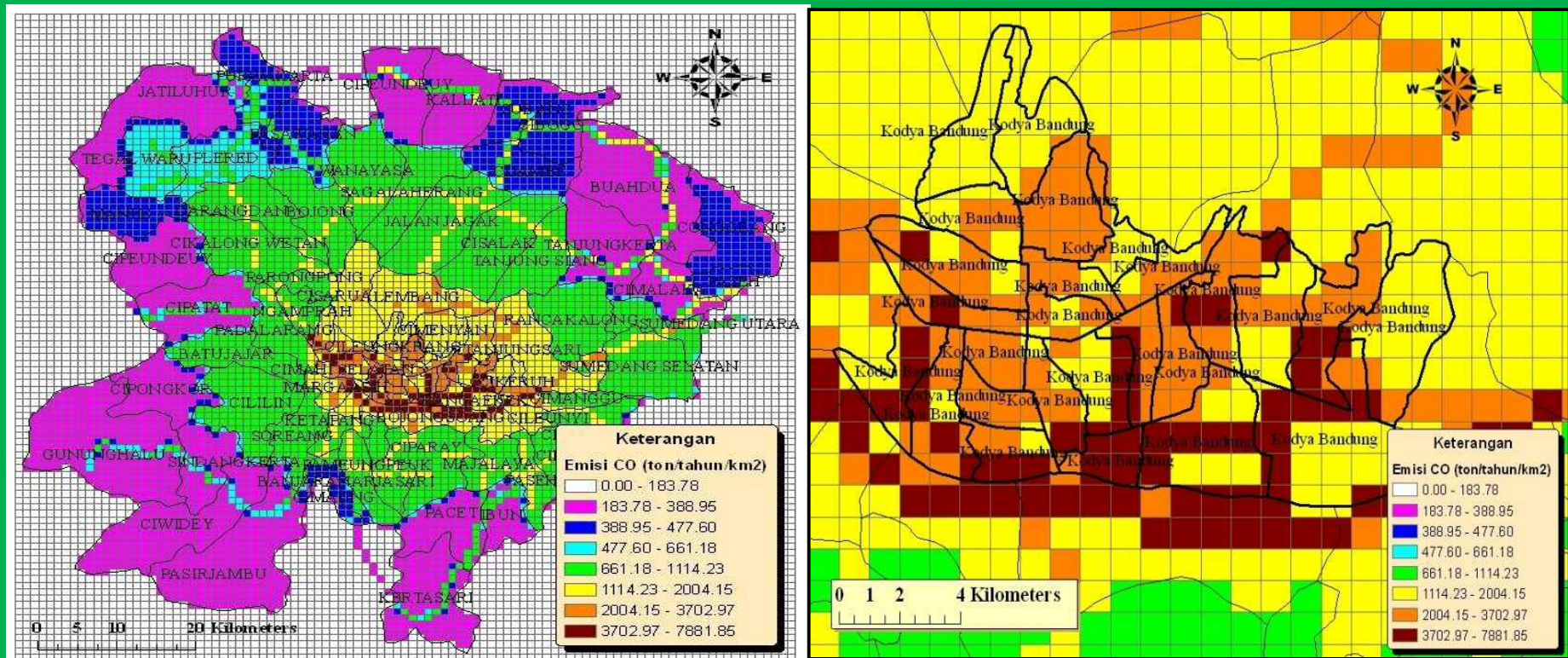
To reduce the air pollution due to transportation particularly to reach schools, government of Bandung provide free school buses for students. This program is aimed to decrease the use of private vehicles at schools.

In addition, there is also a program in which every child is supposed to choose the nearest school around their home. It will cut down the traffic jam and transportation activities that are related to school activities.



# GHGs Emission Inventory

Bandung city conducted GHGs Emission Inventory for calculating GHGs emission from each sector such as energy, industry, agriculture, forestry, and waste.



# Legislation and Regulation



GHGs emission in Bandung City is managed through a range of municipal government acts and regulations (laws).

The national and provincial government also plays an important role due to regulate lower GHGs emission in Bandung city.



**Thank you for your  
attention...**