



DEVELOPMENT OF ENVIRONMENTAL SUSTAINABLE TRANSPORTATION (EST) IN INDONESIA



Current Situation



Cities in Java Islands and some of Sumatera Island has increasing on traffic congestion and pollution



Urban Transportation Problems

- Uncontrollable car and motorbike growth
- Limited transportation network, preferable to cars
- Mismanagement of transportation facility utilisation
- Unstructured transportation network
- Uncontrollable urban development
- Population and economic growth with resulted to high demand growth

Focus of Transportation Development

- Coordination among national and local government
- Coordination among stakeholder involved
- Transport developing:

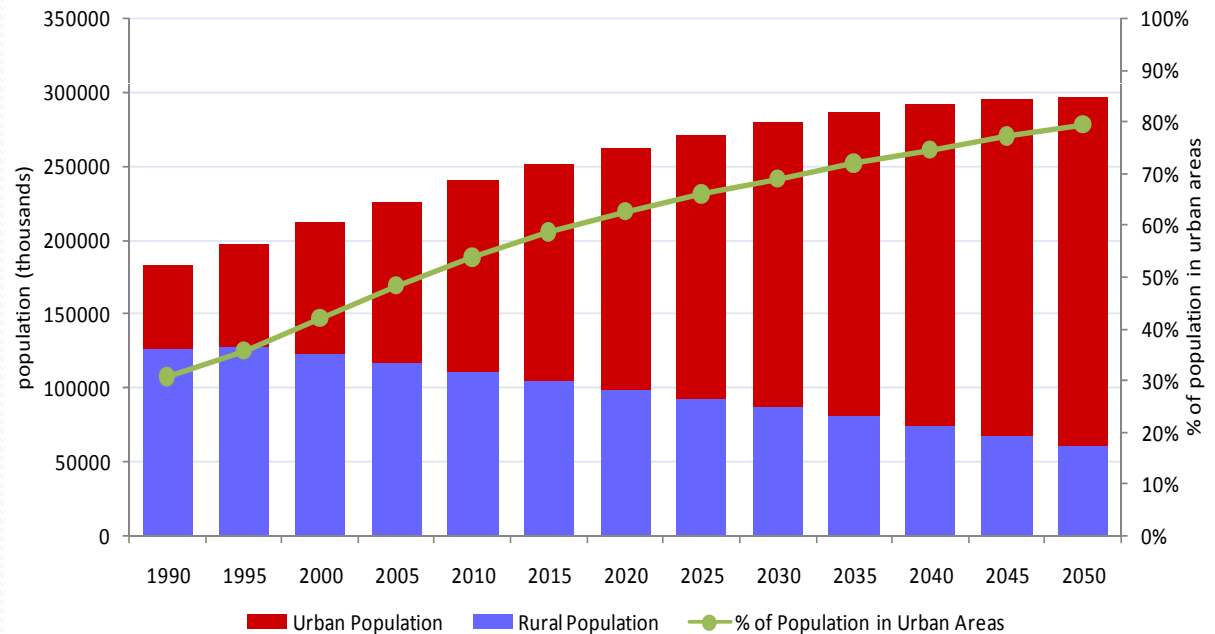
INSTITUTION	Percentages
Land Transport	9.91%
Railways	28.49%
Sea Transport	27.78%
Air Transport	17.51%
Another	16.31%

Source: MoT 2010

Urbanization increase between 1990 and 2005 and forecast for 2050

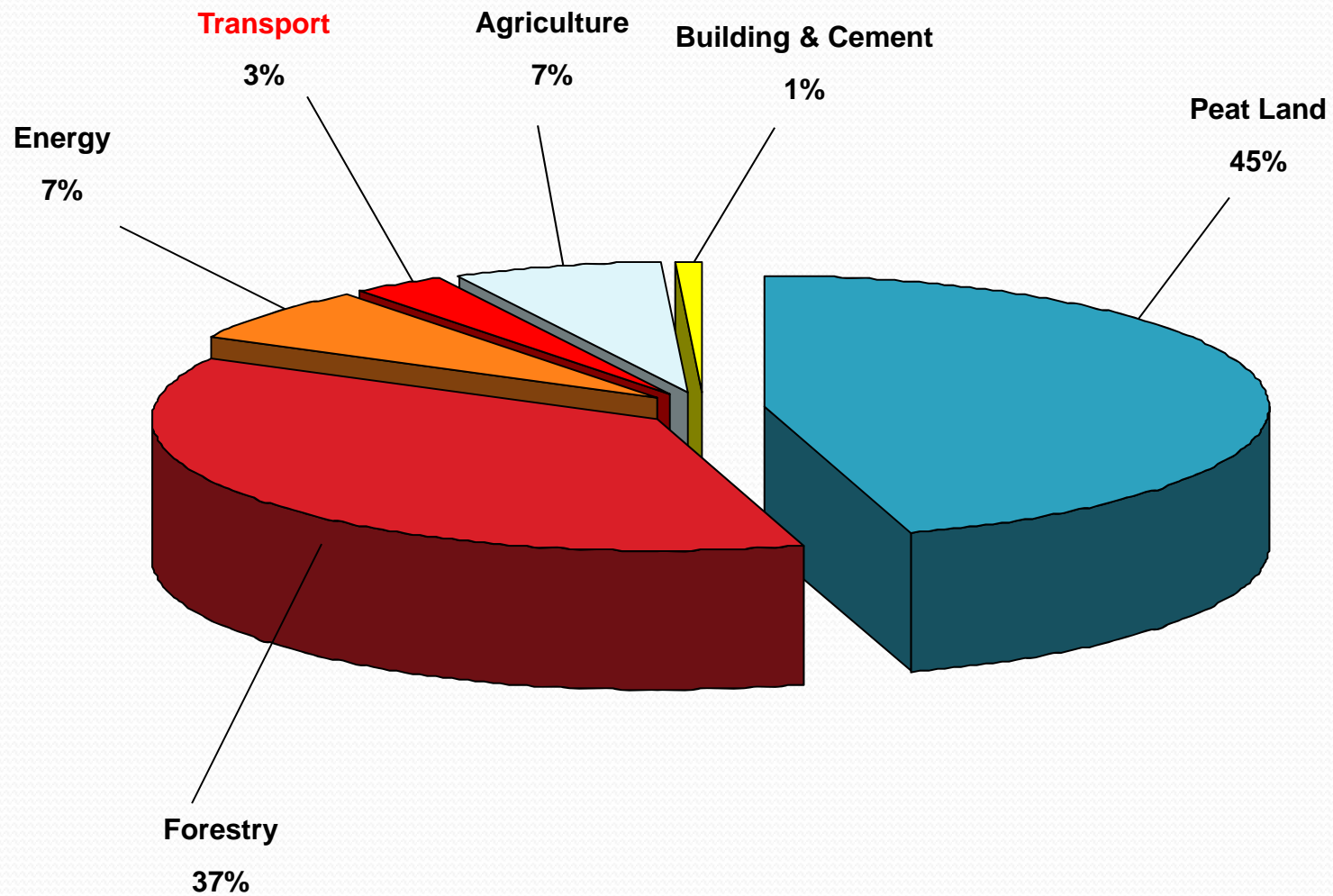


Urbanization

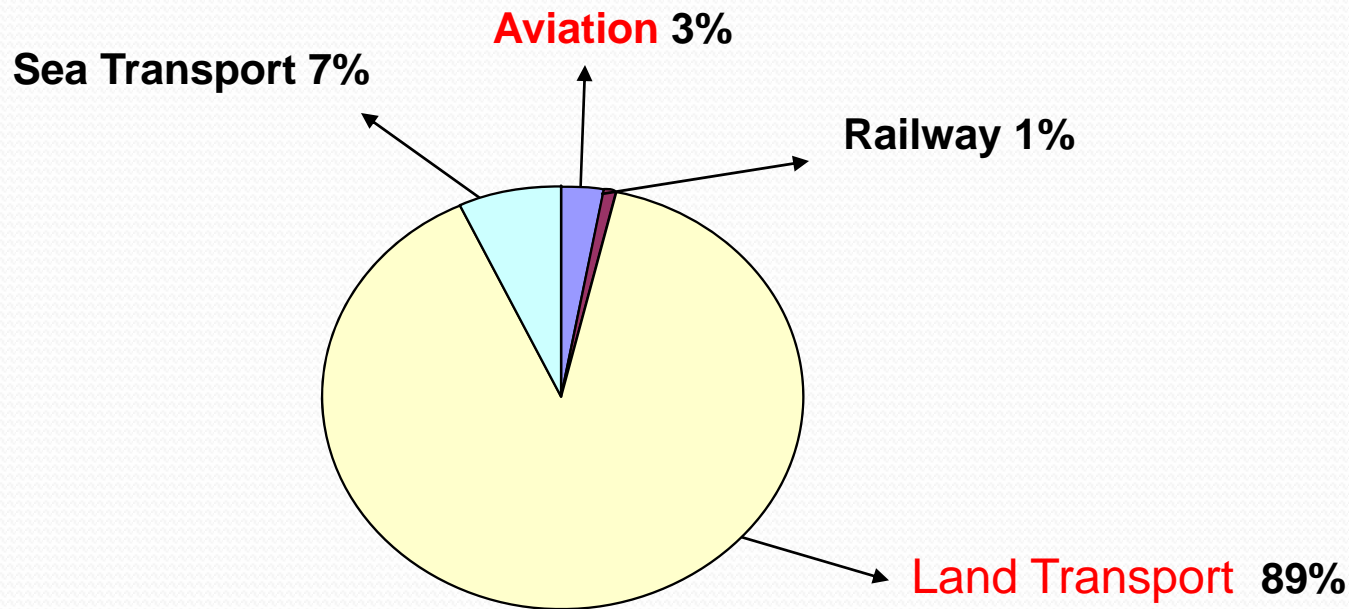


Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat

Percentage of Emission in Indonesia



Transportation Emission



2005

- 1) Emission from transportation is 70 million ton in 2005 (compare with total emission nationally 2250 million ton)
- 2) Transportation uses 33 mill kilo liter/year (i.e 48% of national consumption) fossil fuel.
- 3) Increase fuel consumption per year 6 to 8%
- 4) Transportation emission is predicted to be 250 mill ton by 2020 and 500 mill ton by 2030 (Mc Kinsey)

Climate Change Issues

- Initiative from Indonesian President at G20 meeting in Pittsburgh, USA and Conference of Parties (COP) 15 in Copenhagen December 2009, that Indonesia will reduce emission GHG **26%** from Business as Usual and 41% if supported by 2020.
- The target 26% will be reached from three sector i.e.
 - ✓ Forestry = 14%
 - ✓ Waste = 6%
 - ✓ Energy = 6% (power plant, industry, **transportation**, household)



Strategy

- **Legislation**
 - Law Number 32 Year 2009 concerning on Environmental Protection and Management
 - Law Number 22 Year 2009 concerning on Road traffic
 - Presidential Decree Number 5 Year 2006 on National Energy Management
 - Law Number 36 Year 2009 concerning on Health
- **Capacity building**
- **Networking**
- **Cross sectoral activities:**
 - Needs to enhance national and local institutions' capacity with regards to deal with transportation issues.
 - Needs to have research and development in national level regarding vulnerability and adaptation to climate change, as well as development and deployment of technology adaptation to cope with the impact of climate change.
- **International Cooperation**
 - Needs to have joint research and development on EST .
 - Sharing of information among regional countries also could enhance each country capacity to deal with transportation issues.



Strategy (cont)

- Develop environmental sustainable transportation (EST) through consultation process and participation involving key stakeholders
- Develop decentralised networking of EST in Indonesia
- Enhance capacity of EST aspects in local and regional level



Strategy (cont)

- Spatial plan arrangement to reduce motorised and non-motorised transport (NMT)
- TDM development
- Alternative fuel
- Development of vehicles which environmental friendly



Policy of Fuel Emission Reduction

- increase in exhaust gas emission standard
- improve monitoring and maintenance of vehicle emissions
- improving quality and standards of unleaded gasoline
- improvement of urban transport and traffic management planning



Gasification on Transport (conversion to environmental fuel friendly)

- The utilization of gas fuel for land transportation, particularly for public transportation has been re-invented by the Vice President on 21 February 2008
 - Year 2009 : 1667 units of converter kit have been installed and Year 2010 : 450 units are going to be installed
 - Gas station revitalization

- National team for acceleration of natural gas for vehicles

Challenges:

1. No guaranteed price for a certain period
2. No guaranteed supply
3. Investment
4. Investment cost more expensive (equipment, converter kit price)
5. Lack of infrastructure, Limited of gas station
6. Unachieved equilibrium in Supply and Demand in market mechanism
7. Public opinion: use of fuel gas has greater security risk

Indonesia National Plan on GHG from Energy and Transportation

Emission results decreasing for 26% scenario (in G ton CO2)	Target (Gton)	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Energy and Transportation	0,038	0,000	0,001	0,001	0,003	0,006	0,009	0,013	0,018	0,023	0,029	0,038	0,141
Energy	0,030	0,0000	0,0006	0,0012	0,0024	0,0045	0,008	0,011	0,014	0,018	0,023	0,030	
Transportation	0,0080	0,0000	0,0000	0,0000	0,0004	0,00104	0,00184	0,00280	0,004	0,005	0,006	0,008	

Sources: Indonesia National Planning Development Board

Action plan:

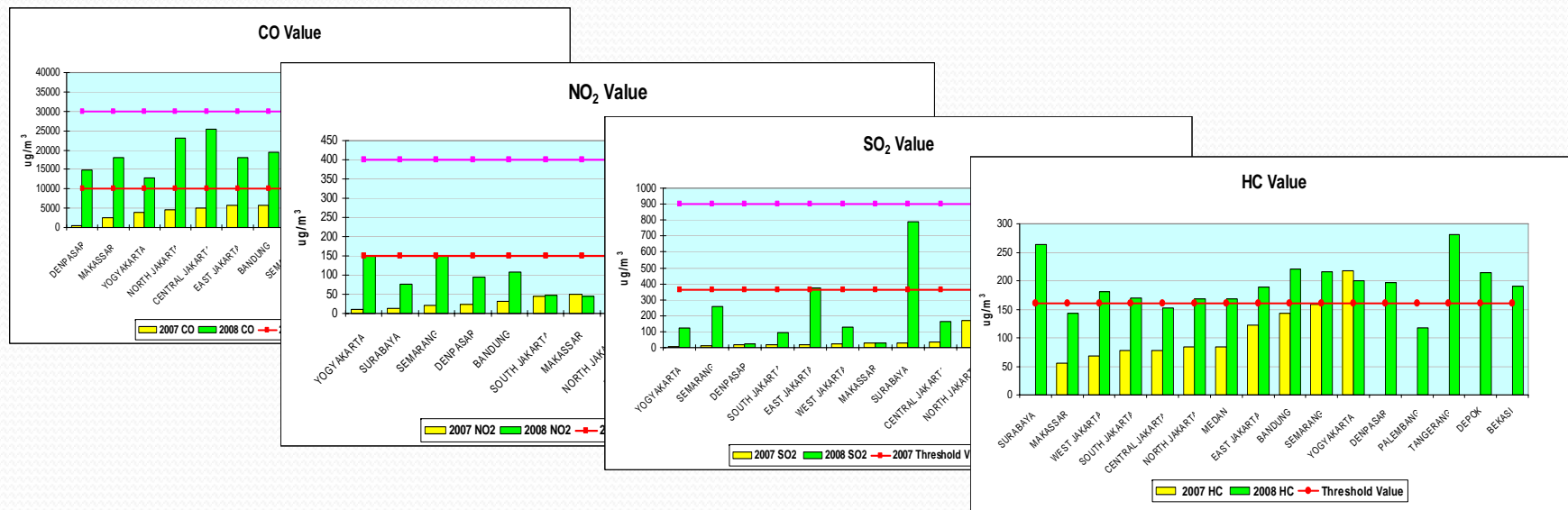
Bio-fuel uses, machine with high fuel efficiency standard, repairing TDM, public transportation and road, demand side management, energy efficiency, renewable energy.

Assumptions:

- Transportasi sector consume 48% from Primer Energy National Total : Land transport (88%), air transport (7%), railway (4%), dan sea /river transport between island (1%).
- GHG Emission from transportation year 2009 : 67 M ton, growth rate amount : 8-12% per year.
- Projections of energy need without mitigation (business as usually) : 8-8,7%.
- *Base-case* scenario energy will be dominated by coal power plant, with same use of natural gas and small renewable energy.

Activities

- ❑ **Blue Sky Program. Cities Evaluation Award** aimed to promote clean air in Indonesian cities. The evaluation criteria for the Award included ambient air quality, vehicle exhaust emissions, and transport management system. It is expected that more and more cities will be motivated to take actions to reduce air pollution



❑ Development on Public Transport

✓ **2009**, BRT has been implemented in the 4 cities :

- Pekanbaru/*Trans Metro Pekanbaru* (20 buses)
- Manado/*Trans Kawanua* (27 buses)
- Semarang/*Trans Semarang* (20 buses)
- Bandung/*Trans Metro Bandung* (10 buses).

✓ **2010**, BRT has been implemented in the following cities :

- Palembang/*Trans Musi* (15 buses)
- Gorontalo/*Trans Thulontalangi* (15 buses)
- Surakarta/*Batik Solo Trans* (15 buses)



Jakarta Case

TransJakarta Busway, 15 corridors planned. Until Year 2010 services 10 corridors (8 corridors operation and 2 corridors still procurement for bus)



❑ Railway development

- Revitalizing Railways (improve tracks, adding train, automating signal, etc)
- Constructing new network (expanding the network)
- Single track to be Double track
- Diesel Loco to be Electric Train
- Railway system for mass/public transport
- MRT in Jakarta
- City to Airport Railway
- Monorail



Bus transit Vehicle from Residence area to central city



Terimakasih - Thank You

