Transport Infrastructure Framework for the Philippines

National Academy of Science and Technology (NAST) Roundtable Discussion
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Outline

- Urbanization and economy
- Poverty incidence
- Transport infrastructure framework
- Framework development: catch up or go strategic?
- Examples from neighbors
- Visioning & benchmarking
- Where do we invest?

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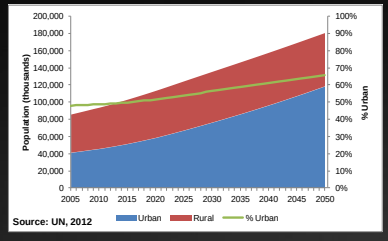
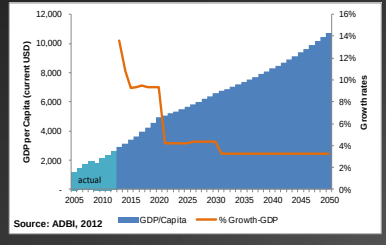
Urbanization and Economy

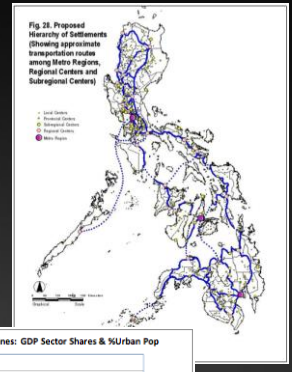
Urban and rural population

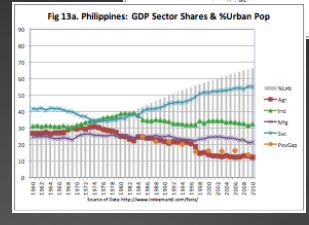


Economic performance



National Spatial Strategy (2013)





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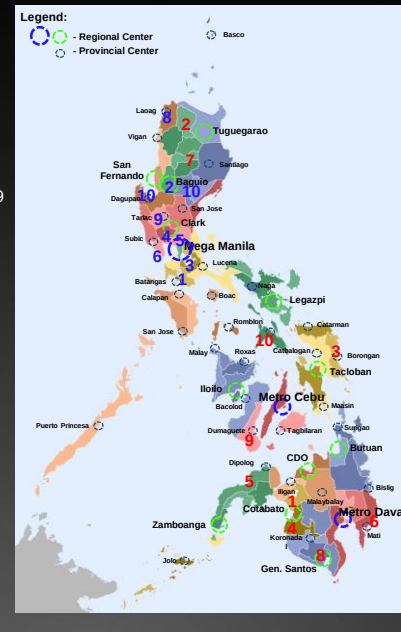
Poverty Incidence [2012 → 2015]
(PSA, 2016)

Highest 10 Provinces
1 – Lanao del Sur (68.9% → 70.2%) – ARMM
2 – Apayao (59.8% → 37.5%) – CAR
3 – Eastern Samar (59.4% → 40.1%) – Reg. 8
4 – Maguindanao (57.8% → 50.4%) – ARMM
5 – Zamboanga del Norte (50.3% → 45.8%) – Reg. 9
6 – Davao Oriental (48.0%) – Reg. 11
7 – Ifugao (47.5% → 32.8%) – CAR
8 – Saranggani (46.5% → 54.5%) – Reg. 12
9 – Negros Oriental (45.3% → 41.9%) – Reg. 7
10 – Masbate (44.2% → 31.6%) – Reg. 5

Lowest 10 Provinces
1 – Cavite (4.1% → 8.3%) – Reg. 4A
2 – Benguet (4.3% → 6.4%) – CAR
3 – Laguna (6.3% → 5.9%) – Reg. 4A
4 – Pampanga (6.4% → 5.2%) – Reg. 3
5 – Bulacan (6.7% → 5.9%) – Reg. 3
6 – Bataan (7.3% → 7.8%) – Reg. 3
7 – Rizal (7.6% → 7.4%) – Reg. 4A
8 – Ilocos Norte (11.0% → 12.3%) – Reg. 1
9 – Tarlac (14.0% → 21.1%) – Reg. 3
10 – Nueva Vizcaya (17.0% → 15.8%) – Reg. 2
Pangasinan (17.0% → 18.5%) – Reg. 1

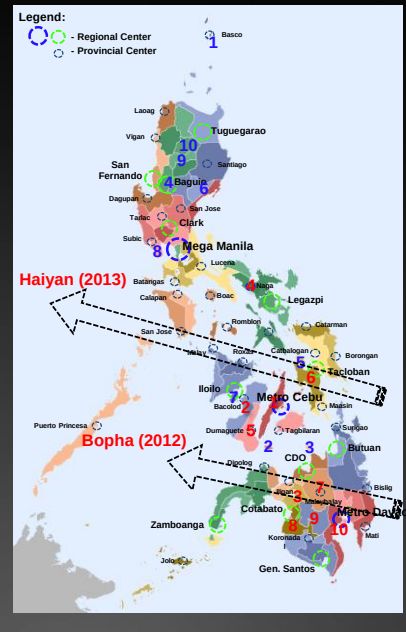


Poverty in terms of population*
(NSCB, 2013)

Highest 10 Provinces
1 – Cebu (**933,480** / 22.4%) – Reg. 7
2 – Negros Occidental (**761,860** / 26.2%) – Reg. 6
3 – Lanao del Sur (**643,017** / 68.9%) – ARMM
4 – Camarines Sur (**610,495** / 33.5%) – Reg. 5
5 – Negros Oriental (**582,860** / 45.3%) – Reg. 7
6 – Leyte (**570,742** / 31.9%) – Reg. 8
7 – Bukidnon (**562,551** / 43.3%) – Reg. 10
8 – Maguindanao (**546,048** / 57.8%) – ARMM
9 – North Cotabato (**538,438** / 43.9%) – Reg. 12
10 – Davao del Sur (**516,911** / 22.3%) – Reg. 11

Lowest 10 Provinces
1 – Batanes (**3,554** / 21.4%) – Reg. 2
2 – Siquijor (**22,403** / 24.6%) – Reg. 7
3 – Camiguin (**29,249** / 34.9%) – Reg. 10
4 – Benguet (**31,073** / 4.3%) – CAR
5 – Biliran (**33,485** / 20.7%) – Reg. 8
6 – Quirino (**38,363** / 21.7%) – Reg. 2
7 – Guimaras (**42,692** / 26.2%) – Reg. 6
8 – Bataan (**50,187** / 7.3%) – Reg. 3
9 – Mt. Province (**53,658** / 34.8%) – CAR
10 – Kalinga (**59,275** / 29.4%) – CAR

*Based on 2012 poverty incidence and 2010 population



Reference: NSCB, 2012

Philippines Transport Infrastructure Framework Plan
(WB, Final Report, 2014)

"Bringing us all closer together for prosperity."

VISION

To provide an integrated, responsive, effective, and efficient transport system that fosters and supports inclusive growth and poverty-reduction, continued regional and national economic development to create opportunity for all system users, safely and securely transports people and goods, is environmentally responsible and improves quality of life, optimizes existing transport assets, and that is implemented by trusted entities accountable to the citizens of the Republic of the Philippines.

- Economic Vibrancy
- Safety and Security
- Project Delivery
- Maintenance and Operations
- Environmental and Social Sustainability

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Philippines Transport Infrastructure Framework Plan
(WB, Final Report, 2014)

OUTCOMES

GOALS

	Transport for Growth	Inclusive Growth	Urban Transport	Resilient Transport	Improving Efficiency/ Effectiveness of Transport Sector
Economic Vibrancy	●	●	●		
Maintenance and Operations		●			●
Safety and Security	●			●	
Environmental and Social Sustainability				●	
Project Delivery					●

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Philippines Transport Infrastructure Framework Plan
(WB, Final Report, 2014)

ISSUES/NEEDS

Non-physical

- Lack of technical capacity for planning (at national and local levels)
- Urban congestion and accessibility to jobs
- High domestic and international shipping costs
- Safety issues and resilience against disasters
- Limited accessibility for the poor
- Governance/organizations not flexible to responsive to needs
- Assets not well-managed
- Investments do not always match needs

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Philippines Transport Infrastructure Framework Plan
(WB, Final Report, 2014)

ISSUES/NEEDS

Physical

- Roads are congested
- Antiquated/insufficient airport infrastructure
- Antiquated/insufficient port infrastructure

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Transport and Poverty

Local roads provide access for communities

Year	PAVED		UNPAVED		Total
	Total	%	Total	%	
2007	21,006.35	71.52	8,363.35	28.48	29,369.70
2008	21,676.53	73.11	7,973.83	26.89	29,650.36
2009	22,468.67	75.15	7,429.42	24.85	29,898.09
2010	24,126.56	77.22	7,115.82	22.78	31,242.38
2011	24,834.38	79.19	6,524.74	20.81	31,359.12
2012	25,443.44	80.52	6,154.24	19.48	31,597.68
2013	26,772.93	83.08	5,454	16.92	32,226.93
2014	27,816.46	85.52	4,710.04	14.48	32,526.50
2015	28,919.17	88.62	3,714.20	11.38	32,633.37

Access to:

- Education
- Health services
- Markets
- Jobs/employment
- Other social services

Classification	Length of roads, km (2012)			% Paved
	Total	Unpaved	Paved	
National	31,597.7	6,154.2	25,443.4	80.52
Provincial	31,233.2	21,457.6	9,775.6	31.30
City	14,739.4	5,537.6	9,201.8	62.43
Municipal	15,816.0	10,422.0	5,394.0	34.10
Barangay	121,702.0	113,682.0	8,020.0	6.59
Total	215,088.3	157,253.5	57,834.8	26.89

Reference: NSCB, 2012 and DPWH, 2013 & 2016

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Required:
Framework for Transport Infrastructure Development

STRATEGIC or CATCH-UP?

How?

Visioning → Future image of cities and transport

Case	Characteristic Policies	Future Image for Transport
LARGE CITY 	A. Rail transit (MRT or LRT) introduced starting 2025, targeting perhaps at least 2 lines for each city by 2050. B. BRT and bus are introduced starting 2020 and 2015, respectively. C. EV is pursued as dominant mode for modern jeepneys and tricycles. D. Hybrid and electric cars will replace conventional cars though not as widely as in Metro Manila.	- Large cities will have mass transit systems; - Modern jitneys will serve feeder routes; - electric tricycles will serve residential areas and local streets; - Significant number of cars will be hybrid or electric. - Walkable and bicycle-friendly cities

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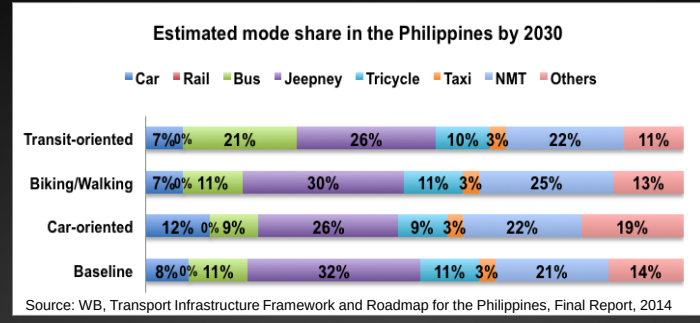
Mode Shares

FUTURE SCENARIOS



Source: WB, Transport Infrastructure Framework and Roadmap for the Philippines, Final Report, 2014

This assumes that there is **no aggressive push for rail development** in the country both for urban and long distance services.

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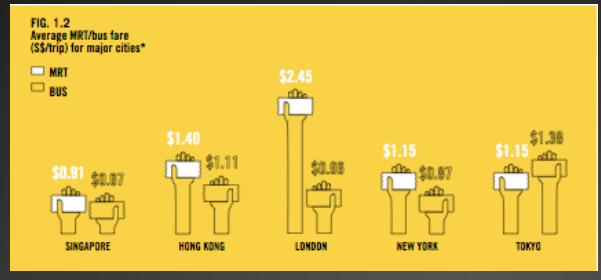
How?

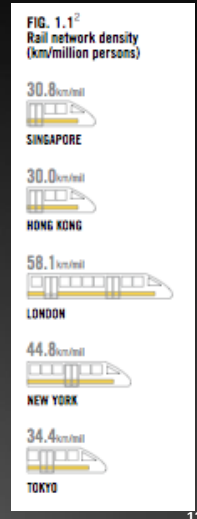
Benchmarking…What are our neighbors doing?

Example: Singapore

Strategic thrusts

- Making public transport a choice mode
- Managing road use
- Meeting the diverse needs of the people





Reference: Singapore Land Transport Master Plan

Example: Malaysia

National Spatial Framework
(Karim, 2012)

National Physical Plan

GOAL:

The establishment of an efficient, equitable and sustainable National spatial framework to guide the overall development of The country towards achieving developed nation status by 2020

Example: Malaysia

Selective Concentration Development Strategy
(Karim, 2012)

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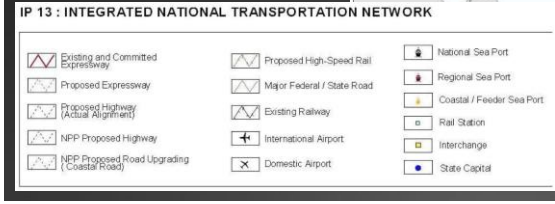
Example: Malaysia

Integrated National Transportation Network
(Karim, 2012)



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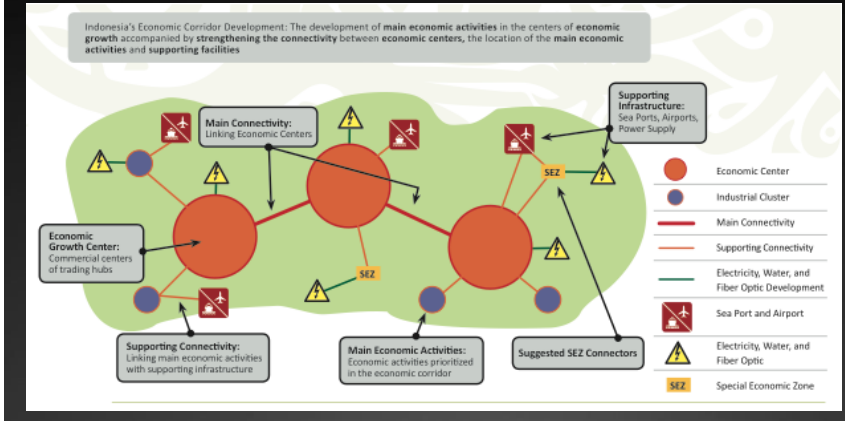
Example: Indonesia

Economic Master Plan
(2013)



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Example: Indonesia

Economic Master Plan
(2013)

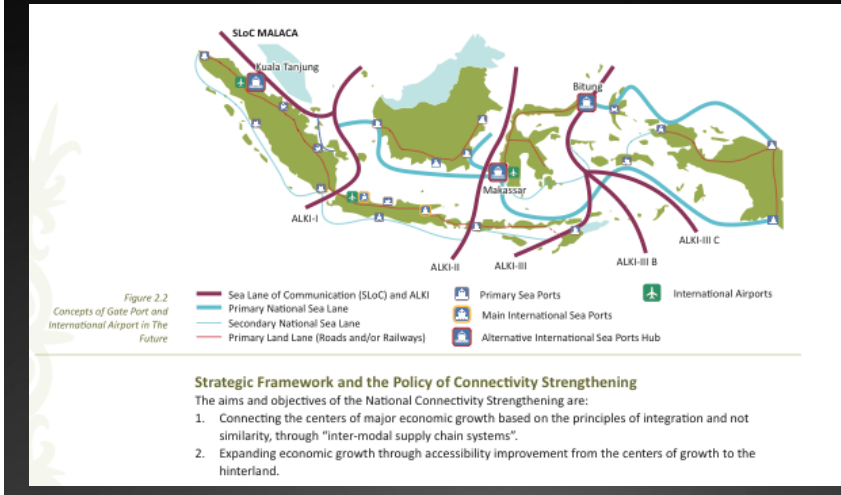

Figure 2.2 Concepts of Gate Port and International Airport in The Future

Strategic Framework and the Policy of Connectivity Strengthening

The aims and objectives of the National Connectivity Strengthening are:

1. Connecting the centers of major economic growth based on the principles of integration and not similarity, through "inter-modal supply chain systems".
2. Expanding economic growth through accessibility improvement from the centers of growth to the hinterland.

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Example: Indonesia

Master Plan

(2013)

Posture Forming Components of the National Connectivity

SISLOGNAS	SISTRANAS	REGIONAL DEVELOPMENT (RPJMN and RTRWN)	ICT
1. Decide Key Commodities 2. Strengthen Logistic Services 3. Infrastructure Netwok 4. Human Resources Capacity Building 5. ICT Improvement 6. Regulation Harmonization 7. National Logistic Board is Needed	1. Transportation Safety 2. Transporation Procurement 3. Transportation Netwok 4. Human Resource and Science and Technology 5. Maintenance of Environtment Quality 6. Provision of Development Fund 7. Improvement of State Administration	1. Local Economy Improvement 2. Human Resource Capacity Building 3. Infrastructure Development 4. Institutional Capacity Building 5. Improvement of Access to Working Capital 6. Improving Basic Social Facilities	1. Migration Toward Convergence 2. Equitable Access and Services 3. Broadband Network Development 4. Improving Network Security and Information System 5. Integration of Infrastructure Application, and National Data 6. Increasing e-literacy, independent domestic ICT industry, ICT HR availability 7. Synergy of National ICT Activities and Investments

Strengthening National Connectivity Carried Out by Integrating and Synergizing Sislognas, Sistranas, Regional Development, and ICT Plans

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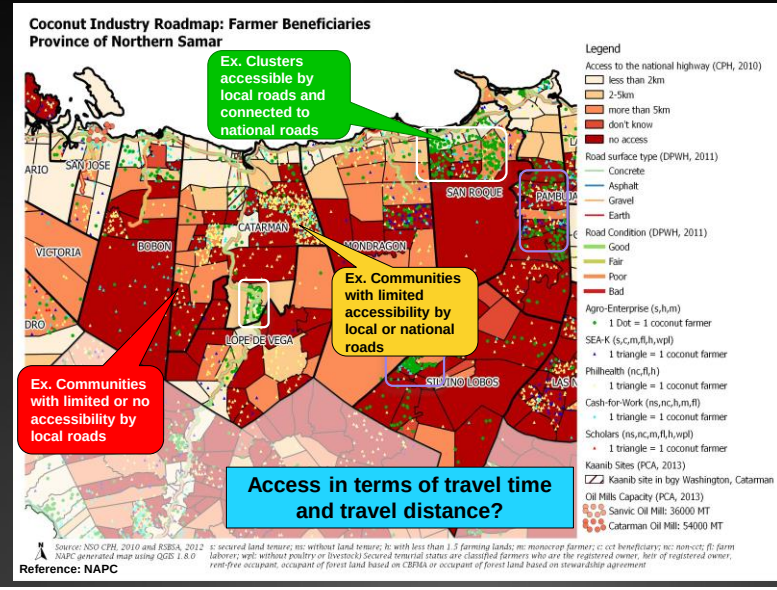
Building an infra network for inclusive growth: Example from NAPC



Reference: NAPC

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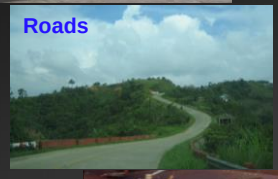
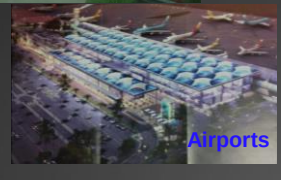
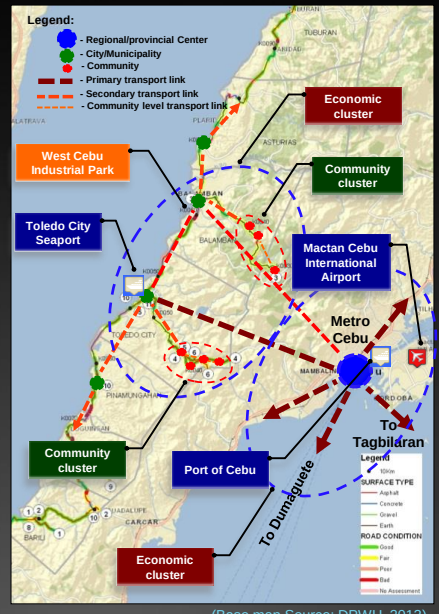
Transport and inclusive development in a rural, provincial or regional setting







(Base map Source: DPWH, 2013)

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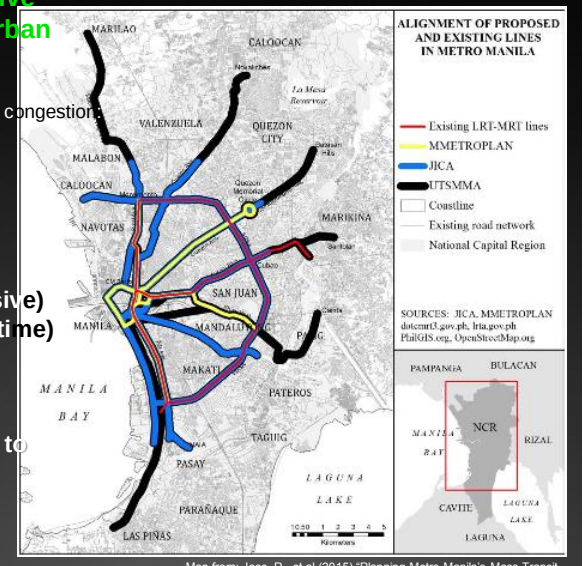
Transport and inclusive development in an urban setting

JICA estimate* of losses due to congestion:
Metro Manila: **PhP 2.4 B/day**
BLRC: **Php 1.0 B/day**

How do we make commuting
Easier? (comfortable)
Affordable? (inexpensive)
Efficient? (less travel time)
Etc.

Social equity!

Ex. Efficient transport to address:
Issues on relocation
Issues on sprawl

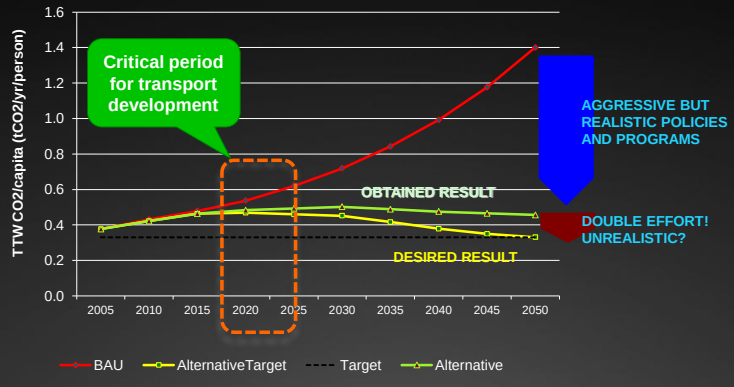


*JICA (2013) Transport Infrastructure Framework and Roadmap for the Greater Capital Region

Map from: Jose, R., et al (2015) "Planning Metro Manila's Mass Transit System," Proceedings of the 11th International Conference of EASTS, Cebu City.

Backcasting and visioning outcomes for carbon reduction

LOW CARBON TRANSPORT LEADS TO BETTER HEALTH, LESS ROAD CRASHES, EQUITABLE TRANSPORT, ENHANCED MOBILITY, ETC. (co-benefits)



Further reduction requires, for example:

- Doubling passengers shifting from 2W/3W to bus and rail (higher capacity modes)
- Significant shift of freight transport from truck and air to rail

Reference: ITPS (2014) A Study on Long Term Action Plan on Low Carbon Transport in ASEAN

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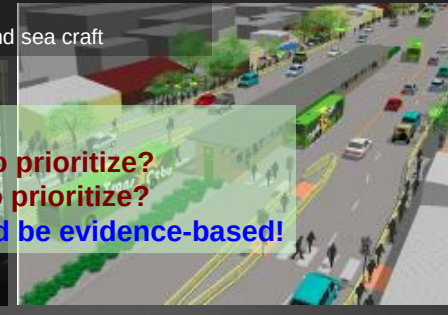
Where do we invest?

Where do we need to invest?

- All weather national roads and bridges
- High quality local roads
  - Farm to market roads
  - Access roads to tourism areas
- Urban transport systems
  - Mass transport (BRT and Rail)
  - Pedestrian and cycling facilities
- Modern airports and ports
  - Upgraded passenger terminals
  - Improved capacity for aircraft and sea craft



Challenges:

What to prioritize?

How to prioritize?

Approach should be evidence-based!

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Salamat po sa inyong pakikinig!

Acknowledgements

Data from:
Clean Air Asia
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Institute for Transport Policy Studies
National Anti-Poverty Commission
Philippine Statistical Authority
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World Bank

End of presentation