

Third Regional EST Forum in Asia

Land Transport Authority



Ministry of the Environment,
Government of Japan



UNITED NATIONS
CENTRE FOR REGIONAL DEVELOPMENT

Breakout Session 6:

Singapore

India

Malaysia

Session Chair

H. E. Mr. Rohana Dissanayake

Expert Intervention:

Marie Tynell, Christopher Weaver,
Yasuo Inokuma, Manfred Breithaupt

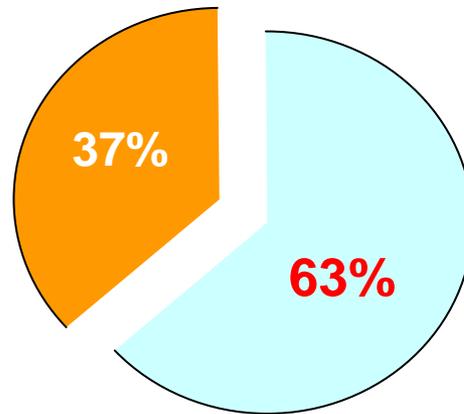
Singapore



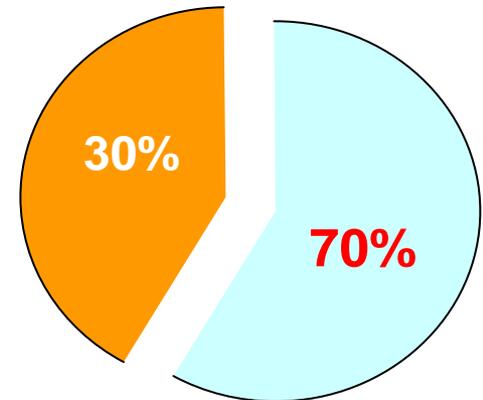
Mode share objectives

-  - Private Transport
-  - Public Transport

2004 Mode Share
(am peak)



Target 2020 Mode Share
(am peak)



Electronic road pricing

Changes to make ERP more effective

| | Current | Revised |
|---|---------|---------|
| Based on initial rate per Passenger Car Unit (PCU) | \$1 | \$2 |
| Rate adjustment per PCU (Increase/reduction in rates when traffic speeds warrant) | \$0.50 | \$1 |

Universal access

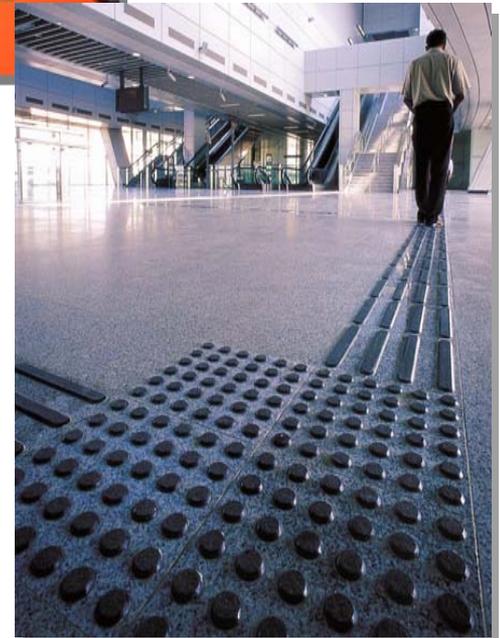
By 2010

All access to transport nodes, and all public roads will be barrier free

40% of public bus fleet will be wheelchair-accessible; 100% by 2020

By 2011

17 additional lifts at 16 MRT stations



Recommendations for Singapore

1. **Clean fuel initiatives should be complemented with retrofit programmes for existing vehicles**
2. **Countries should collect travel statistics on gender-related factors**
3. **More emphasis on non-motorised transport**
4. **Continue to make improvements on bus system, perhaps including consideration of Bus Rapid Transit**



India



Situational analysis

The population of India's six major metropolises increased by about 1.9 times during 1981 to 2001, the number of motor vehicles went up by over 7.75 times during the same period.

There were 0.3 million vehicles in 1951 and there are around 90 million vehicles today.

Travel in the city *per se* has become more risky with accident rates having gone up from 1.6 lakh in 1981 to over 3.9 lakh in 2001.

Air Quality in Major Cities in India

| City | 1998 | | | 2003 | | | 2007 | | |
|-----------|-----------------|-----------------|------|-----------------|-----------------|------|-----------------|-----------------|------|
| | SO ₂ | NO ₂ | RSPM | SO ₂ | NO ₂ | RSPM | SO ₂ | NO ₂ | RSPM |
| Delhi | 15.60 | 35.10 | 342 | 12.20 | 43.30 | 315 | 7.00 | 70 | 133 |
| Mumbai | 15.90 | 14.70 | 211 | 7.70 | 18.70 | 219 | 35.00 | 103.00 | 293 |
| Kolkata | 47.20 | 39.70 | 507 | 18.00 | 75.50 | 244 | -- | -- | -- |
| Chennai | 10.30 | 15.40 | 131 | 6.60 | 7.50 | 149 | 7.00 | 12.00 | 94 |
| Bangalore | 41.60 | 28.40 | 239 | 6.60 | 7.50 | 149 | -- | -- | -- |
| Hyderabad | 7.60 | 22.10 | 152 | 9.70 | 19.00 | 190 | -- | -- | -- |

NATIONAL STANDARD – SO₂ : 80, NO₂ : 80, RSPM : 100
 UNITS IN µG/CUBIC METRE
 SO₂: SULPHUR DIOXIDE



Measures

- Establishment of Ambient Air Quality Monitoring throughout India
- Notification of Ambient Air Quality Standards under Environment (Protection) Act, 1986
- Introduction of alternate fuel vehicles like CNG/LPG.
- Improvement in public transport systems
- Phasing out of grossly polluting commercial vehicles



Recommendations for India

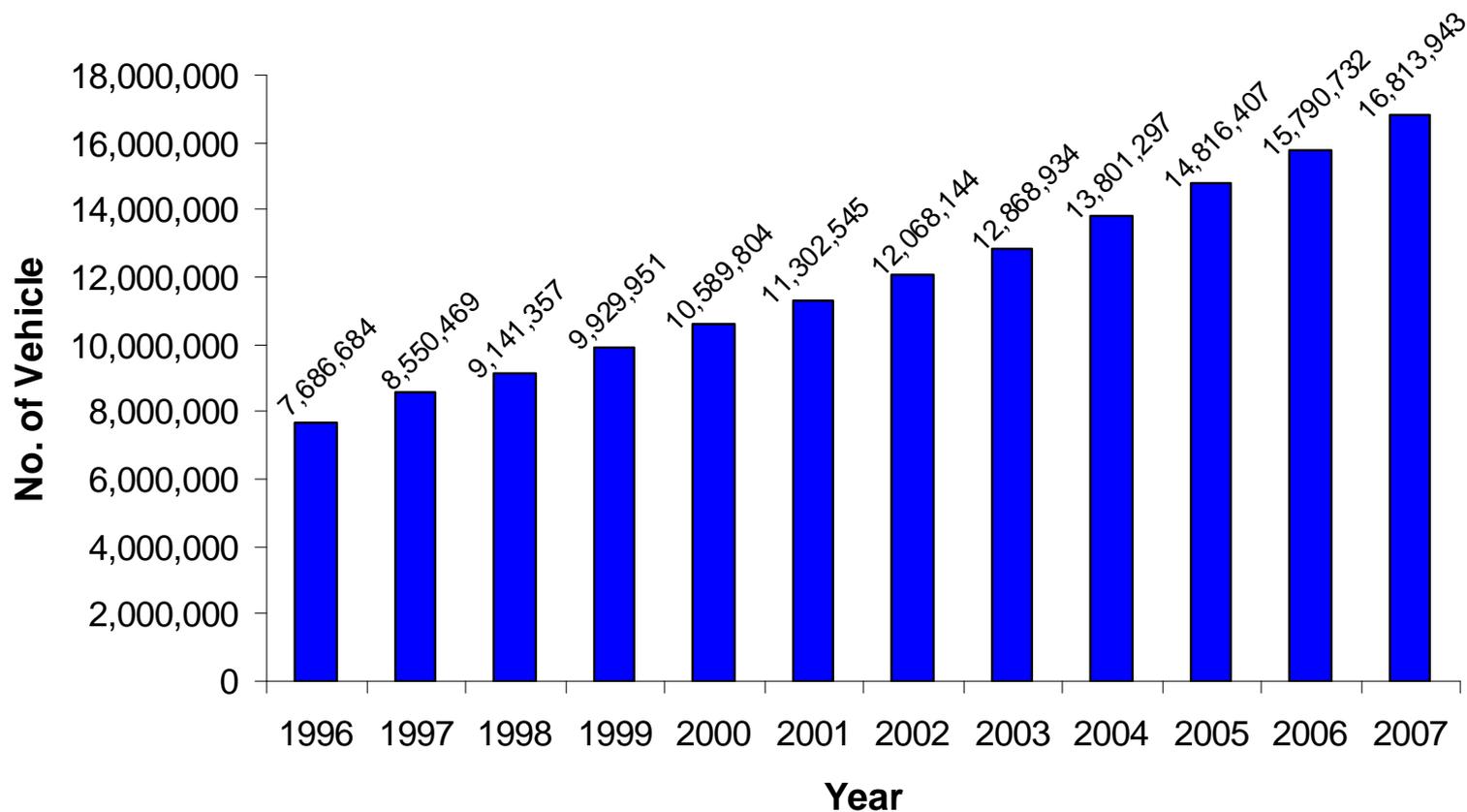
1. **Consider hosting training work shops and distribution of technical resources to cities (e.g. GTZ modules)**
2. **The focus on CNG conversions needs to be complemented by other measures, especially measures to discourage private vehicle use**
3. **Emphasis should be placed on transport initiatives for the poor, especially the rapid delivery of pedestrian and bicycle facilities**



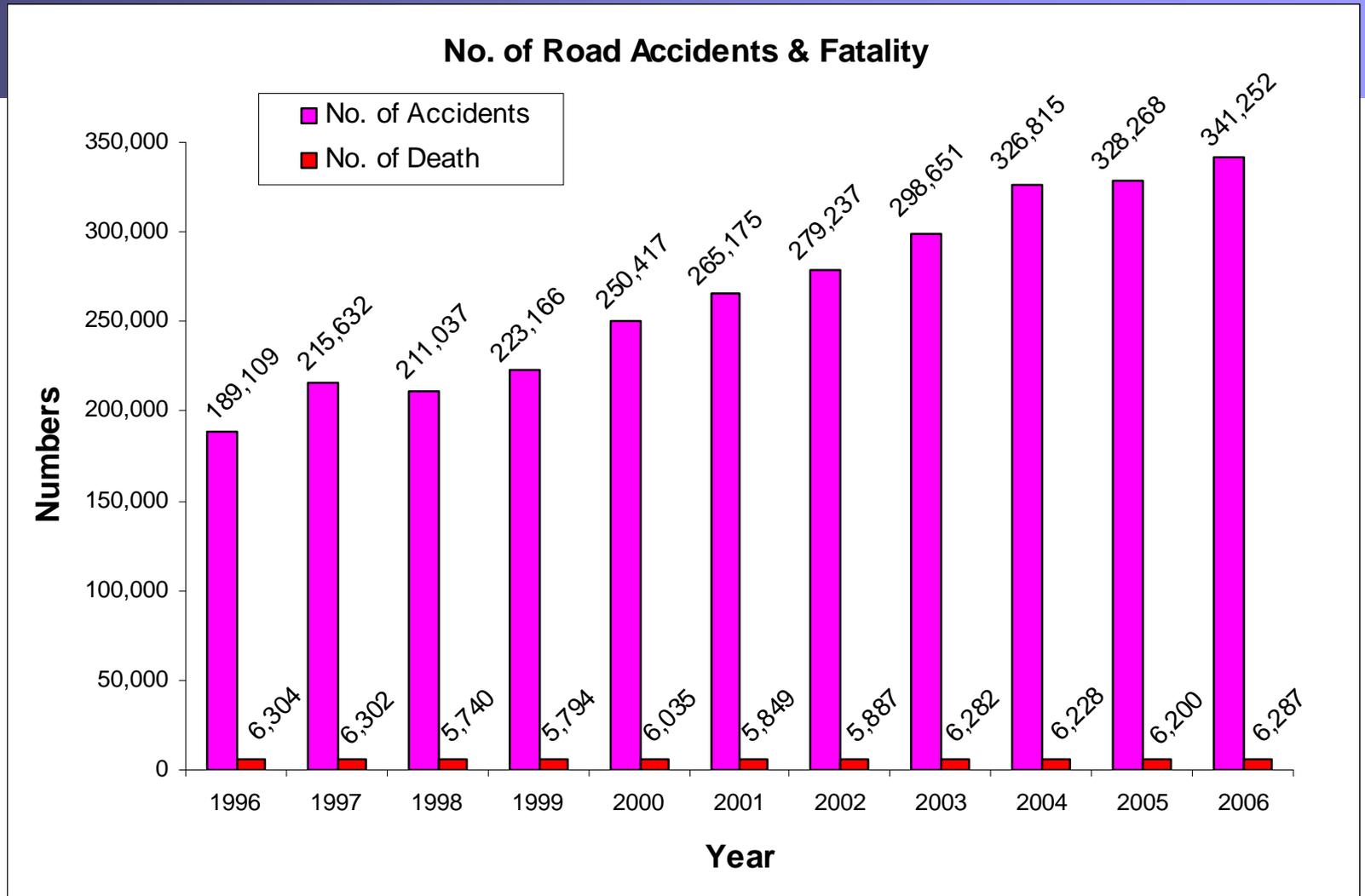
Malaysia



Motor Vehicles Population



Source : Malaysian Institute of Road Safety Research (MIROS)



Source : Malaysian Institute of Road Safety Research (MIROS)

Fuel standards

EURO 1 Standards for diesel vehicles and EURO 2 for petrol vehicles



Recommendations for Malaysia

1. Road safety must become a greater priority
2. Move up introduction of emission standards (currently Euro 2 in Malaysia)
3. More explicit policies aimed at motorcycles
4. More emphasis on transport-disadvantaged groups

