

Transport for Green Cities



The views expressed in this presentation are the views of the author/s and do not necessarily reflect the views or policies of the Asian Development Bank, or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy of the data included in this presentation and accepts no responsibility for any consequence of their use. The countries listed in this presentation do not imply any view on ADB's part as to sovereignty or independent status or necessarily conform to ADB's terminology.

Green Cities Workshop

**Manila, Philippines
7 June 2013**

ADB

**Lloyd Wright
Lwright@adb.org**

Transport and urban development

Unlike virtually all other urban sectors, transport is unique as conditions actually worsen with economic prosperity.

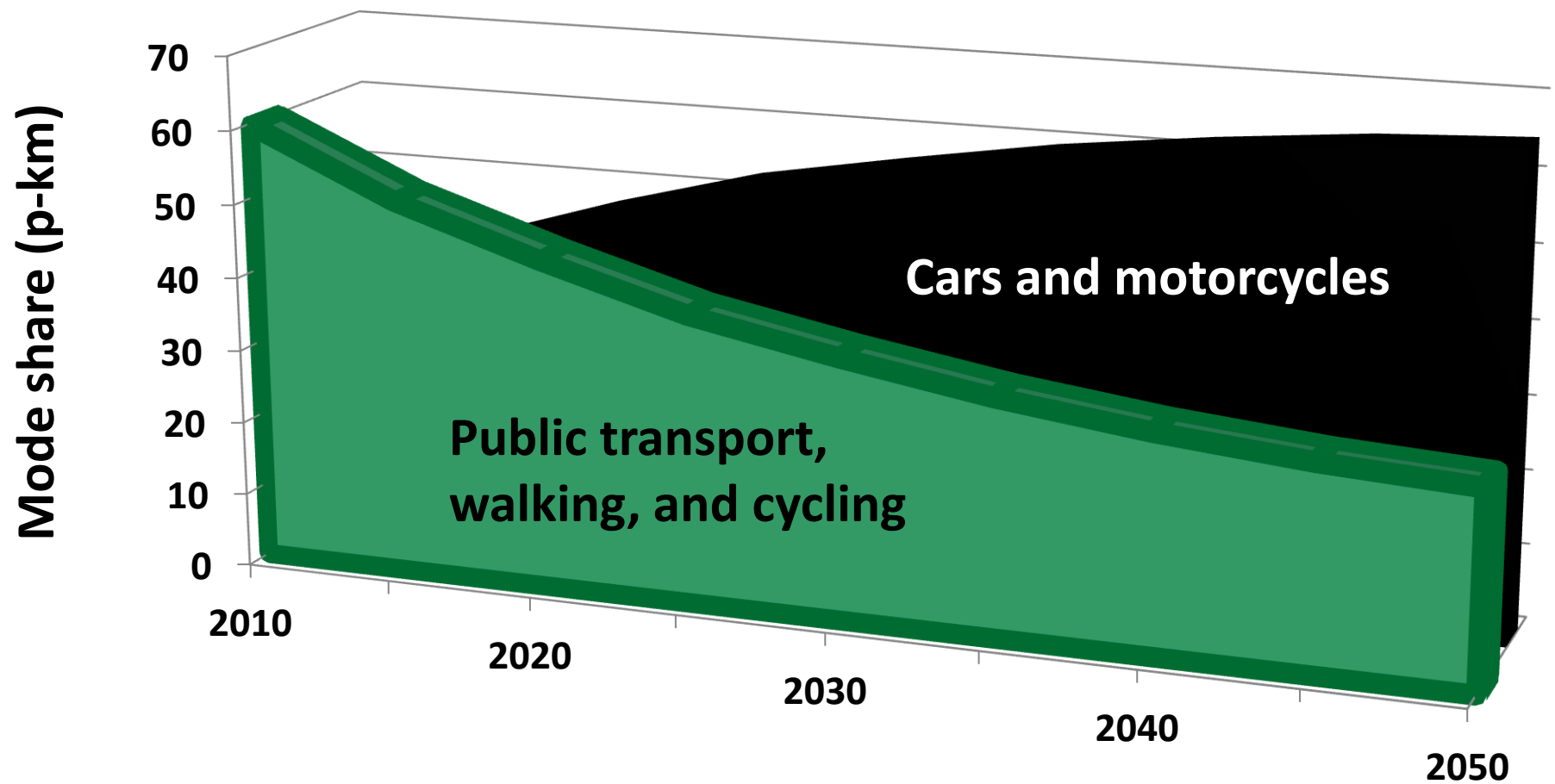


“Experience is the ability to recognize a mistake when you make it again”

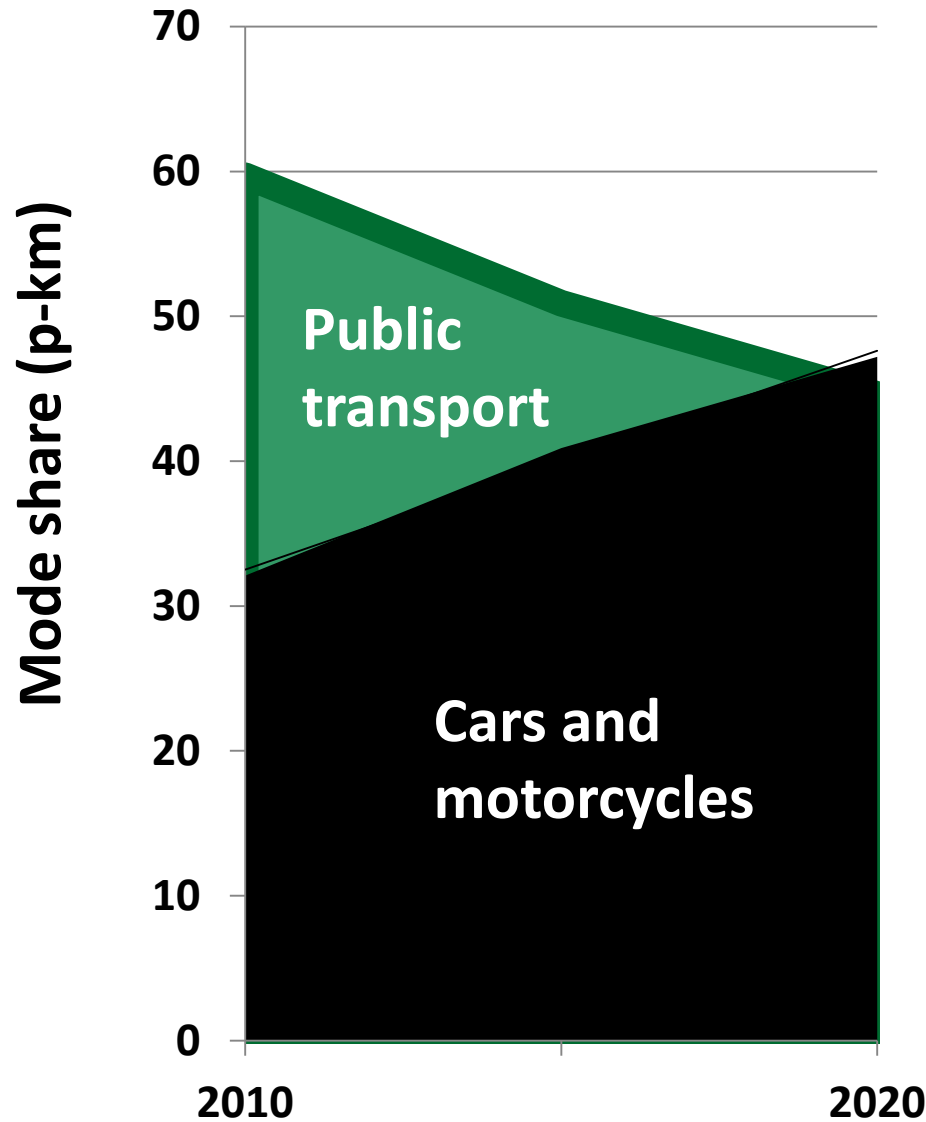


Expanding roadways
to accommodate
traffic is a bit like
combatting obesity by
buying larger pants

Transport trends for Asia and the Pacific



Lag times



**The trend for
the next 5 to 8
years is fixed**

Road crashes

645,000 fatalities and 30 million injuries per year in Asia and the Pacific

Economies of Asia and Pacific lose approximately \$96 billion per year in income due to road accidents

Over 50% of the victims of road accidents in Asia and the Pacific are vulnerable road users (e.g. pedestrians)



Health and transport

According to the World Health Organization, local air pollution contribute to the premature death of more than 500,000 people each year and reduces national GDP in Asia by 2-4%.



Beijing – January 2013

- Particulate matter recorded at:
993 mg/m³
- WHO recommended maximum is:
25 mg/m³



Obesity

■ OBESE NATION

Too fat for our own good

THE image of an obese 33-year-old gentleman and a remark by a 69-year-old about his 11-year-old grandson running out of breath while scaling slopes (NST, June 9) suggest we should shift our attention from rural health to urban health.

The Ministry of Health has done well in promoting rural health. The health problems have now shifted.

Diseases related to urban lifestyles are on the rise. One in four Malaysians is obese, according to a survey made in 1999.

Malaysians are slowly and surely on the road to self-destruction.

The cause: compulsive eating habits. Most people (including I) eat on seeing food rather than when feeling hungry.

Everyone you care to talk to at buffets will admit they overeat. They think it is *rugi* (a loss) not to eat as much as they can.

The amount people eat at buffets is about 4-5 times the amount they normally eat at regular meals elsewhere.

Office meetings and functions are almost always accompanied by food. Sometimes workshops or meetings organised by public and private institutions take place in hotels.

"Meeting packages" offered at most hotels usually contain six meals a day plus sweets on the conference tables! The participants are forever on sugar and fat.

Fat cells behave as storage cells of the body. They can balloon out to more than 100 times their normal size to accumulate excess fat that is ingested.

Fat cells, like brain cells, are classified as permanent cells, meaning the cells do not have the capacity to divide and multiply upon reaching maturity unlike the cells that form our skin, mucous membranes and gut.

An obese person has the same number of fat cells as when he was thinner, except the size of each of his fat cells is bigger than normal.

If we store foodstuff in the food cabinet for a long time, the food would turn bad and

become poisonous to eat. The same thing happens in these expanded fat cells.

The diseases that come with obesity are numerous and well known — from diabetes to depression.

No organ is spared the wrath of toxic substances released from "obese" fat cells.

Obese children become obese adults. This is a fact. Parents are wholly responsible for shaping their children.

Popular eating-places where parents take their kids to these days are fat food joints. Oops! I mean fast food restaurants.

They are taken there to celebrate joyful events like birthdays, passing exams, etc.

Fat food joints have sprung up everywhere, even in small towns.

PROFESSOR DR NOR HAYATI OTHMAN
Deputy Dean (Research)
and Professor of Pathology,
Universiti Sains Malaysia,
Kubang Kerian, Kelantan



GLOBAL PROBLEM: Obesity is fast becoming a major problem worldwide.

Leapfrogging?

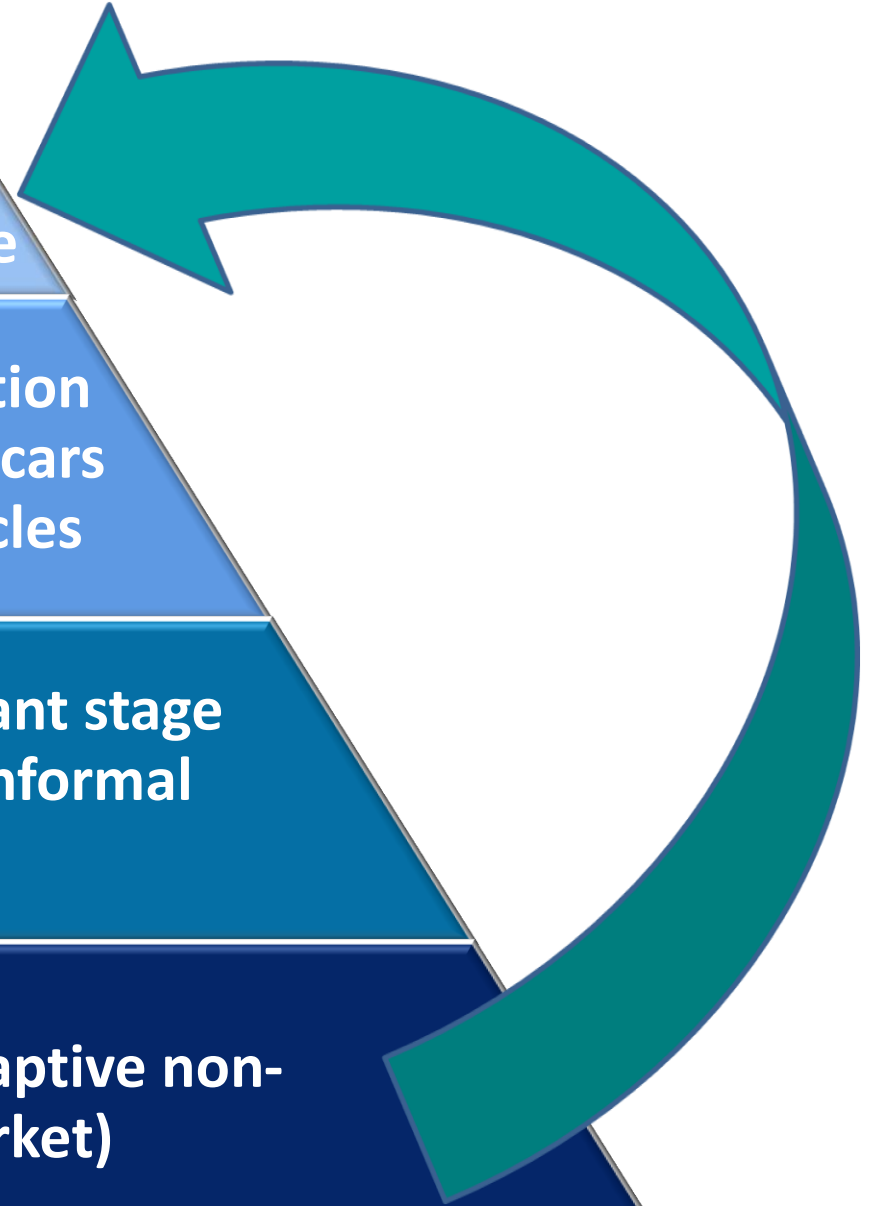
Walking, cycling, public transport, strong car and motorcycle restrictions

Quality of life stage

Full motorization stage (private cars and motorcycles)

Paratransit dominant stage (vans and other informal vehicles)

Basic access stage (captive non-motorized market)



Strategy for Greening Transport



Avoid unnecessary vehicle kilometers

- Smart Growth
- Zoning regulations
- Internet & Communication Technologies (ICT)
- Transit-Oriented Development

Shift to the lowest-emitting modes

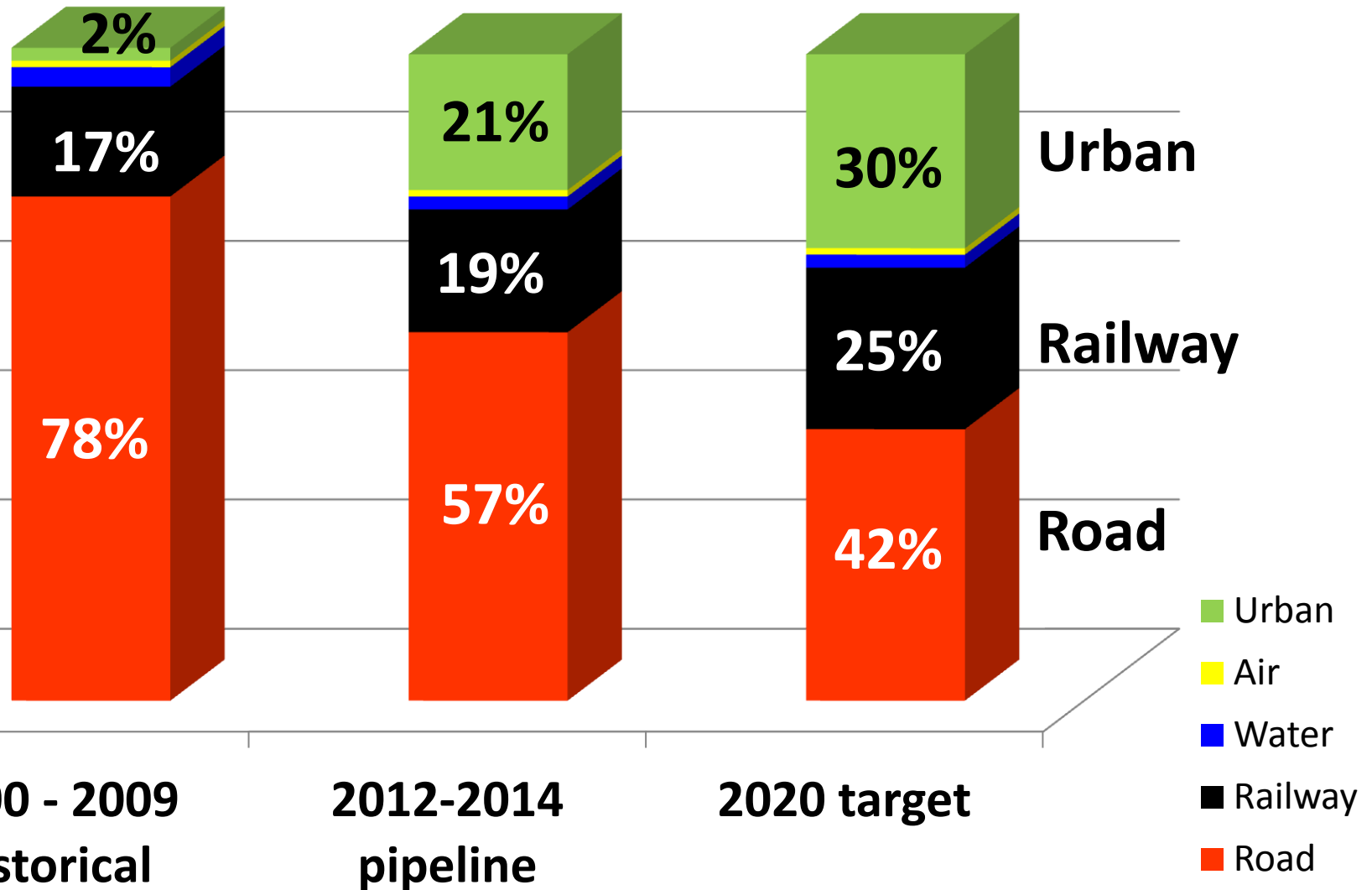
- Public transport
- Non-motorized transport
- Transportation Demand Management (TDM)
- Shift to rail freight

Improve vehicle/fuel technology towards cleaner and more efficient options

- Alternative fuels
- Fuel efficiency standards
- Vehicle maintenance
- Vehicle testing

ADB's transport transformation

Percentage of transport sector investment



“Avoid”: Transit-Oriented Development (TOD)

Concentrating development around public transport nodes

- ❑ Reduces trip distances
- ❑ Links multiple destinations in a single trip
- ❑ Makes public transport, walking, and cycling more convenient and viable
- ❑ Reduces service delivery costs for municipality (water, electricity, sewer, etc.)



Efficient use of urban space



The amount of space required to transport the 60 persons by different modes

“Avoid”: Information and Communications Technologies

- ☐ Telecommuting
- ☐ Video teleconferencing /
Telepresence
- ☐ Teleshopping
- ☐ Telework
- ☐ Cell phones
- ☐ Broadband provision



“Shift”: Public transport

- ☐ Conventional bus systems
 - ☐ Bus Rapid Transit
 - ☐ Light Rail Transit
 - ☐ Metro Systems
 - ☐ Monorails
 - ☐ People Movers
- ☐ Personal Rapid Transit



Tipping points: Bus Rapid Transit



New York bus lane
Paris bus lane

Curitiba

Sao Paulo
Goiania
Pittsburgh

Quito
Leeds

Bogota TransMilenio
Brisbane
Rouen

1963

1974

1975

1996

2000

2005

Approximately 46 systems world-wide

2013

Approximately 150 systems world-wide



Lanzhou BRT project



Shift: Pedestrian upgrades

- ☐ Footpath upgrading
- ☐ City center pedestrianization
 - ☐ Safer crossings
 - ☐ Greenways
 - ☐ Car-Free Days
 - ☐ Shared space
 - ☐ Street lighting
 - ☐ Street furniture



“Shift”: NMT vehicles

- ☐ Bicycle distribution
- ☐ Bicycle sharing systems
- ☐ Dedicated cycle ways and bicycle “super-highways”
- ☐ Bicycle parking
- ☐ Pedicabs



“Shift”: Transportation Demand Management

- ❑ Parking management

 - ❑ Parking levies

- ❑ Congestion charging

 - ❑ Fuel levies

- ❑ Vehicle ownership restrictions

- ❑ Use restrictions by plate number



“Improve”: Clean Fuels

- ☐ Clean diesel
- ☐ Bio-diesel
- ☐ CNG
- ☐ Bio-methane
- ☐ LPG
- ☐ Ethanol
- ☐ Hybrid-electric
- ☐ Electric
- ☐ Fuel cells



Capturing sustainable transport benefits

**ADB is
developing the
Sustainable
Transport
Appraisal Rating
(STAR) system**

Dimension / Core Criteria

Area

Economic

- Efficiency: People
- Efficiency: Businesses
- Quality and reliability
- Fiscal burden
- Employment
- Wider economic benefits

Social

- Basic accessibility
- Affordability
- Safety
- Inclusion
- Social cohesion

Environmental

- GHG emissions
- Transport-related emissions and pollution
- Resource efficiency
- Climate resilience
- Natural and built environment

Rating	Highly Unsustainable	Unsustainable	Moderately Unsustainable	Marginally Sustainable	Moderately Sustainable	Sustainable	Highly Sustainable
Score	-5 to -10	-2 to -4	-1 to 0	1 to 2	3 to 4	5 to 6	7 to 10

Transport and Green Cities: Masdar

- ✓ Solar PV
- ✓ Wind tower
- ✓ Energy-efficient design
- ✓ Recycling of waste
- ✓ Rainwater capture
- ✓ Local agriculture
- ✓ Landscaping



...and a car park that is larger than the entire development.

Green city projects at ADB

Transport

Energy

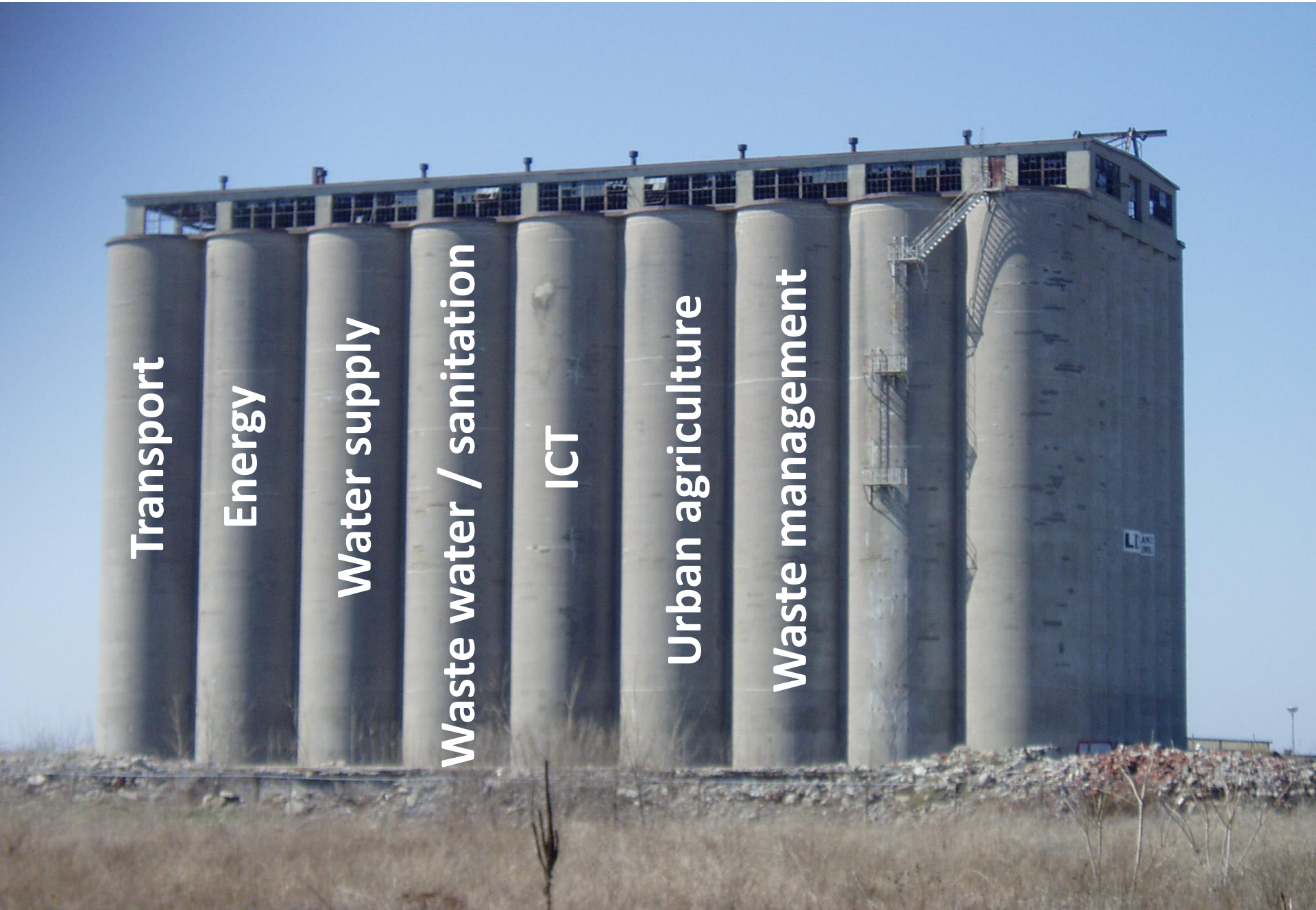
Water supply

Waste water / sanitation

ICT

Urban agriculture

Waste management



Tokyo, Japan:

**Universally-
accessible pedestrian
areas and urban
forestry**





Johannesburg, South Africa:
Non-motorized transport and waste management

**Johannesburg,
South Africa**

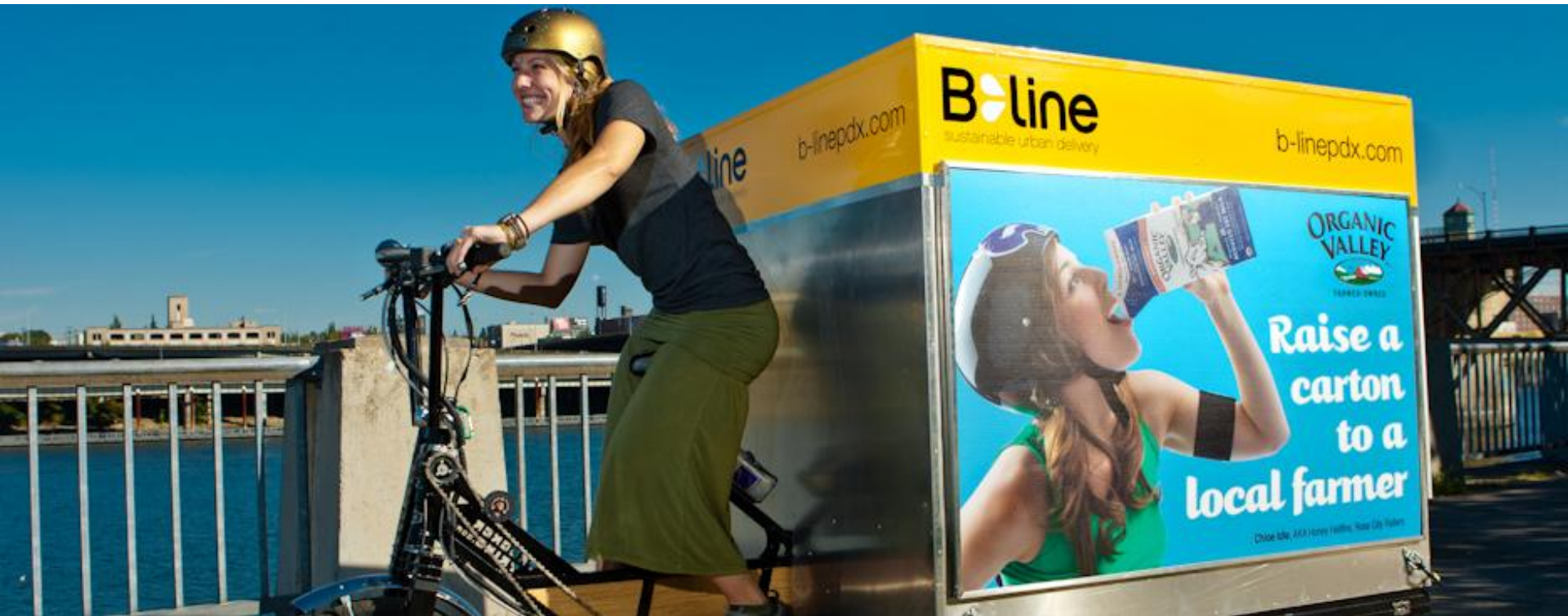
**Bus rapid transit
and solar energy**



**Freiburg (Vauban),
Germany:**

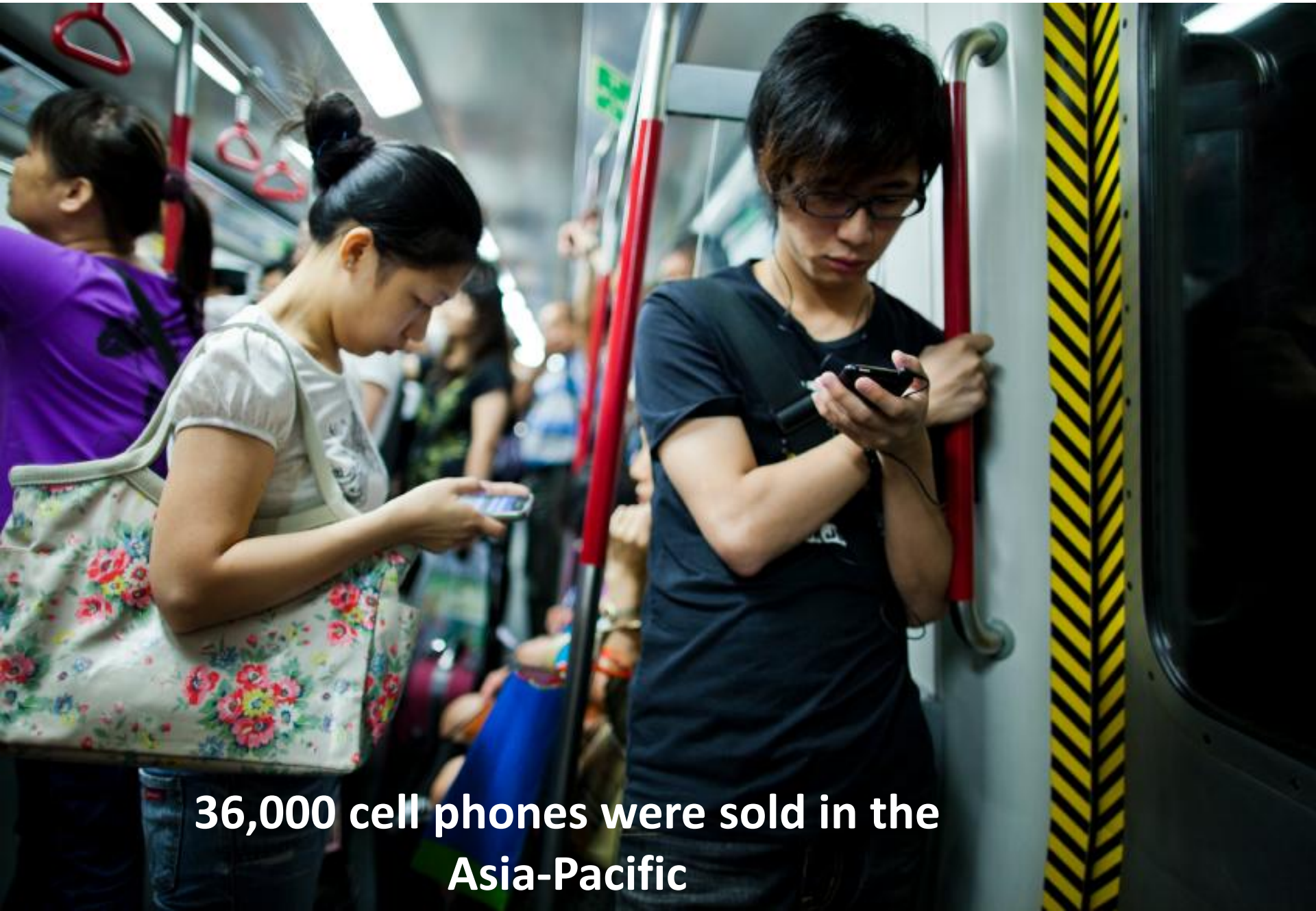
**Car-free city and
renewable energy
generation**





Portland, US:
Non-motorized transport and urban agriculture

During this session...



**36,000 cell phones were sold in the
Asia-Pacific**

During this session...



**4,900 persons will move from
a rural area to an urban area in
the Asia and Pacific region**

During this session...

**3,800 cars and motorcycles will be
sold in the Asia and Pacific region**



Thank you

Lwright@adb.org

