

# Pro-poor transport policy *Towards Green Economy*

*Geetam Tiwari*

*MoUD Chair Professor*

*Department of Civil Engineering/Transportation Research and Injury  
Prevention Program (TRIPP)*

*Indian Institute of Technology Delhi (IITD)*

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# Green Economy

*Focus on Low Carbon Transport*

*Access to goods and services for all inhabitants of the urban area*

*Global concern of CO<sub>2</sub> and local health concerns*

# The Urban India

| Indicator                            | 2001   | 2011                        |
|--------------------------------------|--------|-----------------------------|
| Total population                     | 1.02 b | 1.2 b                       |
| Urban population                     | 286 m  | 377 m                       |
| % urban population                   | 28     | 31                          |
| % urban growth rate                  | 31.5   | 31.8                        |
| Number of towns                      | 5161   | 7935                        |
| No. of UAs/Cities<br>(100,000 +)     | 384    | 468<br>(70 % of urban pop.) |
| No. of UAs/Cities<br>(1 million +)   | 35     | 53<br>(43 % of urban pop.)  |
| No. of Mega Cities<br>(10 million +) | 3      | 3<br>(13 % of urban pop.)   |

**Greater Mumbai:**

**18.4 m**

**30-60% poor**

**Delhi:**

**16.3 m**

**Kolkata:**

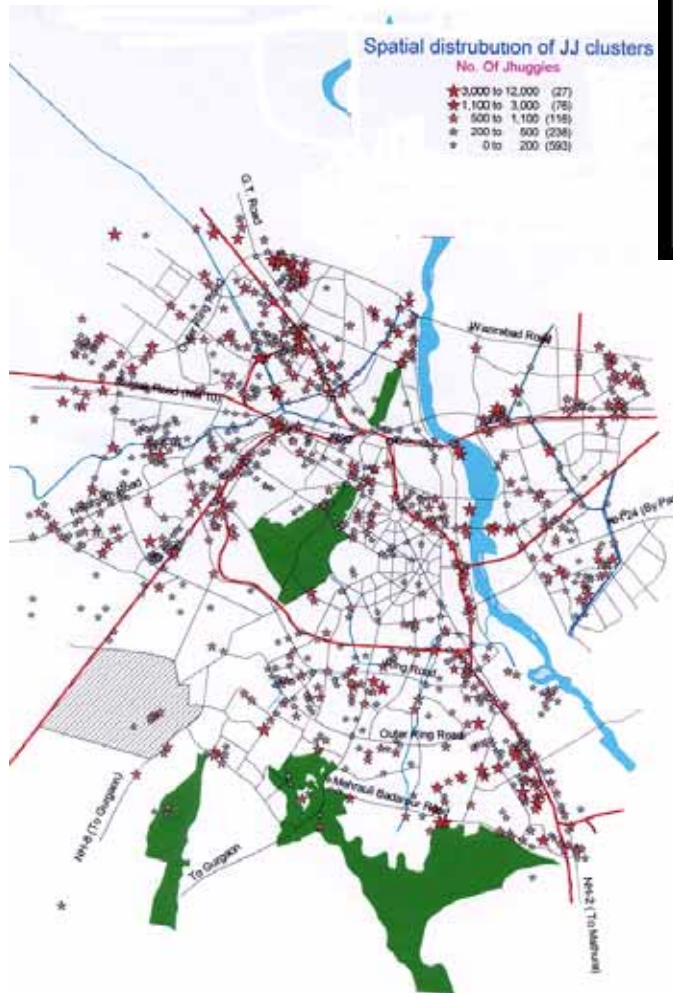
**14.1 m**

# who are the urban poor

## **Urban poor are:**

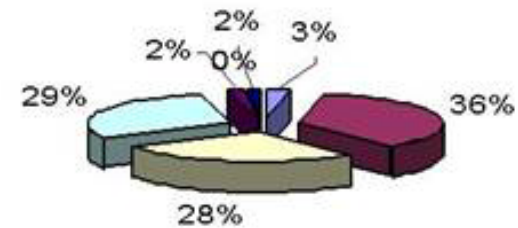
- the slum dwellers
- the pavement dwellers
- living on the urban periphery, squatting on vacant lands
- those employed as casual labour
- those recent migrants from rural areas, particularly those coming from small and marginal farm and landless labour households
- Seasonal migrants
- those with no or low education and no or low skills

# Travel patterns of Urban poor and others (Delhi 2001)



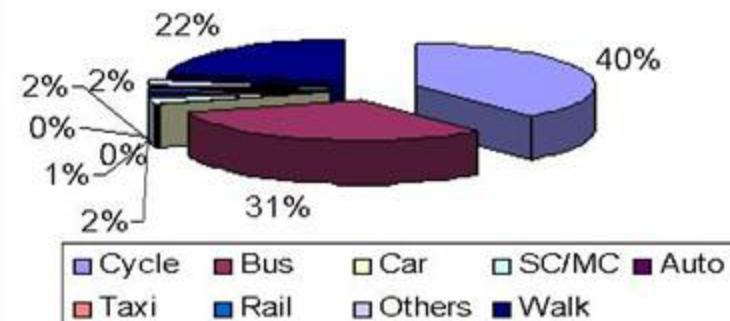
Distribution of Jhuggi Jhopri Clusters in Delhi

**Trip Pattern of high income people**



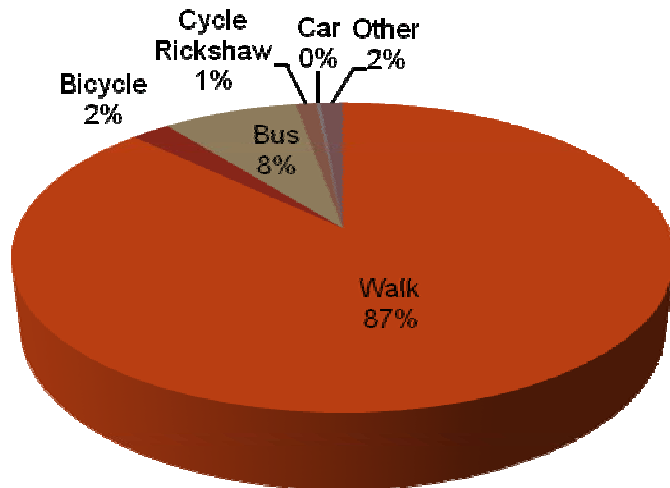
Bus, twheelers and cars

**Trip pattern of low income people**



Bicycle, Bus, walk

# Travel patterns of Urban poor Delhi low income households(2011)

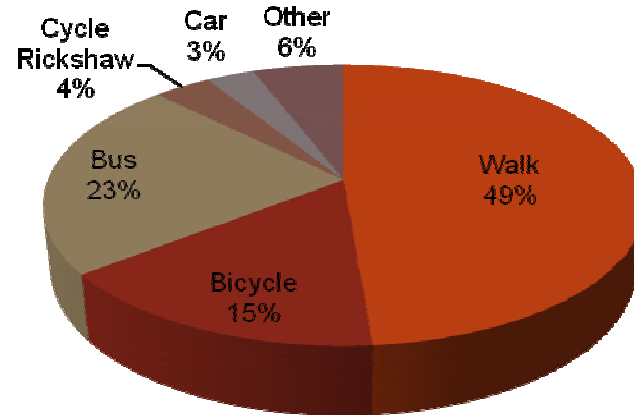


Unemployed persons

Walk 87%

Bus 8%

Bicycle 2%



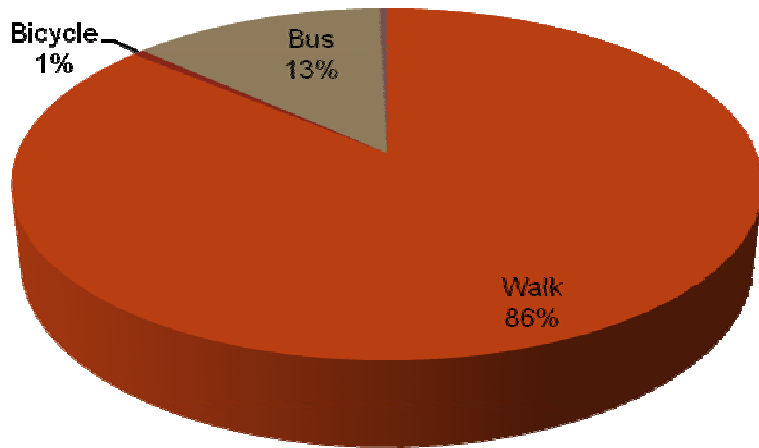
Employed persons

Walk 49%

Bus 23%

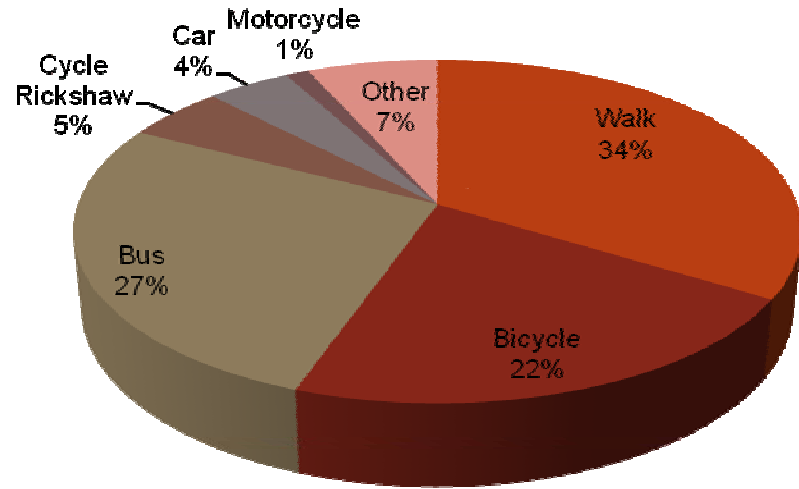
Bicycle 15%

# Travel patterns of Urban poor Delhi low income households(2011)



## Employed Females

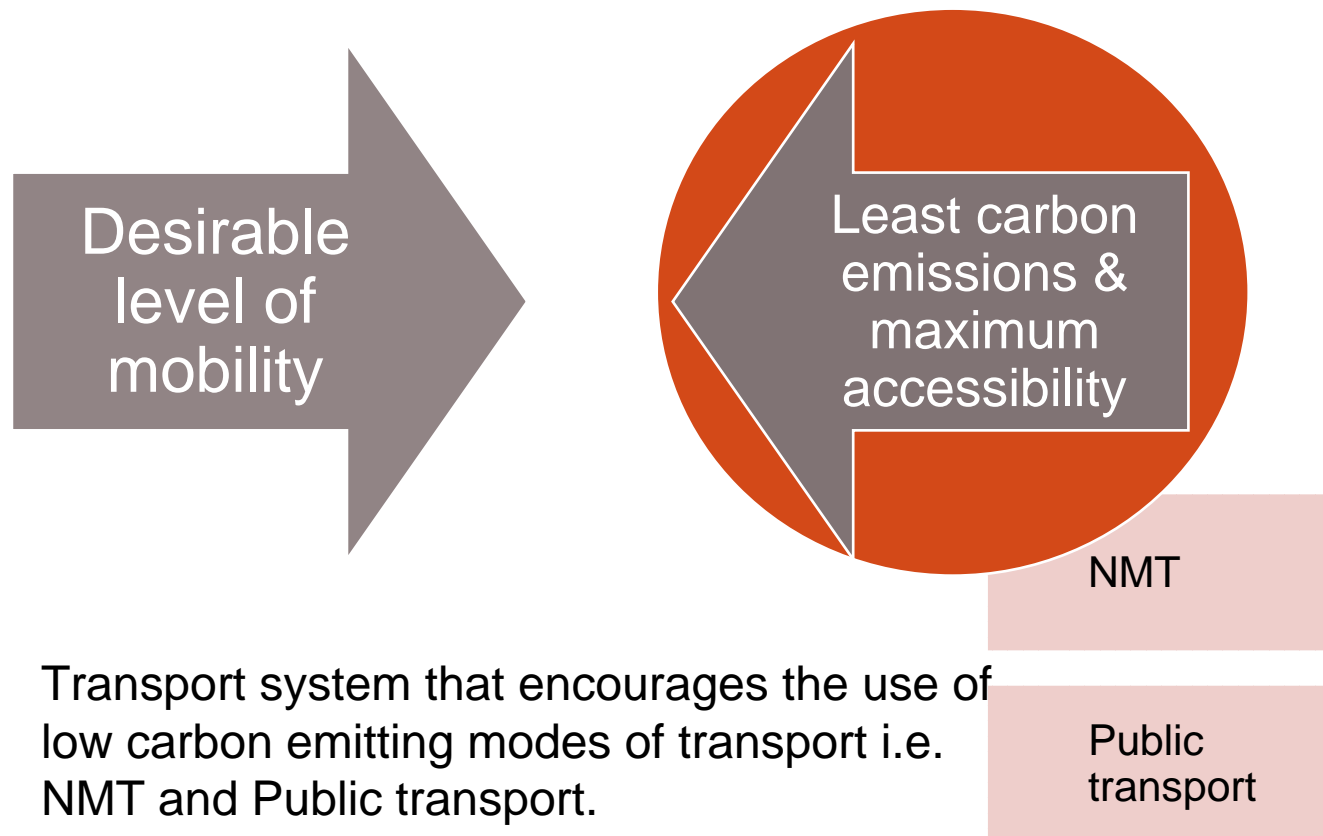
Walk 86%  
Bus 13%  
Bicycle 1%



## Employed Males

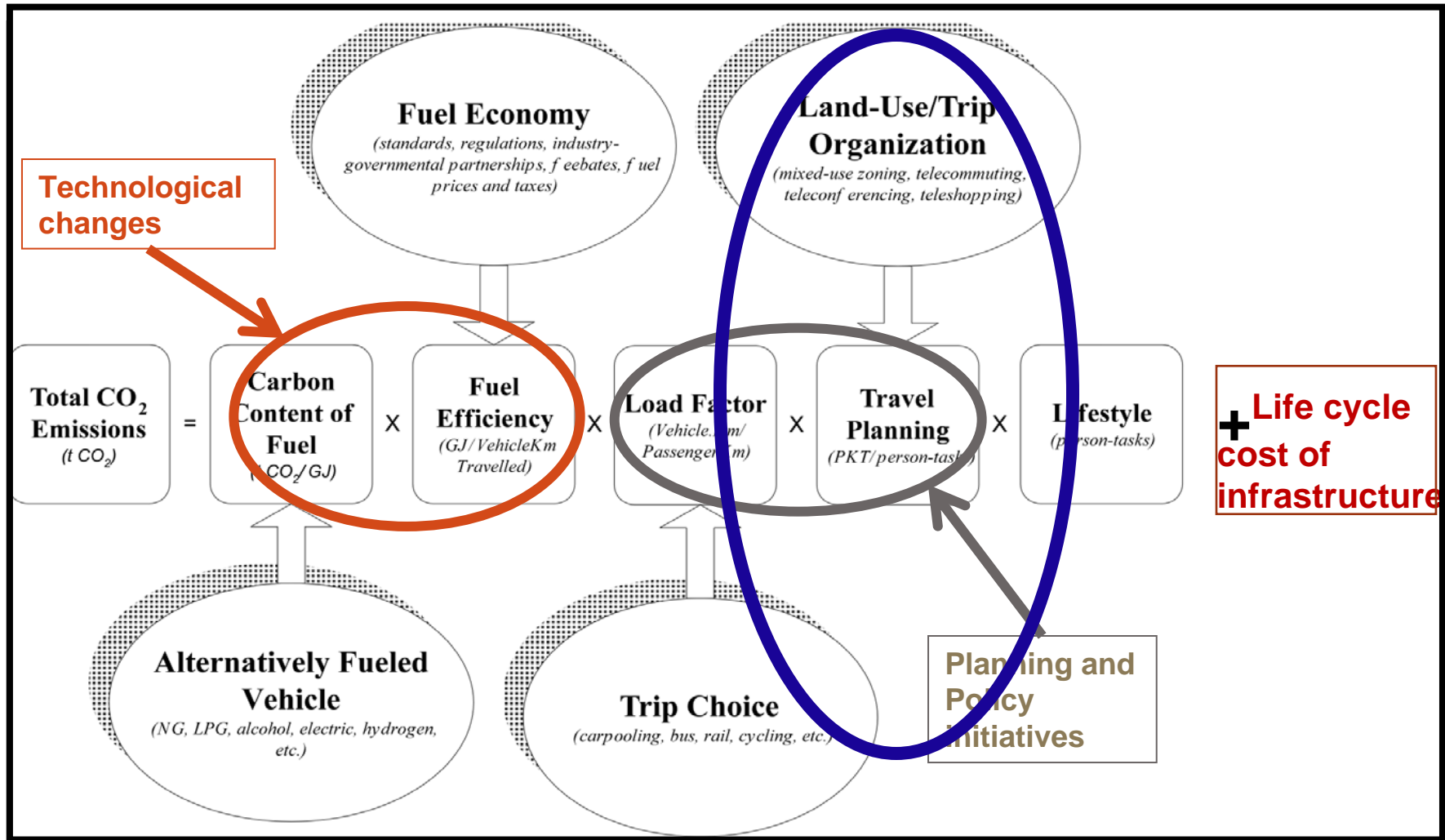
Walk 34%  
Bus 27%  
Bicycle 22%

# What is low carbon transport?

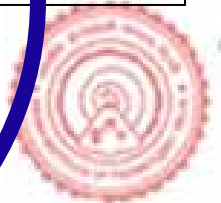
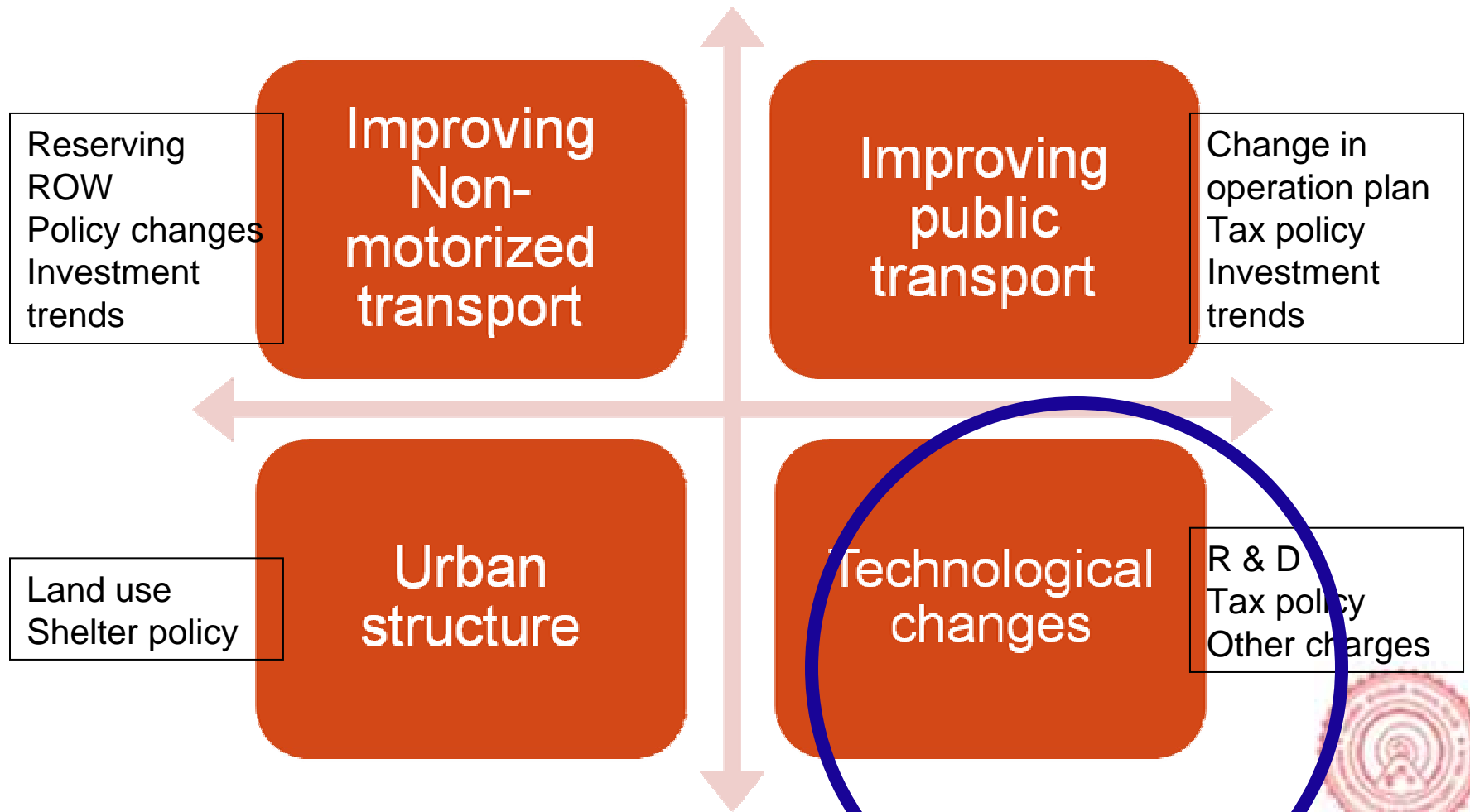




# Factors Impacting Emission Levels



# Possible LC Scenarios



# Indian context/ Pro Poor

- NMT and Public transport is used by people who do not have other choice: **CAPTIVE USERS**
- Captive users may shift to carbon intensive modes because of
  - Existing hostile NMT and public transport infrastructure
  - Increase in income levels & changed aspirations
- Short trip lengths due to compact city structure resulting in high percentage of potential users of NMT
- Land use policy with regards to low income/ informal sector

**Low carbon mobility  
plan**

Retain

Shift

Improve

# Expected Outcome of LCMP

- Propose strategies and plans to
  - Encourage NMT and public transport users to shift from captive to choice users
  - Encourage the use of NMT and public transport by the potential users
  - Technological improvements to reduce emissions from motorized transportation
  - Reflections on land use and shelter policy
- Evaluate the impact of strategies, plans and projects on emissions, accessibility, and social sustainability

# Scenario development

- Three scenarios
  - Improving only bus infrastructure
  - Improving both bus and NMT infrastructure
  - Improving only NMT infrastructure
- For each scenario
  - Maximum Shift Scenario and
  - Minimum Shift Scenario

# Maximum shift scenario

## 1. Improving only bus infrastructure

- Longer trips shift to the use of bus
- Existing use of bus for shorter trips continues

## 2. Improving both bus and Non-motorized transport infrastructure

- Longer trips shift to the use of bus
- Shorter trips shift to walking and cycling

## 3. Improving only NMT infrastructure

|  | Share of trips longer than 5 km shifting to bus | Share of trips shorter than 5 km shifting to NMT   |
|--|---|--|
| <b>Scenario 1</b>  | 50% of the long trips made by MTW and IPT       | 0%   |
| <b>Scenario 2</b>  | 50% of the long trips made by MTW and IPT       | 30% of the short trips made by bus, MTW and IPT    |
| <b>Scenario 3</b>  | 0%  | 30% of the short trips made by motorized transport |
| <b>Note: Modal shift does not occur from four-wheelers</b> |   |  |

# Minimum shift scenario

## 1. Improving only bus infrastructure

- Longer trips shift to the use of bus
- Existing use of bus for shorter trips continues

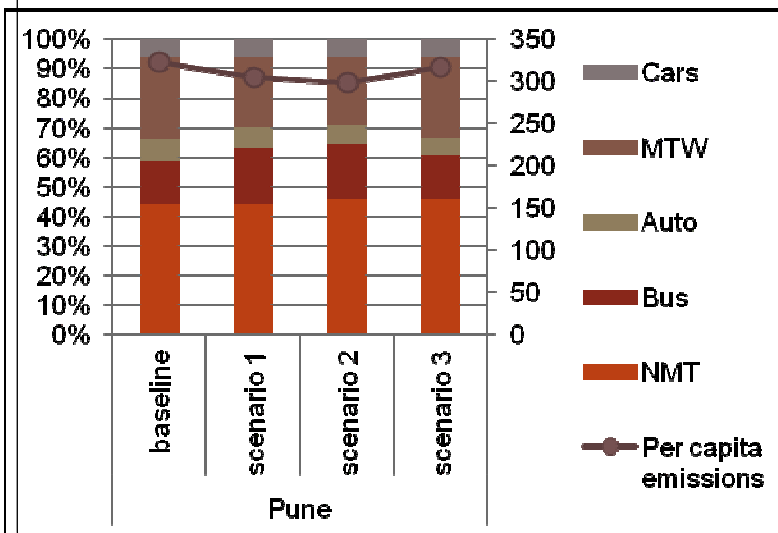
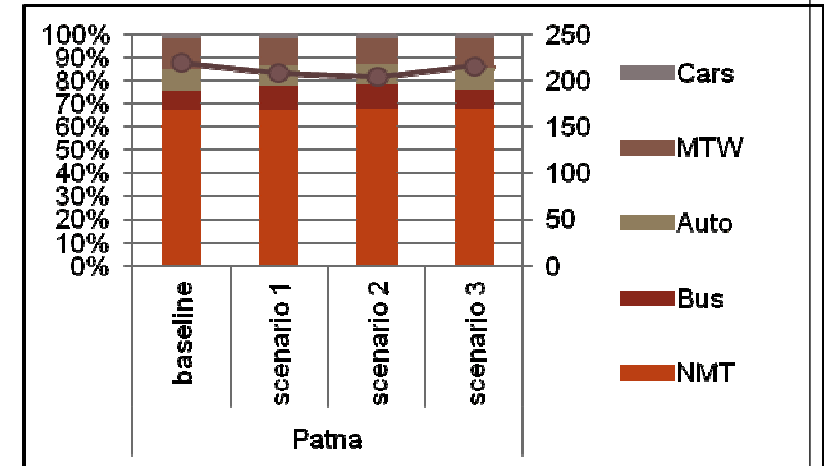
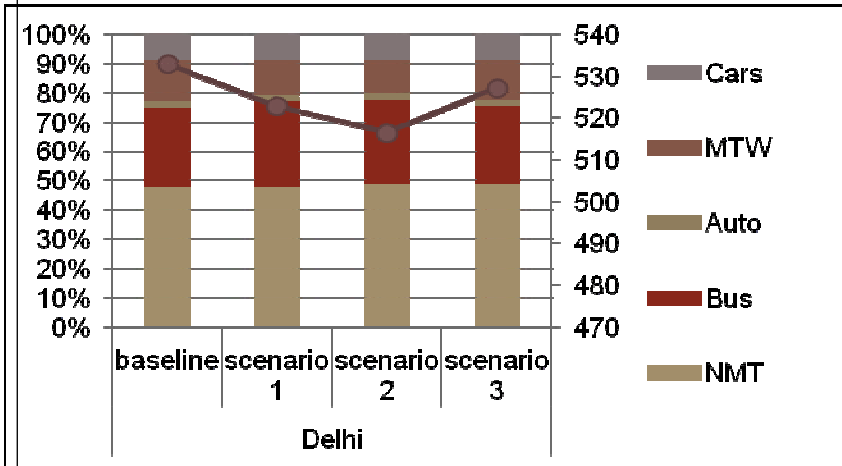
## 2. Improving both bus and Non-motorized transport infrastructure

- Longer trips shift to the use of bus
- Shorter trips shift to walking and cycling

## 3. Improving only NMT infrastructure

|  | Share of trips longer than 5 km shifting to bus                        | Share of trips shorter than 5 km shifting to NMT |
|--|--|--|
| <b>Scenario 1</b>  | 20% of the long trips made by MTW and 5% of the long trips made by IPT | 0%   |
| <b>Scenario 2</b>  | Same as in Scenario 1  | 10% of the short trips made by bus, MTW and IPT  |
| <b>Scenario 3</b>  | 0%   | Same as in Scenario 2                            |
| <b>Note:</b> Modal shift does not occur from four-wheelers |  |  |

# Resulting Emissions and Modal Share( minimum shift )



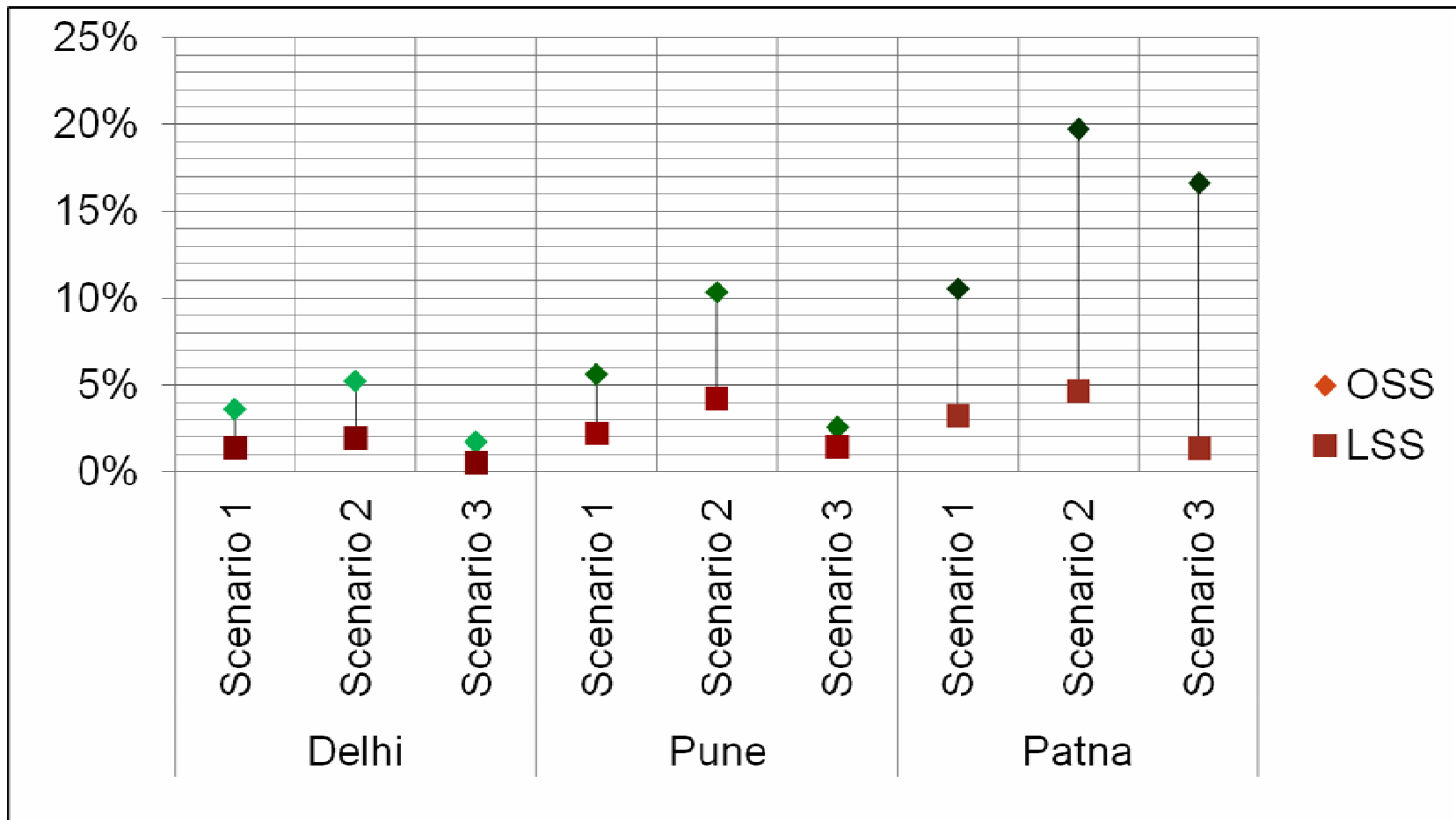
Maximum decrease in total emissions is in scenario 2 for all the three cities.

The result highlights the need of NMT infrastructure along with improved bus service in the cities to reduce emissions in all the cities.

Maximum impact of the strategy can be realized in Patna followed by Pune and least being in Delhi.



# CO<sub>2</sub> EMISSIONS IN MAXIMUM AND MINIMUM SNIIT Scenario



- Maximum reduction in CO<sub>2</sub> is in Patna and least in Delhi.
  - Three mega cities of India – contribute to 50% of the total emissions
- Need to emphasize on megacities to reduce maximum amount of Co2 emissions
- Need to focus on large cities to get maximum benefit

# Urban Transport and Urbanisation

- **I. 1950-1970**
  - **< 20% urbanisation, focus rural development, masterplanning initiated in some cities( US aided)**
  - **Central govt initiative for shelter policies, 1956 Slum Area clearance act passed**
  - **NMV share ~60 % urban transport**

## Urban Transport and Urbanisation -2

- **II. 1970-1990**
  - Formation of slums recognized as a problem(formation of TN Slum Clearance Board, 1971)
  - Controlled by ruling party: orientation away from eviction and resettlement
  - WB entry into Urban sector funding(1975)
  - Delink the TNSCB from political influence  
deregulation of markets, privatisation of municipal services, cost recovery, land tenure

# Urban Transport and Urbanisation -3

- **II. 1990 onwards**
  - Extending banks recommendation from Chennai to other cities: create serviced plots in large scale sites, increase the interest rate for that slum dwellers paid for mortgages
  - 1980- city beautification scheme, slum eviction throughout the city, parking lots made in place of slums
  - WB records show improved slums for 76,000 households, at less than half the cost of tenement construction

# Government initiatives(2001-2010)

## Exclusive visions, exclusive clubs

- 4378 urban agglomerations and towns identified by census in India. 2/3rd of the urban population lives in small and medium size cities.
- Mumbai first(Mckensy 2003), Taskforce report metro, flyovers, sky train to transform the city, closing the doors to new migrants with cutoff dates for rehabilitation
- JNNURM scheme by Government of India (GoI) has identified 63 cities (phase I) emphasis on macro level infrastructure .
- Of the identified 63 cities
  - **BRTS corridors have been planned and approved for 9 cities,**
  - **bus procurement has been sanctioned for 53 cities**
  - **and other projects related to infrastructure expansion have been approved for 21 cities**
- 12<sup>th</sup> Plan document: **Cities >2 million population to have metro**

***Neither green nor pro poor !!***