

# Nepalese Experience on Management of Motor Vehicles

## Regional Consultation on Vehicle Import Policy Road Map for Clean Air

May 31, 2018

Zanzibar, United Republic of Tanzania

(Center for Science and Environment , India)

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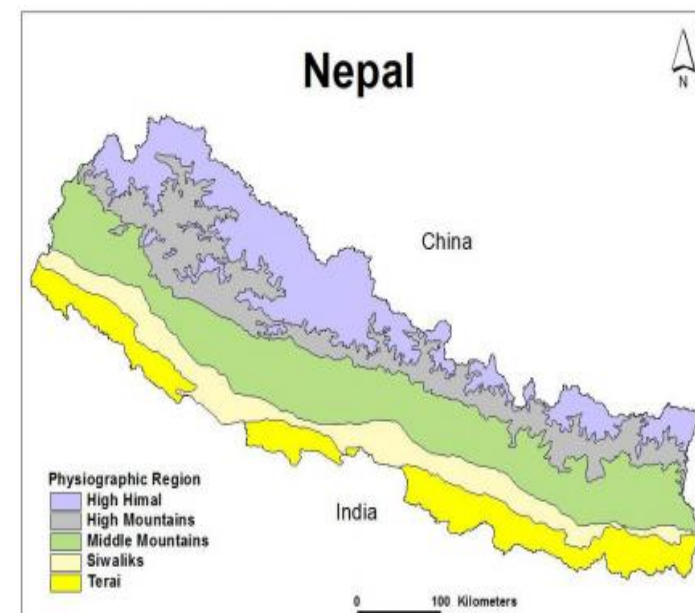
Government of Nepal

Ministry of Physical Infrastructure and Transport

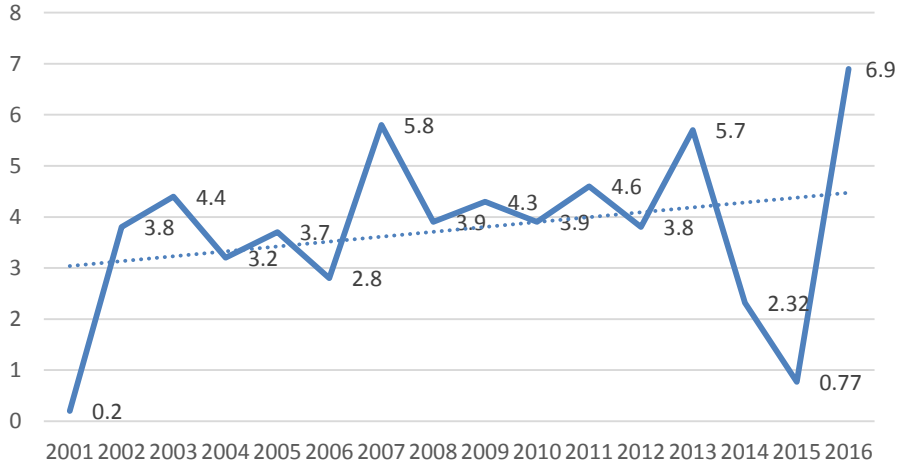
Department of Transport Management

## A Brief Country Profile

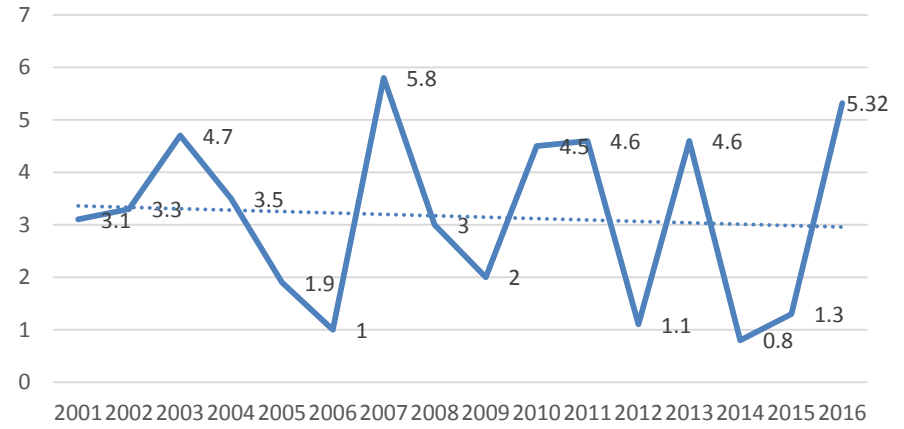
|  |                              |
|--|------------------------------|
| Area   | 147,181 km <sup>2</sup>      |
| Population (2016)                              | 28.331 million               |
| Species of Fauna                               | 4395                         |
| Species of Flora                               | 10,091                       |
| Number of rivers                               | 6000                         |
| total annual average surface run-off in rivers | 225 Billion Cubic Meter      |
| Human Development Index                        | Score 0.548 (2014)           |
| Share in global GHG emission                   | 0.027%                       |
| GDP (Producers' Price) (2017/18)               | US \$ 30 Billion (estimated) |
| Share of Agriculture in GDP (2017/18)          | 27.6%                        |
| GDP growth rate (2017/18)                      | 5.9% (estimated)             |
| GDP per Capita (2017/18)                       | US\$ 1004                    |
| Literacy (15-24 Years)                         | 88.6%                        |



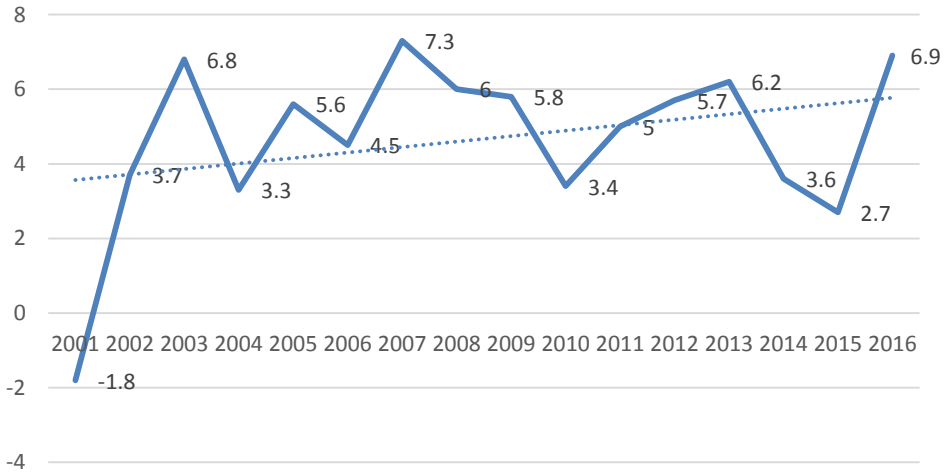
GDP Growth %



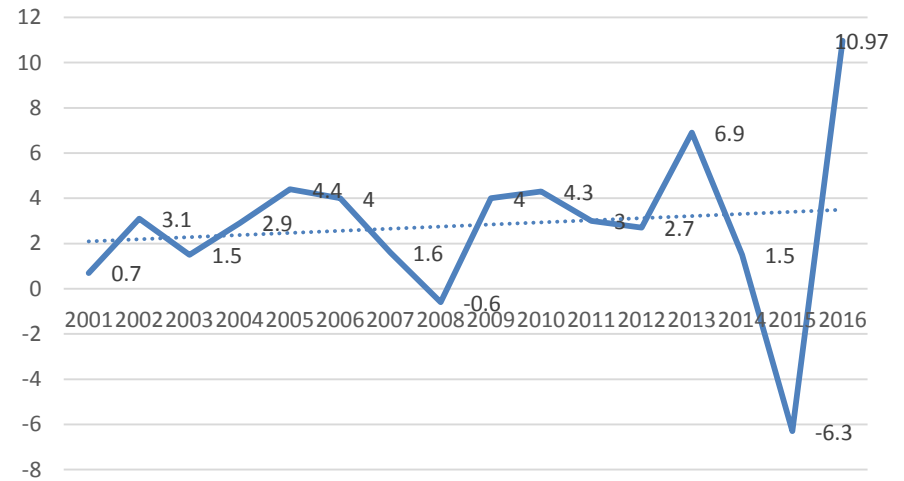
Agriculture Sector Growth %



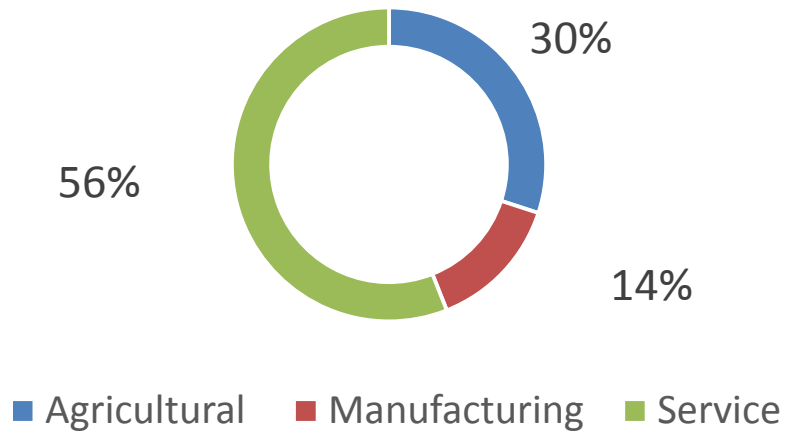
Service Sector Growth



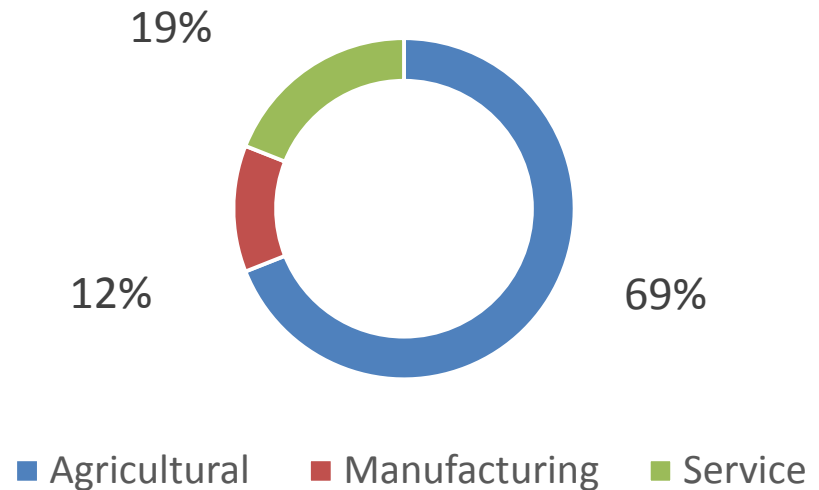
Industrial Sector Growth %



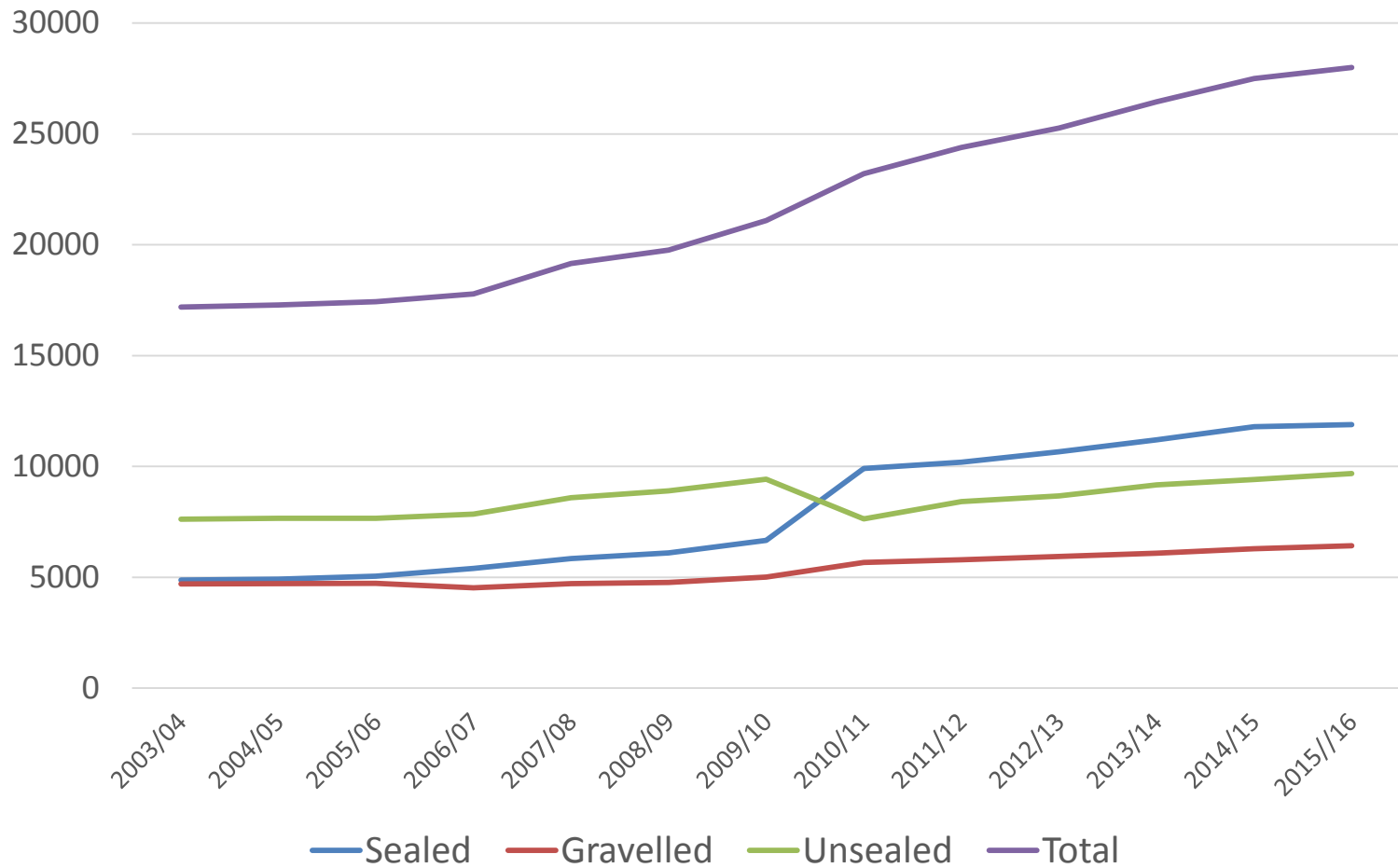
### Structure of Economy (2016/17)



### labour Force Across Sectors (2014)



### Status of Strategic Road Construction, kM



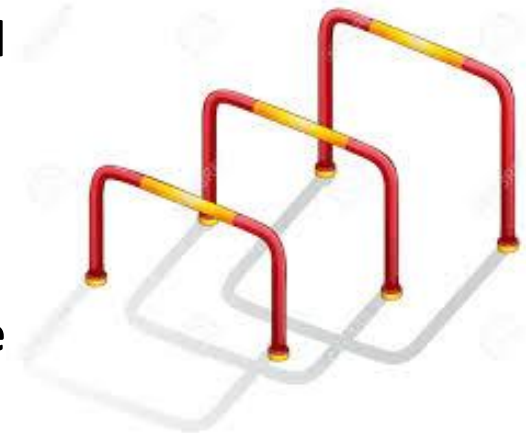
## Constitutional, Policy and Legal Arrangements:

- **Constitution of Nepal (2015)**
- **National Transport Policy (2001)**
- **Climate Change Policy (2011)**
- **Environment Friendly Vehicle and Transport Policy (2014)**
- **Environment Protection Act (1997)**
- **Environment Protection Rules (1997)**
- **Ozone Depleting Substances Consumption (Control) rules (2001)**
- **Motor Vehicle and Transport Management Act (MVTA) (1993)**
- **Motor Vehicle and Transport Management Rules (MVTMR) (1997)**
- **Emission Standard for In-Use Vehicles (1998)**
- **Nepal Vehicle Mass Emission Standard (NVMES-2012)**



# Issues on Transport Sector & Environment

- **Lack of Exact Data:** no specific study carried out so far
- **Infrastructure :** poor condition of roads, no railway, water way not being used, intermodal transport in primitive stage, difficult terrain
- **Inefficient and Polluting Vehicles**
- **Weak Enforcement Capacity / Poor Compliance**
- **Lack of Awareness and Motivation among Vehicle Users and Transport Service Providers**
- **Market:** fragmented service provider – organizations, no incentives from government to support technology upgradation, lack of access to low cost finance and technology
- **Failure to harness hydro-electric Potential as source of energy for Transport**



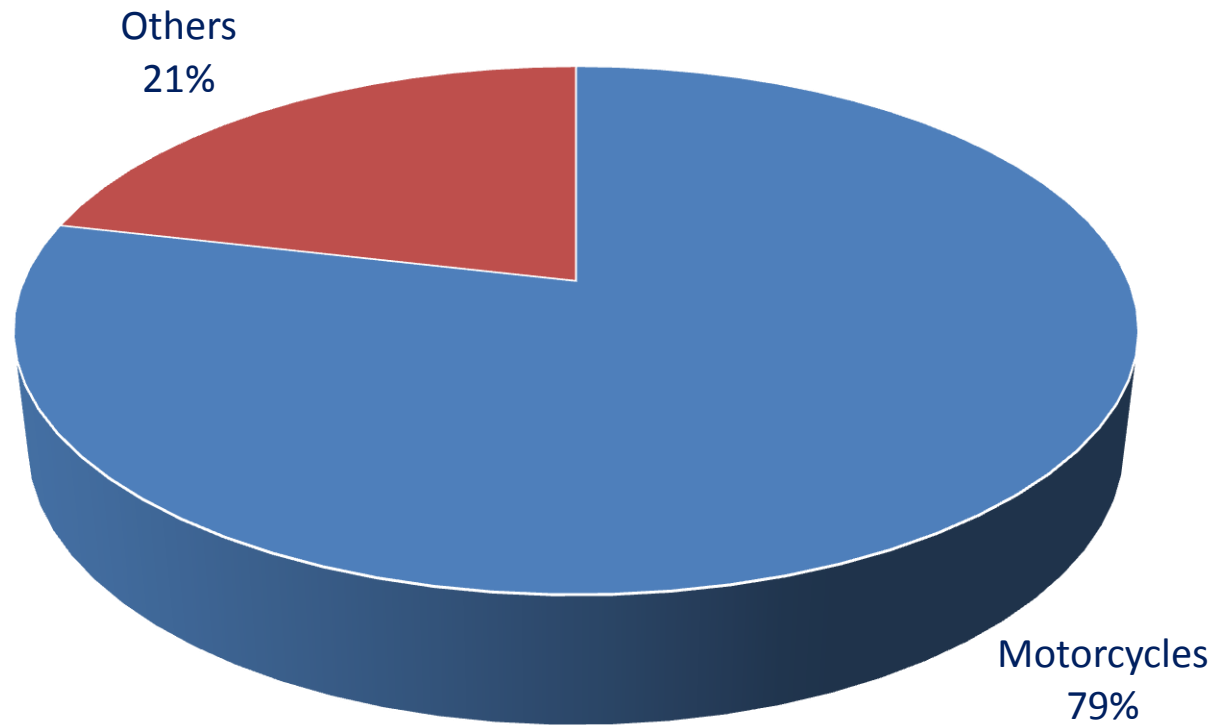
## Opportunities and Way Forward:

- **Systematic Study of Exact Situation for Reliable Data**
- **Strict Enforcement of Prevailing Standards**
- **Education and Training for Stakeholders**
- **Better Traffic Management (Vehicles, Routes, Time)**
- **Technological Intervention : use of better tires, roof deflectors, catalytic converters, promotion of preventive maintenance**
- **Access to Technical Assistance and Low Cost Finance**
- **New and Updated Standards for Vehicles**
- **Infrastructure Building: better, strategic roads, railway, dry ports, petroleum pipelines**
- **Transforming the Energy Mix: increasing electricity production, substitution of petroleum products**



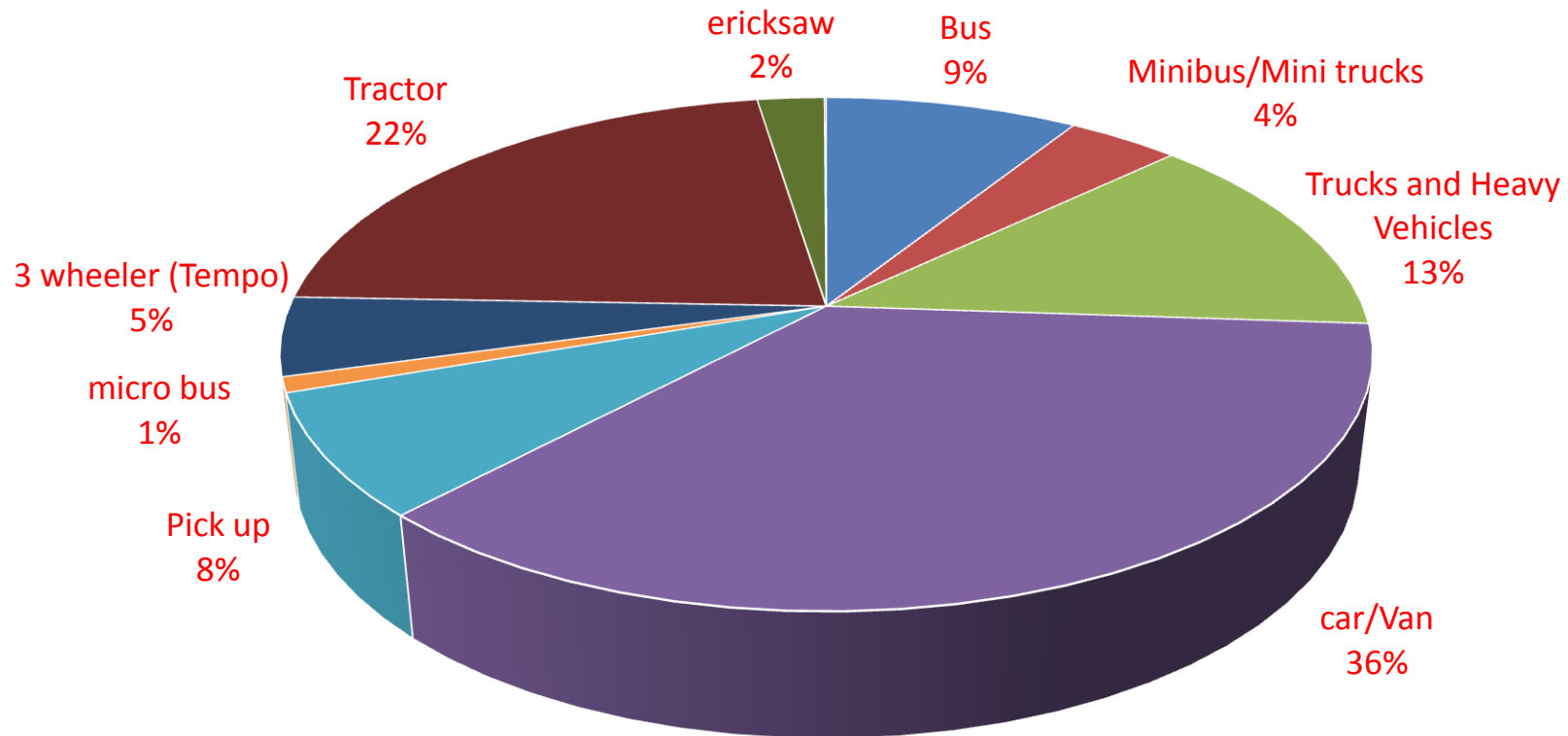
# Number of Motor Vehicles

**Total Number of Motor Vehicles Registered up to 2016/17  
(2,783,428)**

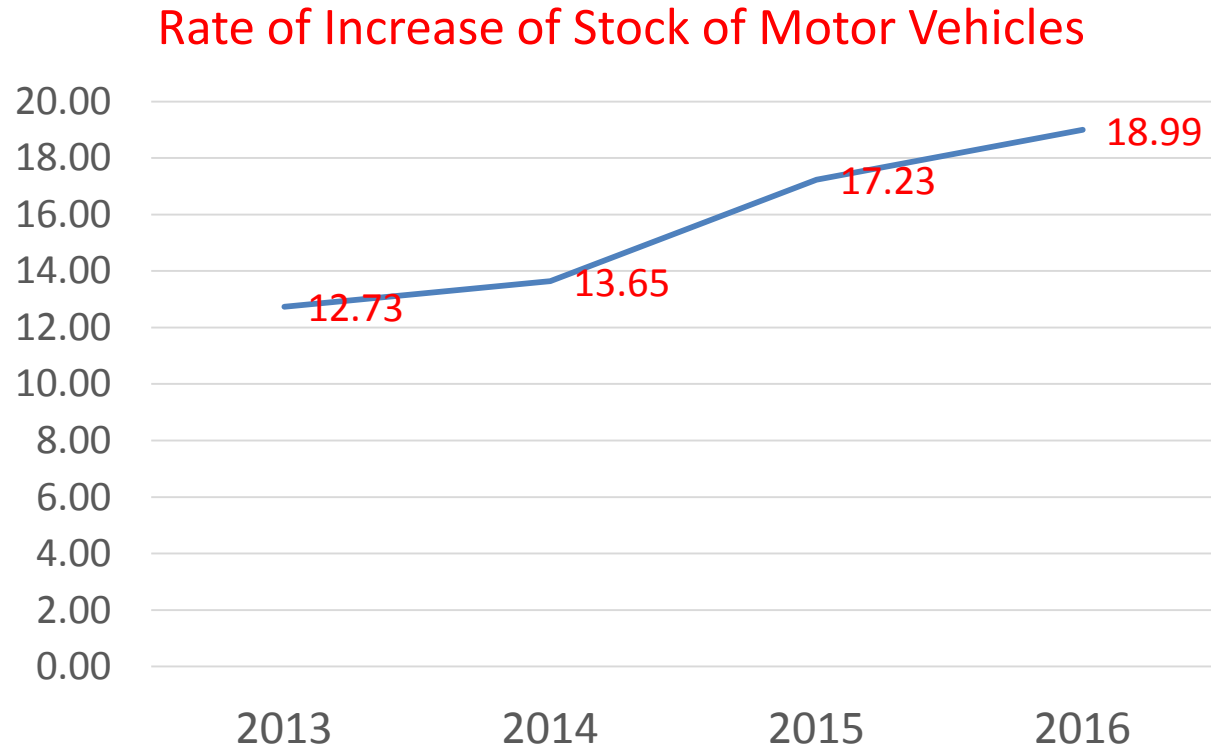


# Number of Motor Vehicles

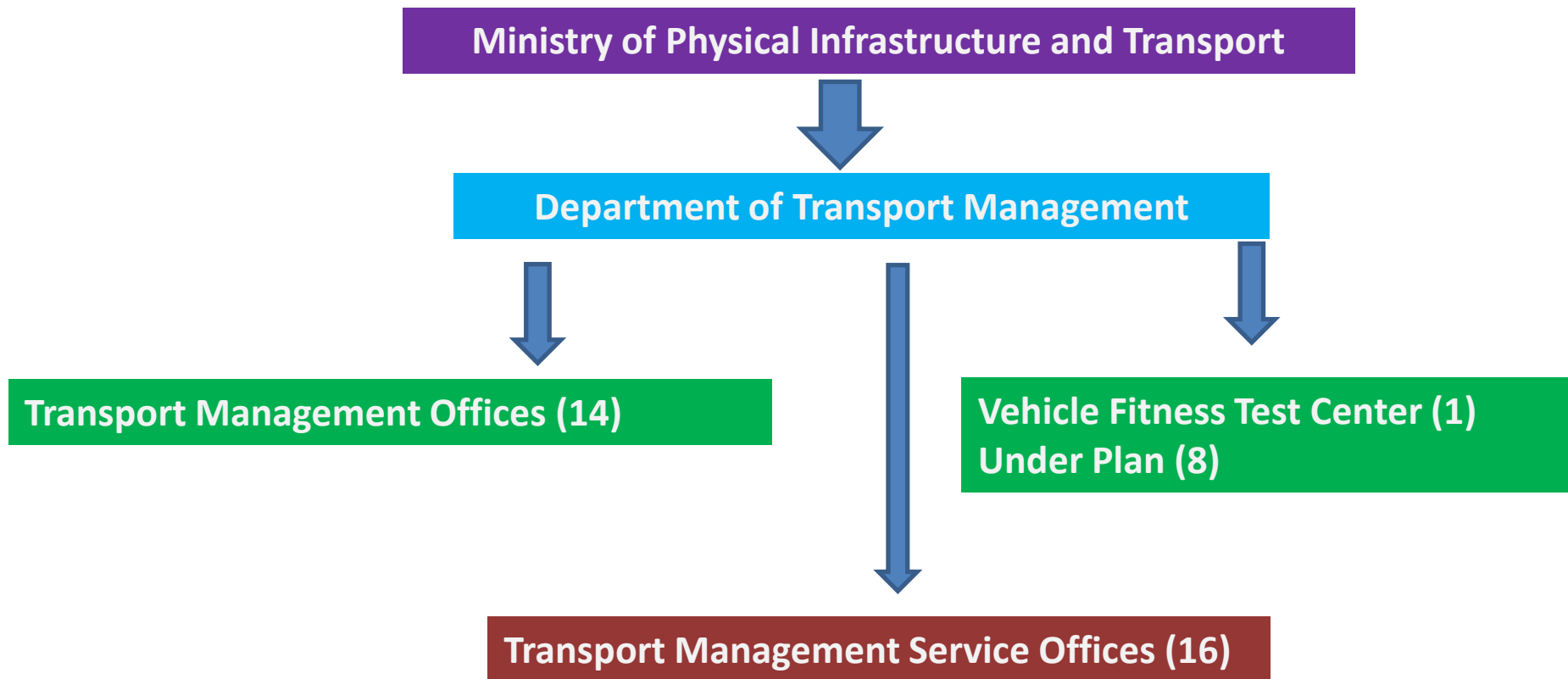
Number of Vehicles Registered up to 2016/17 except Motorcycles) (594,329)



# Number of Motor Vehicles



## Institutional Framework for Transport Regulation



## Mass Emission Provision for New Vehicles to be Imported

- No Pre shipment Inspection
- No measurement of Mass Emission in Chassis Dynamometer or Engine Dynamometer
- Import permitted upon submission of Type Approval and Conformity of Production certificates issued by competent authority in Manufacturing Country

# Biannual Road Test for Public Vehicles

## Rule 39(2) of MVTMR: Details to be examined during a Road Test

- Vehicle body
- windows,
- Seats
- Windscreen
- headlights, sidelights, back lights and other lights
- starting, pick-up and general tuning of engine
- steering
- Brakes
- Gears,
- Tires
- Wheels
- Springs
- Tie-rod
  
- Noise and **Emission**

## Regulation Trail (Pursuing Greener Transport)

30 Aug 1999 (Nepal Gazette Part 49 Supplement 21 (A+1))

- Registration of new 2 Stroke Engine Vehicles Banned
- Registration and Transfer of Title of Diesel powered 3 Wheelers Banned
- 99% custom duty and 100% Value Added Tax waived for the entrepreneurs who would import gasoline powered 10-14 seater bus by displacing diesel 3 wheelers

## Regulation Trail (Pursuing Greener Transport) Contd..

23 Dec 1999 Nepal Gazette Part 49 Pre-Supplement 38 (A+3)

- Introduction and Enforcement of Nepal Vehicle Mass Emission Standard 1999 (Equivalent to Euro I)
  - Except for tractors, power tiller, dozer, loader, dumper, crane, roller and excavator

11 Aug 2000 : Government Notification

- Restriction on import of used items including machineries and their parts, engine pumps & piston heads



# Regulation Trail (Pursuing Greener Transport) Contd..

23 Oct 2000

- In-use Vehicle Emission Standard (Green Sticker Standard)

10 Nov 2000 (Nepal Gazette Part 50 Supplement 41)

- Ban on operation of all types of vehicles made prior to 1980 with effect from 16 Nov 2001
- Ban on operation of 2 Stroke engine based vehicle and petrol or diesel fueled 3 wheelers inside Kathmandu valley with effect from 16 Nov 2001
- Ban on operation of Diesel 3 Wheelers all over Nepal

# Regulation Trail (Pursuing Greener Transport) Contd..

13 Aug 2012

- Nepal Vehicle Mass Emission Standard 2012  
(Equivalent to Euro III)

14 March 2016

- Strategic Work Plan for Development of Road, Rail and Transport for Prosperous Nepal (2016-21)
  - All public vehicles to be scrapped within deadline of 2 years i.e. 14 March 2018
  - 20% out of all vehicles plying in the country will be converted into environment friendly vehicle

22 February 2018

- Revision of In -Use Vehicle Emission Standard with effect from August 2018

## Provisions on Import of Vehicles (Finance Act -temporal)

- Only an authorized dealer can import motor vehicles from the country of manufacture or from authorized dealer in another country
  - If a vehicle is not being imported directly from the manufacturer the importer should furnish a tripartite agreement between the manufacturer, exporting dealer and the importer.
  
- Reconditioned or used vehicles or vehicles not complying to Nepal Vehicle Mass Emission Standard 2012 cannot be imported

Exceptions: Following persons are allowed to bring used vehicles

  - Foreign service employee working at Nepalese Diplomatic Mission abroad
  - A foreign diplomatic staff- member working in Nepal

## Steps to Encourage Environment Friendly Vehicles and Transport

### Value Added Tax Exempted in import of following items used in:

- Electric 3 Wheelers
- Deep Cycle Lead Acid Battery
- Electric Motor
- Chassis

### Full Custom Duty Exempted for

- Components and parts required for converting a fossil fuel 3 Wheeler to electric 3 Wheeler
- catalytic converters
- magnetizers
- machines and equipment for battery recycling plant

### Partial Custom Duty Exempted

- Hybrid motor vehicles (25% exempted)
- Large buses with >40 seats (95%)
- Components or parts for use in manufacturing of Electric Rickshaw

## Fuel Quality

Fuel quality dependent on the fuel quality prevalent in India

- April 2017 : Nepal Oil Corporation (NOC) is supplying Euro IV grade fuel
- From 2020 onward NOC may supply Euro VI grade fuel

## Environment Friendly Vehicles and Transport Policy 2014

### Goals

- Promoting the national production
- Infrastructure for such vehicles and services
- Promoting the industry, trade and technology
- Converting the fossil fuel vehicles to environment friendly vehicles
- Emission reduction and environment protection

## Environment Friendly Vehicles and Transport Policy 2014

### Strategic Programs

- Encouraging, enabling and promoting national industry in this field
- Government or government owned entities to buy such vehicles giving priority to national product , making at least 20% of all vehicles to be environment friendly by 2020
- Provision of exemptions on Finance Act. Income Tax, Custom, VAT, Excise Duty, rebates
- Separate facilitated regulation, test, registration and operation
- Priority sector for bank credit
- Tourism area such means

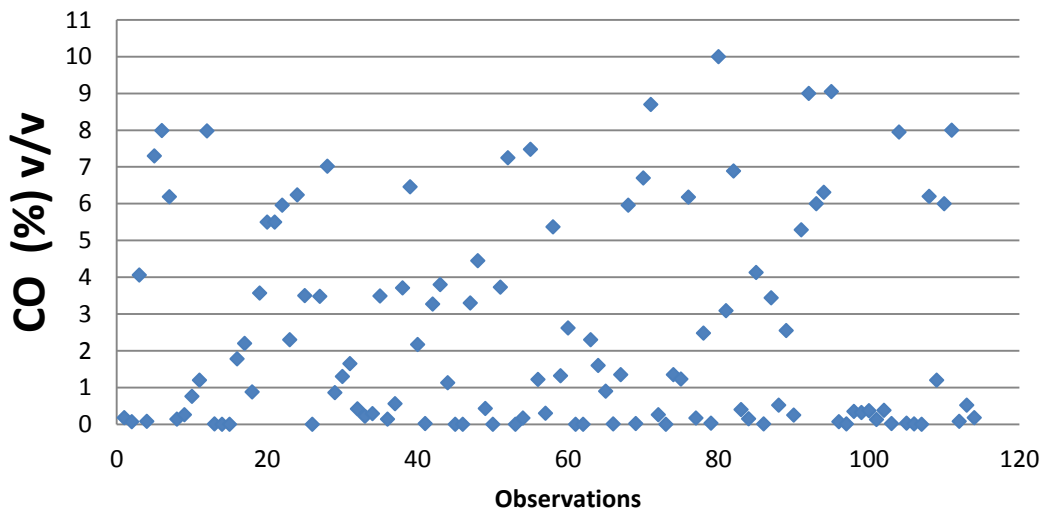
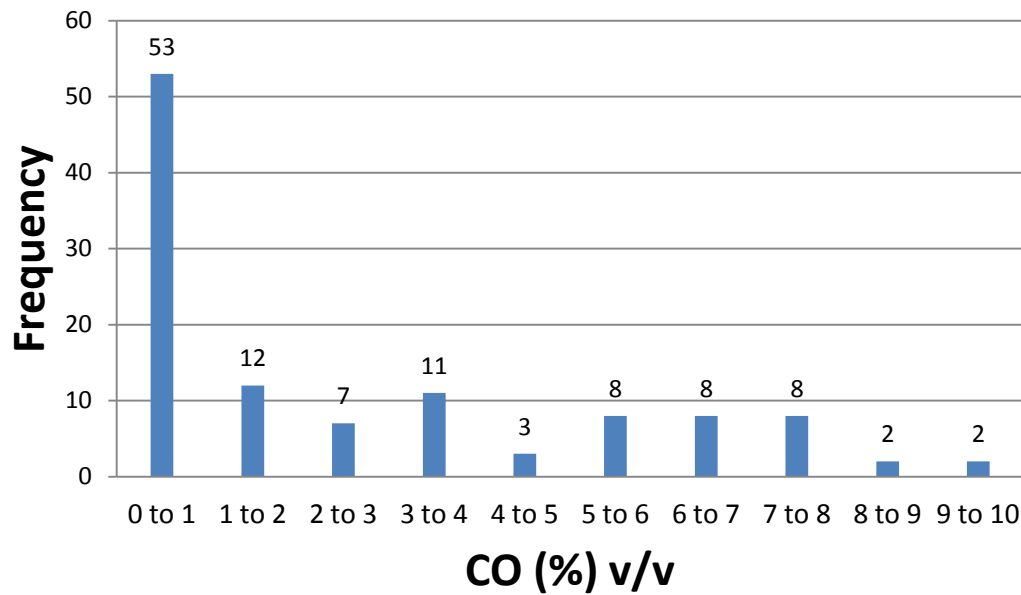
## Environment Friendly Vehicles and Transport Policy 2014

### Strategic Programs (Contd..)

- Cooperation between Public, private and cooperatives for building
  - Green mode of transport like Rope-Ways
  - Charging Stations for Electric Vehicles
  - Parking lots with solar powered charging facilities for electric vehicles
- Promotion of Battery recycling industry
- pollution tax on battery
- Separate lanes for cycles
- Conversion old vehicles into to electric vehicles before they are auctioned
- Separate route and identity for such vehicles used in public transportation



## Scenario: Random Road Side Test of 114 Petrol Vehicles (Jan 2018) (In Kathmandu)

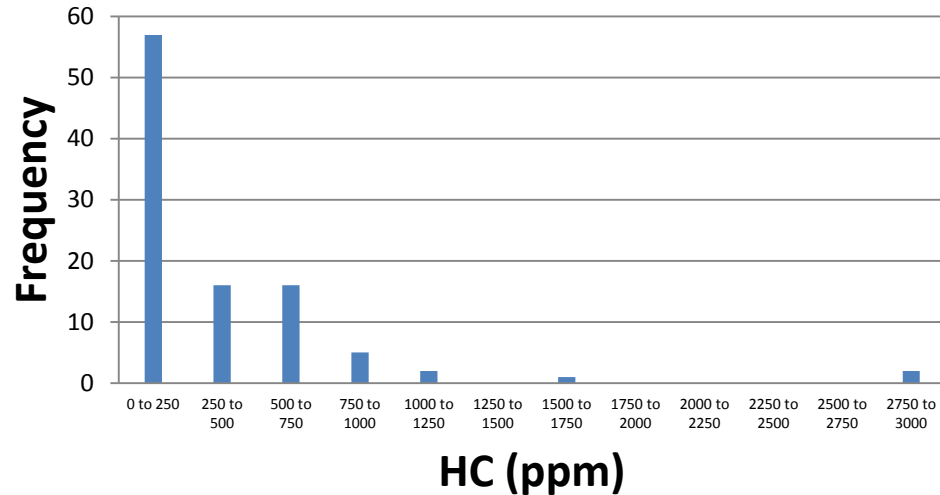


**Max. Permissible level of CO 3%**

|                |          |
|----------------|----------|
| Pass (number)  | 72 (63%) |
| Fail (number)  | 42 (37%) |
| Average CO     | 2.54     |
| St.Dev CO      | 2.84     |
| Average (Pass) | 0.61     |
| St.Dev (Pass)  | 0.76     |
| Average (Fail) | 5.85     |
| Stdev (Fail)   | 1.88     |

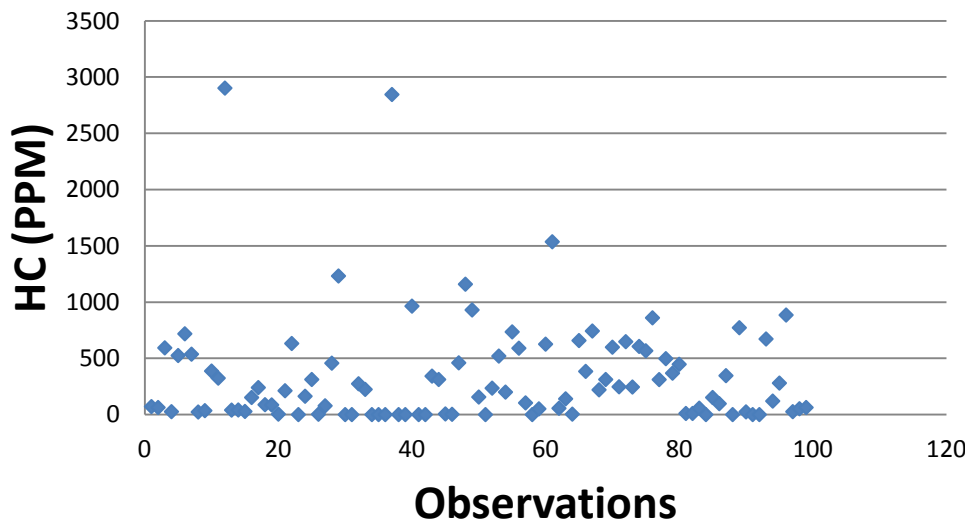


# Scenario: Random Road Side Test of 99 Petrol Vehicles (Jan 2018) (In Kathmandu)



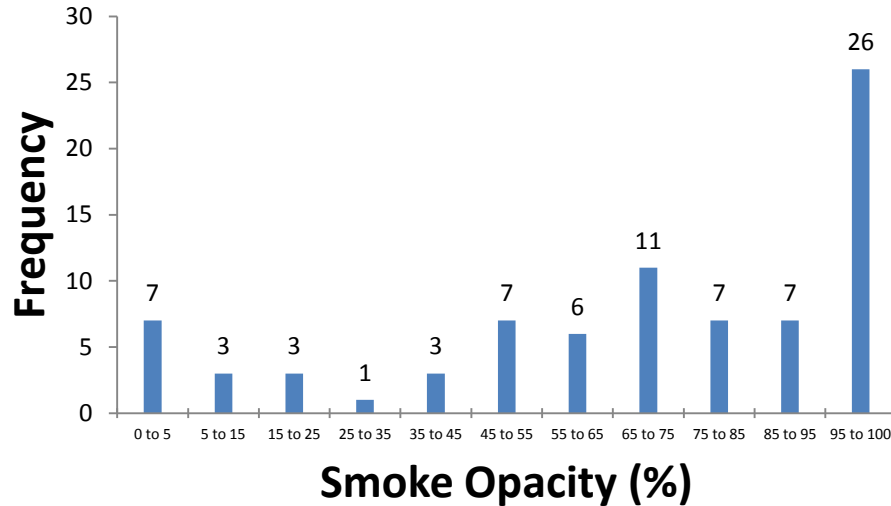
Max. Permissible level of HC 1000

|                |         |
|----------------|---------|
| Pass (number)  | 94(95%) |
| Fail (number)  | 5(5%)   |
| Average        | 340.62  |
| St.Dev         | 487.13  |
| Average (Pass) | 255.82  |
| St.Dev (Pass)  | 271.45  |
| Average (Fail) | 1934.8  |
| Stdev (Fail)   | 868.73  |

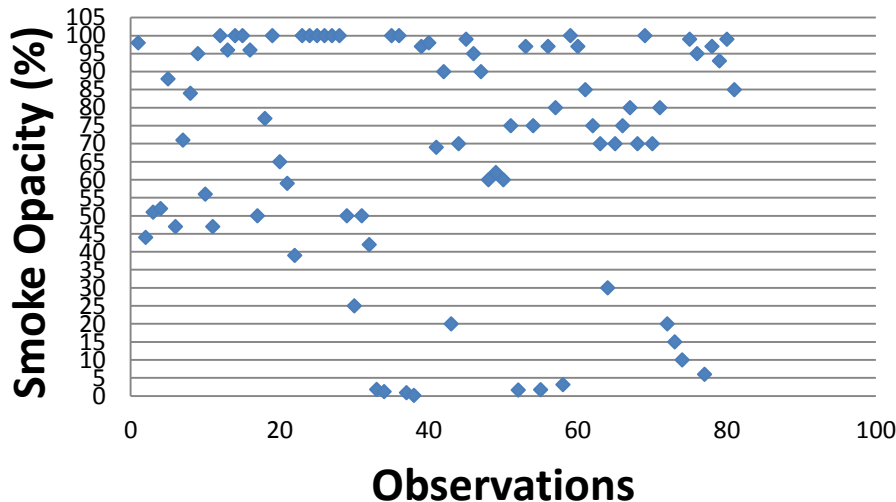


# Scenario: Random Road Side Test of 81 Diesel Vehicles (Jan 2018) (In Kathmandu)

**Max. Permissible Opacity 65%**



|                |          |
|----------------|----------|
| Pass (number)  | 30 (37%) |
| Fail (number)  | 51 (63%) |
| Average        | 44       |
| St.Dev         | 32.4     |
| Average (Pass) | 32.3     |
| St.Dev (Pass)  | 23.2     |
| Average (Fail) | 89.7     |
| Stdev (Fail)   | 11.3     |



## Lessons:

- Only making good policy and legislation is not enough for making motor vehicles and transport sector environment friendly
- Physical infrastructure, dedicated human resource and commitment by all stakeholders are required for effective implementation and monitoring of existing standards.
- Policies and standard formulation, implementation and monitoring should be based more on empirical realities (evidence)
- Systematic study is required to find out how vehicles of different age, make and model are contributing in emission.
- Introduction of vehicles of better technology requires investment of resources and also awareness and motivation among users

## Next Steps:

- Establishment of **Mass Emission Lab** to conduct tests on random sample of imported vehicles.
- Setting Up of Central Data Base connected **Emission Testing Centers** throughout the country.
- Setting up of 7 **Vehicle Fitness Test Centers** across the country
- **Awareness raising** programs for transport entrepreneurs and general public
- Extensive **study of emission pattern** based on type, make and age of vehicles
- Incentives in terms of tax and custom duty exemption or subsidy for **conversion technology and for emission control devices.**
- More incentives and promotional steps for import or production of electric vehicles and simplification of the testing and registration of such vehicles.

Thank You