



A round table on safety of **“TWO-WHEELERS”**

Exploring the Use of Road Safety Legal Instruments to Address Powered
Two-Wheeler Safety policies in **“ASIAN REGION”**

Dr. Rohit Baluja

President ,Institute of Road Traffic Education (IRTE)

India

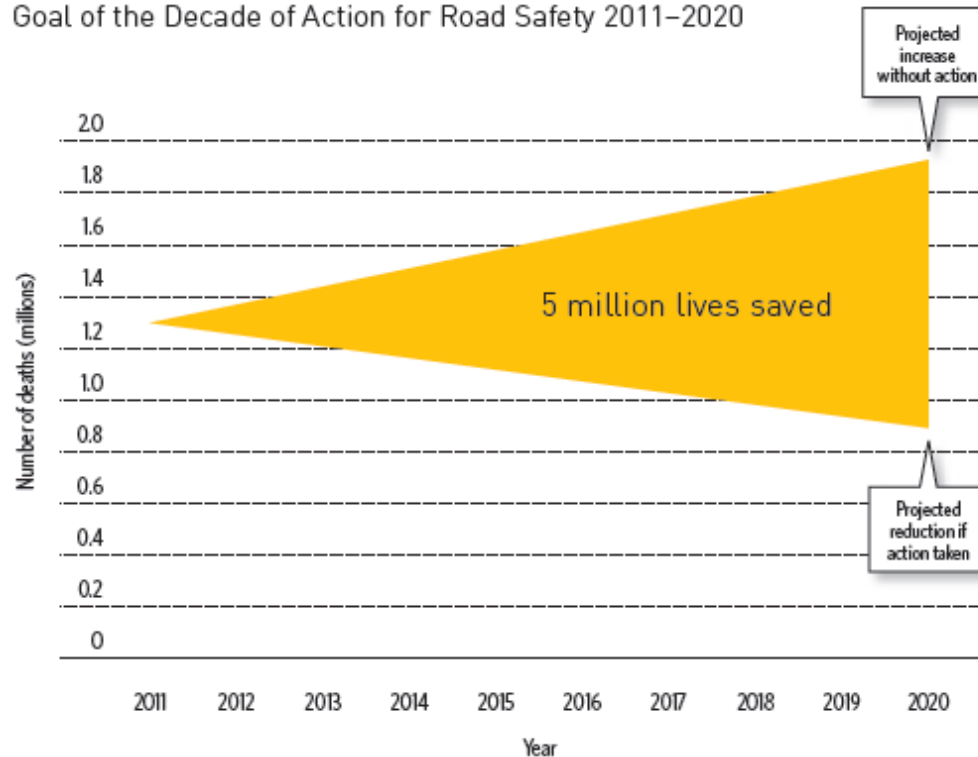




Thank the Members and Secretariat of WP1

For Organizing this Round Table
Giving importance to the issue of
Two-Wheeler Safety

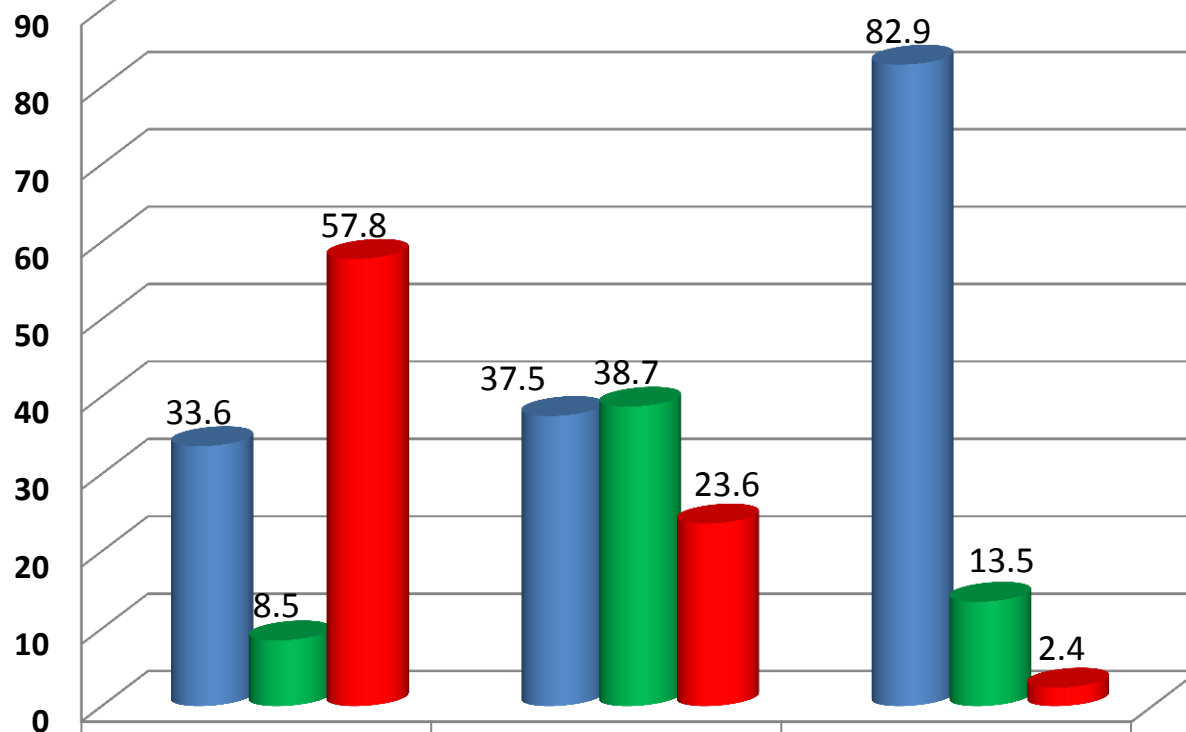
Goal of the Decade of Action for Road Safety 2011–2020



UN Objective In
↔ **“GLOBAL STATUS REPORT ON
ROAD SAFETY 2013”**

- ✓ Globally 23% of the deaths in road accidents are constituted by Two-wheelers.
- ✓ In Asia 34% of the deaths in road accidents are constituted by Two wheelers wheelers.

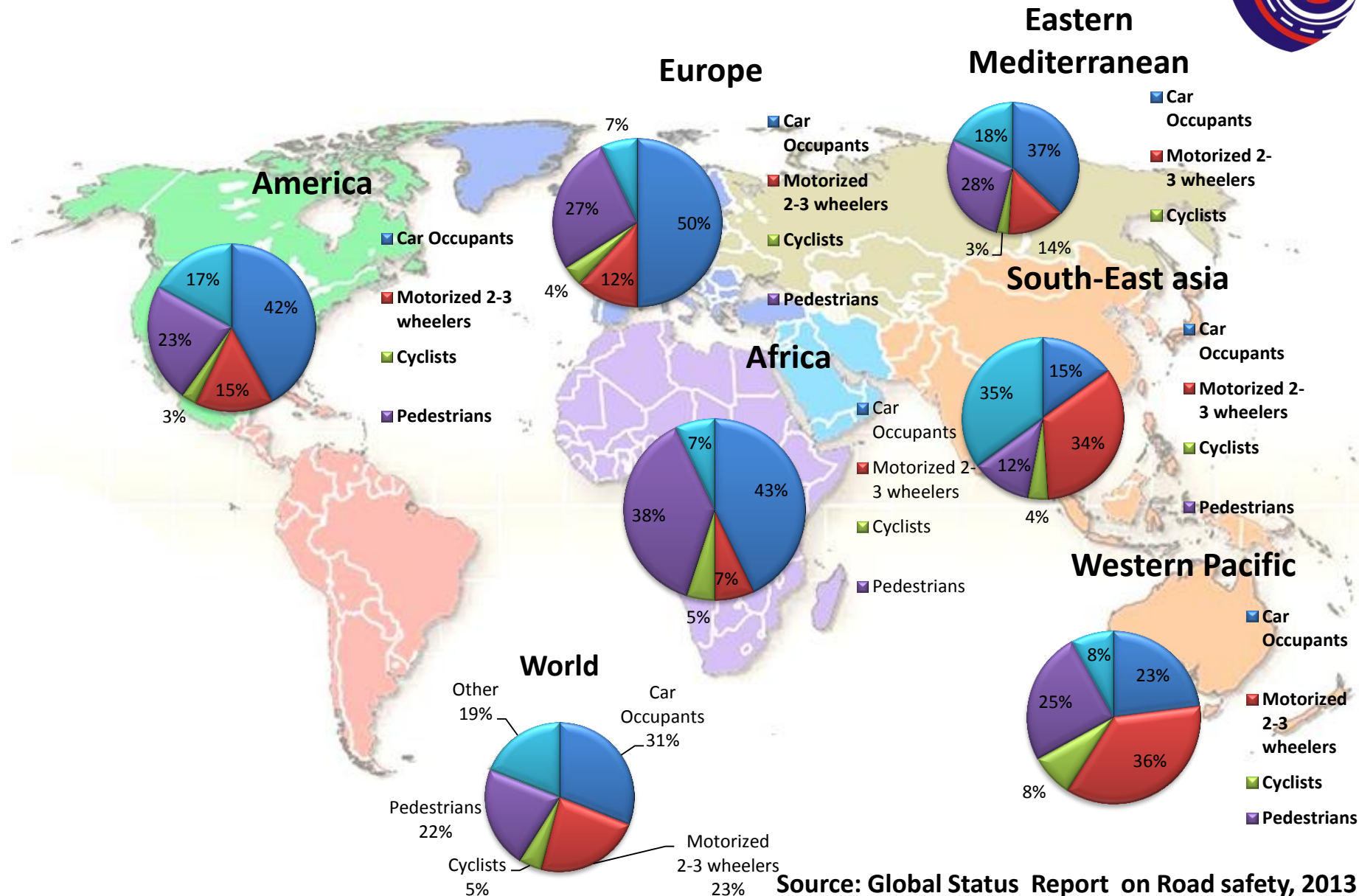
We cannot achieve this target with out considering the importance of Two-wheelers today

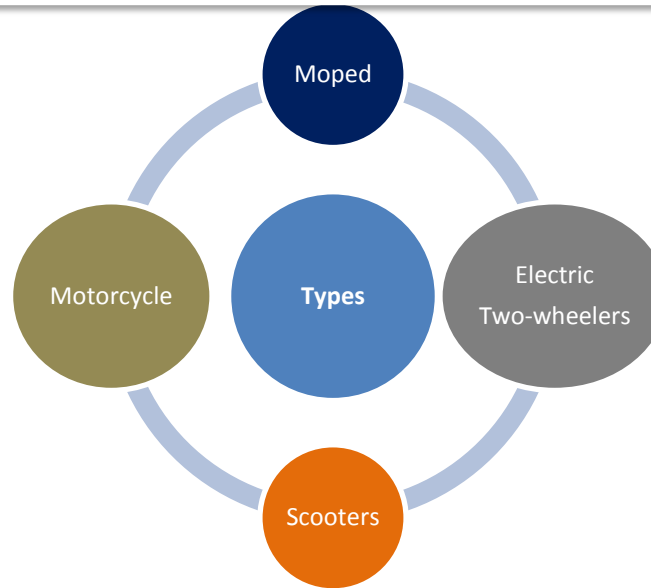
Category wise Production of
Vehicles (%)

■ Passenger cars	33.6	37.5	82.9
■ Commercial vehicles	8.5	38.7	13.5
■ Two-wheelers	57.8	23.6	2.4

Source: Auto Industry India in Changing world order.

Road Traffic fatalities by type of road user





According to United Nations Convention 1968:

- Moped“- Any two-wheeled vehicle not exceeding 50 cc and a maximum design speed not exceeding 50 km (30 miles) per hour.
- "Motor cycle" means any two-wheeled vehicle, with or without a sidecar, which is equipped with a propelling engine whose unladen mass does not exceed 400 kg.

Classification

Cylinder Size(Cubic centimeter)

Moped

≤50cc

Small
Motorcycle/scooter

50cc-150cc

Sports
Bike/Heavyweight
Motorcycle

≥150cc

Factors influencing motorcycle ownership in Asian Cities

Factors	Description	Impact
Cost & financing	Low cost & availability through easy financing terms, sometimes at zero interest rates	+++
Cost & financing	Low cost & availability through easy financing terms, sometimes at zero interest rates	+++
Fuel Economy	Consumes less fuel & has better mileage compared to other modes	+++
Congestion	Highly Congested areas suit 2-wheelers	+++
Trip Length	Motorcycles provide highly competitive service for trip lengths at the 10/km range while for trip lengths greater than 10km, buses & cars are preferred	+++
State of Public Transport & NMT	Low levels of services & adequate facilities for public transportation & non-motorized transportation	++
Parking	Less Parking space requirement	++
Maneuverability	High maneuverability in traffic congested areas & narrow streets	++
Technology & Innovations	Maintenance & technological problems are relatively easier & cheaper to manage	++
Tax	Lower tax rates compared to 4-wheeled vehicles	++
Regulations & Enforcement	Poor &/or lack of regulations & insufficient enforcement	+





UN Convention 1968



Overtaking and movement of traffic in lines

- Contracting Parties or subdivisions thereof shall be free not to apply the provisions of this convention to **Cycles, mopeds, motor cycles and vehicles** which are not motor vehicles within the meaning of this Convention, or to the drivers of motor vehicles whose permissible maximum mass exceeds 3,500 kg or whose maximum speed, by design, cannot exceed 40 km (25 miles) per hour.

(Source: Overtaking and movement of traffic in lines (ARTICLE 11 of Convention on Road signs 1968))

ARTICLE 23

Standing and parking

- Where domestic legislation provides otherwise, vehicles other than two-wheeled cycles, two-wheeled mopeds and two-wheeled motor cycles without side-car shall not stand or be parked two abreast on the carriageway. Standing or parked vehicles shall, unless the layout of the area permits otherwise, be placed parallel to the edge of the carriageway.
- It shall be prohibited for cyclists to ride without holding the handlebars with at least one hand, to allow themselves to be towed by another vehicle, or to carry, tow or push objects which hamper their cycling or endanger other road users.

ARTICLE 27

Special rules applicable to cyclists, moped drivers and motor cyclists

- Motor cyclists **shall not be permitted to carry passengers except in the side-car**, if there is one, and on the additional saddle (pillion), if any, fitted behind the driver.
- Where cycle tracks exist, Contracting Parties or subdivisions thereof may forbid cyclists to use the rest of the carriageway. In the same circumstances **they may authorize moped drivers to use the cycle track** and, if they consider it advisable, prohibit them from using the rest of the carriageway.
- It shall be prohibited for moped drivers to carry passengers on their vehicle; however, Contracting Parties or subdivisions thereof may authorize exceptions to this provision and, in particular, authorize the transport of passengers on such additional saddle or saddles as may be fitted on the vehicle.

ARTICLE 32

Rules of the use of lamps

- During the day, a motor cycle moving on the road shall display at least one passing lamp to the front and a red lamp to the rear. Domestic legislation may permit the use of daytime running lamps instead of passing lamps.
- In the case of mopeds and two-wheeled motor cycles without a side-car which are not equipped with batteries, at the extreme edge of a carriageway in a built-up area.

Rider permits and licensing for mopeds and motorcycles

- **Detailed accident studies have shown that a key element in creating safe riders is experience.** Research has shown that successful completion of a rider-training programme can provide the equivalent of up to six months of riding experience.
- **The European experience has been that young road users usually progress from a bicycle to a moped and then to a motorcycle or car.** In countries where the climate makes two-wheeler riding attractive, mopeds are seen as a special form of bicycle and a first step towards motorized transport.

- For motorcycles, the trend has been towards a phased introduction to the more powerful vehicles. Thus, a learner rider in Europe will be restricted to a limited performance motorcycle for the first two years and then allowed to ride a more powerful machine.
- Some countries allow car drivers to use the car permit to act as a permit for the limited class of motorcycle, on the grounds that such people have experience of using the road. In practice, **such riders usually** take some form of training to become familiar with the operation of the motorcycle.
- The choice of the permit structure for motorcyclists and moped riders depends on many factors in each country and experience shows that no one solution can be claimed to have a better result than another.



UN Consolidated Resolution on Road Traffic



Context

- Comprehensive motorcycle and moped safety programmes based on the most successful practices.

Rider Permits & Licensing for Mopeds & Motorcycles

- Should be based on completion of a rider-training programme equivalent of up to six months of riding experience.
- The minimum age bar for moped riders in European countries is 14 years.
- A learner rider in Europe will be restricted to a limited performance motorcycle for the first two years and then allowed to ride a more powerful machine.

Rider training

- Pre-License training should be followed
- Professional instructors are employed they should be qualified to an agreed standard and should always be experienced riders.
- The training programme should, in addition to teaching relevant machine control skills, also address hazard awareness and avoidance and the importance of rider attitude and behaviour and its consequences.



UN Consolidated Resolution on Road Traffic



Protective Gear

- The wearing of a approved protective helmet should be required for motorcycle and moped riders and passengers, as is legislated already, for example, by the European Agreement supplementing the Convention on Road Traffic, 1968.
- Two-wheeler wear clothing with retro reflective or fluorescent devices particularly when driving at night or in reduced visibility and to use additional protective equipment such as: proper clothing, gloves, boots, long trousers, and a durable long-sleeved jacket; eye and face protection, etc.

Traffic Engineering measures for two-wheeled motorized vehicles mentioned in UN Consolidated Resolution on Road Traffic

Pavement quality



Following Issues regarding Road condition needs to be engineered with special emphasis :

- Ruts
- Potholes
- Grooves
- Surface dressing
- chipping
- Protruding

Road markings



•The **thickness of the paint** and some **thermoplastic markings** may in time be so **slippery** that **braking becomes hazardous**.

Roadside Features



- Lighting supports**
- Signal and sign**
- Crash barriers** should be of concrete retaining walls or profiled crash barriers without unprotected posts and protruding sections is advisable.

Exclusive lanes for two-wheeled motorized vehicles



- Mopeds are allowed to use cycle tracks and lanes**
- Special attention towards pavement quality **on motorways & expressways for motorcycles** and deal promptly with any problems.

Policies & strategies mentioned in UN to improve infrastructure for Two-wheeled motorized vehicles:

- Development of policies on the road design.
- Maintenance and repair of roads, taking into account the impact on two-wheeled motorized vehicles.
- The design , location & mounting arrangements of road signs & road side features.
- Strategies to improve infrastructure for two-wheeled motorized vehicles, aimed at persons responsible for road construction and maintenance.

DEVELOPED NATIONS:

- * TOURISM
- * SPORTS
- * ENFORCEMENT



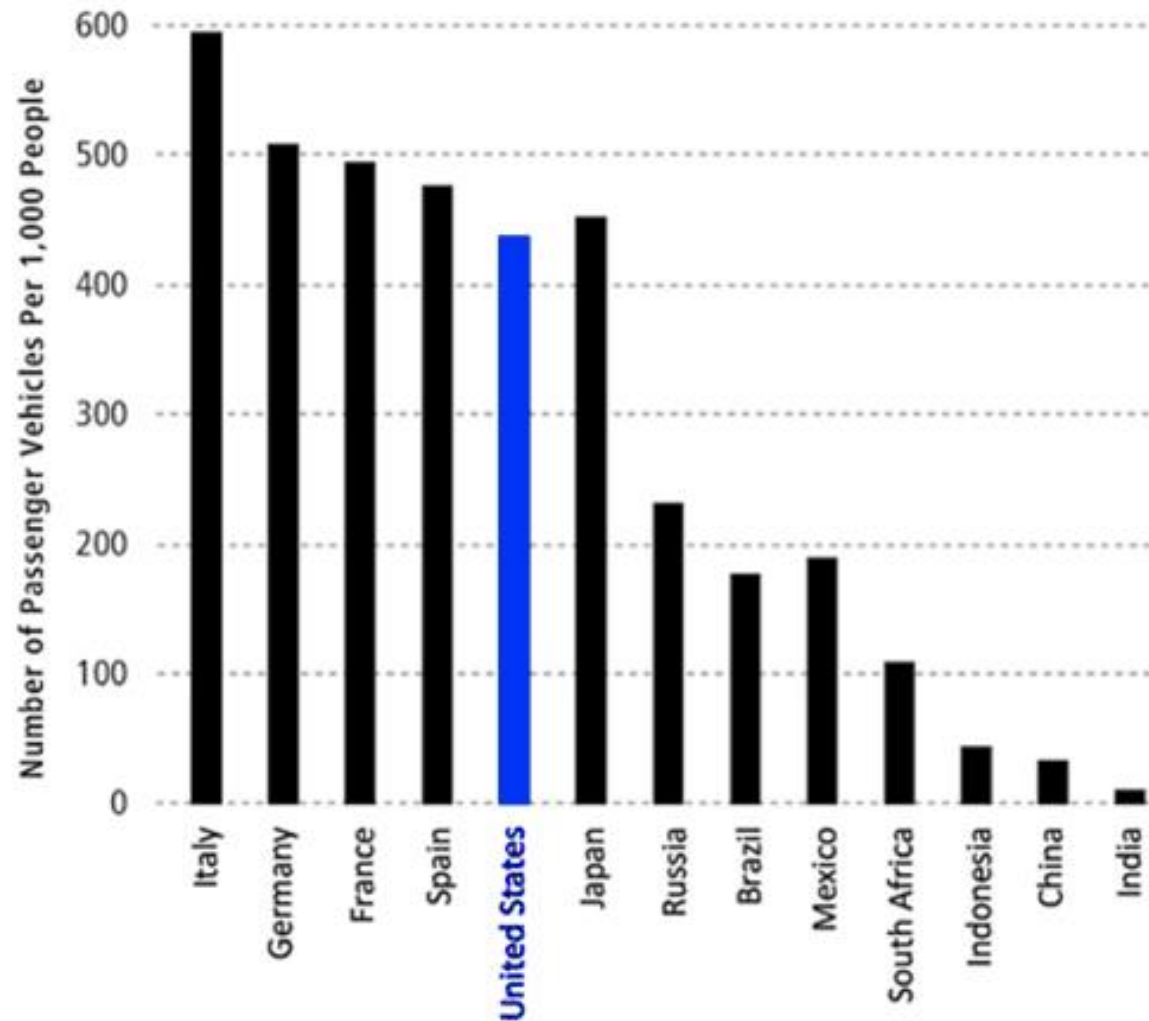
EMERGING ECONOMIES

TRANSPORTATION:

- PASSENGERS
- CARGO
- TAXI
- SCHOOL CHILDREN
- AMBULANCE
- ENFORCEMENT
- SPORTS & TOURISM



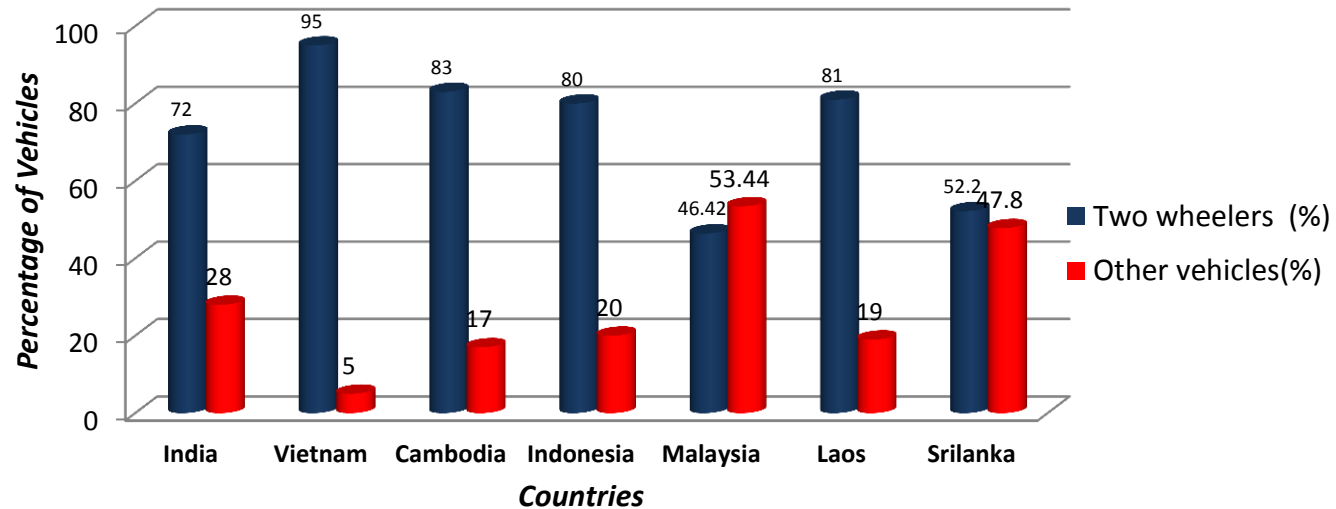
Number of Passenger vehicles per 1,000 population



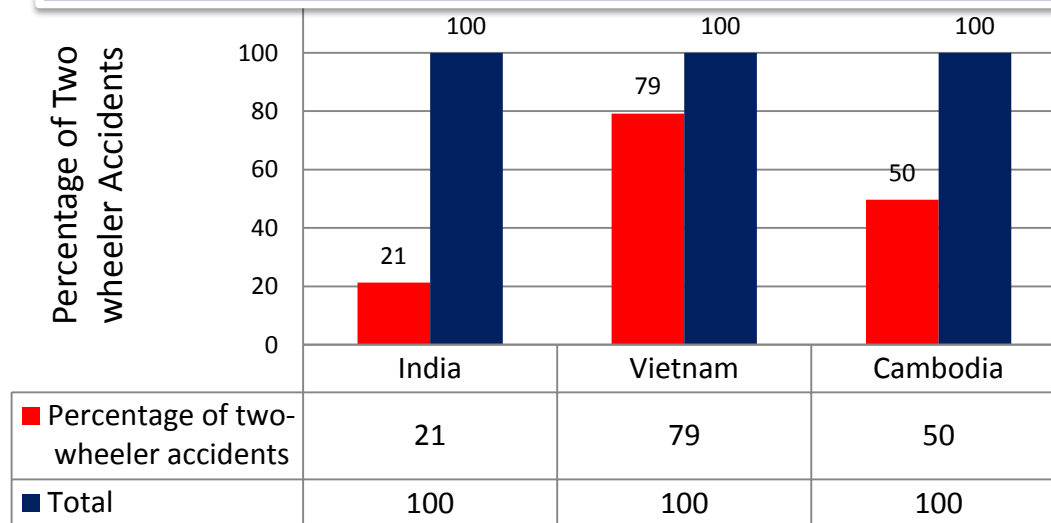
Source: News Paper- The Atlantic, Aug.14, 2012.

Comparison of Total Number of vehicles and Two wheelers -country wise

Composition of Vehicles



Two-wheeler fatalities in Road Crashes, 2011



VIETNAM



VIETNAM



Malaysia



Thailand



INDIA

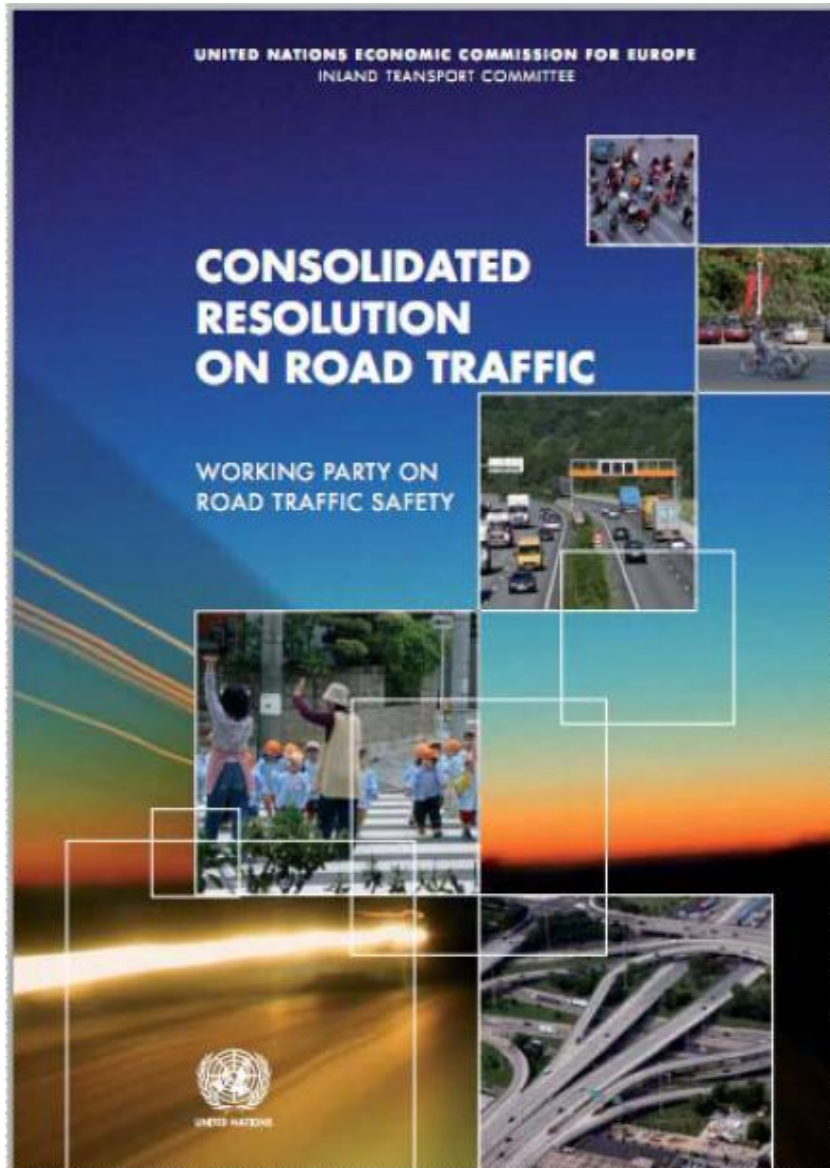


India



INDIA-Two-wheeler **ACCIDENTS**





Chapter-6, (6.2.1):

To be effective in reducing motorcycle and moped crashes and related deaths and injuries, comprehensive motorcycle and moped safety programmes should be established and supported.

China

- Guangzhou led the way in a process of regulating, containing and eventually banning motorized 2 and 3 wheelers.
- Cities throughout China followed suit.



China Scrapping

Source: ITDP China



Reasons for Imposing the Ban on Motorcycles

- Noise pollution
- Air pollution
- Traffic crashes and fatalities
- Illegal motorcycle taxi operation
- Impact on traffic order
- Impact on the image of Guangzhou
- Theft and security

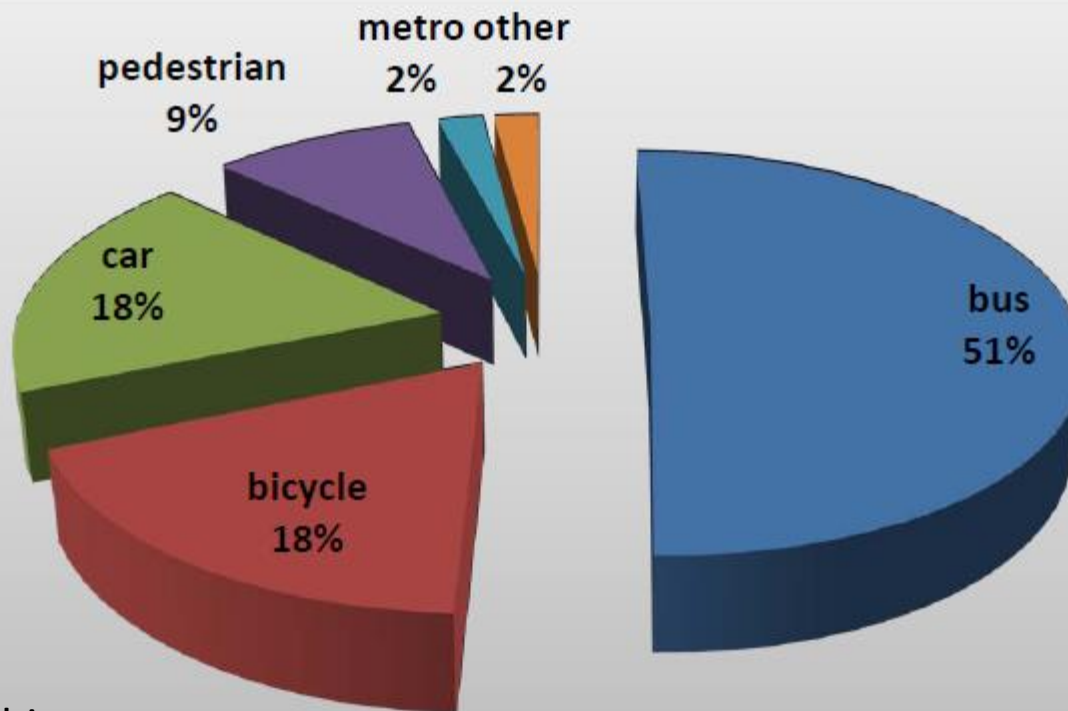
Source: ITDP China

China

Progressive Implementation of the Ban

- The second phase, from 1 January 2006, banned motorcycles from running on Dongfeng Road for 24 hours each day.
- The third phase, from 1 January 2007, banned all motorcycles from the urban area, 24 hours each day.
- Source: ITDP China

- Half shifted to buses. And although nearly 20% of motorcycle riders shifted to cars, the same percentage shifted to bicycles, and nearly 10% walked.



Source: ITDP China

Short term motorcycle mode shifts following the ban from 1 January 2007

Environmental, security, safety and pedestrian amenity improvements

- **Noise pollution**, especially in narrow alleyways and at night, was greatly reduced, and significant reductions in carbon monoxide, particulates and nitrogen oxide emissions were reported.
- **Crashes** significantly declined in January to August 2007 (when there were no motorcycles) compared to the same period a year earlier. Crashes declined by 17.5%, deaths by 2.2%, injuries by 20.4%, and property losses by 42.3%.
- In Guangzhou from January to August 2007 there were 52,141 **criminal** cases, a decline of 15.3% compared with the corresponding period a year earlier. Snatch theft cases declined by 44.3% over the same period.
- The quality of the **walking environment** throughout the city has been greatly improved.

China: Observations

- Banning of a major mode, widely seen as successful and supported by communities, despite probable adverse impact on congestion
- Draconian but not crude
- Same approach being taken in nearly all Chinese cities, and even in many counties
- Local industry not necessarily an obstacle

Source: ITDP China

Need to define the use

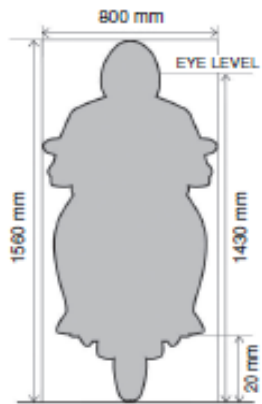
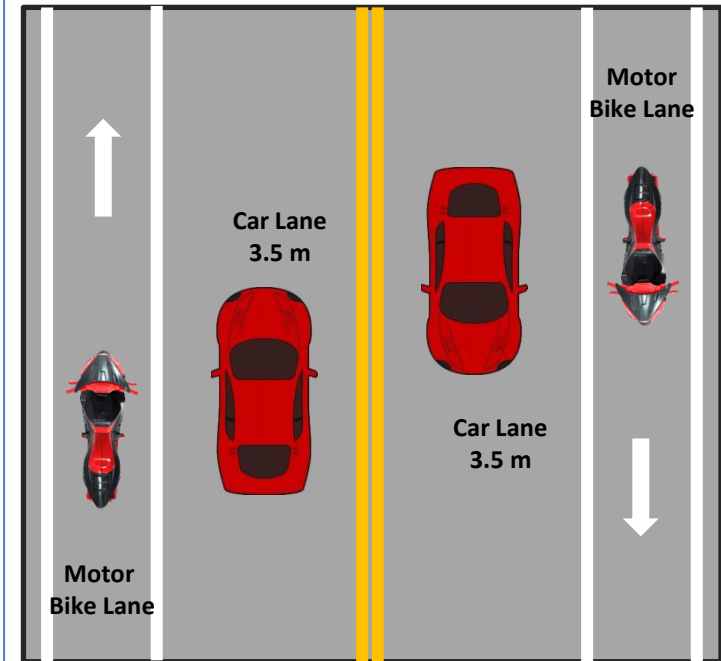
- *Use of Two-Wheeler?*
- *Permissible Rider?*



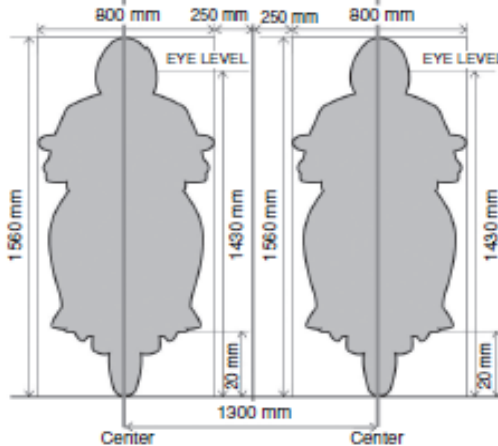
Improvising Traffic Engineering measures

Road Engineering- Segregated lane for Two-wheeler Traffic

Segregated lane for Two-wheeler Traffic In ROW (Right of Way)



Physical width of a static motorcyclist - 0.8m



Side-by-side motorcyclists separation distance of 0.50m



Good Practices in Malaysia & Taiwan





Exclusive Lanes for Two
Wheelers

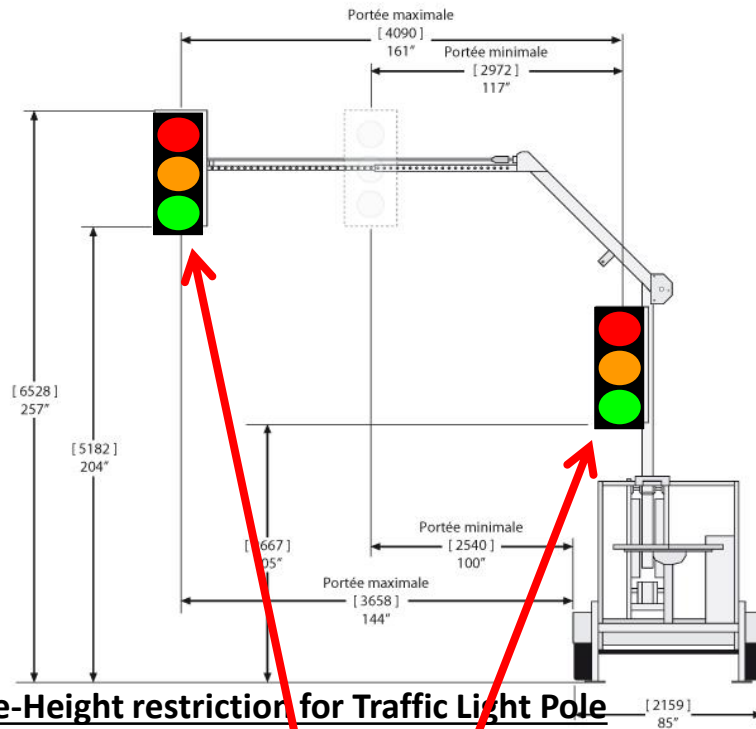


Figure-Height restriction for Traffic Light Pole



Figure- Good Practices for Height restriction of Traffic Light Pole for Tw0-Wheelers



Figure- Various Shapes of Road Signs

RED - stop

GREEN - direction

YELLOW - general warning

BLACK&WHITE - regulation

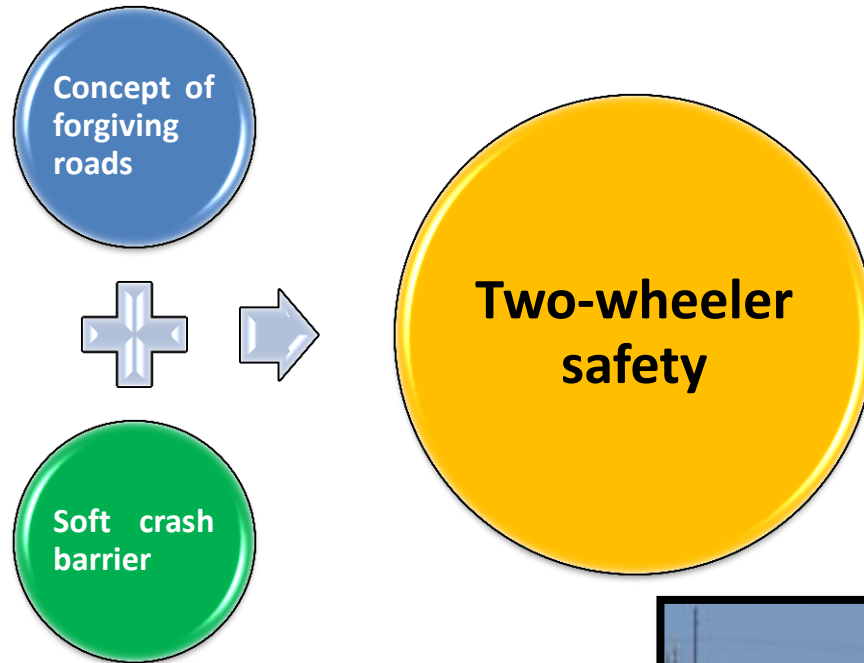
BLUE - motorist service (e.g., gas, food, hotels)

BROWN - recreational, historic, or scenic site

ORANGE - construction or maintenance warning

Figure- Various Colour of Road Signs

Crash Barriers

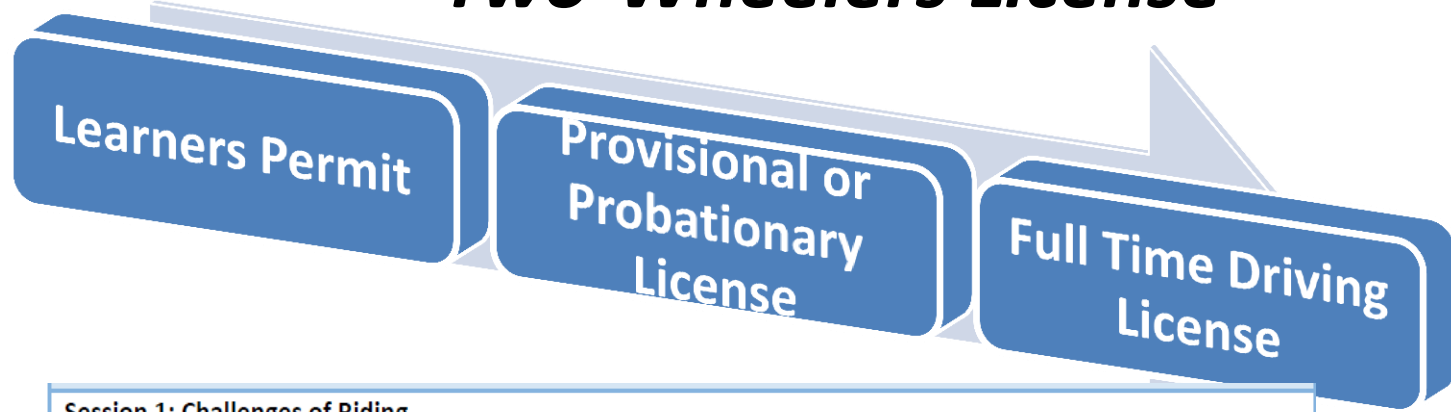


Retro reflectivity in Road Signs, Markings & Signals

- Retro reflectivity in road signs plays a big role in road safety and prevent roadway departure crashes by making the signs appear brighter and easier to see and read at night.



Two-Wheelers License



Session 1: Challenges of Riding <ul style="list-style-type: none"> • Introduction to the problems faced by the two-wheeler riders in the current road and riding environment <ul style="list-style-type: none"> - Types of Driving License and its requirements • Attitude of a Rider, Expected Qualities of a good rider • Expectations from the Organization– Organization guidelines if any
Session 2: Traffic Control Devices & the related Legislation <ul style="list-style-type: none"> • Importance and understanding of Road signs, Markings and signals Recognition - Meaning – Action & the Rules of the Road Regulation & the Right of Way
Session 3: Road Sense – Art of Defensive Riding <p>Code of Conduct on Road: Lane Discipline, Overtaking, Speeds, Acceleration/Deceleration, U-Turns, Stopping/Parking, Loading/Unloading of goods, Cornering, balancing & avoiding skids, Driver Signals, Mirrors, Moving Off, Tailgating, Riding in Adverse Conditions (Night Driving/ Bad Weather)</p>
Session 4: Human Behaviour <ul style="list-style-type: none"> • Health, Hygiene, Stress, Fatigue, Hours of Riding, Using of Mobile Phones while Riding, Drunken Driving, Drugs and Medicines
Session 6: Emergencies and Incidents <ul style="list-style-type: none"> • Handling Emergencies: Vehicles/Human Reporting Systems: Police and Owner • Basics of First Aid

Rider Apparel

Protect yourself

Maintain safe
distance from
vehicles

Make yourself
visible

Look out for
obstacles and road
hazards

Maintain your
bike well

- ✓ Usage of Helmet/Headgear, Knee Pads, Shoulder Pads, Leather jacket, gloves and boots
- ✓ Wearing Retro reflective & Bright coloured clothes
- ✓ Maintaining safe distance from vehicles
- ✓ Look out for obstacles and road hazards
- ✓ Usage of Antilock braking system, tyre condition, air pressure, suspension.



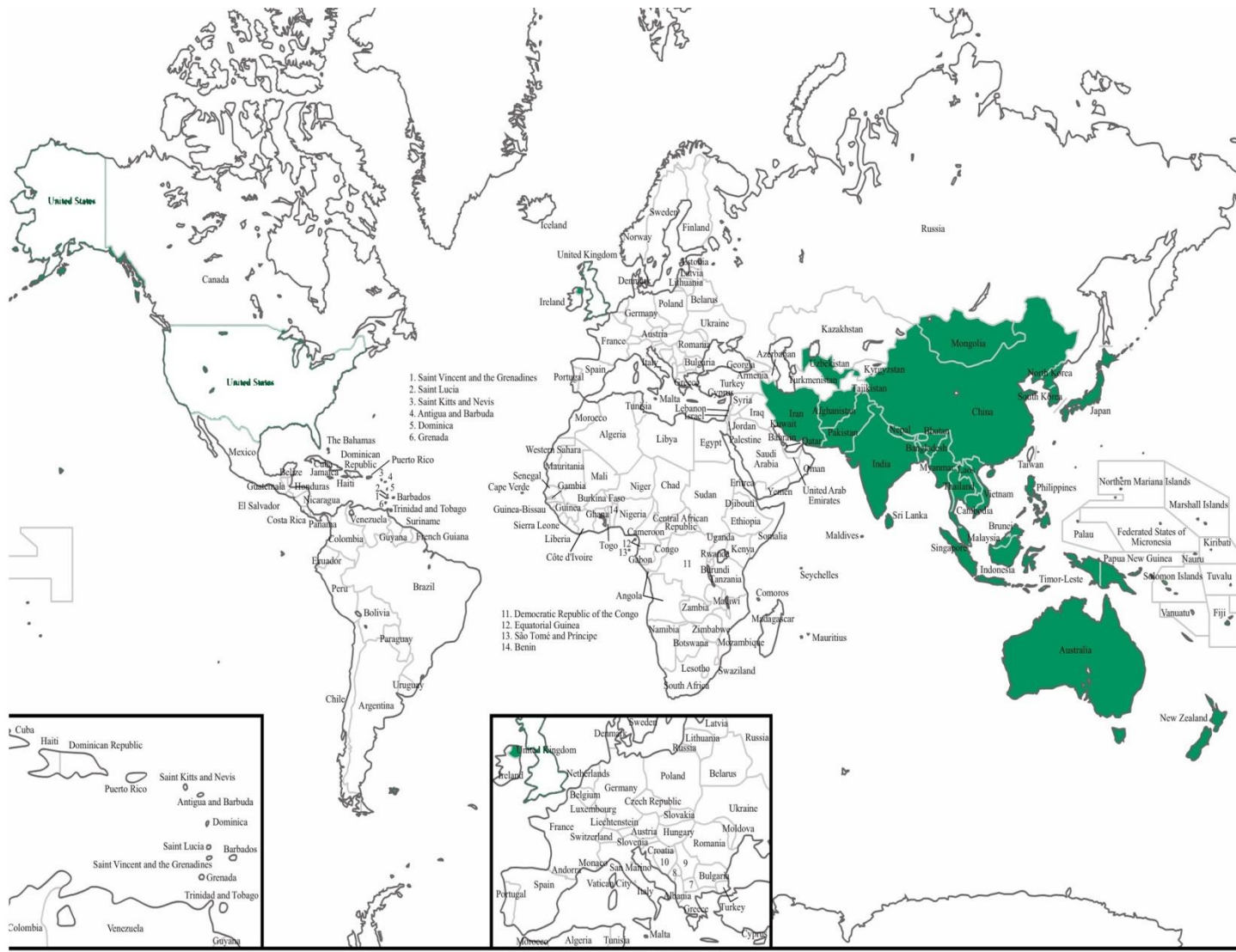
Retro reflective & Bright coloured Jackets for Two wheelers Visibility



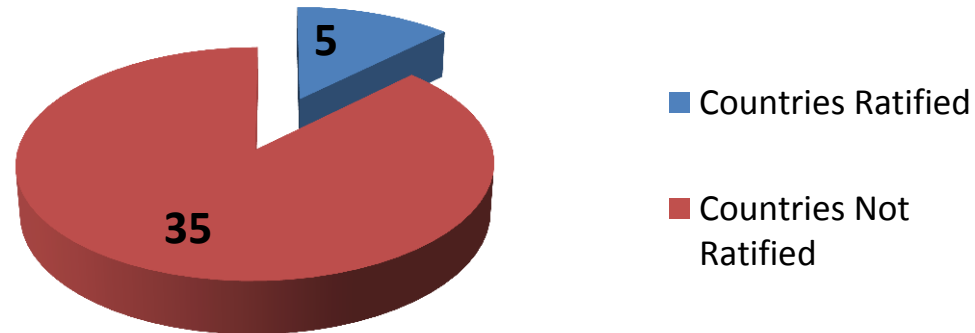
Protective measures for two wheeler riding

UNESCAP: 733,463 (59.47% of Global Road Fatalities)

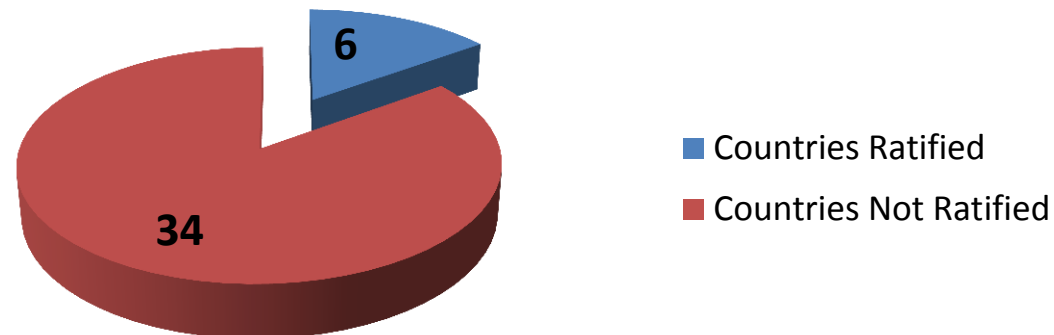
S.No	Member State	Estimated No. of Road Traffic Deaths
1	Afghanistan	6209
2	Australia	1363
3	Bangladesh	17289
4	Bhutan	96
5	Brunei Darussalam	27
6	Cambodia	2431
7	China	275983
8	Fiji	54
9	India	231027
10	Indonesia	42434
11	Iran (Islamic Republic of)	25224
12	Japan	6625
13	Kiribati	6
14	Korea (Democratic People's Republic of)	2614
15	Korea (the Republic of)	6784
16	Lao People's Democratic Republic(the)	1266
17	Malaysia	7085
18	Maldives	6
19	Marshall Islands (the)	4
20	Micronesia (Federated States of)	2
21	Mongolia	491
22	Myanmar	7177
23	Nauru	
24	Nepal	4787
25	New Zealand	398
26	Pakistan	30131
27	Palau	3
28	Papua New Guinea	892
29	Philippines (the)	8499
30	Samoa	30
31	Singapore	259
32	Solomon Islands	79
33	Sri Lanka	2854
34	Thailand	26312
35	Timor-Leste	219
36	Tonga	6
37	Tuvalu	
38	Uzbekistan	3107
39	Vanuatu	39
40	Viet Nam	21651
Total		733463



UNESCAP 1968 Convention on Road Traffic



UNESCAP 1968 Convention on Road Signs & Signals



To Support the UNECE

The first step towards inclusion of the needs of road safety of the Asian member Countries :

Help Develop Standards, Guidelines and Suggestive Legal Instruments for Motorised Two wheeler Safety for this Region

Road Safety For Two Wheeler

- Literature Review
- Survey
- Data Collection
- Data Compilation
- Data Analysis
- Draft Report

Research Study Area

- India
- Thailand
- Malaysia
- Vietnam
- Indonesia

Workshop Location

- India
- Thailand
- Vietnam

Compiled Review

Traffic Engineering

Vehicle

Rider/Human

Safety Apparel

Governing
Legislation

Traffic Engineering,
Lane
Widths/Segregation,
Design Speed/
Operating Speed and
Possible Posting
Speeds

Safety Features,
Carrying Capacity, ABS
and Other elements

Need for Training

Helmets with Standards
considering Climatic
Conditions and speed

All the issues mentioned

Final Submission to
UNECE through UNESCAP

Final Report after discussions
held in all workshops

Recognize the support



For supporting the Primary Work in making a preliminary visit to Malaysia, Thailand and Vietnam and for supporting the visit to eminent research institutional professors to this round table.

TWO WHEELER SAFETY

- 752 riders die every single day.
- Can we afford to let this Carnage continue?

Today is the **TIME** for Action



THANK YOU