

**The 6<sup>th</sup> ATRANS Symposium**

**“Transportation for a Better Life: Infrastructure Development and Management Aspect”**

# **Road Traffic Fatalities (RTF) Analysis: AEC Countries**

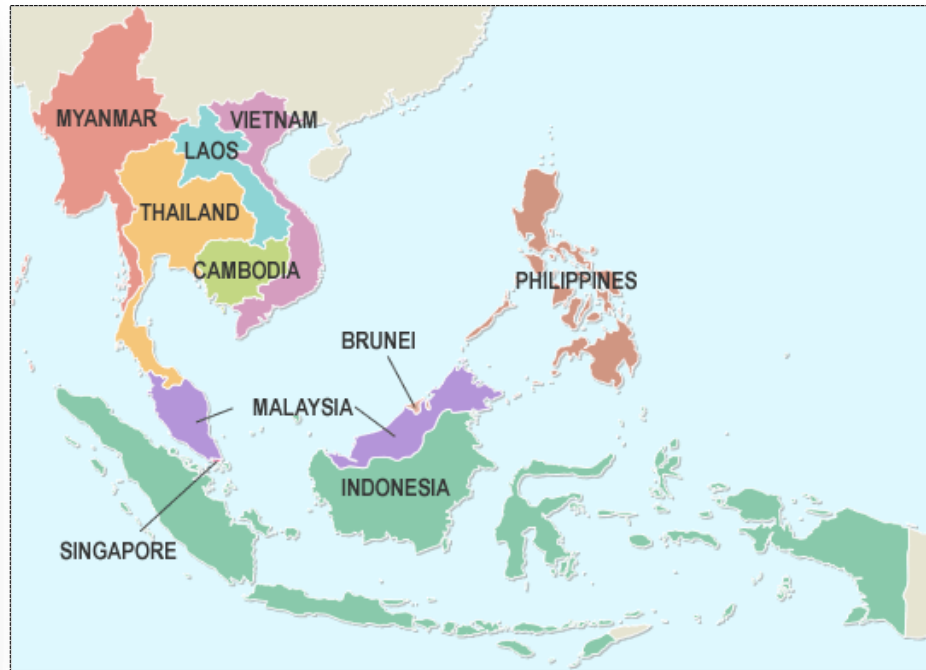
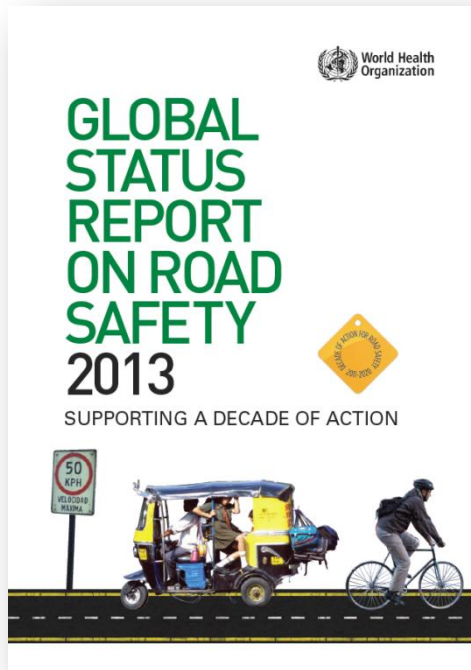
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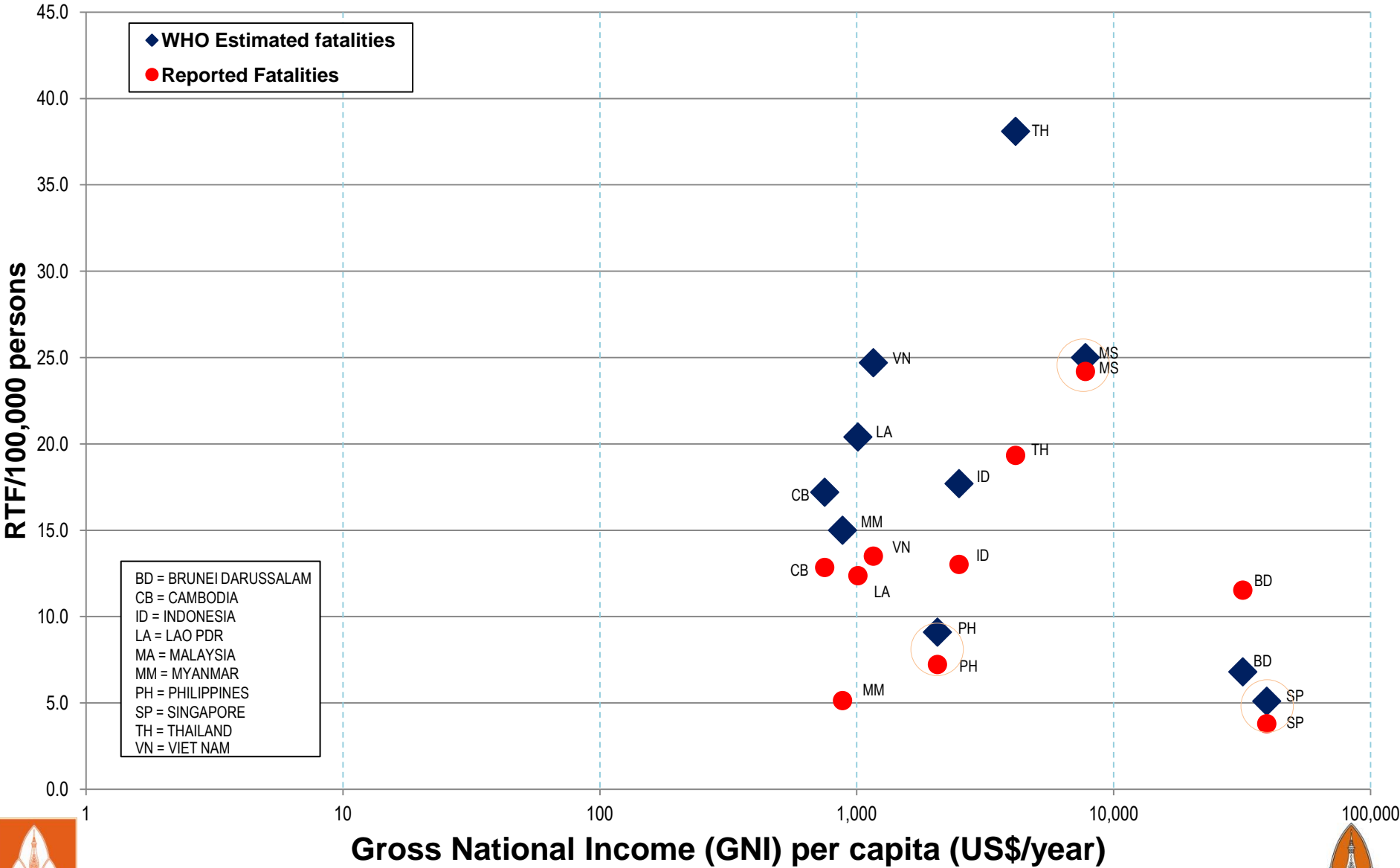
**Khon Kaen University**



- Based on a Global Status Report on Road Safety 2013 reported by WHO (2013), 2010 Road Traffic Fatalities (RTF) data for ASEAN Economic Community (AEC) countries were analyzed against several RTF-related parameters.
- These parameters include Gross National Incomes (GNI) per capita, population, road user types, numbers of vehicles per 1,000 persons, compositions of registered vehicle and others.
- The key findings are described below.

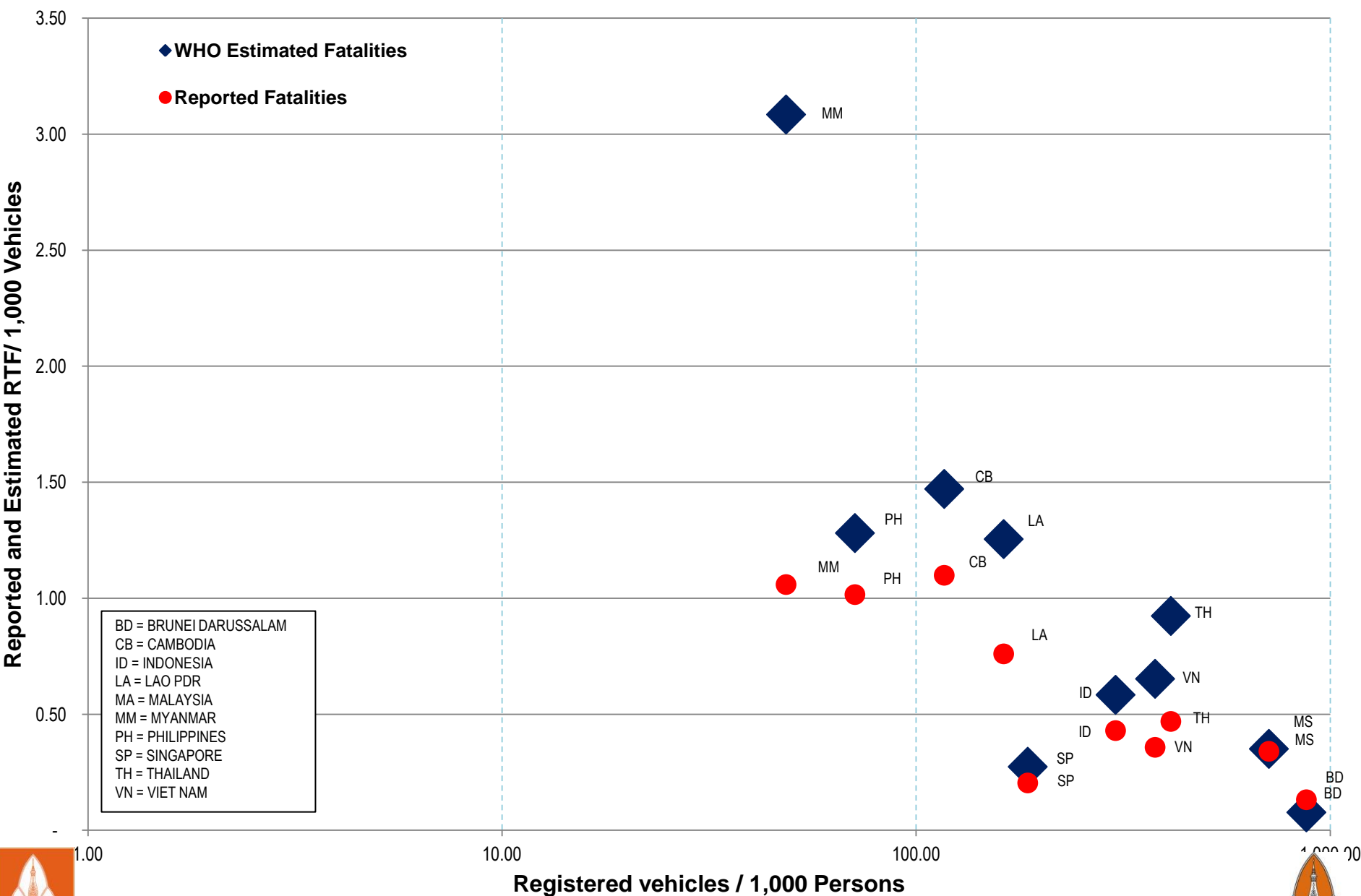


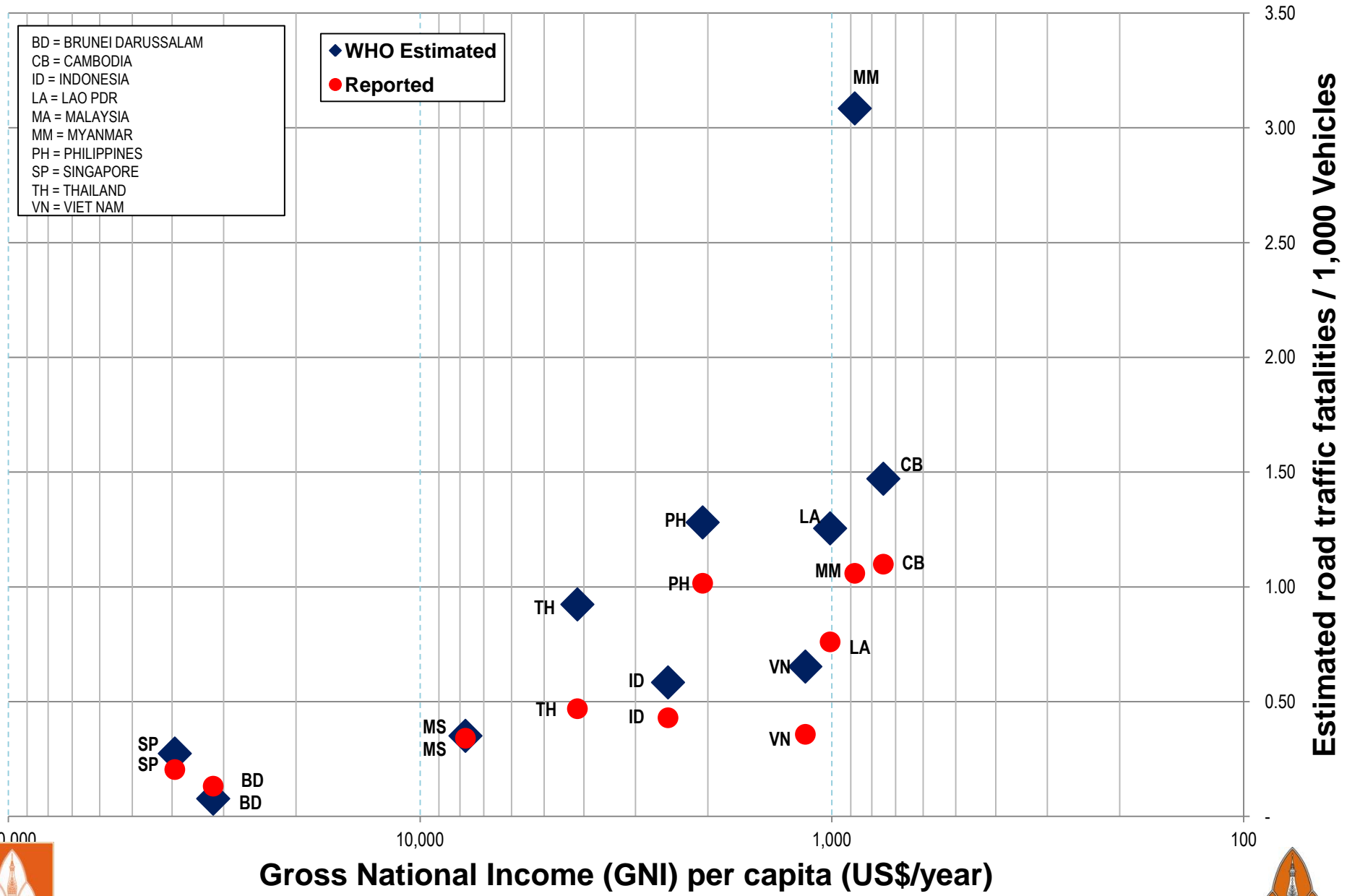
### RTF per 100,000 persons vs GNI per capita for AEC countries (WHO,2013)

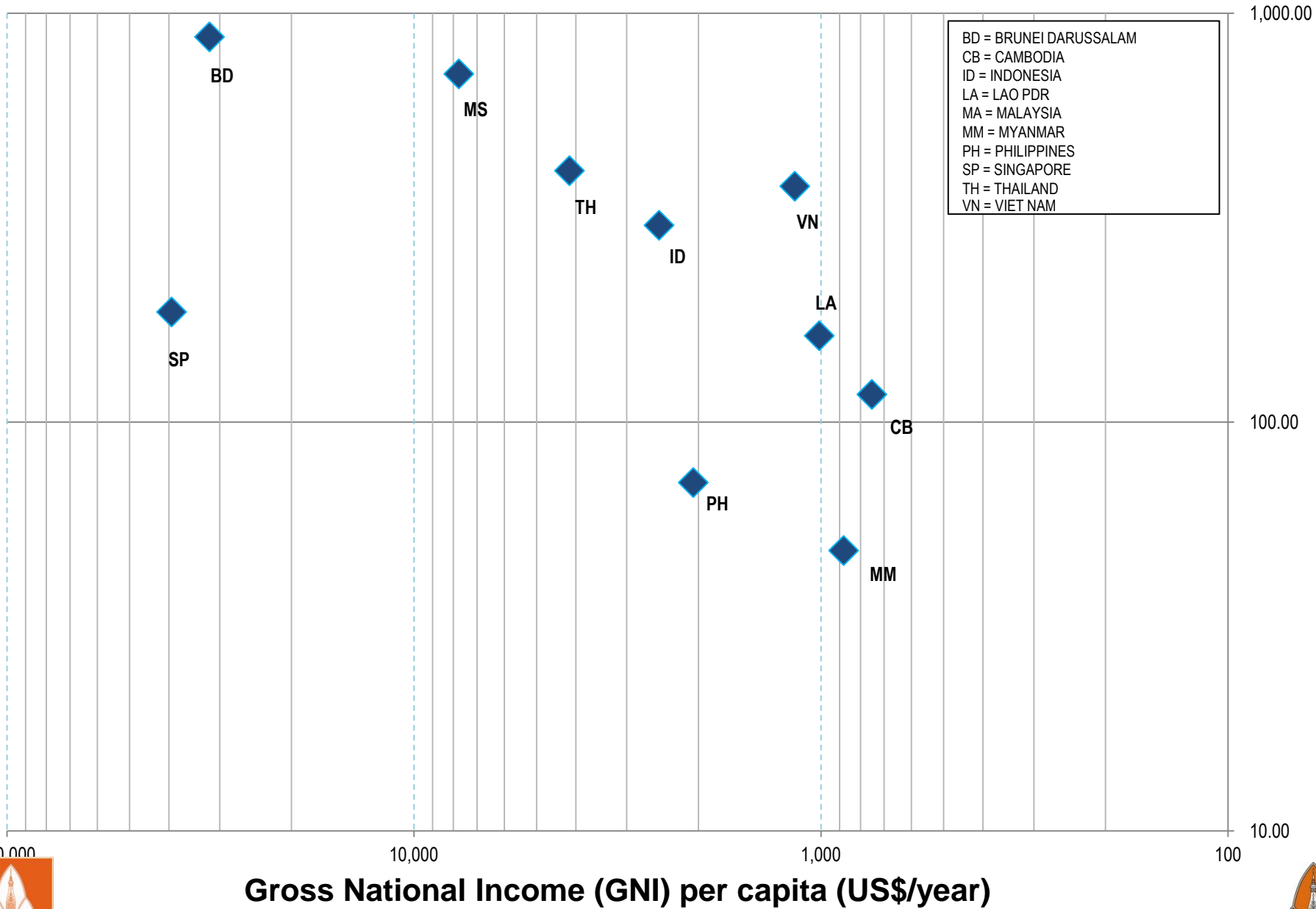


BD = BRUNEI DARUSSALAM  
 CB = CAMBODIA  
 ID = INDONESIA  
 LA = LAO PDR  
 MA = MALAYSIA  
 MM = MYANMAR  
 PH = PHILIPPINES  
 SP = SINGAPORE  
 TH = THAILAND  
 VN = VIET NAM



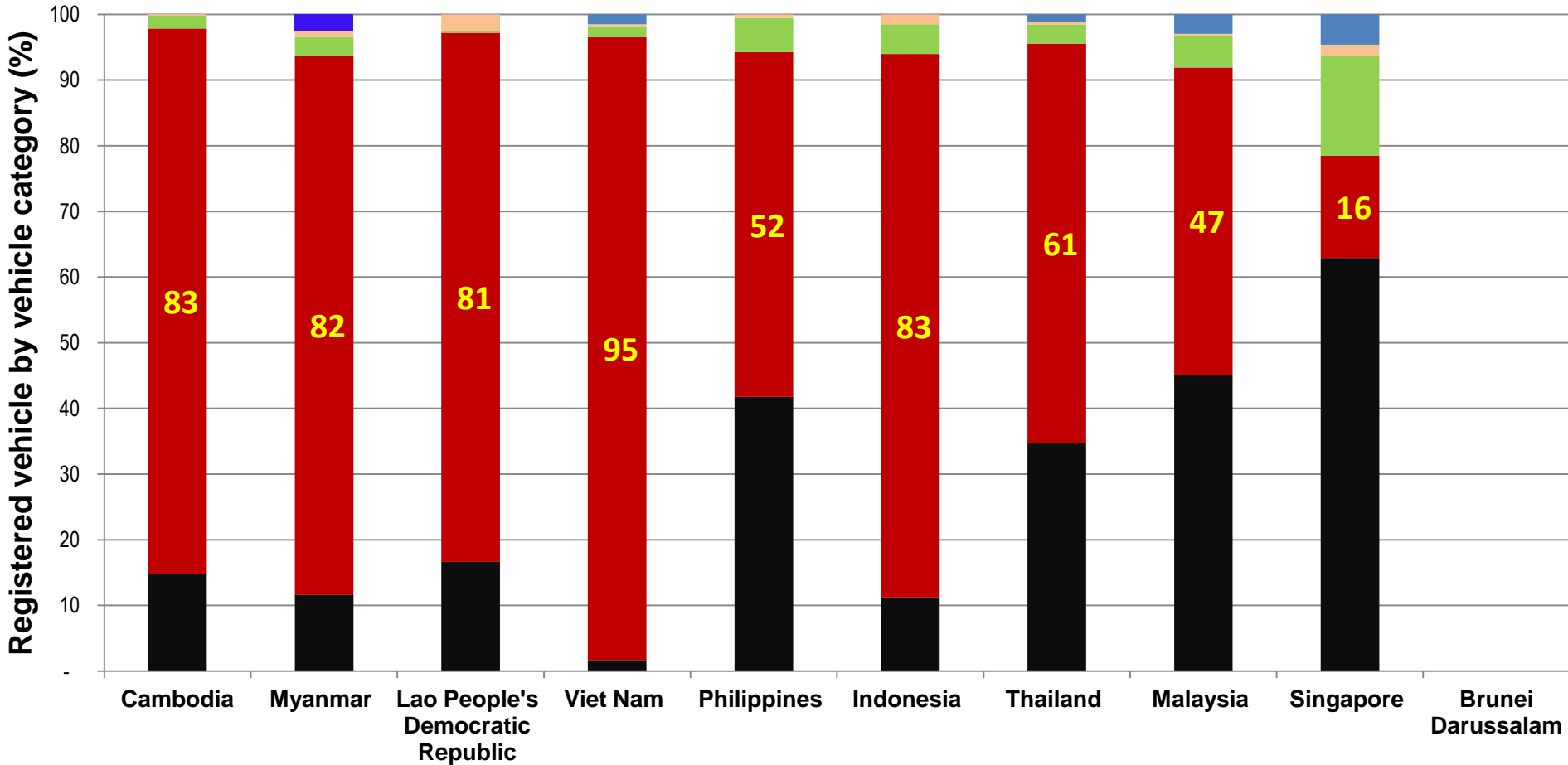






- In general, road traffic injuries and fatalities per 100,000 people will reduce as GNIs per capita increases.
- In AEC countries, both reported and estimated RTF per 100,000 people showed very low correlation with GNIs per capita.
- In contrast, the reported and estimated RTF per 1,000 vehicles have relatively high correlation with both GNI per capita and number of registered vehicles per 1,000 persons.
- The greater the GNI per capita and/or number of registered vehicles per 1,000 persons, the lower the reported and estimated RTF per 1,000 vehicles are.

# Registered vehicles (WHO,2013)



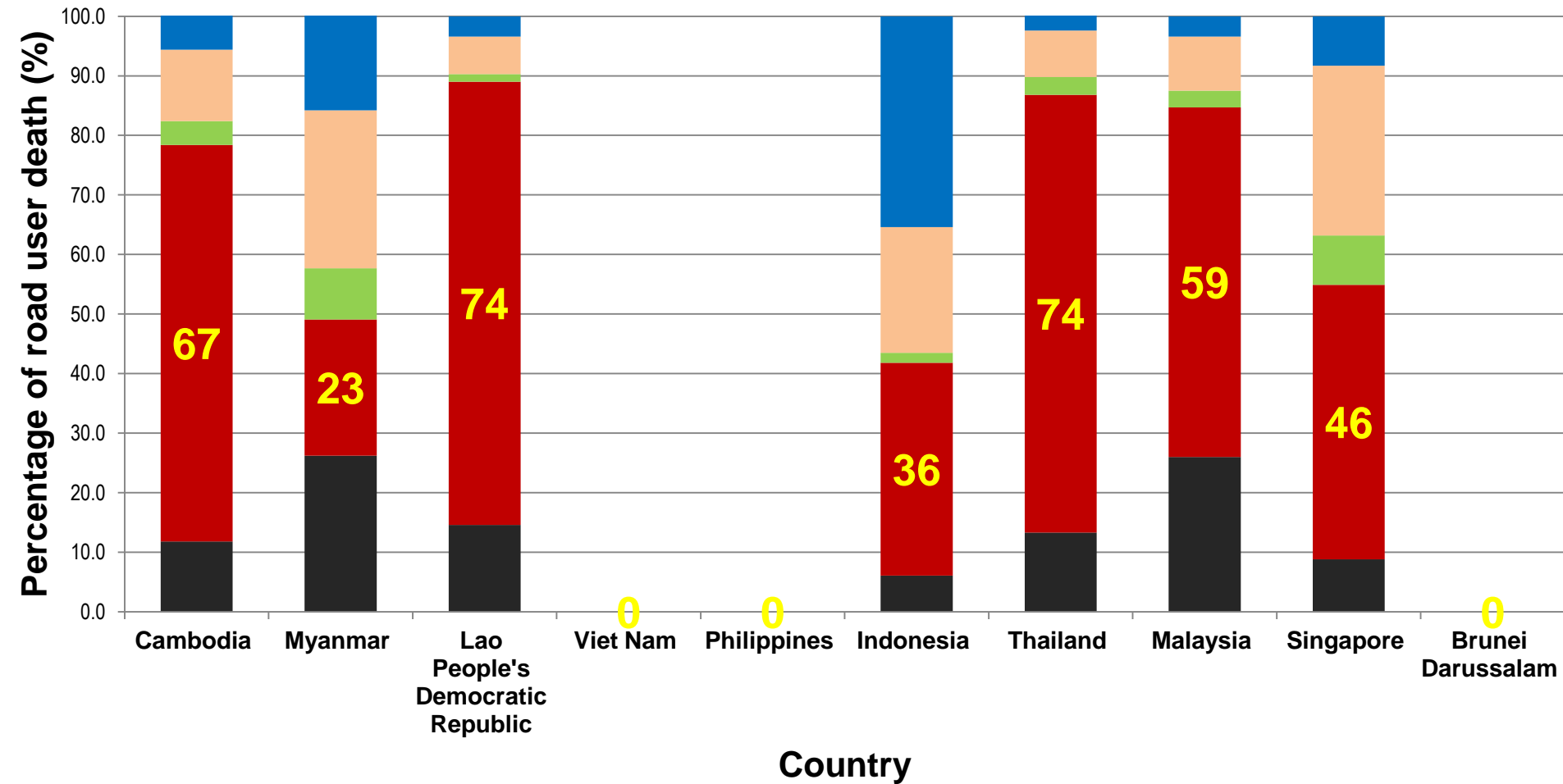
## Country

- cars and 4-wheeled light vehicles
- Motorized 2- and 3-wheelers
- Heavy trucks
- Buses
- Other





## Proportion of RTF by road user types (WHO,2013)



■ Drivers/  
Passengers  
of 4-wheeled  
vehicles

■ Drivers/  
Passengers of  
motorized 2- or  
3- wheelers

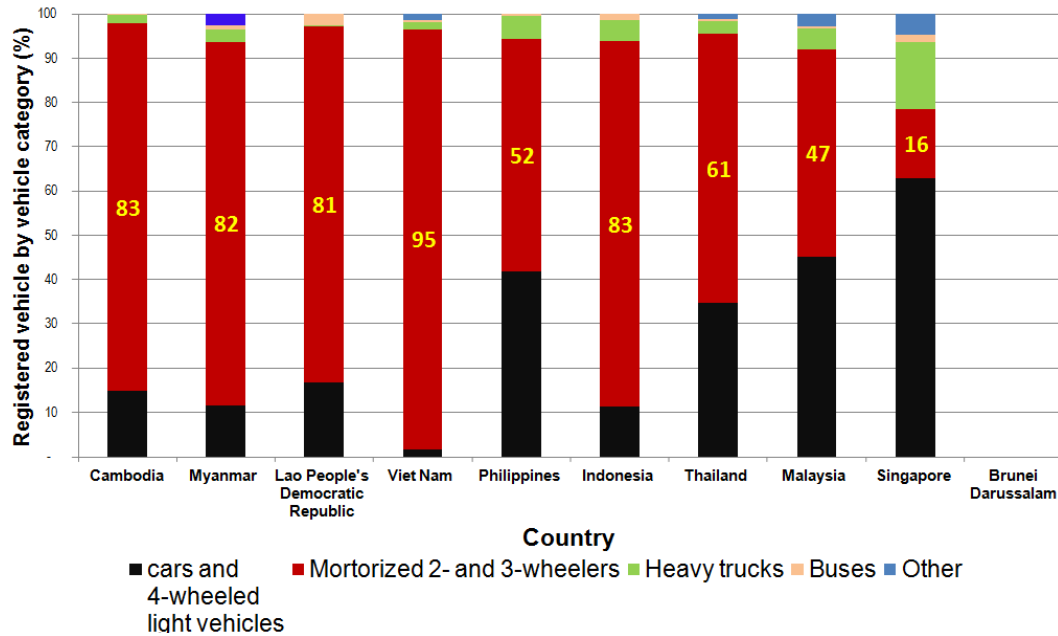
■ Cyclists

■ Pedestrians

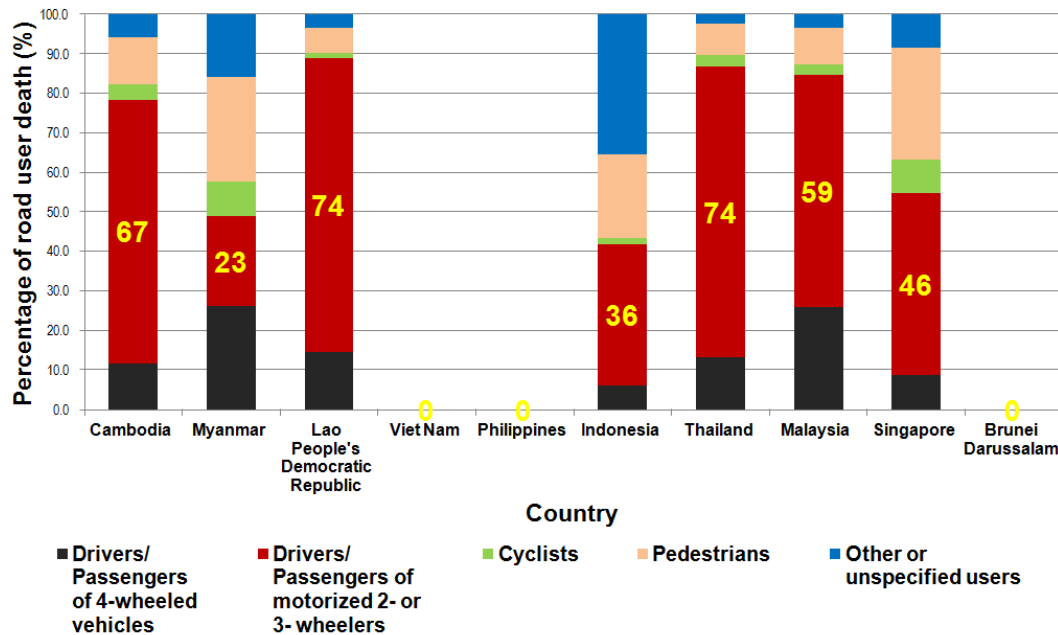
■ Other or  
unspecified users



Registered vehicles (WHO,2013)

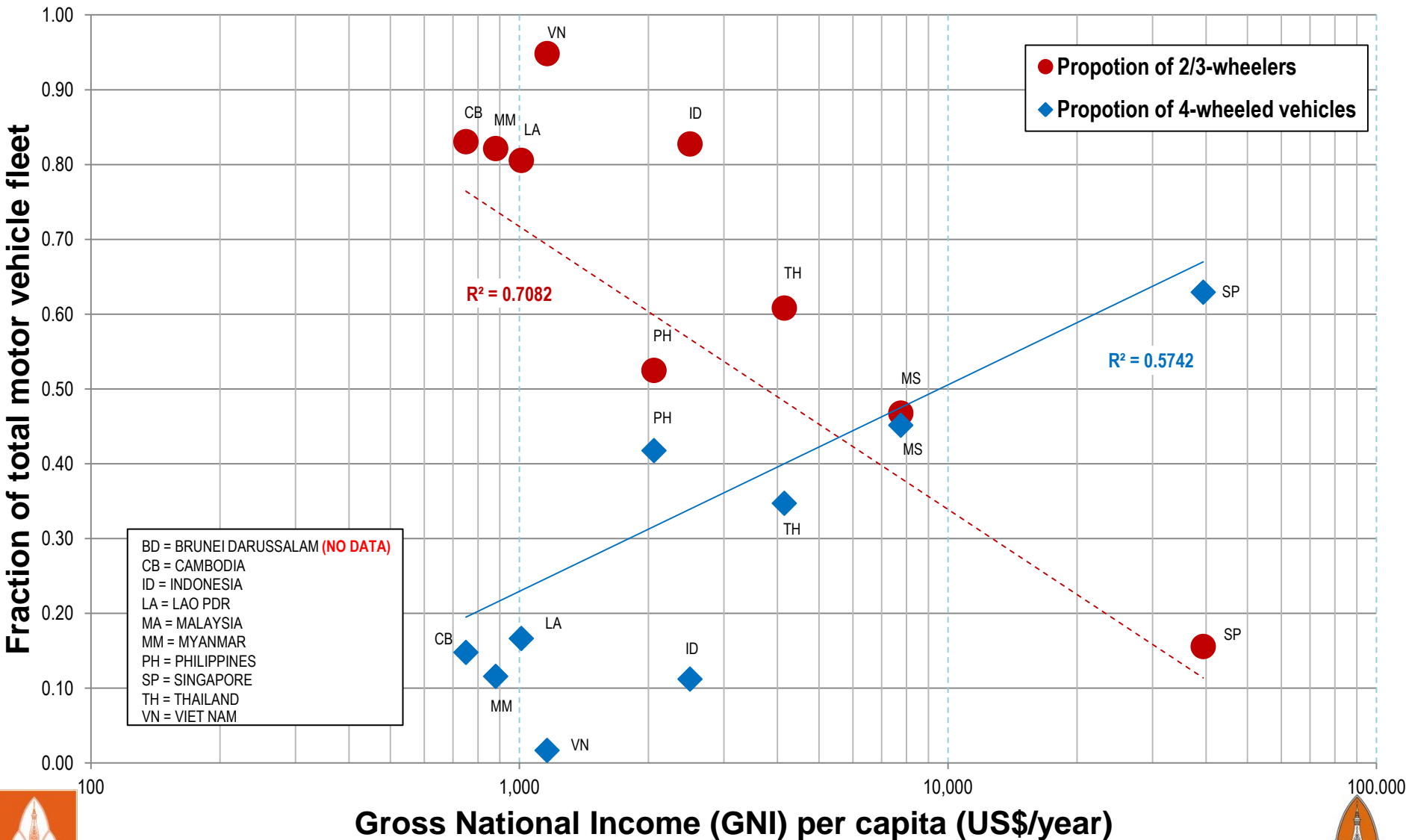


Proportion of RTF by road user types (WHO,2013)



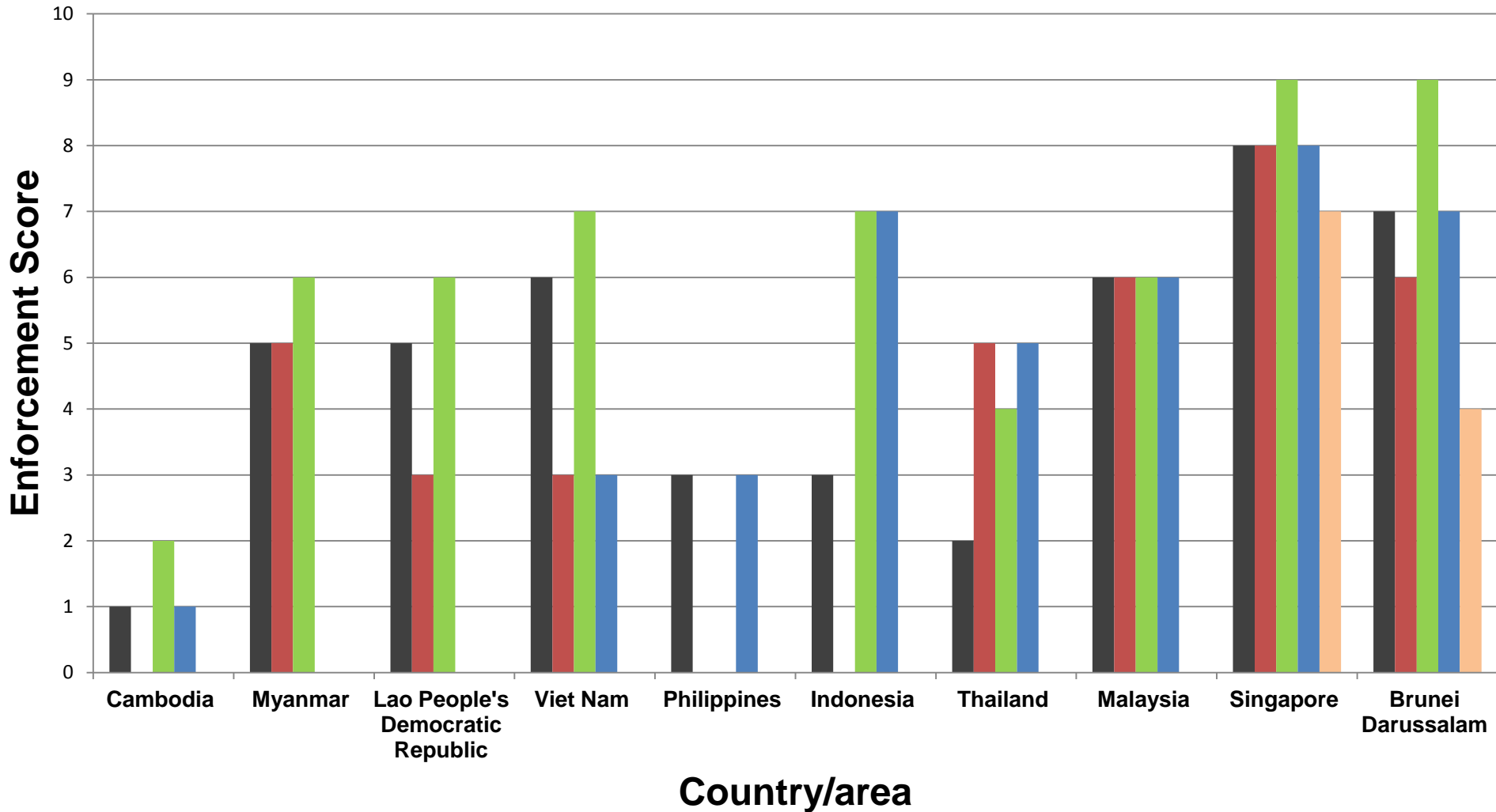
- In most AEC countries, 2/3 wheeled motor vehicles was the dominant mode of the total road fleet composition.
- Based on the distribution of RTF by road user types in AEC countries, 2/3 wheeled motor vehicles were the main contributor of road user fatalities.
- The summation of RTF of pedestrians, cyclists and motorcycle riders and passengers was greater than RTF of 4 wheeled motor vehicles and half of total RTF.

# Proportion of Motorized 2/3-wheelers and 4-Wheeled vehicles cars in vehicle composition vs. GNI per-capita in ASEAN Countries (WHO,2013)



- the proportion of motor cars and 4-wheeled vehicles rises and that of 2/3 wheeled vehicles (including motorcycles) declines as GNI per capita increases.
- The intersection of the 2/3 wheeled vehicles and 4 wheeled vehicles in relation with the GNI per capita trends will be at slightly less than US\$10,000.
- Most (low and medium incomes) AEC countries need critical determination on the adoption and enforcement of the national road safety legislation on the utilization of 2/3 wheeled vehicles.

# National legislation in ASEAN countries (WHO,2009)



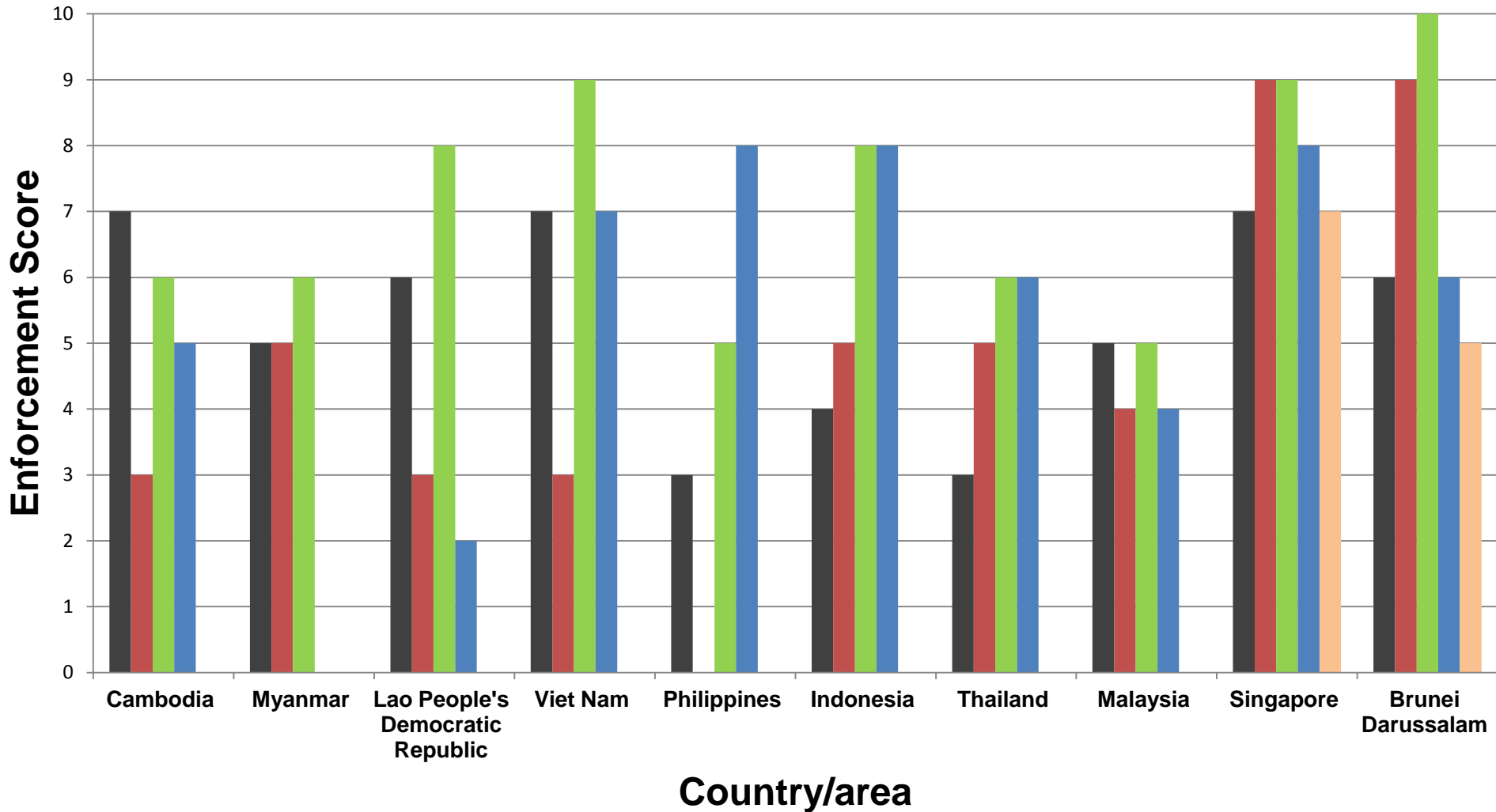
■ National speed limits  
■ National seat-belt law

■ National drink- driving law  
■ National child restraint law

■ National mortorcycle helmet law



# National legislation in ASEAN countries (WHO,2013)



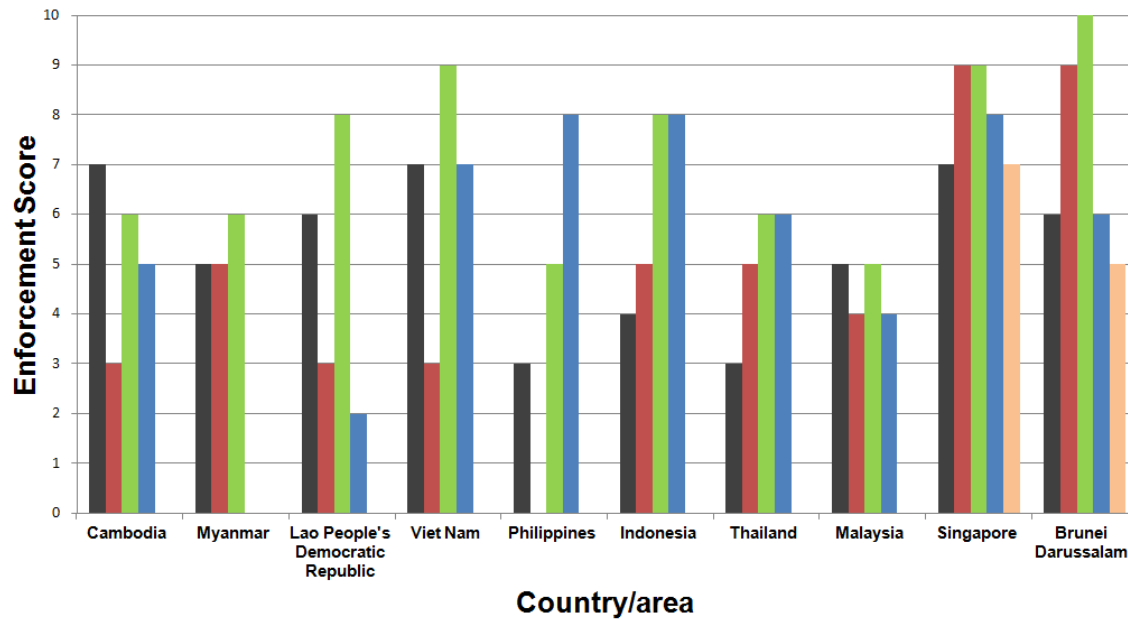
National speed limits  
 National seat-belt law

National drink- driving law  
 National child restraint law

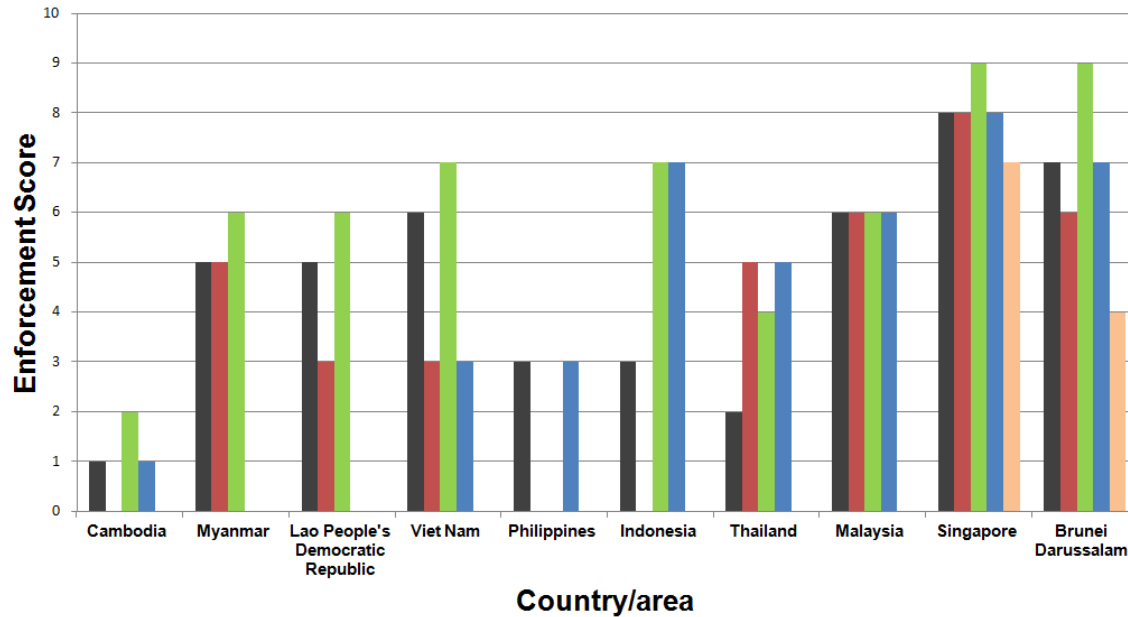
National mortorcycle helmet law<sup>W</sup>



National legislation in ASEAN countries (WHO,2013)



National legislation in ASEAN countries (WHO,2009)



National speed limits
  National drink- driving law
  National mortorcycle helmet law
  National seat-belt law
  National child restraint law





- Based on WHO (2009 & 2013), the general improvement of the adoption and enforcement of national road safety legislation can be recognized.
- Only Singapore and Brunei Darussalam clearly showed the high performances on the adoption and enforcement of national road safety legislation.
- Only these two AEC countries currently implement and enforce the child-restraint law.
- Cambodia, Indonesia and Philippines illustrated high degree of national legislation improvement.

# CONCLUSIONS

- While the RTF per 100,000 people had very low correlation with GNIs per capita, the RTF per 1,000 vehicles have relatively high correlation with both GNI per capita and number of registered vehicles per 1,000 persons.
- Appropriate and road safety database systems for AEC countries are needed.
- Based on the distribution of RTF by road user types in AEC countries, 2/3 wheeled motor vehicles were the main contributor of road user fatalities.
- These unprotected road user types were the most vulnerable to road traffic injuries and fatalities.

- the proportion of motor cars and 4-wheeled vehicles rises and that of 2/3 wheeled vehicles (including motorcycles) declines as GNI per capita increases.
- Most (low and medium incomes) AEC countries need critical determination on the adoption and enforcement of the national road safety legislation on the utilization of 2/3 wheeled vehicles.
- The national road safety legislation (including speed limits, drinking and driving law, motorcycle helmet law, seat belt law and child restraint law) is needed to be seriously and continuously implemented and enforced.