Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

On behalf of

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

MRV of NAMAs

Measuring the Impact of Low Carbon Transport Interventions: How to keep it simple

Regional Exchange on Transport NAMAs
Singapore, 16 August 2013

Andrea Henkel - German International Cooperation (GIZ)

1. **Rational for MRV**
2. **Challenges for MRV in the transport sector**
3. **Different Approaches**

The National MRV System: Interaction between MRV of emissions, NAMAs and Support

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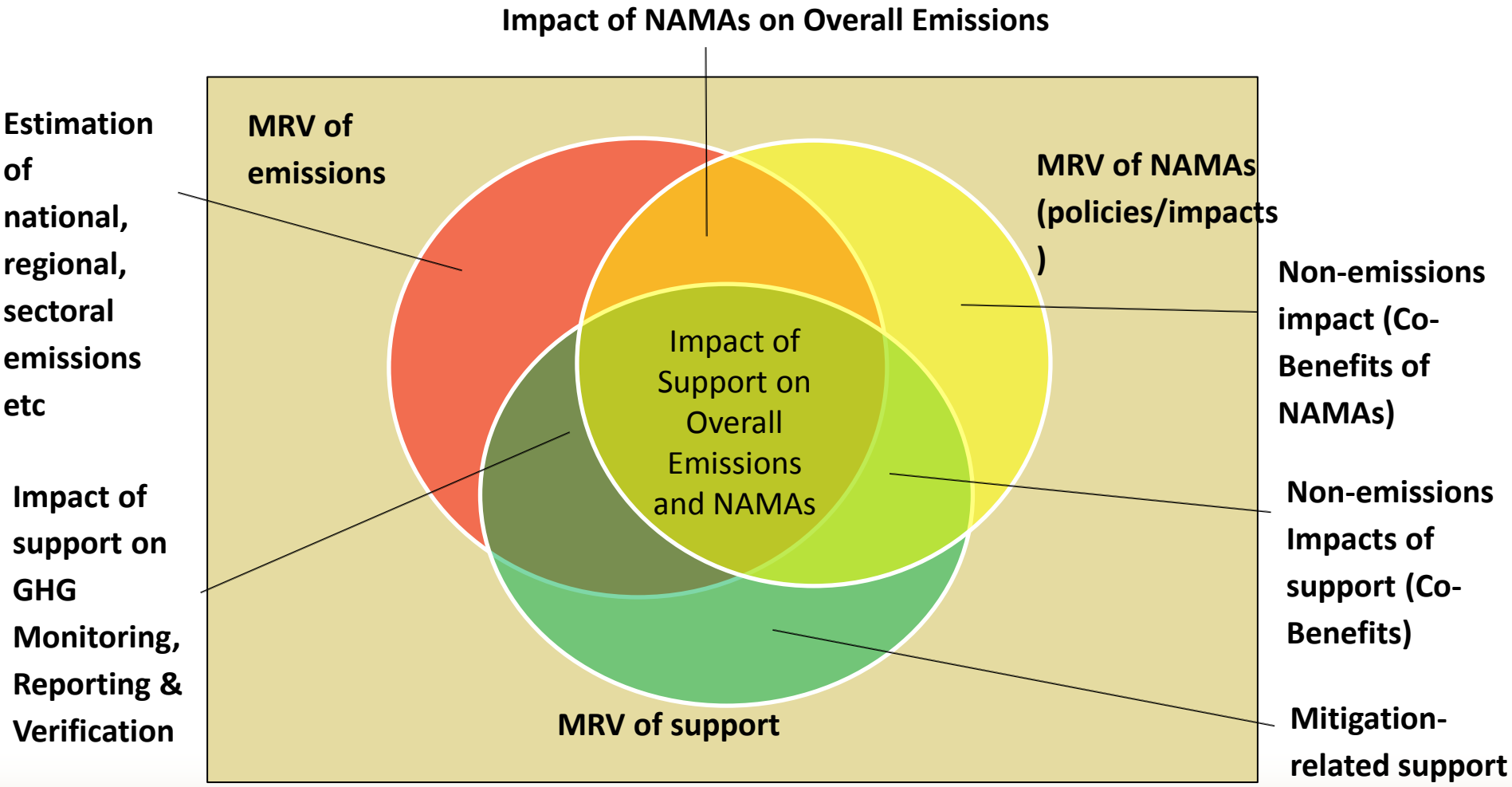
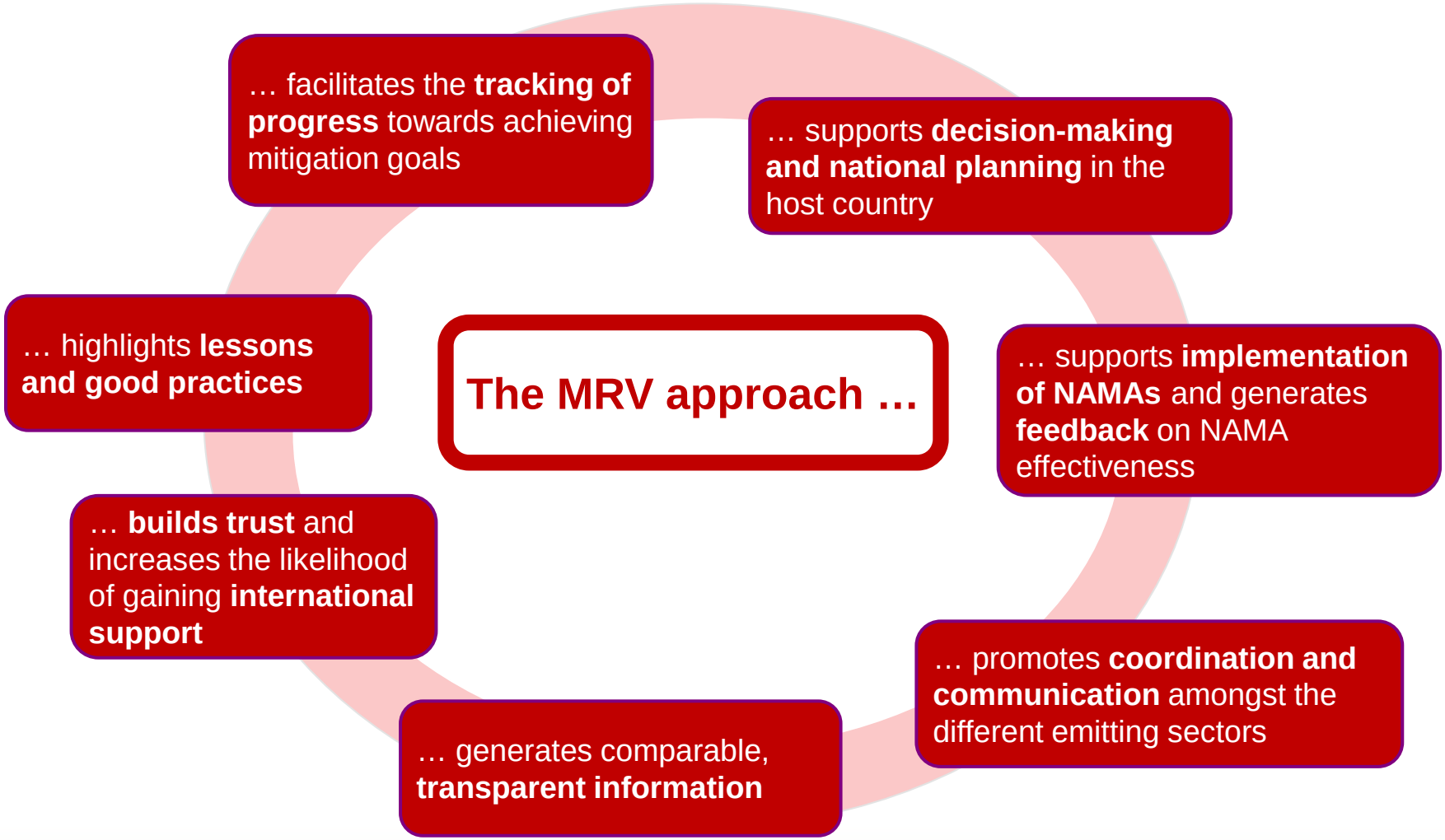


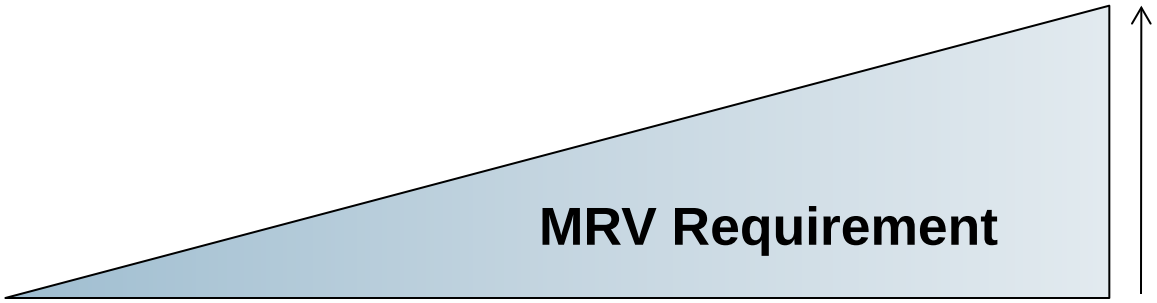
Photo credit: Transit Utopia transitutopia.blogspot.com

WHY MEASURE THE CO_2 IMPACT OF TRANSPORT INTERVENTIONS?

MRV of NAMAs


The MRV approach …
… facilitates the **tracking of progress** towards achieving mitigation goals
… supports **decision-making and national planning** in the host country
… supports **implementation of NAMAs** and generates **feedback** on NAMA effectiveness
… promotes **coordination and communication** amongst the different emitting sectors
… generates comparable, **transparent information**
… **builds trust** and increases the likelihood of gaining **international support**
… highlights **lessons and good practices**

MRV requirements are variable



Unilateral Actions – Domestic support

Supported Actions (Non-credit)

Credited Actions

Nationally Appropriate Mitigation Actions (NAMAs)

MRV challenges in the transport sector

- Unique nature of mobile sources of emissions in the transport sector
- Patchy and insufficient data
- No standardised baselines
- Complexity and cost of methods
- Availability of suitable modeling tools
- Difficulties in ensuring endurance of emissions reductions

True genius resides in the capacity for evaluation of uncertain, hazardous, and conflicting information

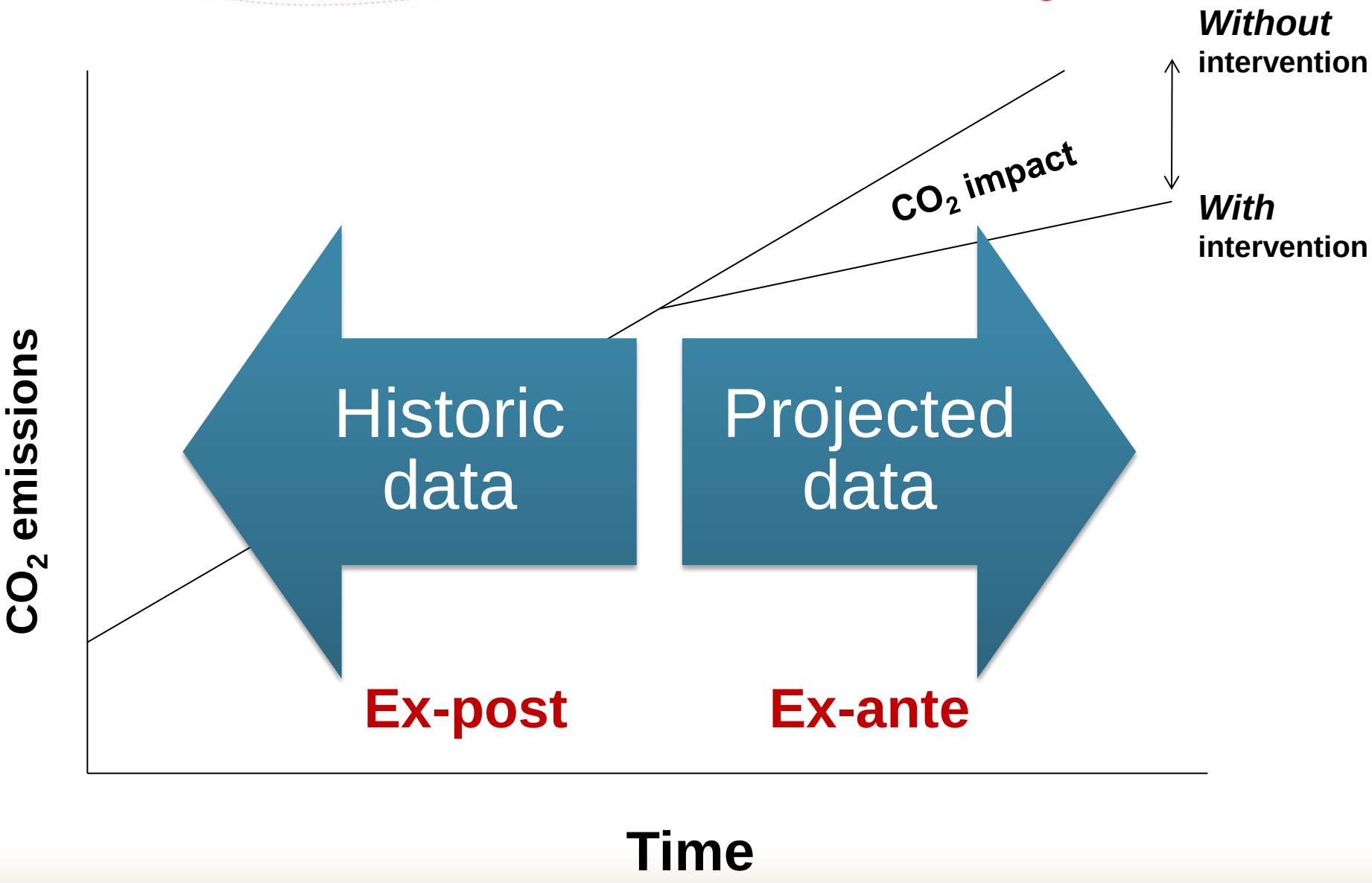
Winston Churchill

Basic data requirements

CO_2 emissions result from fuel combustion

- Amount of fuel used
- Source of fuel consumed (i.e. bus/ private car)
- Carbon content of the fuel

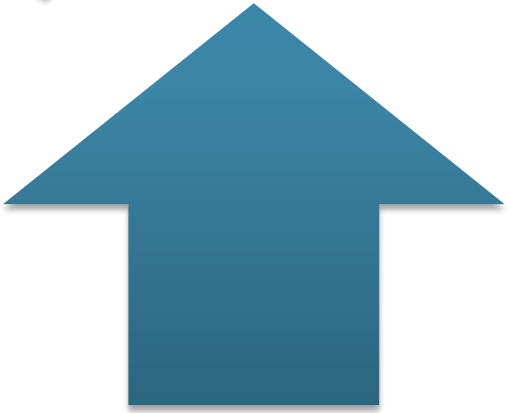
Basic data requirements



Measurement approaches

Top –Down

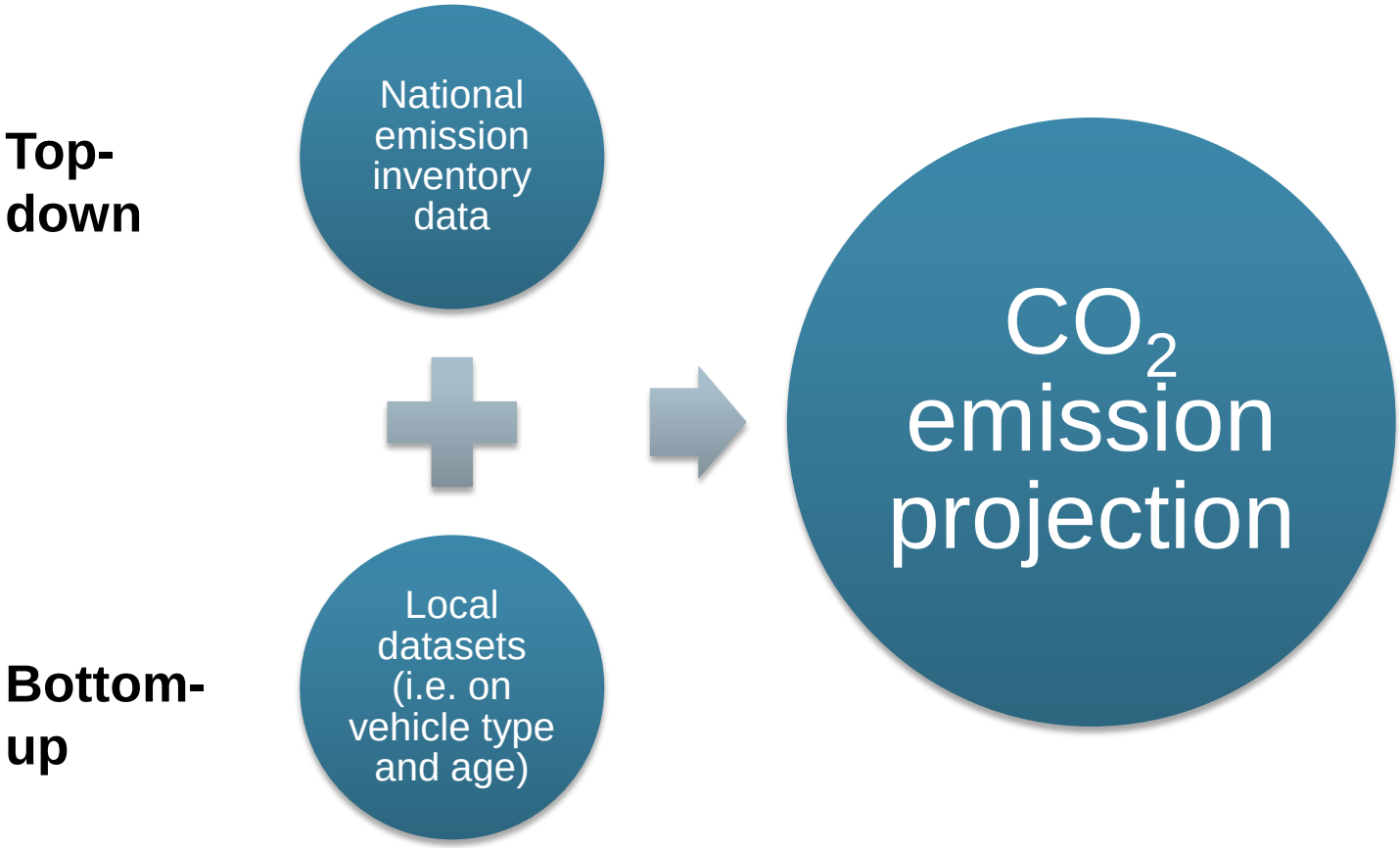
- National level data



Bottom-up

- Data gathered from more detailed sources e.g. City /metropolitan area/region

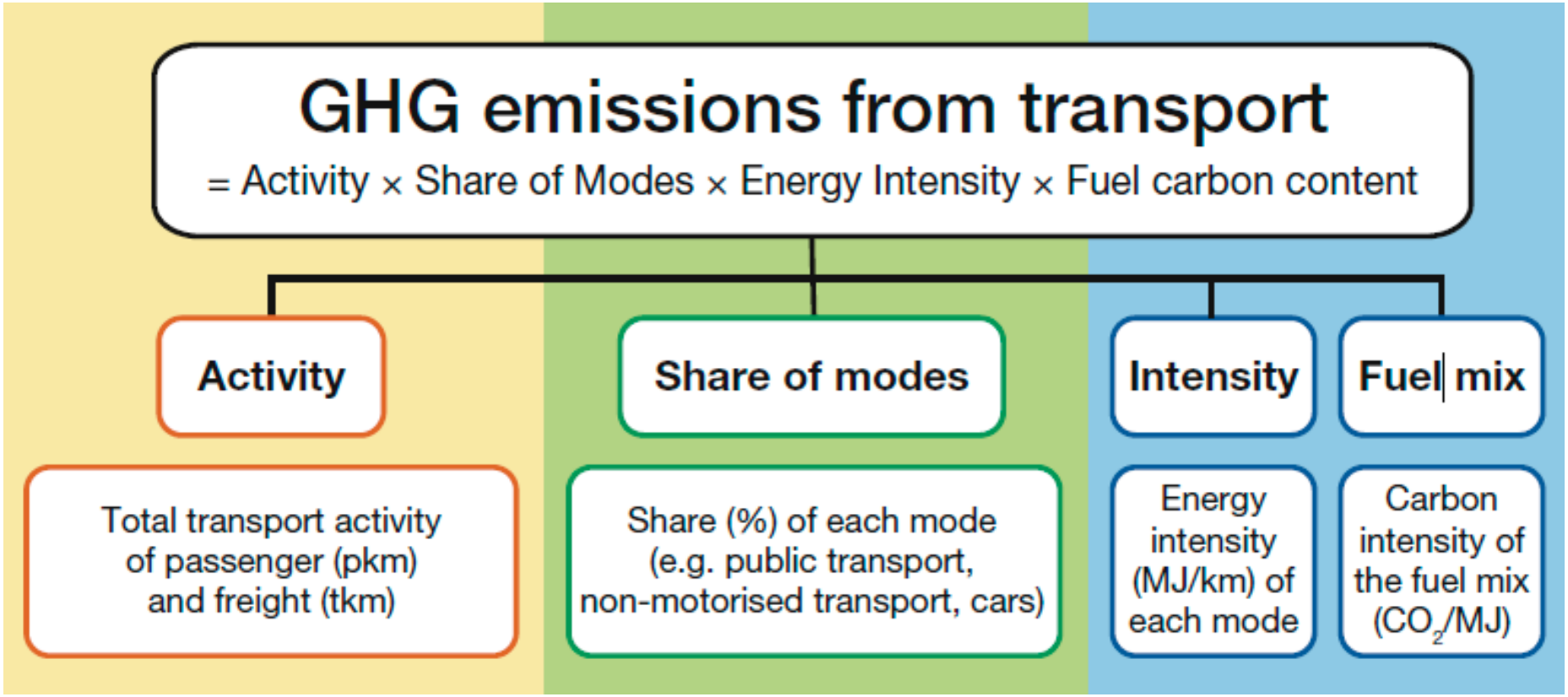
Combined approach



BOTTOM-UP APPROACHES TO MEASURING CO_2 EMISSIONS

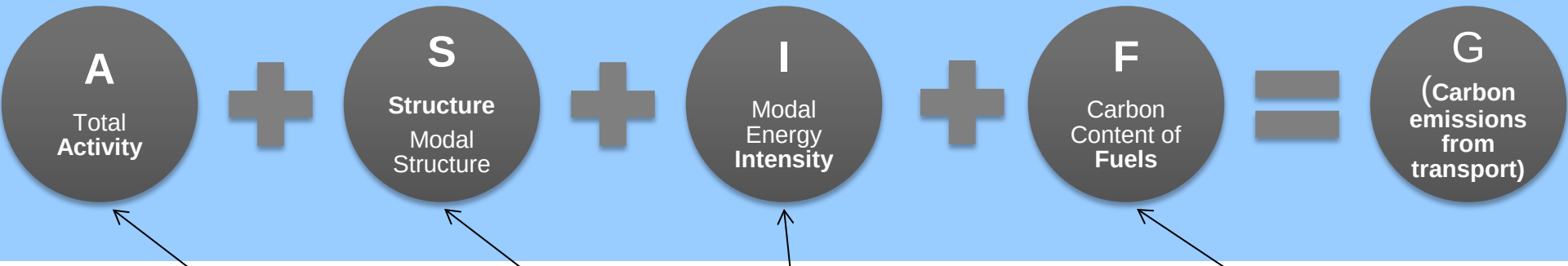
An overview of their characteristics and associated methods.

ASIF – drivers of emissions from transport

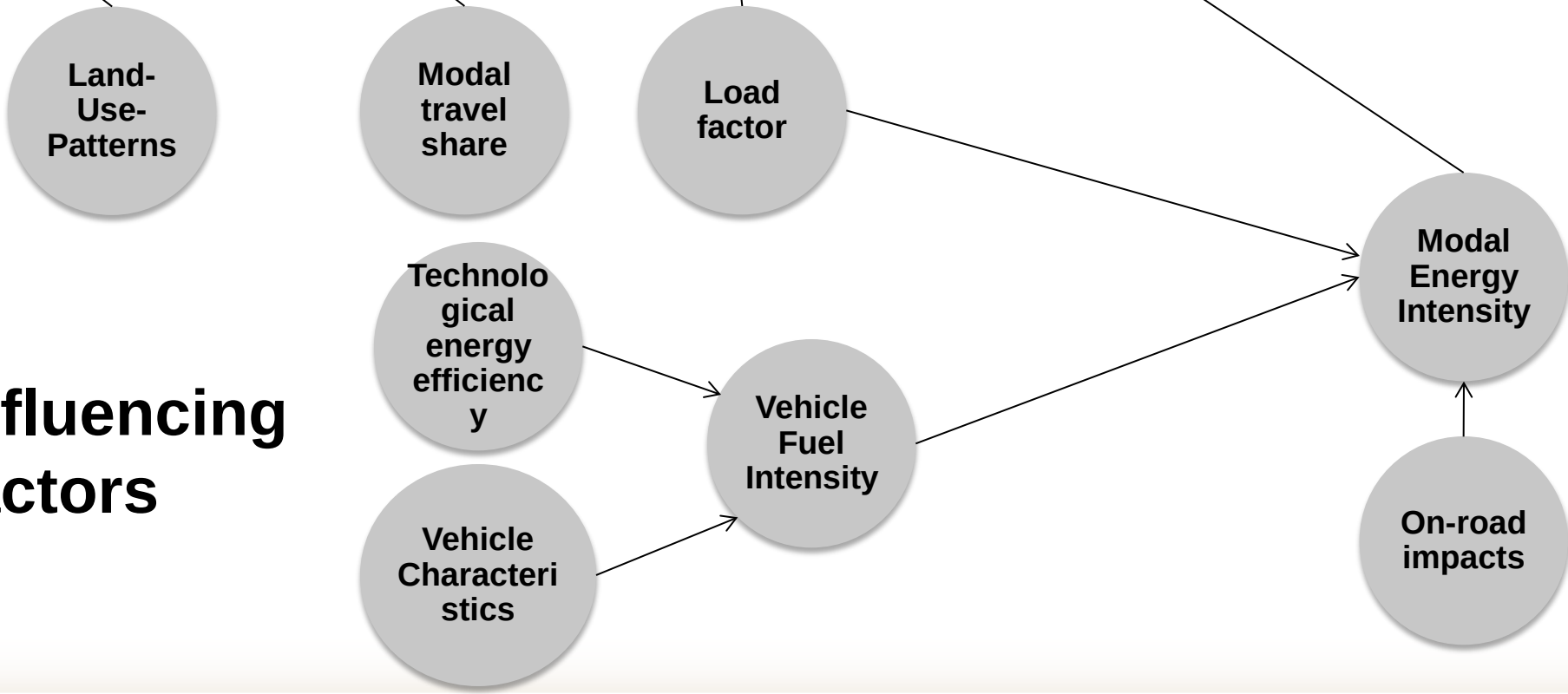


ASIF – drivers of emissions from transport

ASIF formula



Influencing factors



Far better an approximate answer to the right question...than an exact answer to the wrong question.

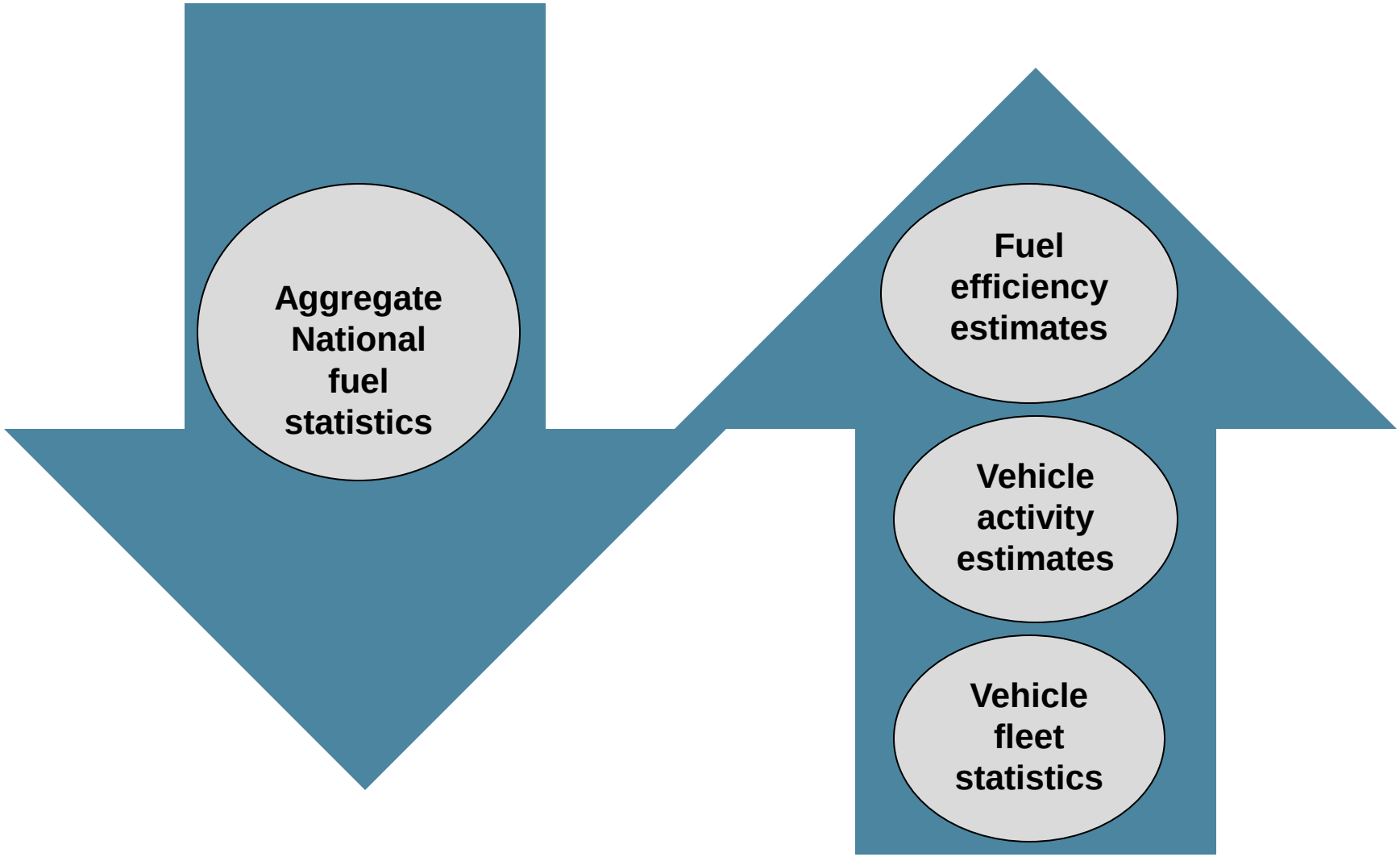
John W. Tukey (1962)

All models are wrong, but some are useful.

George E.P. Box (1979)

Source: CAI-Asia, ITDP. 2011. TEEMP Overview ppt presented at the SLOCAT NAMA workshop in Seoul April 2011

Top-down & Bottom-up



MODULE SUMMARY

Summary

- There are many benefits to measuring the CO2 impact of low carbon transport interventions
- There are a wide range of challenges that can be experienced when seeking to measure and estimate emissions but there are also an increasing number of methodologies that can be replicated or adapted
- The stringency of measurement requirements are variable
- The most basic of data requirements are readily achievable in most circumstances
- Data can be collected from a range of sources
- There are numerous expert sources that can be consulted for advice

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Thank you for your attention !

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Intro I: Why do we need to M,R & V?

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National Drivers

- MRV systems underpin national GHG data quality
- MRV helps identify national priorities (including NAMAs), as well as challenges and opportunities
- Policy planning and improving policy coherence – important to keep track of lessons learnt from NAMA implementation to develop better policies in the future
- For internal national record: Keeping a record of NAMAs in place, tracking progress of the effectiveness of NAMAs
- Data quality assurance: important to access climate finance and participate in market mechanism (e.g. emission trading system)
- To demonstrate to donors the emission reduction and impacts of NAMAs

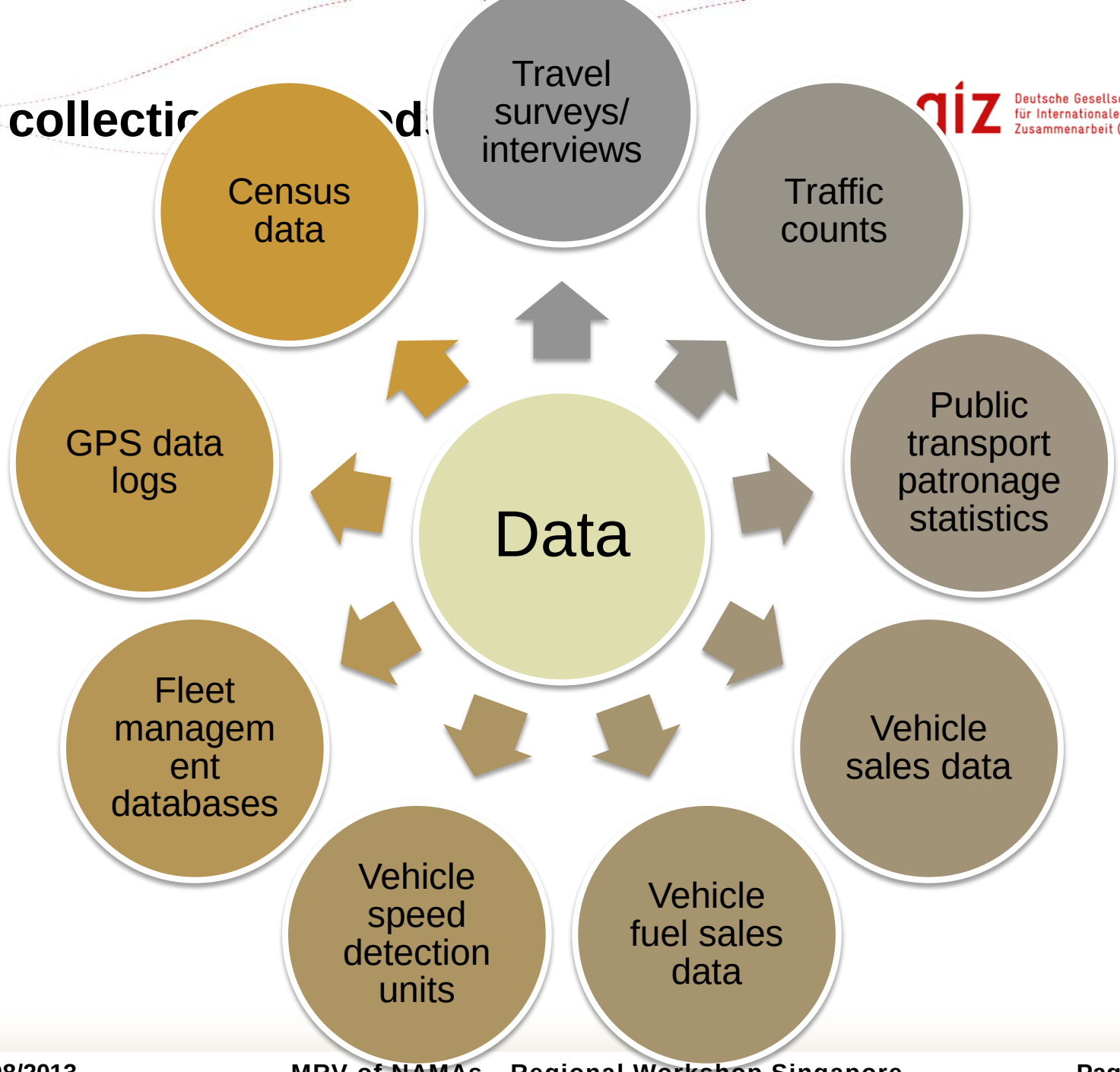
Intro I: Why do we need to M,R & V?

International Drivers

- Improve trust
- International recognition for national performance
- Provide lessons learned, input to 2013-15 review
- Data quality is key to address national reporting obligations to the UNFCCC mechanisms and progress national engagement in the UNFCCC process:

Biennial Update Reports will include national GHG inventories and data on policies and measures, and these reports will be reviewed by the UNFCCC through International Consultations and Analysis (by a team of technical experts). In addition, National Communications are to be reported every 4 years, also including national GHG emissions data.

Data collectio[illegible]ds



ASIF component	Data requirement
Total Activity (A)	• Fuel use • Annual vehicle kilometers travelled by vehicle class • Tonnes of freight moved • Passenger numbers • Annual kms or fuel use by locomotive type.
Modal Structure (S)	• Composition of vehicle fleets
Modal Energy Intensity (I)	• Kms travelled (passenger km or per tonne of fuel used by detailed vehicle class or locomotive type for rail) • If there are electric locomotives will need emission information from the 'electricity generating sector.'
Carbon content of Fuels (F)	• The carbon content of the fuels used (i.e. petrol, diesel and CNG for road transport; diesel for rail).