

Measurement, Reporting and Verification for transport: sector- level and NAMA level

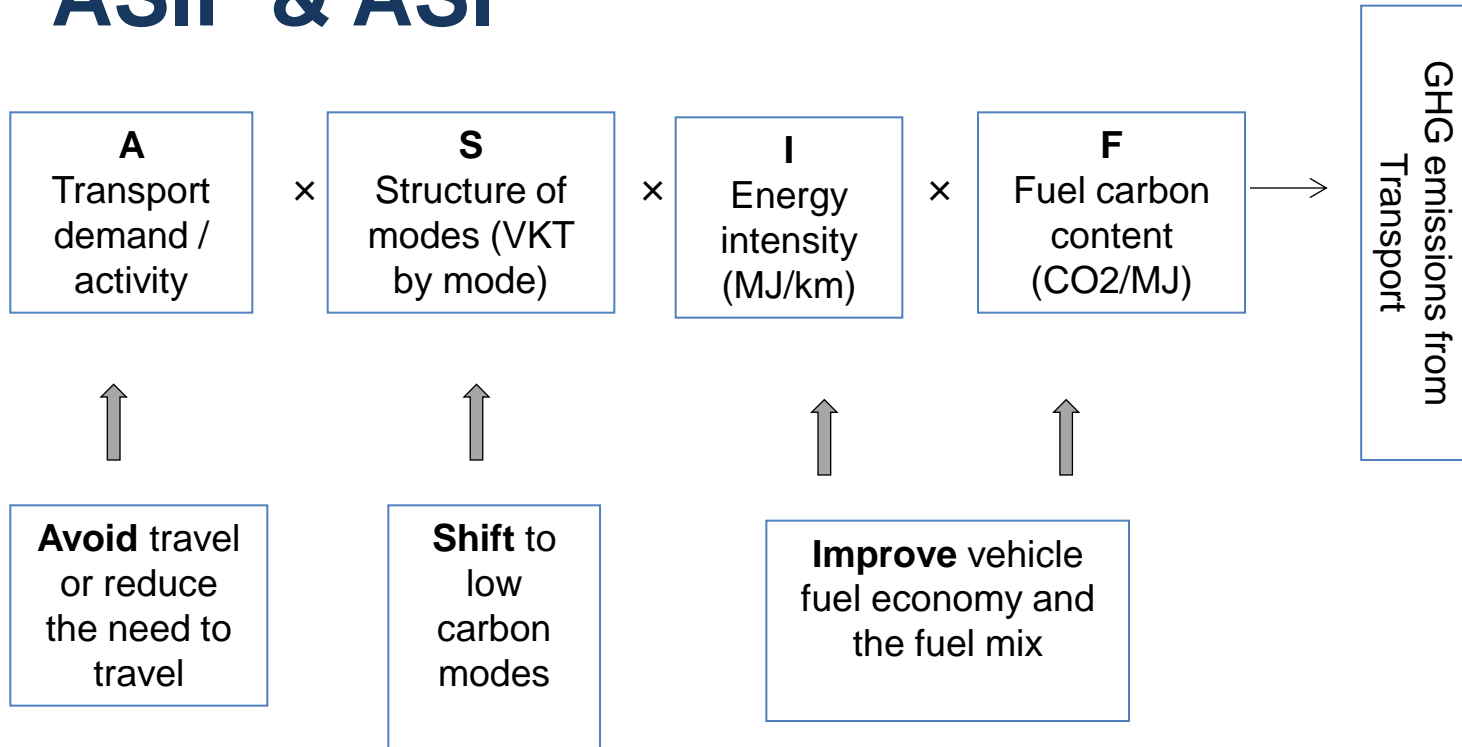
Stefan Bakker
GIZ

Regional Exchange on Transport-NAMAs in ASEAN
UNEP NAMA workshop, 1-3 October 2014, Ha Long City





CO₂ Emissions and reductions: ASIF & ASI

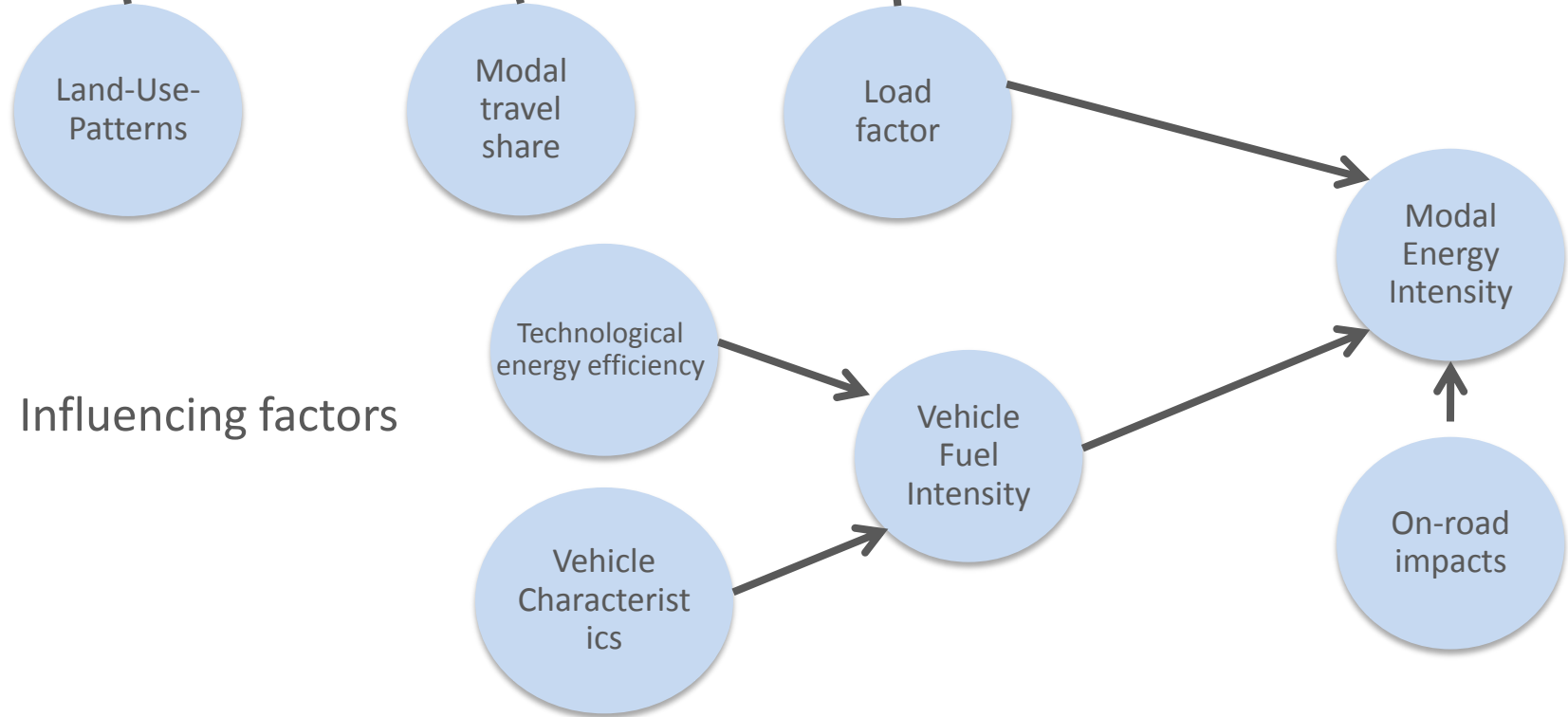
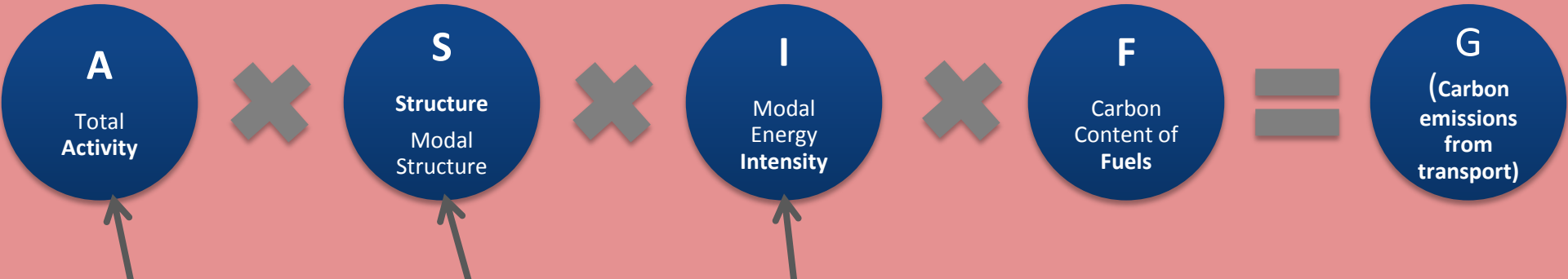




ASIF – drivers of emissions from transport

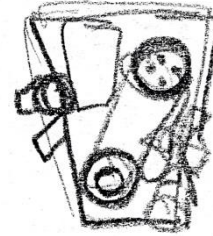
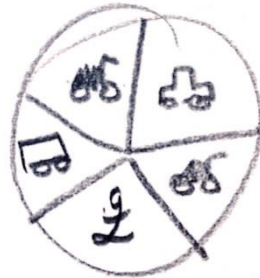


ASIF formula





Transport and climate change



A	S	I	F
Activity	Share (structure)	Intensity	Fuel
pkm / tkm	Modal split (%)	MJ / km	CO2 / km
Number of trips, transport length	Modal split	Energy consumption	Carbon content
Avoid	Shift	Improve	



Indicators at system level

Output Indicators (efficiency)

1. g CO₂/pkm and g/CO₂/tonkm
2. g CO₂/ km
3. g CO₂/GDP (USD)
4. g PM/pkm and g PM/tonkm
5. g NO_x/pkm and g NO_x/tonkm
6. g CO₂/VKM (mode wise)
7. KTOE/capita
8. Fatality/VKM
9. ton CO₂/\$ investment

Investment Indicators (infrastructure/investment)

1. Km of infrastructure built/Year
2. USD of Transport Investment/Year

Activity Indicators (Avoid-Shift)

1. PKM/capita
2. TKM/capita
3. VKM/capita (mode wise)
4. PKM mode share/Trips mode share, TKM mode share
5. Average Speed
6. Load factor

Technology Indicators

1. MJ/VK_m (different modes)



MRV of transport-NAMAs: types of indicators

- Emission reductions (outcome indicator)
 - Tonnes CO₂-eq reduced in 2020 compared to baseline
- Changes in the transport system due to policy intervention (output indicator)
 - Modal shift
 - Efficiency (MJ/km) of newly sold vehicles
- Development of policies (process indicator)
- Inputs (input indicator)
 - Financial resources



Towards a Consistent Approach to MRV

Transport and climate change



National GHG Inventory Report



Transport Sector MRV System

National Communications

Registry & NAMA Supporter

Input to transport section of inventory

Localized Conversion & Emission Factors

Inventory and Scenario Tool
e.g. COPERT, TREMOD

Methodology

Monitoring Approach

co-benefits

Annual assessment of impacts
i.e. changes attributed to mitigation action

Activity

Structure

Intensity

Fuels

Fleet

Mileage

Fuel

Boundary

Mileage (VKT)

Mode / Load

Technologies

Fuels used

General transport data
collected and managed

Surveys

Statistics

Countings

Defaults / Structure

NAMA monitoring data
collected and managed

Surveys

Statistics

Countings



MRV: main messages

- MRV should facilitate action, not being a burden
- Don't worry: for a good transport-NAMA a suitable MRV approach can be found
- Relation between overall monitoring system and MRV of individual NAMAs
 - Align data sources, institutional approach and methodologies
- Indicators
 - System level
 - NAMA level
- Start working, improve over time