



## **SUMMARY REPORT**

# **Second Regional Workshop on Sustainable Transport Indicators**

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## Abbreviations

ADB	Asian Development Bank
AJTP	ASEAN Japan Transport Partnership
AMS	ASEAN Member States
ASEAN	Association of Southeast Asian Nations
ASIF	Framework used for transport sector monitoring (total transport Activity, vehicle kilometres/passenger kilometres per mode, modal Intensity, emissions per unit of energy)
BMZ	<i>Deutsches Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung</i> (German Federal Ministry for Economic Cooperation and Development)
BTD	ADB's Better Transport Data
CAA	Clean Air Asia
DPSIR	Driving forces, Pressures, States, Impacts, and Responses
DSM	Demand Side Management
EPU	Economic Planning Unit
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH (German International Cooperation Agency)
INDCs	Intended Nationally Determined Contributions
KLTPSP	Kuala Lumpur Transport Strategic Plan
LDVs	Light Duty Vehicles
MRV	Measurement, Reporting and Verification
MYR	Malaysian Ringgit (Malaysian currency)
PKT	Person Kilometre Travelled
SDGs	Sustainable Development Goals
TCC	Transport and Climate Change project
TKT	Ton Kilometre Travelled
UNFCCC	United Nations Framework Convention on Climate Change



## 1 Background

The objective of TCC is to enhance energy efficiency in the transport sector and reduce the emission of greenhouse gases (GHG) in ASEAN member countries (AMS). At the national level, the project supports relevant transport and environment government bodies in Indonesia, Malaysia, the Philippines, Thailand and Vietnam in developing national action plans and linking their strategies to the KLTSP. At a regional level, the TCC supports the implementation of the KLTSP. These regional activities in the second phase of the project can be grouped into the following focal areas: fuel efficiency, two wheelers, green freight and logistics, and data collection and MRV. The latter is particularly important for proper transport sector planning as well as to promote capacity building among partner countries.

The recent Kuala Lumpur Transport Strategy Plan 2016-2025 (KLTSP) has called for “the development of the monitoring framework and harmonised approach for indicators on energy and GHG emission in the transport sector”. In order to develop this monitoring mechanism, consultations need to be carried out to gain support from diverse public and private stakeholders and improve awareness<sup>1</sup>.

The First Regional Scoping Workshop on Sustainable Transport Indicators, which took place in Jakarta, Indonesia, aimed at working towards gathering better data and developing a common understanding of sustainable transport indicators. In this first workshop, basic knowledge about indicators and data collection were conveyed, together with emphasising the importance of reliable and transparent data in transport sector monitoring.

The Second Regional Workshop on Sustainable Transport Indicators further supports the implementation of the KLTSP and the connected harmonised approach for transport sector monitoring. It did so by bringing together stakeholders from the ASEAN region working at an intersection of transport, energy and environmental disciplines to promote greater awareness and creating knowledge to measure and monitor transport sector performance.

This workshop served as a platform for consultation on main sources of transport sector data, the availability, capacities and constraints for the collection and analysis of transport sector data. This focuses on the development of indicators, and also covers measurement, reporting & verification (MRV) and United Nation Sustainable Development Goals (SDGs).

The detailed agenda can be found in **Annex 1**. The workshop was attended by 40 participants mainly from government ministries/agencies of Cambodia, Indonesia, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam, as well as representatives from the ASEAN Secretariat, and TCC. The private sector was represented by the automotive industry. The list of participants is included in **Annex 2**.

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<sup>1</sup> Per KLTSP goal 2.3.1 “Carry out workshop and study on potential indicators and monitoring”.



## 2 Summary of Meeting

### 2.1 Welcome and Opening Speech

Mr. Tali Trigg, the project director of TCC welcomed the participants and expressed his delight about their presence and interest of the workshop. The TCC is supporting the implementation of the KLTSP, with a particular focus on the sustainable transport chapter.

He explained the long-term goal of the efforts undertaken during the workshop series, which includes supporting a data compilation of indicators (data collection), which can be used by every AMS and increase the consistency and comparability across the region.

The objectives of the workshop were:

- To present the background paper for sustainable transport indicators in the ASEAN (following the aim of implementing KLTSP ST. 2.3.1).
- To discuss on what elements should be included in the development of guidelines and monitoring framework for sustainable transport indicators (KLTSP ST 2.3.2).

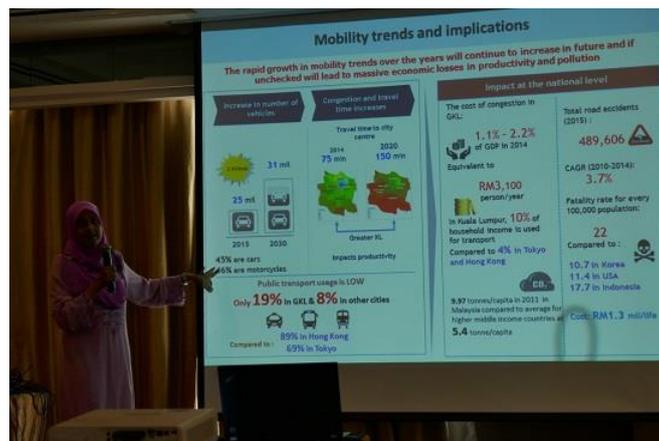
He then introduced the workshop moderator, Mr. Sudhir Gota, who also delivered one of the presentations. The next presentation was given by the Economic Planning Unit of Malaysia.

### 2.2 Workshop Proceedings

#### 2.2.1 “Indicators and data – status quo, challenges and future goals in Malaysia”, by Dr Fatimah Kamal from the Economic Planning Unit (EPU)

Dr Kamal opened her presentation with an explanation for the increase of land transport infrastructure in Malaysia, which is based on the link between economic prosperity and transport.

The development has indeed lead to an increase of economic development, but has also brought about negative side effects such as an increase in air pollution and traffic congestion. Each year, about 1.1-2.2% of the country’s GDP is lost due to traffic jams, and about 10% of the income of Malaysian households is spent on transportation. Since Malaysians like to travel by car, public transport usage is quite low, about 19% of the overall trips in the Greater KL area are done by bus, train or other public transport mode. This is especially low if compared to other cities like Hong Kong or Singapore, where the shares of public transport usage are 89% and 69% respectively.



Dr Fatimah Kamal explaining the economic and social side effects of increased mobilisation (Source: GIZ).

Using private vehicles increased the CO<sub>2</sub> emissions, and is currently 9.97 ton per capita (t/cap), which is very high compared to other higher middle income countries, of which the average CO<sub>2</sub> emissions are 5.4t/cap. Noteworthy is also the economic cost of 8 billion MYR due to traffic fatalities. Embarking to shift towards sustainable transport and low carbon mobility will substantially lower the carbon emissions and prevent expenditures due to lives lost.

In her presentation, Dr Kamal underlined the necessity of a reduction of motorised travel, which can be achieved only by providing a non-motorised transport friendly environment. Convincing the Malaysian people of the benefits of public transport is challenging, especially since **the perceived maximum walkable distance is 500m**. This translates into the need for transport hubs which within a radius of 400m of residential areas, and should include the accessibility of hospitals, schools and job centres.

Other challenges to low carbon mobility according to Dr Kamal are:

- Difficulties in gaining political acceptance.
- **Lack of data**, and not being sure if they are collecting the right data to monitor sustainable transport development.
- Institutional structures may not support the implementation of low carbon mobility measures.

Dr Kamal's presentation can be found in **Annex 3**.

### **2.3 Demand Side Management (DSM) Transport Energy Use by Professor Dr Nasrudin Abd. Rahim of EPU**

Professor Dr Nasrudin Abd. Rahim started his presentation with a recently completed report by the EPU including an overview of the status quo in Malaysia regarding transport. He mentioned since most of the Malaysian population stays in the south of the country, the biggest traffic related issues are in this region. Between 1993 and 2014 the energy consumption in Malaysia increased rapidly, also due to an increase of vehicles road transport of about 25% within the last 10 years. This development has negative effects particularly visible in cities, such as congestion, noise, air pollution, and carbon dioxide emissions.



The recent popularity of online shopping created another congestion factor, with the amount of light duty (freight) vehicles (LDVs) increasing steeply. The low fuel price, the weak public transport infrastructure, and the affordability of private vehicles increased car sales in Malaysia and have led to the current high amount of transport related CO<sub>2</sub> emissions.

In the report, the EPU used different indicators measuring transport activity (PKT, TKT), and disaggregated the data into the different modes of transportation. Although there is the possibility of estimating certain parameters, there are still inaccuracies to be addressed in the current Demand Side Management study.

Professor Dr Nasrudin Abd. Rahim remarked that, with the help of detailed guidelines, the EPU would be able to conduct more accurate studies which can bring about meaningful results.

Professor Dr Nasrudin Abd. Rahim's presentation is included in **Annex 4**.

### **2.3.1 “TCC, KLTSP, and Sustainable Transport Indicators” by Julia Nagel**

Advisor for TCC, Ms. Julia Nagel introduced GIZ in general and the project “Energy Efficiency and Climate Change Mitigation in the Land Transport Sector in the ASEAN Region”, and its role to support the AMS. She explained the background of motorisation growth in ASEAN and pointed out that with increasing numbers of motor vehicles, there is an opportunity to start gathering data and setting indicators in a consistent manner, to be able to assess challenges and track changes regarding the negative impacts of road transport.

A major activity of the TCC project is to support the national and regional implementation of the KLTSP, which is ASEAN's latest regional strategy for transport activities. For the first time it also features a chapter on sustainable transport, which reflects the desire to address climate change mitigation activities also on a regional level.

Ms. Nagel presented the objective of the workshop, proceeding on the way to not only increasing knowledge about indicators but also developing guidelines on sustainable transport indicators, which can be applied in the whole ASEAN region. She emphasised the importance of collecting correct baseline data and updating this data for proper transport sector planning and tracking emission reduction efforts in the transport sector.

Currently, there exists no harmonised approach regarding data collection and indicator development, this gap has been recognised and mapped in the KLTSP under goal 2.3 “develop monitoring framework and harmonised approach for indicators on energy and GHG emissions in the transport sector”. Goal 2.3 is the reason for TCC to organise this set of workshops on sustainable transport indicators and it will move forward to support the development of a regional indicator- and reporting framework to support countries in implementing Nationality Determined Contributions. Ms. Nagel's presentation is provided in **Annex 5**.



### 2.3.2 “Sustainable Transport Indicators on Energy Efficiency and GHG Emissions”, by Sudhir Gota

GIZ consultant Mr. Sudhir Gota presented on “Sustainable Transport Indicators on Energy Efficiency and GHG Emissions”. He began his presentation with an explanation of what indicators are, why they are needed, and which indicators matter within the ASEAN framework. The question that is implicitly addressed when thinking about the introduction of indicators is: how do we know that the decisions we are making have an impact? Indicators are a means of conveying information to the stakeholders, for example converting traffic fatalities into economic cost, to show the policy makers how they could save money by introducing speed cameras.

In a first step Mr. Gota outlined the difference between **data** and **indicators**, and on what level of policy making these diverse indicators are being applied. Another focus was put on the aspect of usability of an indicator, which requirements need to be fulfilled by the indicator in order to be of use for policy making. Some of these requirements include unambiguity, measurability, comparability, and practicality.

Following this, he spoke about the reason for why indicators are needed to set targets, carry out benchmarking, and monitor efforts made in terms of sustainable transport. Many countries voluntarily agreed to meet Intended Nationally Determined Contributions (INDCs), which were published following the UNFCCC conference in Paris 2015. 75% of the countries which signed the Paris agreement have identified the transport sector to be important to mitigate CO<sub>2</sub> emissions. In order to be able to track the progress in reducing CO<sub>2</sub> emissions, indicators play a key role, especially their availability and usability.

Under the KLTSP, ASEAN countries agreed on a more harmonised approach moving towards sustainable transport, for which ASEAN wide applicable indicators are needed to map the progress and the impacts of different measures taken.

Mr. Gota also talked about the host country Malaysia in particular, since the carbon emissions and concentrations are above the average of ASEAN countries due to an extended use of private vehicles, it would be important to monitor the traffic using indicators.

A common mistake made when suggesting the use of indicators is the so-called “analysis-paralysis”, which denotes the feeling of being overwhelmed with too many indicators and not knowing which suit the best. Mr. Gota suggests the use of a step-by-step approach to get to an appropriate number of indicators: start with a low number of indicators, this number can be as low as five, then assess the gaps and introduce further indicators as desired. The process is on-going and can be modified on every stage. The only important rule is to choose indicators which depict the situation one wants to have addressed, so careful planning in the initial phase is required.

In his report, Mr. Gota uses a set of 33 indicators, which appears as **Annex 6** which were chosen after close examination. These indicators are designed to work on a disaggregated level, which is important for a sound assessment of the specifics of transport systems and measures. However, the background paper does not include a detailed approach how to collect these indicators respectively where to get the data from. It is meant to provide the

reader with an understanding of the concept of indicators, the country-wise application should be assessed in every country separately and can therefore differ in many ways.

A way of designing sustainable transport indicators is to follow the ASIF framework, the second biggest framework that is available in transport sector monitoring. The A stands for “total transport Activity”, S represents the vehicle kilometres or passenger kilometres per mode, I is the modal Intensity, and F stands for the emissions per unit of energy.

Reviews of successful monitoring systems indicate that a multi-year action programme that improves data availability and measurement processes over a period of time, is more likely to succeed in the ASEAN countries, rather than an extensive programme, which aims to collect and report all the data required from the outset. Thus, it is recommended to start immediately with a minimum set of indicators based on data and resource availability and to advance the system over time by adding additional indicators.

In order to facilitate this, two categories of indicators for monitoring the impact of sustainable transport policies on energy efficiency and carbon emissions have been recommended.

### *The important thing is to start*

A key issue when creating indicators is data availability, which needs to be considered beforehand. Mr. Gota presented main indicators which can be used in ASEAN, considering potential restrictions of data availability. He then gave an outlook on possible ways forward, which he underlined showing examples from AJTP (ASEAN Japan Transport Partnership) and ADB BTM (Asian Development Bank’s Better Transport Data). CAA (Clean Air Asia) and ADB (Asian Development Bank) are currently collecting data on various transport related parameters, which can also be used by AMS to conduct their calculations.

When speaking of data collection, precision is important, but not the most important. There are significant differences between bottom-up and top-down modelling. However, it is always possible to improve the data quality during the process, it is more important to start collecting data than to be 100% accurate in the beginning. Mr. Gota urged the participants not just to use the top-down approach because it seems to be more accurate, they should always incorporate the bottom-up approach as well. The more indicators are disaggregated in the following, the better are the results.

The presenter also mentioned key issues to be addressed before setting up a definitive approach on data collection and indicator generation which are mainly: multiple stakeholders and stakeholder cooperation, different ministries involved data collection, data availability and transparency.

### *Tools are available and free to use*

Indicator development is not an expensive task, in cases where data is already available, as Mr. Gota described. Enough tools are available, of which some are entirely free of charge. The important task is to understand the methodology behind indicators and to develop a strategy of how to use the tools. Every methodology has its flaws; the main objective is to be aware of these flaws and gaps in the methodology, knowing how to advance nevertheless.



A possible way of progressing with the formation of indicators would be standardised templates, to facilitate the process and assure a proper design approach. A critical prerequisite to get to ASEAN wide sustainable transport indicators is knowledge, therefore capacity-building opportunities like this workshop are vital to achieve a future-oriented strategy on tracking emission targets.

Mr. Gota's presentation can be reviewed in [Annex 7](#).

#### **2.4 Group exercise: Bus stop**

A breakout session was organised as a "bus stop exercise" which was carried out as follows: six indicators were displayed on pin boards, with five questions to each of the indicators (every indicator had the same questions). The participants were divided into six diverse groups, and six moderators were selected (one moderator per indicator/board). The task was to discuss all the questions on each indicator for 10 minutes, during which the moderator noted key statements from the group. When the time was up, the group changed the board and discussed the same questions on a different indicator.

The six indicators were:

- Vehicle registration
- Passenger kilometre and freight kilometre travelled (annual) by modes
- Average vehicle kilometre travelled by vehicle and fuel type per year
- Fuel efficiency by mode and fuel type
- Fuel consumption in transport
- Average occupancy and loading

To which the following questions were to answer:

- Is this data collected and reported?
- Who collects or should collect this data (all relevant stakeholders)?
- How do you collect this data?
- What are the challenges in collecting/reporting this data?
- What support is required?

The exercise brought about a lively discussion especially about the challenges of data collection and the requirements and desires of the countries on how to support the collection.



Mr. Gota and the participants of the second regional workshop on sustainable transport indicators engaged in the “bus stop exercise” (Source: GIZ).

The detailed outcomes of each breakout group can be found in **Annex 8**.

Following the break-out session Mr. Gota summed up the main outcomes – data is available but disparately located - and gave the floor to the participants, who had the opportunity to give their feedback and express their requirements of the development of a framework and guidelines for the collection of indicators.

Different participants reported they really enjoyed the opportunity to exchange their approaches, challenges as well as best practices with other country representatives in the region. They discovered many similarities, especially when it comes to barriers of data collection/reporting. One of the background problems as one participant remarked is the difficulty to include the government, since sustainable transport is usually not a main point on the political agenda.

Regarding the development of guidelines, the participants would like to have more concrete information on which data is important for them to collect, and on how to collect them. Furthermore, a regular meeting approximately every year to mutually support each other with data collection/ indicator development was suggested and could be considered in the future as a follow-on measure and to be participated by related experts from AMS. The need for further capacity development was emphasised, which will be met by carrying out further regional workshops on sustainable transport indicators in the future.

After feedback from the participants, the moderators of each indicator board were also asked to give a brief summary of their perception of the break-out activity. They concluded that regarding the barriers, more institutional cooperation has to be achieved. Policymakers need to be convinced that the monitoring and reporting of data is useful to reach the pledged goals, and should therefore be done. Moreover, appropriate regulations have to be in place to ensure the generation of proper and reliable indicators.

Approaches on how to measure the data are as diverse as the countries, the important factor is that data is collected and can be converted to realise comparability within the region.



As one of the moderators, Mrs. Jeyashri Kisna states her opinion about the challenges the countries are facing when collecting different data (Source: GIZ).

As a way forward the countries and moderators agree, that standardised templates would be helpful to deepen the understanding of each indicator as an important part of the guidelines on indicator development and data collection. Synergies can be utilised to an increased extent, as the countries discovered the commonalities and collaboration potential.

## **2.5 “Workshop Summary/Wrap Up” by Tali Trigg**

Mr. Tali Trigg concluded the day by reminding the participants about the lessons learned during this workshop as well as providing an outlook for future actions in the field.

He outlined the necessity of indicators to being able to track development, especially under the prospect of aggregating the data on an ASEAN level. After this workshop, the participants are able to understand the necessity for data collection, which is crucial for the harmonised approach also mentioned in the KLTSP. Even though the approaches to get to these indicators can be different, the outcome should be clearly defined as a first step, Mr. Trigg remarked. Again he stressed the importance of starting, which is more important than having the perfect dataset from the beginning, because it can always be improved down the road. Another misconception is that collecting data is expensive. Mr. Gota enumerated various tools which are available without further charges.

Through the group work, countries were able to recognise similar challenges, which can be addressed through proper regulation within countries and clear guidance, which will be supported by TCC in terms of guidelines and capacity support. The key challenges, however, are lack of resources for data collection, reliability of third-party data as well as inter-ministerial coordination.

Mr. Trigg also sketched the outlook for the future, with the next step being the third workshop on sustainable transport indicators in March 2017 in Bangkok, Thailand. This next workshop will provide a closer structure to the development of detailed guidelines as well as a catalogue of indicators, which will then ideally be followed by an action plan that results finally in a central database.



His presentation can be found in **Annex 9**.

### **3 Conclusion**

The Second Regional Scoping Workshop on Sustainable Transport Indicators aimed to support the AMS to understand and being able to assess their individual needs for indicators and data collection and enable them to start carrying out their own research to increase energy efficiency and lower the emissions in the land transport sector in the region.

The second workshop, building on the efforts already taken in the first workshop in Jakarta, brought together stakeholders from almost all ASEAN member states to discuss their individual approaches and challenges related to sustainable transport indicators. The focus of this workshop was to enhance the understanding of indicators and data collection, as well as to provoke an interregional dialogue to examine best practices and mutual support mechanisms.

The next workshop of this format will take place in Bangkok, Thailand in March 2017 and will follow up on the requirements posed and help crystallising the draft approach to achieve regional guidelines.

## 4 ANNEXES

### Annex 1

#### Workshop Agenda

Time	Activity	Responsible/Speaker
09:00	<b>Welcome remarks and opening</b>	GIZ
09:15	<b>Indicators and data – status quo, challenges and future goals in Malaysia</b> Presentation and Q&A	EPU
09:45	<b>What have we learned so far / Where are we?</b> Short summary of last workshop	GIZ
10:00	<b>Introduction, objectives, and workshop programme</b> What is an indicator and why do indicators matter? What is the difference between indicators, data, and MRV?	Sudhir Gota
10:45	Coffee & tea	
11:00	<b>Presentation of final draft indicators and report</b> Q&A	Sudhir Gota
12:00	Lunch	
13:00	<b>Group work and facilitated discussions: follow-up on final draft indicators group work, discussions</b> How do we get from a set of indicators to guidelines on data compilation? What is needed from a country perspective? What is the role of ASEC in data compilation?	Sudhir Gota  Participants
	<i>This section also includes a break for coffee &amp; tea.</i>	
16:00	<b>Presentation of findings from group work</b>	Presentation by groups
16:45	<b>Summary of discussion and next steps</b>	GIZ
17:00	<b>Closing</b>	GIZ



## Annex 2

### Workshop Participants

No	First Name	Country	Affiliation	Position	Email/Phone
1	Mr. Chea Socheat	Cambodia	Ministry of Public Works and Transport	Director of Road Transport Department	<a href="mailto:cheasocheatmpwt@gmail.com">cheasocheatmpwt@gmail.com</a>
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				Study on the Demand Side Management of the EPU	
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### [Annex 3](#)

Indicators and data – status quo, challenges and future goals in Malaysia, Dr Fatimah Kamal , EPU



[Annex 4](#)

Demand Side Management (DSM) Transport Energy Use, Professor Dr Nasrudin Abd. Rahim, EPU

[Annex 5](#)

TCC, KLTSP, and Sustainable Transport Indicators, Ms. Julia Nagel, GIZ

**Annex 6**

33 Indicators proposed by Mr. Sudhir Gota

<b>Data</b>	<b>Tier 1 (First Priority)</b>	<b>ASEAN Availability</b>
Fuel sold	Amount of Fuel Sold/consumed (liter/MJ)fuel type in transport	●
Transport Activity	Total vehicle kilometre travel per population	○
	Freight Tonkm/GDP	●
	Passenger kilometre travel/GDP	●
Energy	Transport energy consumption per GDP	●
GHG Emissions	GHG Emissions from transport sector segregated by modes	○
	Transport GHG per capita	●
	Passenger GHG per PKM	○
	Freight GHG per TKM	○
Air Pollutants	PM Emissions from Transport Sector segregated by modes	○
	NOx Emissions from Transport Sector segregated by modes	○
Fuel Type	Proportion of vehicle fleet by alternative fuel type	●
	Share of renew able energy in total transport fuel consumption	●
Road Accident	Fatality/Million vehiclekm	○
	Accidents/Million vehiclekm	○
Motorization	Passenger and Freight Motorization Index ( vehicles/1000 population)	●
Freight Rates	Unit Price (\$) per Tonkm for different modes	●
Fuel Subsidy	Fossil Fuel Subsidy/Unit of GDP	●
Investment	Transport Investments	●
	Climate Finance share	○
Fleet	Number of vehicles by vehicle registration type & fuel type	●
Distance Travelled	Vehicle kilometre by vehicle type (in vkt) (mode & fuel)	○
	Passenger Kilometre (pkm) (mode & fuel)	○
	Ton Kilometre (tkm) (mode & Fuel)	○
Trips	Total Number of Trips/Mode/Fuel type	○
Load Factor	Average Occupancy (No of persons/Vehicle) (by mode & fuel type)	○
	Average Loading (Tons/Vehicle) (by mode & fuel type)	○
Fuel Efficiency	Fuel Efficiency (kmpL or L/100km or MJ/km) (by mode & fuel type)	●
Speed	Speed by mode/fuel type	○
Emission Factor	Emission factors for air pollutants in g/KM per vehicle/fuel type	○
Population	No of inhabitants	●
Economic	GDP/Capita or GDP	●
Infrastructure	Km of Infrastructure	●

[Annex 7](#)

Sustainable Transport Indicators on Energy Efficiency and GHG Emissions, Mr. Sudhir Gota

**Annex 8** (Excel file is available upon request)

Break-out session details, Mr. Tali Trigg, Mr. Alvin Mejia, Mr. Aditya Mahalana, Dr Horizon Gitano-Briggs, Mr. Stefan Bakker, Mrs. Jeyashri Kisna.

Fuel consumption in transport					
Questions	Is this data being collected and reported?	Who collects or should collect the data	How do you collect the data?	Challenges	Support needed
<b>In General</b>					Central agency & database, Segregation of data based on sector/ modes, Capacity building in data collection, survey methodology, Database analysis, Transparency in data collection, Forecasting and develop outlook for future, More support to improve the bottom up approach
<b>Cambodia</b>	No. Fuel Consumption data collected only for taxation purpose. (not reliable, proper recording)	Department of Custom (Tax), Ministry of Finance (Import)	Fuel Sales Data (tax data from the customs)	Many points for data collection, Delay in data collection, thus no real time data, Difficult to differentiate for transport or non-transport use	
<b>Indonesia</b>	Yes	Ministry of Energy	Fuel Sales Data	Not timely submission	
<b>Malaysia</b>	Yes	Energy Commission (ST), Ministry of Energy, Green Technology and Water (KETTHA), Ministry of International Trade and Industry (MITI) : Sales of fuel at fuel station in Malaysia	Fuel Sales Data	Data at many different agency, difficult to keep database	
<b>Myanmar</b>	Yes	Ministry of Electricity and Energy (MOEP)	Fuel Sales Data (Myanmar wanted to replace this with "Data is collected in cooperation with relevant Ministries and organizations.")	Under reporting, don't reflect the whole consumption	
<b>The Philippines</b>	Yes	Department of Environment (DOE)	Fuel Sales Data	No database, Disaggregation based on geographical area i.e. fuel price	
<b>Singapore</b>	Yes	Ministry of Finance, Ministry of Trade and Industry (MTI)	Fuel Sales Data	No challenges – as different sectors are administrated by different ministry/ government agencies. Thus, data is monitored at point of transfers.	
<b>Thailand</b>	Yes	Ministry of Energy	Fuel Sales Data	Only total fuel sales data available, cannot differentiate to which sector the consumption is to, whether to land, water, rail transport	
<b>Vietnam</b>	Yes	Ministry of Industry and Trade (MOIT)	Fuel Sales Data	Industry not cooperative due to legal/tax issue, Leakages: fuel used for agriculture, fishing boats, military, constructions are accounted as transport fuel	
<b>Additional comments</b>					



Vehicle Occupancy and Loading					
Questions	Is this data being collected and reported?	Who collects or should collect the data	How do you collect the data?	Challenges	Support needed
<b>In General</b>		DOTr should collect this data centrally, but often no lead agency for collection of freight data.	Rail is easy; PT tends to send in questionnaires. O-D surveys for freight.	Irregular studies on freight (only done in a research manner). Lack of sharing information even where it does exist. Lack of lead agency, and lack of enforcement (key issues).	Incorporate more transport data/questions in national census or household interview surveys. Freight survey data could be fed into models for better resolution. Post offices could be contacted to gather data.
<b>Cambodia</b>				Only 8 weigh stations in CM, but truckers know where they are so they avoid them.	
<b>Indonesia</b>		MoT will start centrally collecting data in 2017, taking over from provinces for weight stations for trucks.			
<b>Malaysia</b>	LRT and ports (ships/trucks) data is available in PH and MY.	SPAD collect public transport data. Customs can provide data	Axle-loading stations for public works		Getting more data from card payment companies would be helpful.
<b>Myanmar</b>	Data is available.	Road Transport Administration Department	Combine the data which are collected from the state and regional offices.		
<b>The Philippines</b>	LRT and ports (ships/trucks) data is available. Bus companies collect data but not always easy to find or share; national surveys might pick up some public transport data, but often there is better resolution on an urban level. Only available for Jeepneys for certain studies, nothing regular.		Axle-loading stations for public works	Master of Planning Study each 10 years captures some data, but often the data remains with the consultant doing the study.	Getting more data from card payment companies would be helpful.
<b>Singapore</b>		Collects real-time data for public transport, otherwise surveys for passenger cars.			Freight forwarder associations have the data, but it's disaggregated, need mandate to collect.
<b>Thailand</b>					
<b>Vietnam</b>	Bus companies collect data but not always easy to find or share; national surveys might pick up some public transport data, but often there is better resolution on an urban level.		Freight companies tend to send in data every 6 months	Some data is collected, but from external sources and often remains with projects/consultants.	
<b>Additional comments</b>				Mobility sharing (e.g. GoJek/Grab/Uber) might make things harder in the future.	Institutionalise surveys in companies. Tollroad data is not counted, support needed to do so. HOV-lanes (if/where they exist) could be used for data collection. Introduce ITS for public transport e.g. passenger counters.



Vehicle Fuel Efficiency					
Questions	Is this data being collected and reported?	Who collects or should collect the data	How do you collect the data?	Challenges	Support needed
<b>In General</b>	Generally rely on MFRG's numbers. If measured, only on locally assembled models.	MOT or MOEnergy, or a new "Energy Efficiency" department (generally within MOT/MOE)	Simple Road Test (Philippines uses 80kph steady driving on-road) Loaded Dyno Testing	Responsibility (within government) not clearly defined, Expertise lacking, Equipment/funds lacking, NO MEASUREMENTS OF IN USE VEHICLES	Tech Expertise, Single Authority with clear direction and political clout, Labeling, Systematic Data to give Good Policy, Money, Upgrading of Equipment
<b>Cambodia</b>					
<b>Indonesia</b>					
<b>Malaysia</b>					
<b>Myanmar</b>					
<b>The Philippines</b>					
<b>Singapore</b>	Only on imported second hand vehicles				
<b>Thailand</b>					
<b>Vietnam</b>					
<b>Additional comments</b>	Motorcycles (50% of Market) are NOT measured, and no data exists		Vehicle Type is NOT same as Vehicle Usage (Eg. MPV and Pickups are used same as passenger cars, thus should be classified in same category)	INDIGENOUS vehicles not measured (or only sporadically): Tuk-tuk, Jeepney, Tricycles, motorcycle Taxis	

Vehicle Registration					
Questions	Is this data being collected and reported?	Who collects or should collect the data	How do you collect the data?	Challenges	Support needed
<b>In General</b>				information on disaggregated data is not possible/accessible	Regional standard/template for data collection, that can also accommodate electric vehicle registration. The issue of vehicle registration to be accommodated in related. ASEAN Working Group meetings. <b>Need to have better data management system and more integrated system, ASEAN-wide reporting.</b>
<b>Cambodia</b>		Highway police	Registration at highway police, data is segregated based on fuel type and engine capacity		
<b>Indonesia</b>		Road Transport Authority	Has an "E collection super corridor" programme, transport is part of E government initiative, it is done electronically		
<b>Malaysia</b>	Data is collected by road transport authority. No scrappage scheme for private vehicle, scrappage scheme only for public vehicle	Road Transport Administration Department	New private vehicle has to be registered and it is valid for three years. Heavy duty vehicle has registration validity of one year.  Combine the data which are collected from the state and regional offices.		
<b>Myanmar</b>	Data is collected and reported	Land Transport Office	Registration for brand new vehicles valid for three years, after three years renewal is needed every year. Philippines controls the registration information through stickers placed on the vehicle	Database system is done by private company, and have to pay money to get the data from the company who runs the database. The LTO is a fund generating office and they have certain quota to achieve, so if they implement strict regulation in vehicle registration e.g, roadworthiness, they might not be able to fulfill the quota, therefore making a possible conflict between regulation and income generation. Emission test is in place for extending license, but roadworthiness test does not exist.	
<b>The Philippines</b>	Data is collected and report might be difficult to get. No scrappage system in Philippines. Data collection is done by Land Transport Office but database system is being sub-contracted to private party	Land Transport Authority	Registration only for first phase, road tax is to be paid every year. Detail information and data segregation are done, and in more greater detail (fuel type, engine capacity, number of seats, etc)		
<b>Singapore</b>	Data is available. Scrappage scheme is enforced in Singapore. Information is collected however release of segregated data might be difficult	Department of Land Transport	DLT to collect data, segregation of data by fuel type and engine capacity	huge datasets, problem in database system and renewal of registration is also a problem	
<b>Thailand</b>	Data is collected by Dept for Land Transport (DLT). No scrappage scheme in Thailand, release of information is limited	Police dept/Ministry of Transport. There are different office responsible for it in Vietnam	Vehicle owner has to register, data is segregated based on fuel type and engine type	data might not be reliable, especially data regarding motorcycle.	
<b>Vietnam</b>	Registration data is collected. Age limit for freight vehicles and age limit for private vehicle is not limited as long as they are registered				To accommodate vehicle inspection in order to extend vehicle registration, ASEC shared that ASEAN has a vehicle inspection recognition
<b>Additional comments</b>					



Vehicle Kilometres					
Questions	Is this data being collected and reported?	Who collects or should collect the data	How do you collect the data?	Challenges	Support needed
<b>In General</b>				political will	documentation of best practices, experience sharing, guidance on institutional arrangements, enforcement, reporting, regional cooperation mechanism to enable experience sharing
<b>Cambodia</b>	not collected officially, only sample studies are done			lack of cooperation from the private fleet operators (when they ask for data for sample surveys), lack of penalty for non-cooperation	
<b>Indonesia</b>	not collected officially, data for publicly-operated buses would be available, data for private fleets is collected but normally reserved for internal usage (not accessible)			lack of coordination between the relevant agencies	
<b>Malaysia</b>	Data is being collected for commercial vehicles, for express buses, the law states that these should be equipped with GPS, for state buses (in capital cities), GPS data is used for computing payments, freight operators have data, but are not reported	Vehicle inspection centers that are randomly selected by the government (MIROS) for each region	selected vehicle inspection centers are mandated to record odometer readings for commercial vehicles which are supposed to get inspected every 6 months	encoding errors/ quality (sometimes, negative values are computed based on the encoded records)	capacity building on the role of I.T. as an enabler for generating data, support in mandating automatic data collection (e.g. for public transport vehicles)
<b>Myanmar</b>	not officially collected				
<b>The Philippines</b>	not collected officially; sample studies are done				
<b>Singapore</b>	collected (see next column); data can be disaggregated to reflect vehicle type-fuel sub-segments but not currently reported publicly	For cars and commercial vehicles, this data is collected through authorized vehicle inspection centers, public buses collected as a basis for payment, taxis (through their smart meters)	data is collected through vehicle inspection centers, collated/integrated by the Land Transport Authority		
<b>Thailand</b>	starting this year, odometer readings are recorded for all passenger vehicles >7 years old, for new passenger vehicles, the discussions are on-going (integrating odometer reading encoding with the license plate renewal)	vehicle inspection centers that are appointed by the Department of Land Transport (DLT)		encoding errors are also observed	
<b>Vietnam</b>	not officially collected, current discussions are on-going to integrate collection of this data with the inspection system (lead: Vietnam Register), law is in place for mandating GPS devices for buses, trucks (discussions are ongoing for taxis), but the GPS data is not yet used to calculate VKT	lead organization in the discussions is the Vietnam Register		some vehicles (i.e. Motorcycles) are not mandated to go through regular inspection	
<b>Additional comments</b>					



Passenger-km and tonne-km by mode					
Questions	Is this data being collected and reported?	Who collects or should collect the data	How do you collect the data?	Challenges	Support needed
<b>In General</b>	For all countries except Singapore: Passengers: public transport, no private transport Freight: no comprehensive data, but most countries collect for rail and water; some limited studies; Malaysia collect data for bigger companies			No transport questions in census, Lack of institutional coordination, not clear who is in charge, In accurate data, No reporting format or template, Lack of knowledge on exactly which data need to be collected and how, No clear policy, regulation and mechanism for centralized data collection, Difficulty in finding data, Institutions don't want more work that is outside of core duties and kpis	Guidance and templates for data collection, Policy support, Study to start data collection, Development and improved of practical methods for data collection, Support development of data management system
<b>Cambodia</b>					
<b>Indonesia</b>					
<b>Malaysia</b>		JPJ (road transport department) and SPAD (land PT and freight)	Survey for passenger transport, Freight: associations		
<b>Myanmar</b>					
<b>The Philippines</b>					
<b>Singapore</b>	Passenger: yes; Freight: No		PT: tickets, occupancy rate surveys, car travel by sampling; household survey every 5 yrs, travel survey every year		
<b>Thailand</b>					
<b>Vietnam</b>		Min. of Planning and Investment; General Statistics Office	PT enterprises and shipping companies		
<b>Additional comments</b>					

[Annex 9](#)

Workshop Summary/ Wrap Up, Mr. Tali Trigg, GIZ