



NEGARAKU

DEVELOPMENT OF SYSTEM OF ENVIRONMENTAL-ECONOMIC ACCOUNTING (SEEA) IN MALAYSIA

By:

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**Inter-regional Workshop on
Strengthening Statistical Capacities for Building Macroeconomic and Sustainable
Development Indicators in Latin America, the Caribbean and Asia-Pacific Countries
10-12 July 2017, Santiago, Chile**

OUTLINE

1

BACKGROUND

- i. Current situation
- ii. Policy demand

2

DEVELOPMENT OF MySEEA-ENERGY

3

QUALITY ASSURANCE

4

ISSUES AND CHALLENGES

5

CRITICAL SUCCESS FACTORS

6

WAY FORWARD

ENVIRONMENT STATISTICS IN DOSM

1

EXISTING

- **Compendium of Environment Statistics (CES)** - since 1998
 - ➔ Framework for the Development of Environment Statistics (FDES), Malaysia 1998 adopted from FDES, United Nations 1984
- **Report on the Survey of Environment Protection Expenditure** - since 2009
 - ➔ Environmental Expenditure Statistics: Industry Data Collection Handbook , 2005 – Eurostat
- **Economic Census for Water Supply; Sewerage, Waste Management & Remediation Activities**

2

NEW PRODUCTS

Green Economy Indicators

System of Environmental-Economic Accounting (SEEA)

Physical Supply Use Table (PSUT) - Energy Account

Pilot Project Green Economy Indicators (2014-2015) – UNSD

3

DEVELOPMENT

- **CES 2017** based on FDES Malaysia 2013 adopted from FDES UN 2013
- **FDES Malaysia 2017**

System of Environmental-Economic Accounting (SEEA)

- Roadmap SEEA Malaysia (2016)
- Water Account (2017)

FDES 2013

- Adopted by the United Nations Statistical Commission, at 44th Session in 2013

Supporting Member States in Developing and Strengthening Environment Statistics and Environmental-Economic Accounting for Improved Monitoring of Sustainable Development (2016-2017) - UNSD



POLICIES RELATED TO ENVIRONMENT



4

Pursuing green growth for sustainability and resilience

Green growth refers to growth that is resource-efficient, clean, and resilient. It is a commitment to pursue development in a more sustainable manner from the start



5

Strengthening infrastructure to support economic expansion

Infrastructure development ensures that the rakyat have access to essential amenities and services such as transport, communications, electricity and clean water. Better integration.....

SEEA AS AN INPUT TO GEI & SDGS

SEEA

SOCIAL DIMENSION

- Energy use per household
- Household income spent on fuel and electricity

ECONOMIC DIMENSION

- Energy use
- Energy intensities
- Household energy intensities
- Efficiency of energy
- Water use
- Water productivity
- Forest area
- Land cover

ENVIRONMENTAL DIMENSION

- Co2 emissions
- Air pollutant emissions
- Wastewater generated
- Municipal waste collected

SUSTAINABLE DEVELOPMENT GOALS



GEI

1 The environmental and Resource Productivity

- Carbon emissions
- Energy

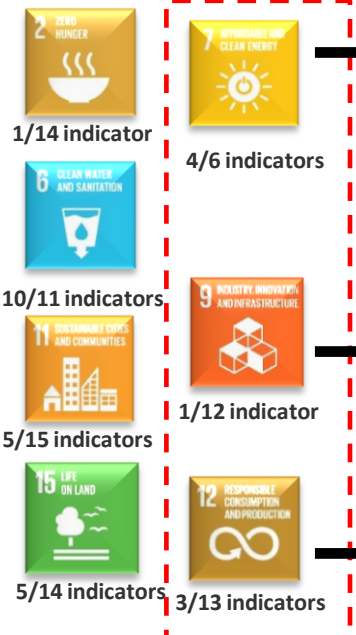
2. The natural asset base

- The renewable resources
- Land & agriculture

3. The environmental dimension of quality of life

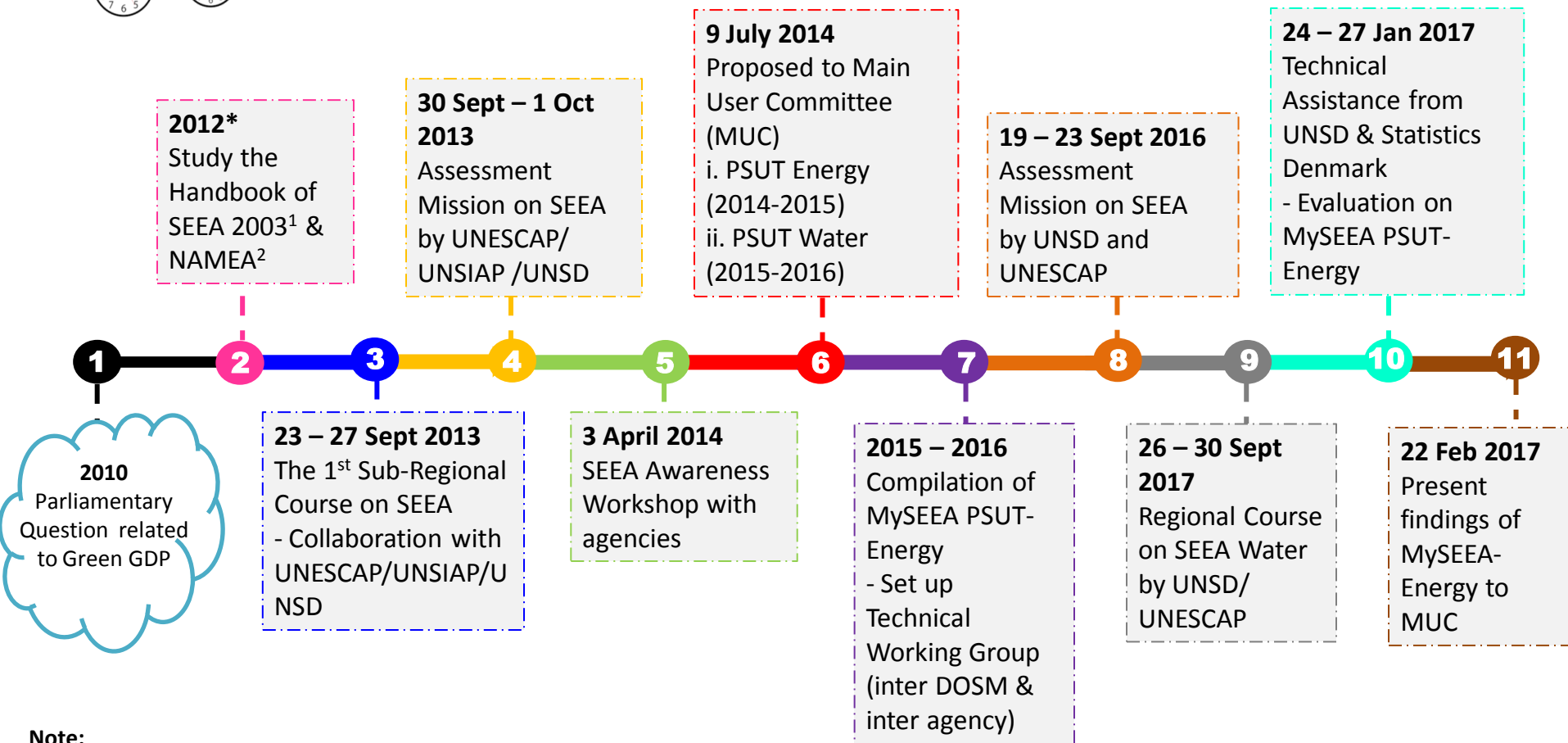
- Environmental health & risk
- Environmental services and amenities

Total indicators related to SEEA in each goals



- 2 Target Under Goal 7:**
 - 7.2.1 Renewable energy share in the total final energy consumption
 - 7.3.1 Energy intensity measured in terms of primary energy and GDP
- 1 Target Under Goal 9:**
 - 9.4.1 CO2 emissions per unit of value added
- 1 Target Under Goal 12:**
 - 12.c.1 Amount of fossil-fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels

JOURNEY OF SEEA MALAYSIA



Note:

- SEEA CF 2012 was still draft document. It is adopted as a standard manual by UNSD at the 43rd UNSC session in 2013.

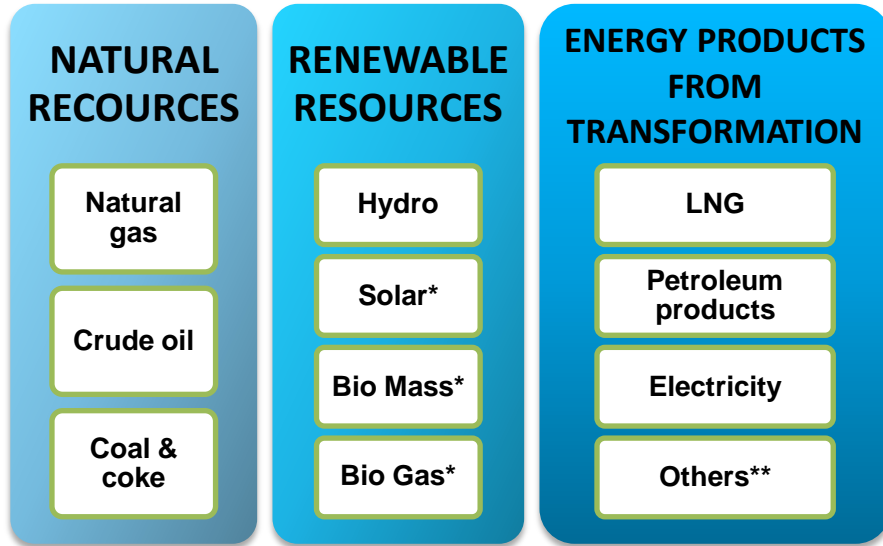
1 Handbook of National Accounting: Integrated Environmental and Economic Accounting 2003

2 National Accounting Matrix with Environmental Accounts

How We Develop MySEEA-Energy

MySEEA PSUT-ENERGY 2010

Energy Resources¹



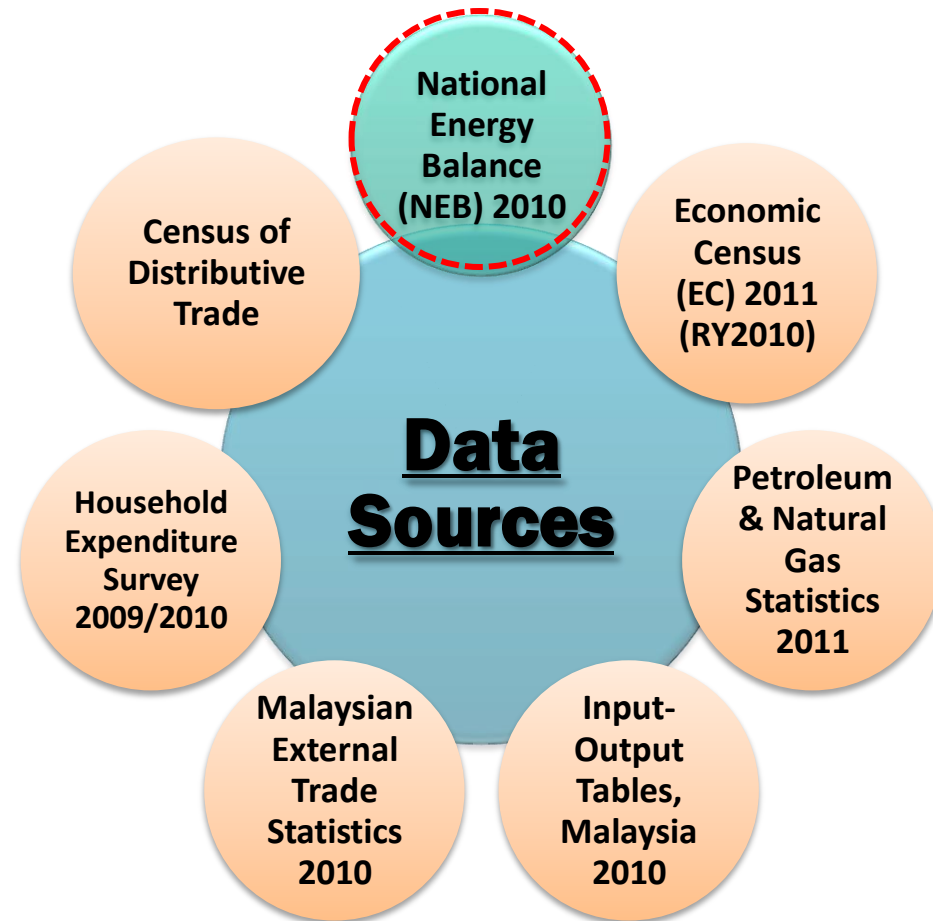
Note: ¹ Excluding reserve of energy resources
 * will be covered on MySEEA PSUT-Energy 2015
 **Others refer to additive (which are used as refinery intake)
 e.g. imported Light Diesel, Crude Residuuum & Middle East Residue.

Classification



Why 2010?

Data sources for the compilation i.e. Economic Census and Input-output Tables in 2010.



BASIC STRUCTURE

Energy Balance

Item code	Flows	Energy products					of which: Renewables
		E1	E2	E3	...	Total	
1.1	Primary production						
1.2	Imports						
1.3	Exports						
1.4	International Bunkers						
1.5	Stock change (closing-opening)						
1	Total energy supply						
2	Statistical difference						
3	Transfers						
4	Transformation processes						
5	Energy Industries own use						
6	Losses						
7	Final consumption						
7.1	Final energy consumption						
7.1.1	Manufacturing, const. and non-fuel mining industries, Total						
	Iron and steel						
	Chemical and petrochemical						
	Other Industries						
7.1.2	Transport, total						
	Road						
	Rail						
	Domestic aviation						
	Domestic navigation						
	Other Transport						
7.1.3	Other, total						
	Of which: Agriculture, forestry and fishing						
	Households						
7.2	Non energy use						

SEEA PSUT-Energy Account

Supply	Industries	Households	Accumulation	Rest of the World	Environment	Total
Energy from natural input					Energy inputs from the environment	Total supply of energy from natural inputs
Energy product	Output			Imports		Total supply of energy products
*Conversion losses	Conversion losses generated by industry	Conversion losses generated by household consumption	Conversion losses from accumulation	Conversion losses received from the rest of the world	Conversion losses recovered from the environment	Total supply of conversion losses

Use	Industries	Households	Accumulation	Rest of the World	Environment	Total
Energy from natural input	Extraction of energy from natural input					Total use of energy from natural inputs
Energy product	Intermediate consumption	Household consumption	Changes in inventories	Exports		Total use of energy products
*Conversion losses	Collection & treatment of conversion losses		Accumulation of conversion losses	Conversion losses sent to the rest of the world	Conversion losses flows direct to environment	Total use of conversion losses

Supply Use Losses

*Conversion losses: i) Natural resource losses are natural resource inputs that do not subsequently become incorporated into production processes and, instead, immediately return to the environment. (SEEA CF-3.98) ii) 4 types of losses i.e. losses during extraction, losses during distribution, losses during storage and losses during transformation. (SEEA CF-3.100)

METHODOLOGY

Top-down approach

National Energy Balance (NEB)
- Aggregate Data

Agriculture

Mining

Manufacturing

Construction

Services

Household

- Structure:
- Economic Census
 - I-O Table
 - HES

EXPENDITURE

Fuel, lubricants and gas consumed

9.9 Bahan pembakar, pelincir dan gas
Fuel, lubricants and gas

11

(a) Pelincir
Lubricants 12 22 %

(b) Minyak diesel
Diesel oil 13 %

(c) Petrol
Petrol 14 %

(d) Gas petroleum cecair
Liquified petroleum gas (LPG) 15 %

(e) Gas asli/Gas asli untuk kenderaan
(NGV)
Gas asli/Gas asli untuk kenderaan
(NGV) 16 %

(e) Bahan pembakar lain (sila nyatakan)
Other fuels (please specify) 17 %

.....

Jumlah / Total 18 1 0 0 %

Water and Electricity

12 AIR DAN TENAGA ELEKTRIK
WATER AND ELECTRICITY

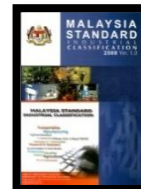
Unit Kuantiti
Unit of Quantity Kuantiti / Quantity 17

12.1 Air yang diabstrak
Water abstracted Meter padu
Cubic metre 10

12.2 Tenaga elektrik yang dijana (sila nyatakan)
Electricity generated (please specify)
cth : Solar, Biomass, Biogas
e.g : Solar, Biomass, Biogas Kilowatt-jam
Kilowatt-hour 11

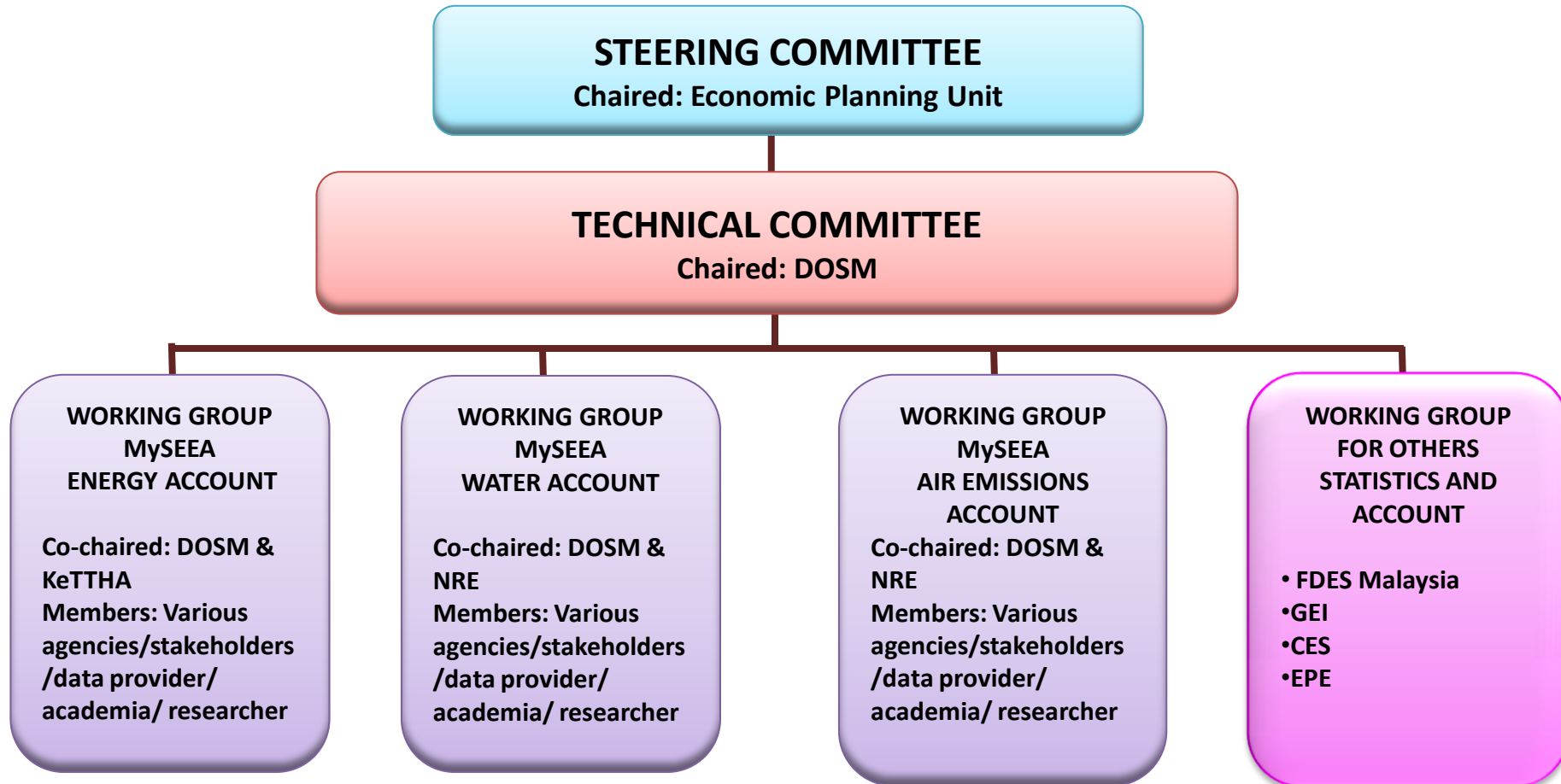
(a) Jika soalan 12.2 diisi, sila nyatakan peratus kegunaan sendiri
If the question 12.2 are filled, please specify the percentage for own use 12 %

Note: Industry based on Malaysia Standard Industrial Classification 2008 adopted from ISIC Ver.4



GOVERNANCE STRUCTURE

PLANNING AND DEVELOPMENT FOR ENVIRONMENT STATISTICS



NOTE:

* New environment statistics:

- Latest UNSD's manual
- Project received from international org.

- Membership will be reviewed from time to time

MySEEA PSUT ENERGY – QUALITY ASSURANCE

PROCESS

SCOPE & CONCEPT

- i. Standard manual – SEEA CF, SEEA Energy, IRES, PEFA
- ii. Discussion via online with Experts /LG members
- iii. Attachment to other NSO

DATA

i. Data sources

- a. National Energy Balance (as a benchmark)
- b. DOSM (e.g. economic census, petroleum & natural gas statistics, trade)

ii. Data verification by Technical Working Group:

- a. Internal DOSM
- b. Inter agencies (Energy Commission, Economic Planning Unit, Ministry of Energy, Green Technology & Water)

iii. Cooperation:

- a. Working closely with other agencies
- b. Technical collaboration with local university (data estimation & analysis)

VERIFICATION

Structure comparison between SEEA Energy and IO

Use	Agriculture	Mining	Manufacturing	Constructions	Services
SEEA	1.0 %	1.0%	62.2%	0.6%	35.3%
IO	4.1%	2.8%	59.8%	2.0%	31.2%

Note: By ranking

FINDINGS

Technical assistance by UNSD/international consultant/experts : Valuation & verification

MySEEA PSUT-Energy vs NEB

	SEEA	NEB
Total Energy from natural inputs	26.9%	27.5%
Total Energy products	51.1%	47.6%
Total Conversion Losses	22.0%	24.9%

Note:

- i. Other indicator: intensity/GDP
- ii. Comparison with other countries (Netherlands, Finland & Lithuania)

Endorsement by Main User Committee

Provide statistics to support current policy/ programmes/ plan (e.g. National Policy on Environment, National Renewable Policy & Action Plan, Malaysia Plan)



Issues & challenges

Knowledge

- SNA and IO concept
- Biophysical/environmental subject & term
- NEB concept, compilation methods & coverage

Data

- Insufficient physical energy data/information
- Data scattered at the various agencies
- Different scope & coverage

Technical matters

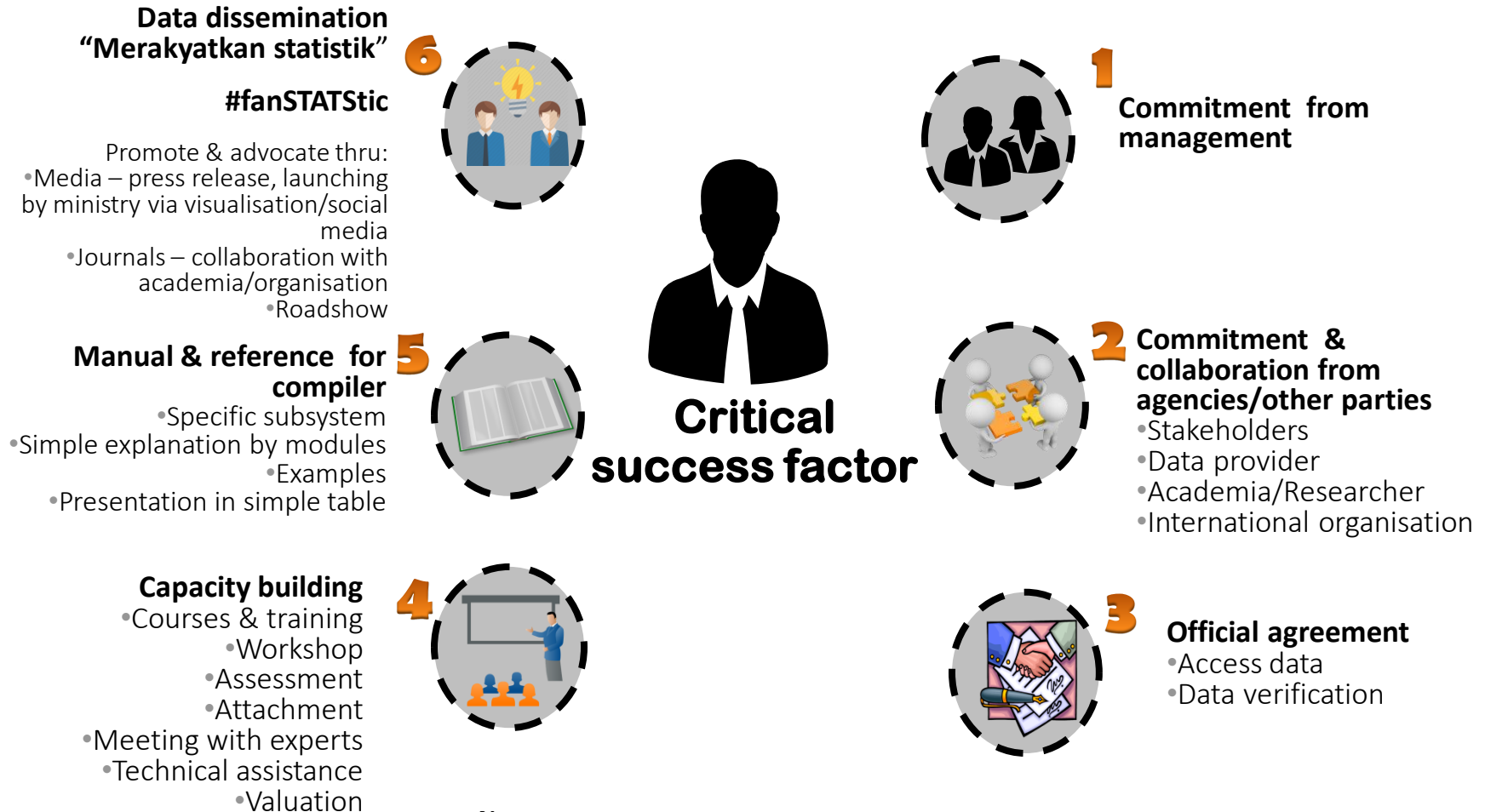
Need detailed explanation on estimation methods, techniques and examples on:

- Conversion factor
- Losses
- Balancing
- Allocation of supply & use from NEB to SEEA
- Treatment (e.g. bunkering & tourism)

Dissemination

- Promote the importance/usefulness of SEEA to stakeholders/agencies
 - i. Explain the different of NEB vs SEEA & how it compliment each other
 - ii. Linkages with SDGs and GE indicators
- How to present SEEA in a [simple and informative](#) to the public/user

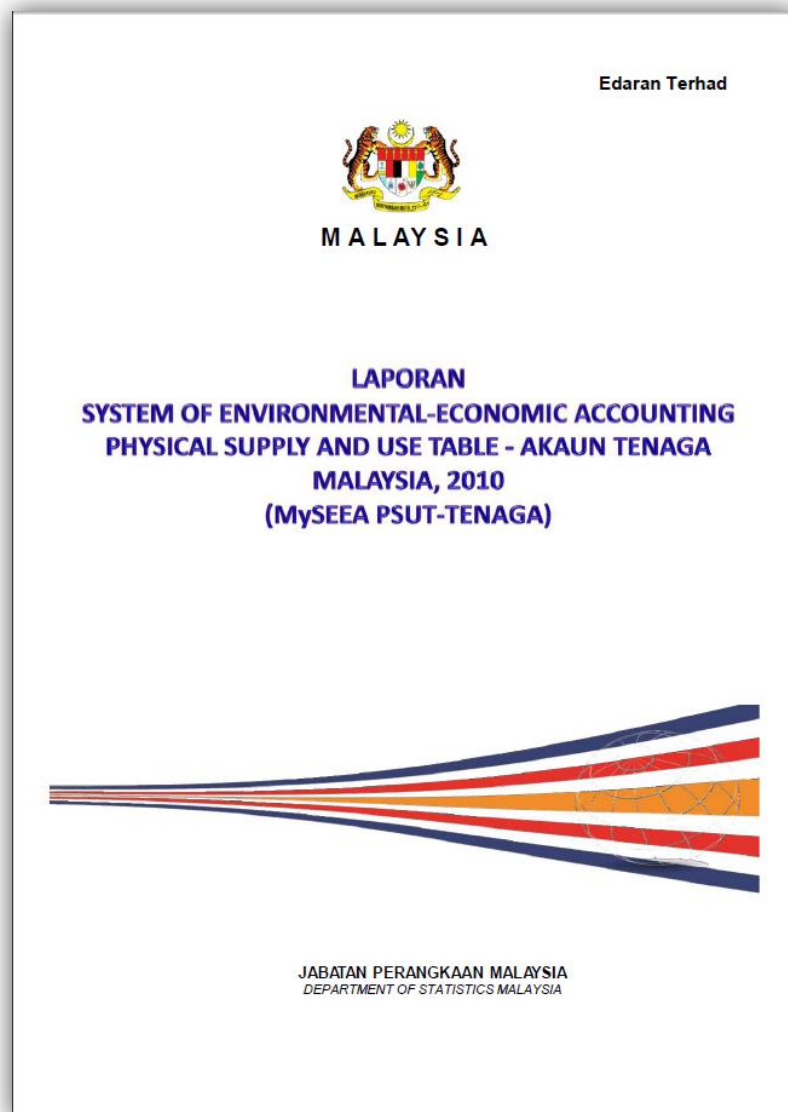
CRITICAL SUCCESS FACTOR



Note:

- i. Current workforce in developing SEEA Malaysia-6 officers
- ii. No. of capacity building received:
 - Course & training – 3
 - Workshop – 2
 - Assessment – 2
 - Meeting with experts – 6
 - Technical assistance & valuation - 1

REPORT OF MySEEA PSUT-ENERGY



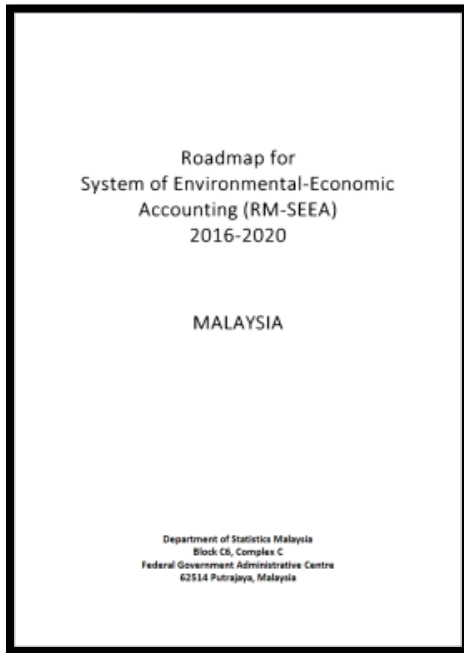
Main contents:

1. • Methodology
2. • Strategic Plan for the Development of SEEA Malaysia
3. • Issues & Challenges
4. • Findings

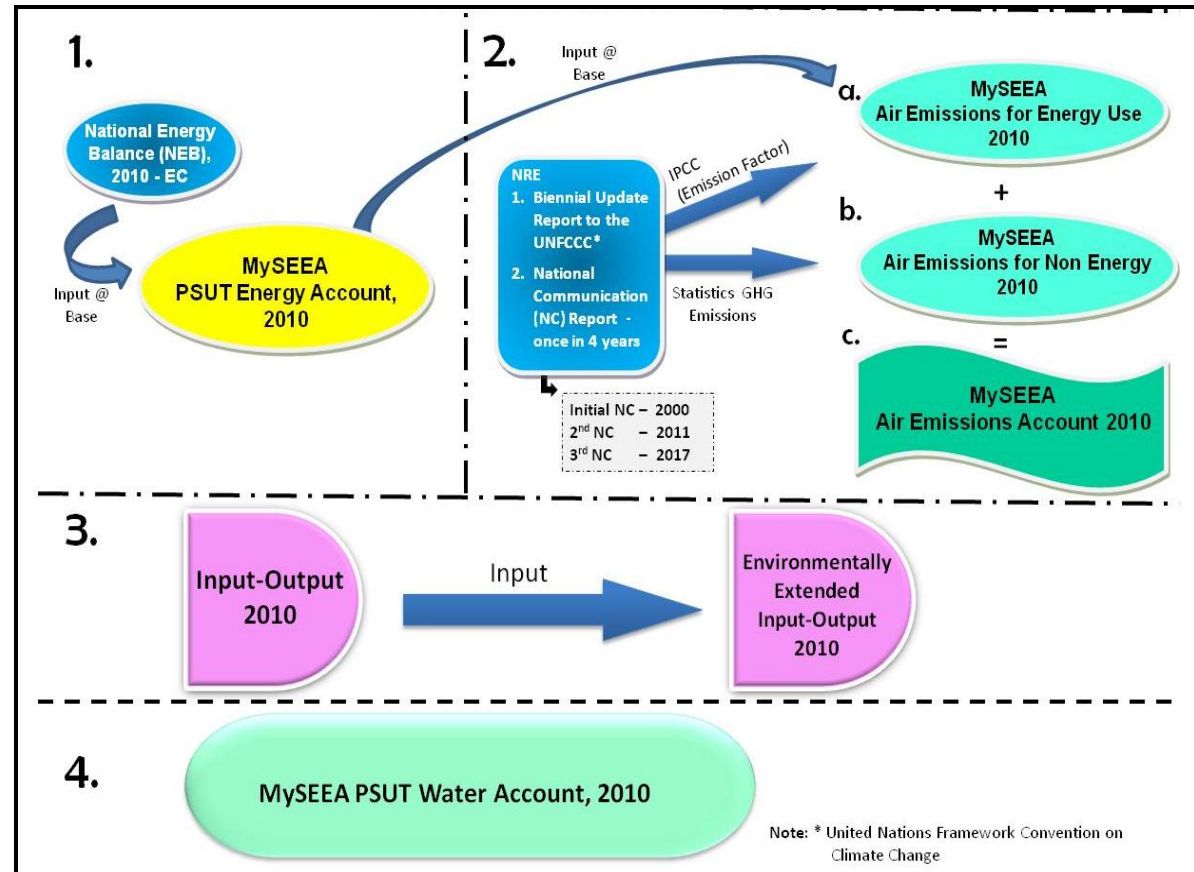
Purpose:

To document experience as a reference & guideline for the future reference

ROADMAP SEEA MALAYSIA



Proposed plan for development of SEEA 2016 - 2020



MAIN CONTENTS

- Policies/Programmes/Plan/Initiatives
- Development Plan of SEEA Account 2016-2020
- Governance structure
 - Membership - Agencies involve
 - Term of reference
- Data requirements/sources/references

Note: Plan to amend the Statistical Act (Malaysia Statistical Review by World Bank 2017)

WAY FORWARD

1

Dissemination Strategic Plan
-seminars, workshop, roadshow, talks in media online, radio etc
- Release 'capsule' launch by Minister etc

2

Develop the Subject Matter Expert (in the DOSM Transformation Plan 2016-2020)

3

Review @ Amend the Statistic Act (recommended in the DOSM's Statistical Review System by the World Bank)

4

Working with the Local Univ. in offering SEEA courses at Degree/Master/PHD

Thank you

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