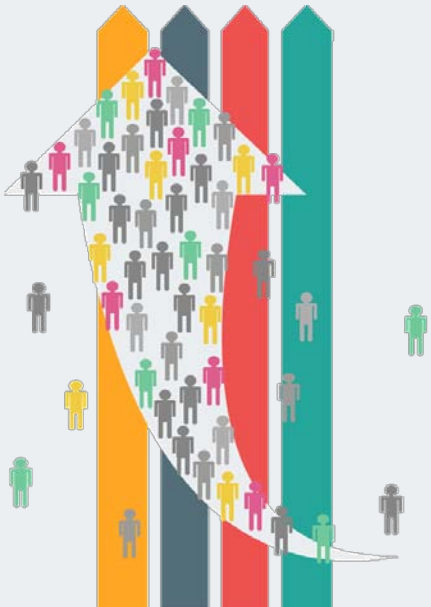
SYSTEM OF ENVIRONMENTAL-ECONOMIC ACCOUNTING (SEEA) MALAYSIA

PRESENT BY:
Madam Roslawati Yahya
Director of Agriculture & Environment Statistics Division



Date :

27 November 2017

Time :

10.30 a.m

Venue :

Alam Warisan Ballroom 2, Bunga Tanjung, Level 2, Hotel Pullman Lakeside Putrajaya

PRESENTATION OUTLINE

1. BACKGROUND
2. ROADMAP SEEA MALAYSIA
3. MySEEA PSUT ACCOUNT
   - Energy
   - Water
4. ISSUES & CHALLENGES
5. WAY FORWARD

BACKGROUND

- United Nations Statistics Division (UNSD) has conducted a development account project "Supporting Member States in Developing and Strengthening Environment Statistics and Integrated Environmental-Economic Accounting for **Improved Monitoring** of Sustainable Development" for the period of 2016 - 2017 :
  - ❖To strengthen the regular and sustained **production of environment statistics**
  - ❖To strengthen the **compilation of environmental-economic accounts** and supporting statistics by integrating environment and economic statistics and linking it to policy demand – **Malaysia as a pilot country**
- Objective: To measure the effectiveness of environmental policies/programmes
- Project's outputs: ***Roadmap*** **SEEA Malaysia** and **SEEA Water Account**
- National consultant: Dr. Mohd Yusof Saari from UPM

THE SEEA CENTRAL FRAMEWORK

Physical & Monetary

1. Supply & Use Table (SUT)
i. Energy
ii. Water
iii. Emission (Air, water, waste)

2. Asset Account
i. Mineral & energy resources
ii. Land
iii. Soil resources
iv. Timber/forest resources
v. Aquatic resources
vi. Water

3. Functional account
i. Environmental Protection Expenditure Account (EPEA)
ii. Environmental Goods & Services Sector (EGSS)

4. Sequence of economic account

Monetary

- *Production Account (elaborated in SUT)*
- *Distribution and Use of Income Accounts*
- *Capital Account*
- *Financial Account*

Less depletion of natural resources

Add back depletion of natural resources

Framework that describe **the interactions between the economy and the environment**

SEEA CF 2012 was adopted by the United Nations Statistical Commission, at its 43rd Session in 2012, as the international standard for environmental-economic accounting.

Note: (i) SEEA applies **the accounting concepts, structures, rules and principles of the SNA (i.e. Production boundary, definition of products and territory/residential approach.)**
(ii) For more information, refer to : SEEA CF 2012, SEEA for Energy, SEEA for Water, SEEA for Ecosystem, SEEA Agriculture, Forestry and Fisheries (draft version) and SEEA- Applications & Extensions.

ROADMAP
SEEA MALAYSIA

ACTIVITY ON PREPARING THE ROADMAP

2016

June –Aug. 2016

i. Appointment of national consultant

ii. Engagement with agencies
- Awareness on SEEA
- Policy requirement
- Potential account

iii. Draft of Roadmap SEEA to agencies

Sept. 2016

i. Assessment Mission (UNSD)(19 - 23 Sept)
- Buy in process –High level meeting & working visit

ii. Review Roadmap SEEA – comment from UNSD & agencies

iii. Training Workshop on SEEA (UNSD) (26 – 30 Sept)

7 Nov. 2016

Stakeholder Consultation Workshop
- Present the draft of Roadmap SEEA:
  - Governance
  - Water account
  - SEEA Development Plan 2016 -2020

9 Nov. 2016

Meeting with EPU & ministries:

i. Set up governance
- Membership
- Term of reference

ii. Roadmap SEEA:
- Water account
- SEEA Development Plan 2016 -2020

2 Dec. 2016

Submit the draft of RoadMap SEEA to the UNSD

2017

24 – 27 Jan. 2017

Technical Assistance (UNSD & Stats Denmark):

i. Assess & evaluate the energy Account

ii. Air Emissions Account

Feb. 2017

i. Main User Committee Meeting

ii. Submit the Roadmap SEEA Malaysia to the UNSD

Mac – Oct. 2017

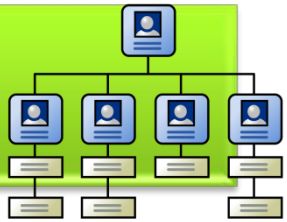
Development of the Water Account

ROADMAP SEEA MALAYSIA

1. Policies/Programmes/Plan/Initiatives

2. Development Plan for SEEA Account
   - 2016-2020

3. Governance structure
   - Membership - Agencies involve
   - Term of reference



4. Data requirements/sources/references

THE PURPOSE OF ROADMAP SEEA MALAYSIA

SEEA ACCOUNT DEVELOPMENT PLAN 2016 - 2020

1. Energy Account

National Energy Balance (NEB), 2010 - EC

Supply and use of energy by product & industry

2017

MySEEA
PSUT Energy Account, 2010

Energy use by product & industry

2. Air Emissions Account

a. 2017 MySEEA
Air Emissions for Energy Use 2010

+

b. 2018 MySEEA
Air Emissions for Non Energy 2010

=

c. 2018 MySEEA
Air Emissions Account 2010

SEEA ACCOUNT DEVELOPMENT PLAN 2016 - 2020 (cont'd)

3. Water Account

2017

MySEEA PSUT Water Account, 2010

4. Environmentally Extended Input-Output

2018

Input-Output 2010

+ Air emissions statistics

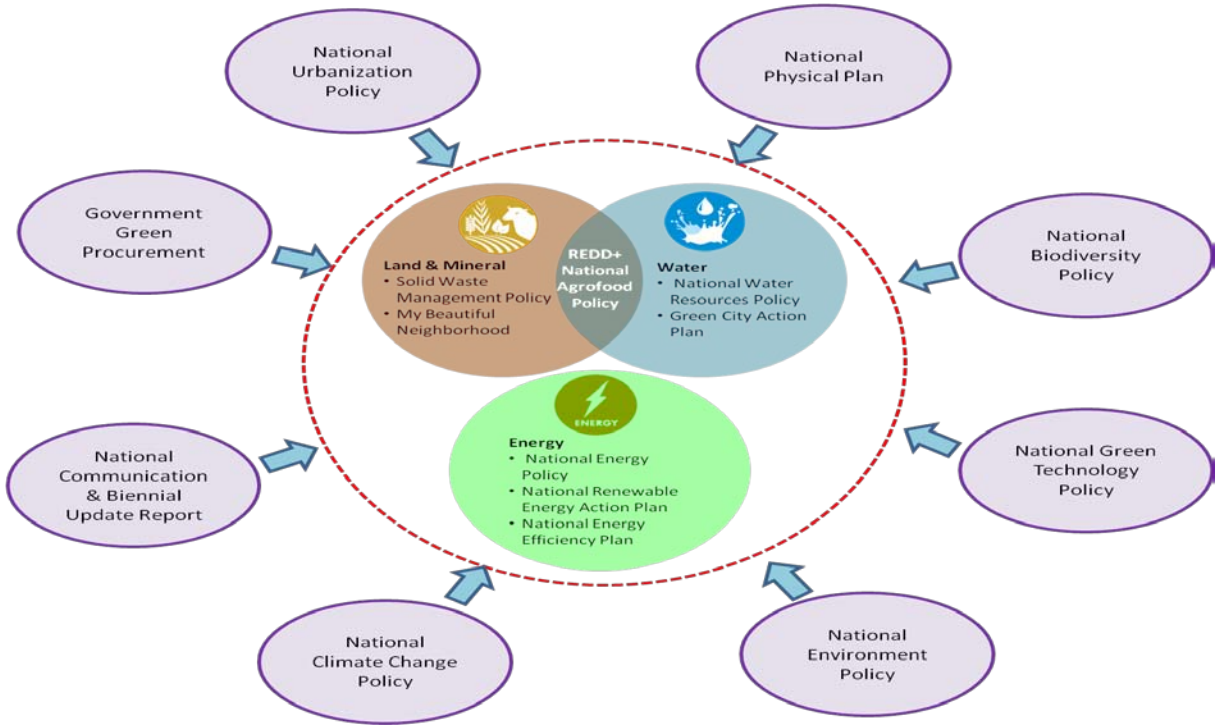
Environmentally Extended Input-Output 2010

5. Land Account

2019

MySEEA Land Account (Focus on the agriculture land use)

NATIONAL POLICY & PRIORITIES



ELEVENTH MALAYSIA PLAN 2016-2020
ANCHORING GROWTH ON PEOPLE

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, rather than a more conventional and costly model of 'grow first, clean up later'. A reinforced commitment to green growth will ensure that Malaysia's precious environment and natural endowment are conserved and protected for present and future generations.

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 of different transport modes will create seamless movement for people and goods. Moreover, an efficient infrastructure lowers the cost of doing business, which in turn improves national competitiveness and productivity. Good infrastructure is therefore the foundation of social inclusion, economic expansion, and growth.

POLICIES / PLANS / PROGRAMMES RELATED TO SEEA

SEEA ENERGY ACCOUNT

- Eleventh Malaysia Plan
- National Energy Policy
- National Climate Change Policy
- National Environment Policy
- National Green Technology Policy
- National Mineral Policy
- Green Technology Master Plan
- National Energy Efficiency Action Plan
- National Renewable Energy Policy and Action Plan
- Second National Physical Plan
- Government Green Procurement Action Plan
- Green City Action Plan
- National Strategic Plan for Solid Waste Management
- Third National Communications (TNC) and Biennial Update Report (BUR)

SEEA WATER ACCOUNT

- Eleventh Malaysia Plan
- National Agro-food Policy
- National Climate Change Policy
- National Green Technology Policy
- National Biodiversity Policy
- National Water Resources Policy
- National Environment Policy
- National Urbanization Policy
- Green City Action Plan
- Second National Physical Plan
- National Strategic Plan for Solid Waste Management
- My Beautiful Neighbourhood (MyBN)
- REDD+ Malaysia
- Third National Communications (TNC) and Biennial Update Report (BUR)

POLICIES/PLANS/PROGRAMMES RELATED TO SEEA

SEEA LAND ACCOUNT

- National Agro-food Policy
- National Climate Change Policy
- National Green Technology Policy
- National Urbanization Policy
- National Biodiversity Policy
- Second National Physical Plan
- Green City Action Plan
- National Strategic Plan for Solid Waste Management
- My Beautiful Neighbourhood (MyBN)
- REDD+ Malaysia
- Third National Communications (TNC) and Biennial Update Report (BUR)

SEEA AIR EMISSION ACCOUNT

- Eleventh Malaysia Plan
- National Climate Change Policy
- National Green Technology Policy
- National Environment Policy
- National Urbanization Policy
- Green Technology Master Plan
- Green City Action Plan
- National Strategic Plan for Solid Waste Management
- Third National Communications (TNC) and Biennial Update Report (BUR)

GOVERNANCE STRUCTURE

PLANNING & DEVELOPMENT OF ENVIRONMENT STATISTICS COMMITTEE

NOTE:

*** New environment statistics:**

- **Latest UNSD's manual**
- **Project received from international organization**

- **Membership will be reviewed from time to time**

MySEEA
PSUT - ENERGY

JOURNEY OF SEEA MALAYSIA

2010
Parliamentary question related to Green GDP

2012*
Study the Handbook of SEEA 2003[1] & NAMEA[2]

23 – 27 Sept 2013
The 1st Sub-Regional Course on SEEA
- Collaboration with UNESCAP/UNSIAP/UNSD

30 Sept – 1 Oct 2013
Assessment Mission on SEEA by UNESCAP/UNSIAP/UNSD

2014
Parliamentary question related to Green GDP

3 April 2014
SEEA Awareness Workshop with agencies

9 July 2014
Proposed to Main User Committee (MUC)
i. PSUT Energy (2014-2015)
ii. PSUT Water (2015-2016)

2015 – 2016
Compilation of MySEEA PSUT-Energy
- Set up Technical Working Group (inter DOSM & inter agency)

19 – 23 Sept 2016
Assessment Mission on SEEA by UNSD and UNESCAP

26 – 30 Sept 2016
Regional Course on SEEA Water by UNSD/ UNESCAP

24 – 27 Jan 2017
Technical Assistance from UNSD & Statistics Denmark
- Evaluation on MySEEA PSUT-Energy

22 Feb 2017
Present findings of MySEEA-Energy to MUC

August 2017
Released of Report on MySEEA PSUT-Energy 2010

March - Nov 2017
Present MySEEA PSUT-Energy
- Executive Talk to Statisticians in DOSM, March 2017
- 2nd APES Week Bangkok Thailand, May 2017
- Inter-regional Workshop on Strengthening Statistical Capacities for Building Macroeconomic and Sustainable Development Indicators in Latin America, the Caribbean & Asia-Pacific Countries, July 2017, Santiago, Chile
- Research Colloquium INTAN, Sept. 2017, Malaysia
- Statistics Colloqium DOSM, Sept. 2017
- MyStats Conference, Nov. 2017
- Regional Closing Workshop on SEEA, Nov. 2017

ENERGY PHYSICAL FLOW 2010

ENVIRONMENT

ECONOMY

Unit: ktoe

Total energy from natural input 105,728

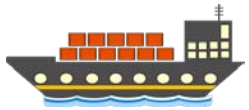
Natural gas	69,504
Crude oil	33,136
Coal	1,511
Hydro power	1,577

Supply of energy product

Natural gas	62,165
Crude oil	33,136
Coal	1,511

Mining & quarrying 96,811

Imports 40,569



Energy products

Services 9,160

Electricity 8,620

Electricity 540

Manufacturing 54,654

LNG 29,839

Petroleum products 24,428

Electricity 387

Total supply of energy products: 201,194

Agriculture, forestry & fisheries 1,292 (1%)

Mining & quarrying 1,302 (1%)

Manufacturing 81,960 (41%)

Use of energy products

Construction 752 (0%)

Services 46,669 (23%)

Household 9,047 (4%)

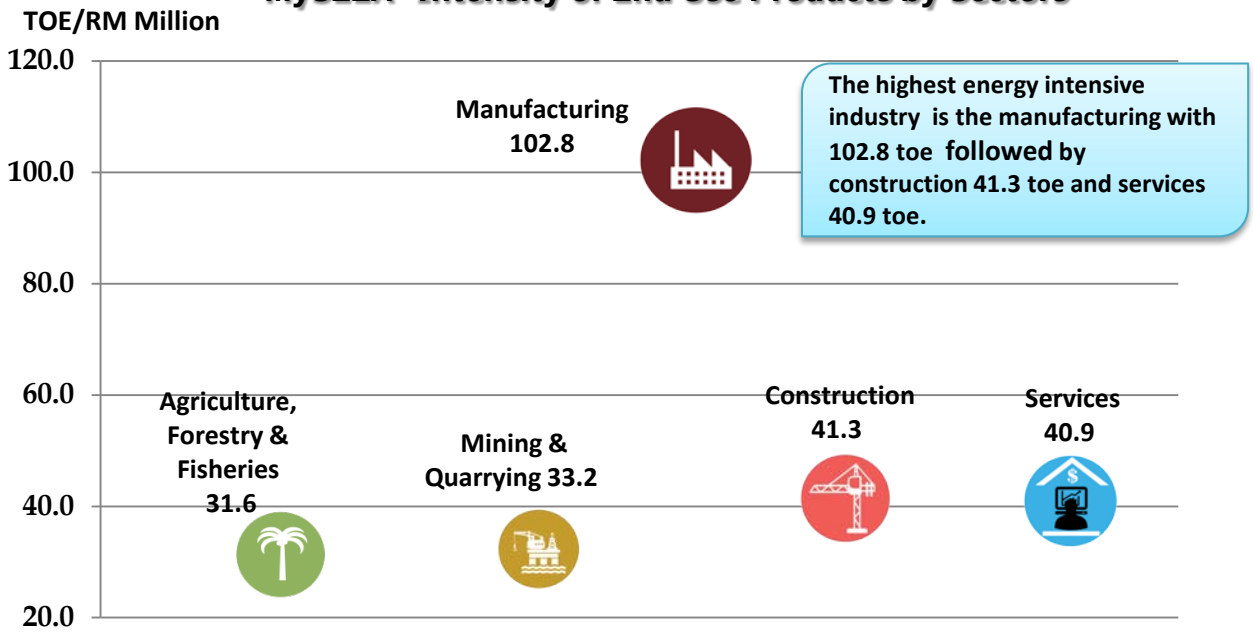
Exports 60,171 (30%)

Total use of energy products: 201,194

@MySEEADOSM

INTENSITY

MySEEA- Intensity of End Use Products by Sectors



NEB –Energy Intensity

Item	Energy Intensity
Final Energy Demand [toe/GDP at constant price 2000 (RM million)]	74.1

Item	Agriculture, Forestry & Fisheries	Mining & Quarrying	Manufacturing	Construction	Services
End use of energy products (TOE)	1,291,549	1,302,102	15,898,917	752,205	13,182,751
GDP by kind of economic activity at constant price 2000 (RM million)	40,916	39,270	154,640	18,220	322,611
Energy intensity (toe/value added)	31.6	33.2	102.8	41.3	40.9

MySEEA – Energy Intensity	
Total end use incl. household (TOE)	41,475,000
GDP at constant price 2000 (RM million)	559,554
Energy intensity (toe/GDP)	74.1

MULTIPLIER EFFECT

Final Demand

Sector	Energy use (TOE)	New energy use (TOE) - by increasing of 10% Final Demand for the manufacturing sector	Growth rate (%)
Agriculture, Forestry & Fisheries	1,291,549	1,362,733	5.5
Mining & Quarrying	1,302,102	1,365,935	4.9
Manufacturing	**80,982,854**	**87,932,713**	**8.6**
Construction	752,205	757,348	0.7
Services	49,041,751	49,910,455	1.8

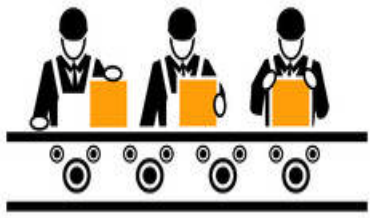
Increase of 10% in Final Demand in the **manufacturing sector *will give a direct effect on the growth rate of energy consumption in the* manufacturing sector 8.6%.** In addition, it also gives the indirect effect to the growth rate of energy consumption for **agriculture, forestry & fisheries (5.5%) and mining & quarrying sector (4.9%)**.

+10%

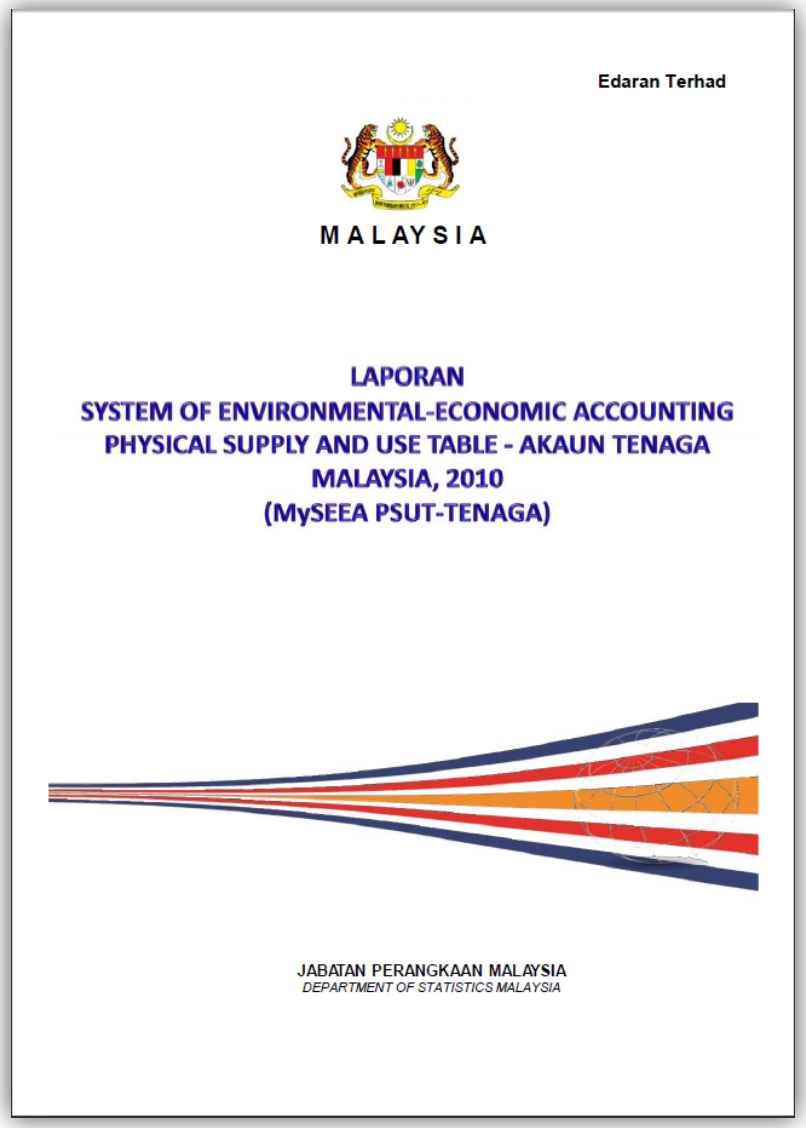
Injection 10% of Final Demand in manufacturing sector

+8.6% from manufacturing — Direct effect

Indirect effect:
- +5.5% from agriculture
- +4.9% from mining
- +0.7% from construction
- +1.8% from services



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

MySEEA PSUT - ENERGY INPUT TO GEI & SDG

GREEN ECONOMY INDICATORS

THE ENVIRONMENTAL AND RESOURCE PRODUCTIVITY
- *Carbon emissions*
- *Energy*

THE NATURAL ASSET BASE
- *The renewable resources*
- *Land & agriculture*

THE ENVIRONMENTAL DIMENSION OF QUALITY OF LIFE
- *Environmental health & risk*
- *Environmental services and amenities*

SEEA

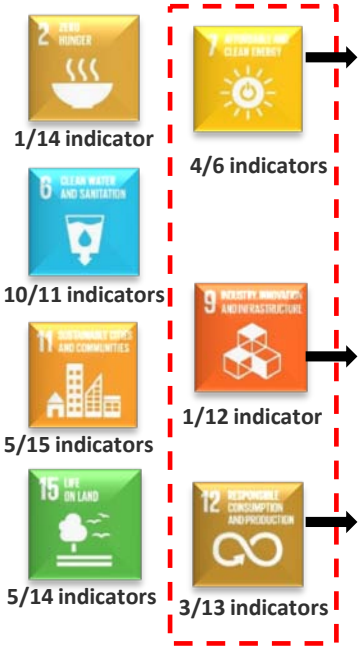
SOCIAL DIMENSION
- *Energy use per household*
- *Household income spent on fuel and electricity*

ECONOMIC DIMENSION
- *Energy use*
- *Energy intensities*
- *Efficiency of energy conversion and distribution*
- *Water use*
- *Water productivity*
- *Forest area*
- *Land cover*

ENVIRONMENTAL DIMENSION
- *Co2 emissions*
- *Air pollutant emissions*
- *Wastewater generated*
- *Municipal waste collected*

SUSTAINABLE DEVELOPMENT GOALS

Total indicators related to SEEA in each goals



2 Indicators 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

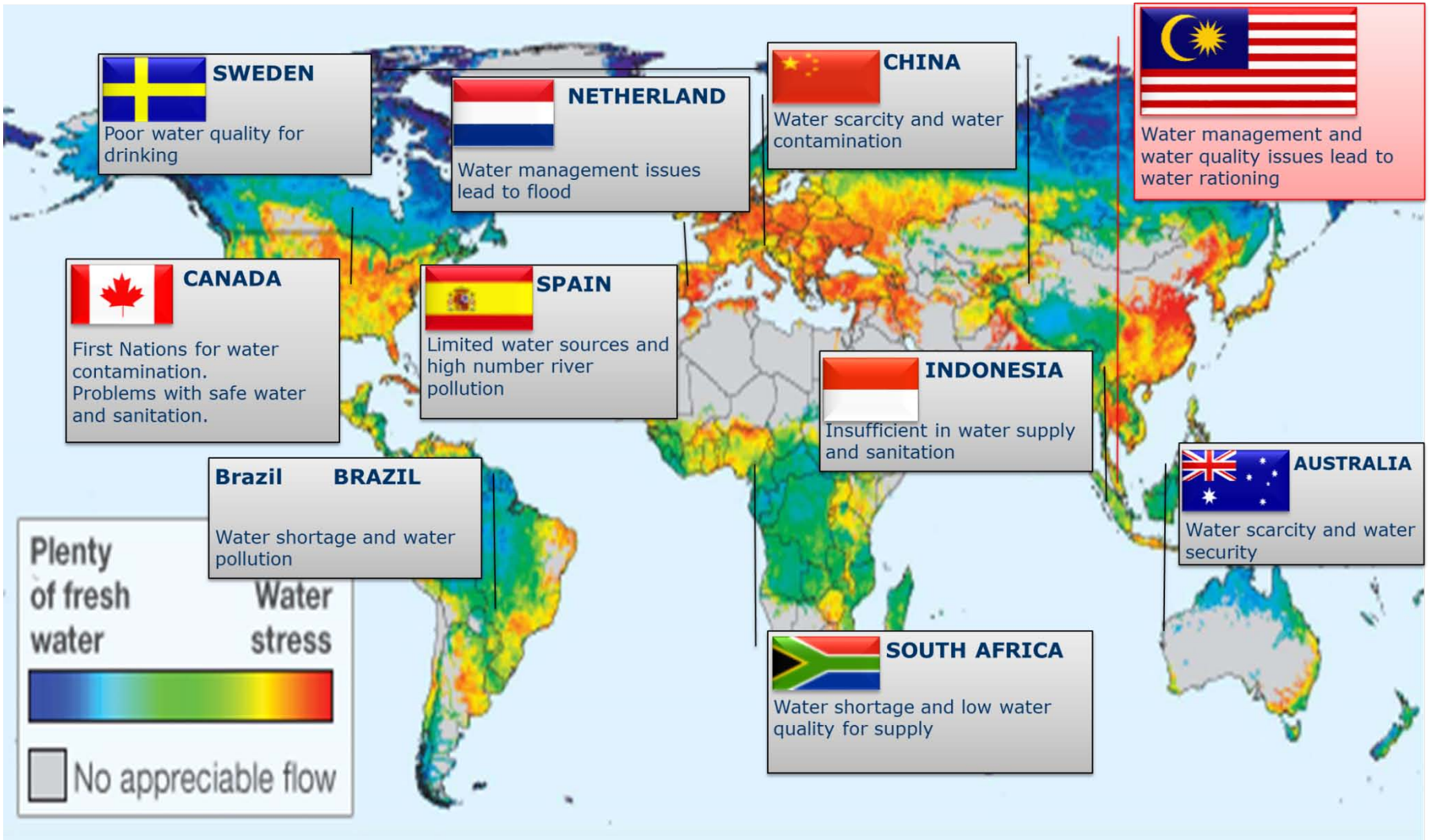
1 Indicator Under Goal 9:
- 9.4.1 CO_2 emissions per unit of value added

1 Indicator 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

MySEEA
PSUT - WATER

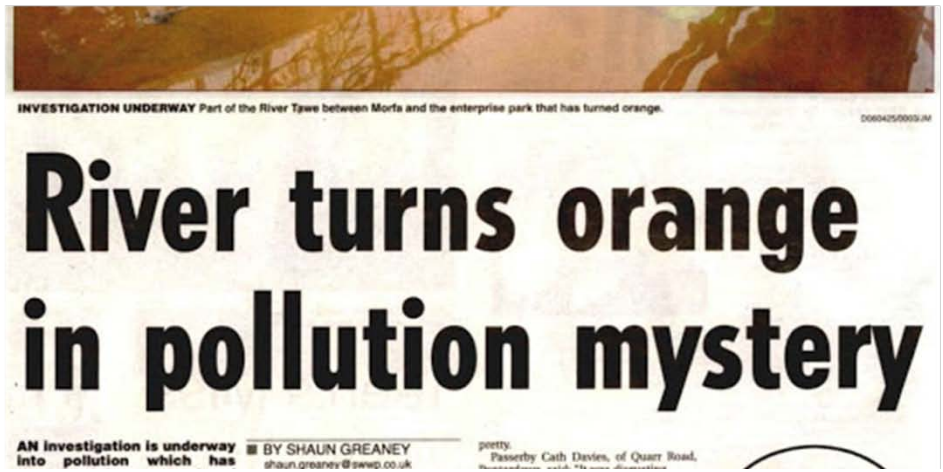
WHY WATER ACCOUNT?

- Policy Priorities



WHY WATER ACCOUNT? (cont'd)

- Current Issues



WHY WATER ACCOUNT? (cont'd)

- Current Issues

Najis babi cemar dua sungai

Oleh Salina Abdullah

KUALA SELANGOR: Satu kajian mendapati paras pencemaran di Sungai Sembah dan Sungai Selangor meningkat dipercayai berpunca daripada kumbahan najis babi dari ladang ternakan berdekatan.

Kajian oleh sekumpulan ahli kimia dalaman sebuah syarikat pada September 2002 itu, mendapati paras ammonia dan bakteria di sungai berkenaan meningkat sejak ladang ternak babi beroperasi di kawasan itu, berbanding tahun sebelumnya.

Ammonia dan bakteria T Coliform petunjuk yang digunakan bagi menentukan mutu air. Peningkatan paras ammonia dan T Coliform menunjukkan air mengalami pencemaran.

Ammonia adalah sebatian nitrogen bersifat toksik dan boleh menjejaskan kesihatan manusia di samping hidupan akuatik. Selain najis ternakan, ammonia juga hadir dalam baja nitrat yang digunakan untuk pertanian.

Ladang ternakan babi itu dipercayai mula beroperasi lebih setahun lalu selepas berpindah dari Tasik Puteri, Rawang yang diarahkan tutup.

Berita Harian difahamkan ladang ternakan babi itu menyediakan kolam rawatan dan takungan

PUSAT pemotong

50 tahun tanpa bekalan air bersih

Insani mahu masalah dihadapi enam keluarga diselesaikan segera

SENGGARANG

KRISIS AIR LEMBAH KLANG

Hampir 100,000 penduduk di di Kuala Lumpur, Gombak dan Ampang mungkin terpaksa berhadapan dengan masalah bekalan air untuk seminggu lagi berikutan kegagalan kali kedua sistem rumah pam di Wangsa Maju dan Pudu Hulu Baru ▶ 22

Penduduk di Flat Seri Melaka terpaksa beratur untuk mendapatkan bekalan air melalui tangki sementara yang disediakan pihak Syabas, semalam.

SEEA PSUT – Water Account 2010, Malaysia

Physical Use Table

Physical use table for water (million cubic metre)	Abstraction of water: intermediate consumption: Return flows						Final consumption	Flows from the rest of the world	Flows to the environment	Total use
					Services					
	Agriculture	Manufacturing	Mining and quarrying	Construction	Water collection	Other services	Households	Exports		
(I) Sources of abstracted water										
Inland water recources										
Surface water	2,044.80	0.11	52.73	0.03	5,463.07	0.05				**7,560.78**
Groundwater					74.34					**74.34**
Total	2,044.80	0.11	52.73	0.03	5,537.41	0.05				**7,635.12**
Other water sources										
Sea water	158.12					12.32				**170.44**
Total use abtracted water	2,202.92	0.11	52.73	0.03	5,537.41	12.37				**7,805.56**
(II) Abstracted water										
Distributed water	22.20	428.14	1.32	24.36		740.32	1,631.12	23.23		**2,870.70**
Own use	2,202.92	0.11	52.73	0.03	387.62	12.37				**2,655.78**
(III) Wastewater (sewerage)										
Wastewater received from other sources					4,394.82					**4,394.82**
(IV) Return flows of water										
Returns of water to the environment									7805.56	**7,805.56**
(V) Losses/trade balance										
Loss during distribution					2,302.32					**2,302.32**
Trade balance								23.15		**23.15**
Total use	**4,428.03**	**428.36**	**106.78**	**24.41**	**12,622.17**	**765.06**	**1,631.12**	**46.39**	**7,805.56**	**27,857.89**

Notes: Dark grey cells are null by definition.

SEEA PSUT – Water Account 2010, Malaysia

Physical Supply Table

Notes: Dark grey cells are null by definition.

ISSUES & CHALLENGES

ISSUES & CHALLENGES

Data limitation

- Data @ information are scattered
- Data produced just for specific objectives
- Level of data accessibility especially in the state level
- Estimation methodology

Coordination and support

- Full commitment and collaboration from all related agencies
- Convincing the policy makers on the relevance of SEEA for development planning in Malaysia
- Support from private sector

Capacity Building

- Training @ courses
- Technical assistance
- Statisticians less skills to explain to users in layman

ISSUES AND CHALLENGES

- Issues related to data

INCONSISTENCY DATA

- Different underlying method or classification.
- Different sources have different aggregate values.

MISSING DATA

- Types of missing data
  i. Single cell or flow is missing.
  ii. Data cannot be estimated residually.

RELIABILITY OF NON-SURVEY APPROACH

- Estimation might be undervalued or overvalued.
- Bias on the influential factors and quantification

CRITICAL SUCCESS FACTOR

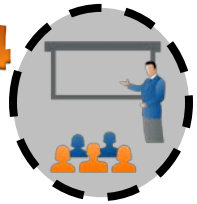
Critical success factor

1 **Commitment from management**

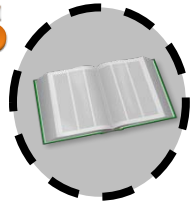
2 **Commitment & collaboration from agencies/other parties**
- Stakeholders
- Data provider
- Academia/Researcher
- International organisation

3 **Official agreement**
- Access data
- Data verification

4 **Capacity building**
- Courses & training
- Workshop
- Assessment
- Attachment
- Meeting with experts
- Technical assistance
- Valuation



5 **Manual & reference for compiler**
- Specific subsystem
- Simple explanation by modules
- Examples
- Presentation in simple table



6 **Data dissemination "Merakyatkan statistik"**
Promote & advocate thru:
- Media – press release, launching by ministry via visualisation/social media
- Journals – collaboration with academia/organisation
- Roadshow

Note:

i. Current workforce in developing SEEA Malaysia-6 officers

ii. No. of capacity building received:
- Course & training – 4
- Workshop – 2
- Assessment – 2
- Meeting with experts – 7
- Technical assistance & valuation - 1

WAY FORWARD

WAY FORWARD

Improving current economic and environmental surveys

Development of integrated data system

Strategic Communication

1. Capsule
2. Brochure
3. Exhibition booth
4. Statistics talk

CAMERA LENSE

CAMERA LENSE

1st Subregional Course on SEEA (23 – 27 Sept. 2013)

Assessment Mission on SEEA (30 Sept. – 1 Oct. 2013)

SEEA Awareness Workshop with Agencies (3 April 2014)

11th Session of United Nations Committee of Experts on Environmental-Economic Accounting (22 – 24 Jun 2016)

CAMERA LENSE (cont'd)

Engagement session with agencies(July – Nov. 2016)


Assessment Mission with UNSD & ESCAP (19 – 23 Sept. 2016)




Regional Training Workshop of SEEA with a focus on Water Accounting (26 – 30 Sept. 2016)




Technical Assistance on Air Emissions Account & Evaluation on Energy Account (24 – 27 Jan. 2017)



CAMERA LENSE (cont'd)

Pre-Technical Working Group Internal Committee Meeting of Planning and Development for Environment Statistics MySEEA – Water (11 Oct. 2017)

Technical Working Group Committee Meeting of Planning and Development for Environment Statistics MySEEA – Water (13 Oct. 2017)

Technical Working Group Internal Committee Meeting of Planning and Development for Environment Statistics MySEEA – Water (1 Nov. 2017)

Technical Committee Meeting of Planning and Development for Environment Statistics (13 Nov. 2017)

SPECIAL THANKS

"Statistics are the barometer that reflects the pulse of the country"

Dr. Mohd Uzir Bin Mahidin, The Star, 14th July 2016

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