MINISTRY OF ECONOMY
DEPARTMENT OF STATISTICS MALAYSIA

MALAYSIA IN COMPILING SYSTEM OF ENVIRONMENTAL ECONOMIC ACCOUNTING FOR MALAYSIA (MYSEEA) AND SUSTAINABLE DEVELOPMENT GOAL (SDG) 6 AND 7

BY
DEPARTMENT OF STATISTICS MALAYSIA (DOSM)
DATE: 31st MAY 2023 (WEDNESDAY)

System of Environmental-Economic Accounting

- Overview of the relationship between the economy and the environment and vice versa;

- To integrate economic and environmental information to enable analysis of the interrelationships between natural resources, economic performance, and environmental pollution.

Information from SEEA can help policy-makers in formulating policies:

- To create a strategic plan and analyze the effectiveness of economic and environmental policies comprehensively.

- As an input in measuring the achievement of Green Economy Indicators (GEI) and Sustainable Development Goals (SDGs).

NATURAL RESOURCES

ENVIRONMENT

ECONOMY

RESIDUAL

WORKING GROUP COMMITTEE

1

2

3
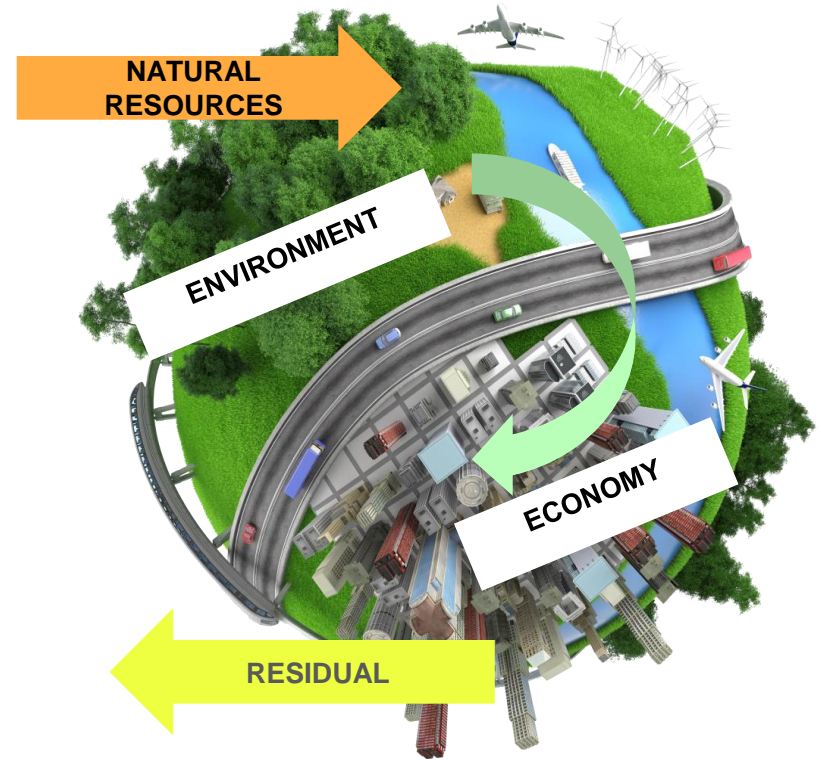
Steering Committee
Chaired by
Ministry of Economy

Technical Committee
Chaired by
Deputy Chief Statistician

MySEEA Energy
Director
Agriculture and Environment Division , DOSM

MySEEA Air Emmission
Director
Agriculture and Environment Division , DOSM

MySEEA Water
Director
Agriculture and Environment Division, DOSM

MySEEA Land
Director
Agriculture and Environment Division, DOSM

Climate Change
Director, Ministry of Natural Resources,
Energy and Climate Change, NRECC

Disaster-Related Statistics Framework
Director
Agriculture and Environment Division, DOSM

- The 12th Malaysia Plan (RMKe-12) is aligned with the 2030 Agenda for Sustainable Development, taking into account the spirit of the Malaysian Family.

- The policy framework of the 12th Malaysia Plan consists of 3 Themes, 4 Policy Thrusts, and 14 Drivers of Change organized into 13 Chapters, in line with the current changes and the latest essence from all stakeholders.

9 MAIN FOCUSES

FOKUS 01 — Spur Economic Growth

FOKUS 02 — Strengthen Growth Catalyst

FOKUS 03 — Improve the Wellbeing of Keluarga Malaysia

FOKUS 04 — Enhance Safety & Public Order

FOKUS 05 — Eradicate Absolute Poverty & Reduce Income Gap

FOKUS 06 — Empower the Bumiputera & Keluarga Malaysia Agenda

FOKUS 07 — Boost the Developmet of Sabah, Sarawak & Other Less Developed States

FOKUS 08 — Accelerate Green Growth

FOKUS 09 — Improve Public Service Delivery & Ensure Effective Implementation of Policies

Chapter 9: Enhancing Energy Sustainability and Transforming the Water Sector.

Ensuring Sustainable Energy for All

- Strengthen Energy Sector
- Ensuring Sustainable and Progressive Oil and Gas Subsector
- Strengthening the Electrical Subsector

Transforming the Water Sector

- Empowering the People
- Strengthening Governance at All Levels
- Enhancing Data-Driven Decision-Making Capabilities
- Ensuring Sustainable Financing
- Developing Cost-Effective Sustainable Infrastructure with Effective Technology.

National Energy Policy

2021-2040

Introduction to Comprehensive National Energy Policy

31%

2025

New Energy Potential from Installed Capacity.

98%

2025

Coverage of Access to Clean and Safe Water in Rural Areas.

25%

2025

Level of Water Insufficiency.

Roadmap MySEEA

Roadmap for System of Environmental – Economic Accounting (SEEA), 2016-2020

1 Is a dynamic document that outlined policies/ programs/ initiatives related to environment in Malaysia, governance structure, data requirements, proposed accounts and implementation strategies for SEEA implementation.

2 The purpose of this roadmap is to link the current Malaysia environmental-economic accounting initiatives and policy requirements with the SEEA and other international framework.

3 To support the development of environment-economic accounting
• 2015-2017 – SEEA Water and Energy
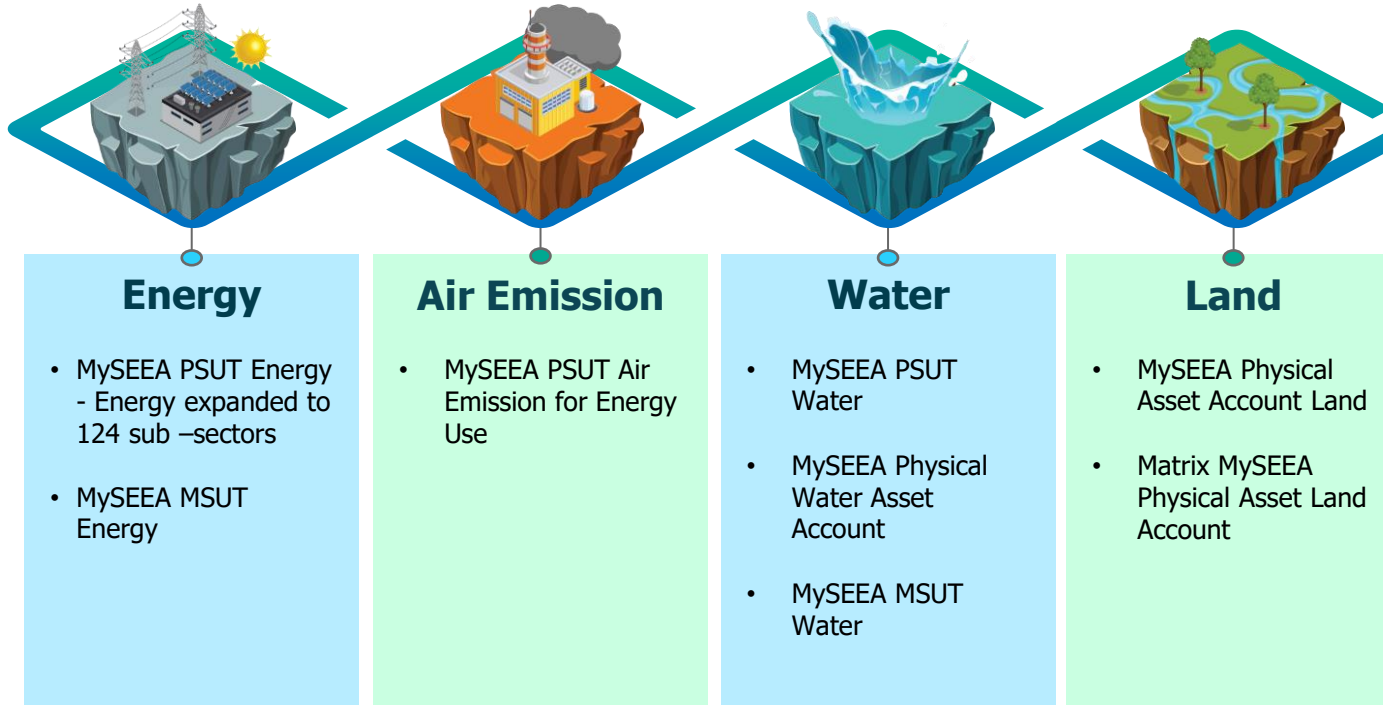• 2018-2020 – SEEA Air Emission and Land

4 Coordination of the implementation of the roadmap SEEA with a 3-level structures consist of Steering committee, Technical Committee and Working Group Committee.

Roadmap for
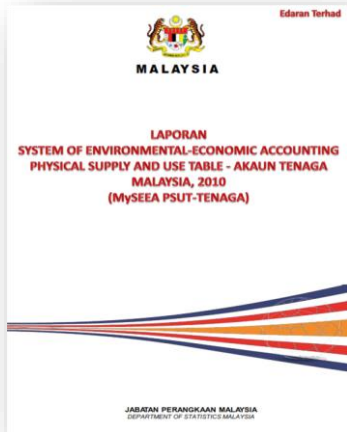System of Environmental-Economic
Accounting
2016-2020

MALAYSIA

StatsMalaysia
www.DOSM.gov.my

Energy

- MySEEA PSUT Energy - Energy expanded to 124 sub –sectors

- MySEEA MSUT Energy

Air Emission

- MySEEA PSUT Air Emission for Energy Use

Water

- MySEEA PSUT Water

- MySEEA Physical Water Asset Account

- MySEEA MSUT Water

Land

- MySEEA Physical Asset Account Land

- Matrix MySEEA Physical Asset Land Account

MySEEA PSUT ENERGY 2015

Edaran Terhad

MALAYSIA

**LAPORAN
SYSTEM OF ENVIRONMENTAL-ECONOMIC ACCOUNTING
PHYSICAL SUPPLY AND USE TABLE - AKAUN TENAGA
MALAYSIA, 2010
(MySEEA PSUT-TENAGA)**

JABATAN PERANGKAAN MALAYSIA
DEPARTMENT OF STATISTICS MALAYSIA

MALAYSIA

SISTEM PERAKAUNAN EKONOMI-ALAM SEKITAR
SYSTEM OF ENVIRONMENTAL-ECONOMIC ACCOUNTING

Jadual Fizikal Penawaran & Penggunaan:
Akaun Tenaga
*Physical Supply & Use Table:
Energy Account*

2015

MySEEA PSUT Tenaga / *Energy*

JABATAN PERANGKAAN MALAYSIA
DEPARTMENT OF STATISTICS MALAYSIA
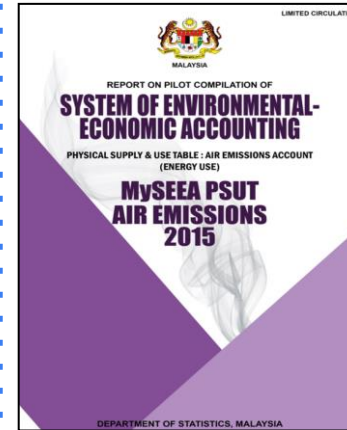
Components of MySEEA PSUT Energy:
 i) Source of natural inputs
  • Non-renewable
  • Renewable
ii) Product of Non-renewable energy
  • Natural gas
  • Crude oil
  • Coal and coke
iii) Type of Renewable energy
  • Hydro power
  • Solar
  • Biomass
  • Biogas
  • Biodiesel
iv) Use of energy product
  • Transformation
  • Final use

1st published in 2010 – limited circulation

MySEEA PSUT Water, 2015 is the 1st publication released in general

The Supply & Use Table covers sector:
• Agriculture
• Mining & quarrying
• Manufacturing
• Construction
• Services
• Households
• Export and Import

LIMITED CIRCULATION

MALAYSIA

REPORT ON PILOT COMPILATION OF
SYSTEM OF ENVIRONMENTAL-ECONOMIC ACCOUNTING

PHYSICAL SUPPLY & USE TABLE : AIR EMISSIONS ACCOUNT
(ENERGY USE)

**MySEEA PSUT
AIR EMISSIONS
2015**

DEPARTMENT OF STATISTICS, MALAYSIA

1st published in 2019 – limited circulation

The Supply & Use Table covers sector:
• Agriculture
• Mining & quarrying
• Manufacturing
• Construction
• Services
• Households

MySEEA PSUT Air Emission only covered energy use

Components of MySEEA PSUT Air Emissions:
 i) Coverage of energy products
  • Natural gas
  • Coal and coke
  • LNG
  • Petrol
  • Diesel
  • Fuel oil
  • LPG
  • Kerosene
  • ATF & AV gas

ii) **Types of green house gas (GHG)**
  • Carbon dioxide
  • Methane
  • Nitrous oxides

PSUT ENERGY 2015

StatsMalaysia
www.DOSM.gov.my

Natural Resource Inputs

- Natural gas 71,572
- Crude Oil 34,351
- Coal 1,773

Non-Renewable Energy

Renewable Energy

- Hydropower 3,582
- Biodiesel 684
- Biomass 189
- Solar 75
- Biogas 18

ENVIRONMENT

TOTAL ENERGY FROM NATURAL INPUTS: 112,243

Supply of Energy Products

- Mining & quarrying 103,307
- Manufacturing 57,637
- Services 12,403
- Others 14

Mining & quarrying:
- Natural gas 67,580
- Crude oil 33,955
- Coal 1,773

Manufacturing:
- LNG 31,057
- Petroleum product 25,553
- Electricity 317
- Others 710

Services:
- Electricity 12,403

IMPORTS 49,304
- Petroleum products 16,120
- Coal 15,999
- Crude oil 9,357
- Natural gas 5,941
- LNG 1,873

ECONOMY

TOTAL OF ENERGY PRODUCTS: 222,652

Use of energy products

- Mining & quarrying 885 (0.4%)
- Construction 1,495 (0.7%)
- Households 14,252 (6.4%)
- Agriculture 821 (0.4%)
- Manufacturing 93,410 (42.0%)
- Services 51,747 (23.2%)
- Exports 59,991 (26.9%)

Note: Exclude accumulation

Energy Resources[1]

NATURAL RESOURCES
- Natural gas
- Crude oil
- Coal & coke

RENEWABLE RESOURCES
- Hydro
- Solar
- Biomass
- Biogas
- Biodiesel

TRANSFORMATION OF ENERGY PRODUCTS
- LNG
- Petroleum products
- Electricity
- Others**

Note: [1] Excluding reserve of energy resources
** Others refer to additive (which are used as refinery intake) e.g. imported Light Diesel, Crude Residuum & Middle East Residues.
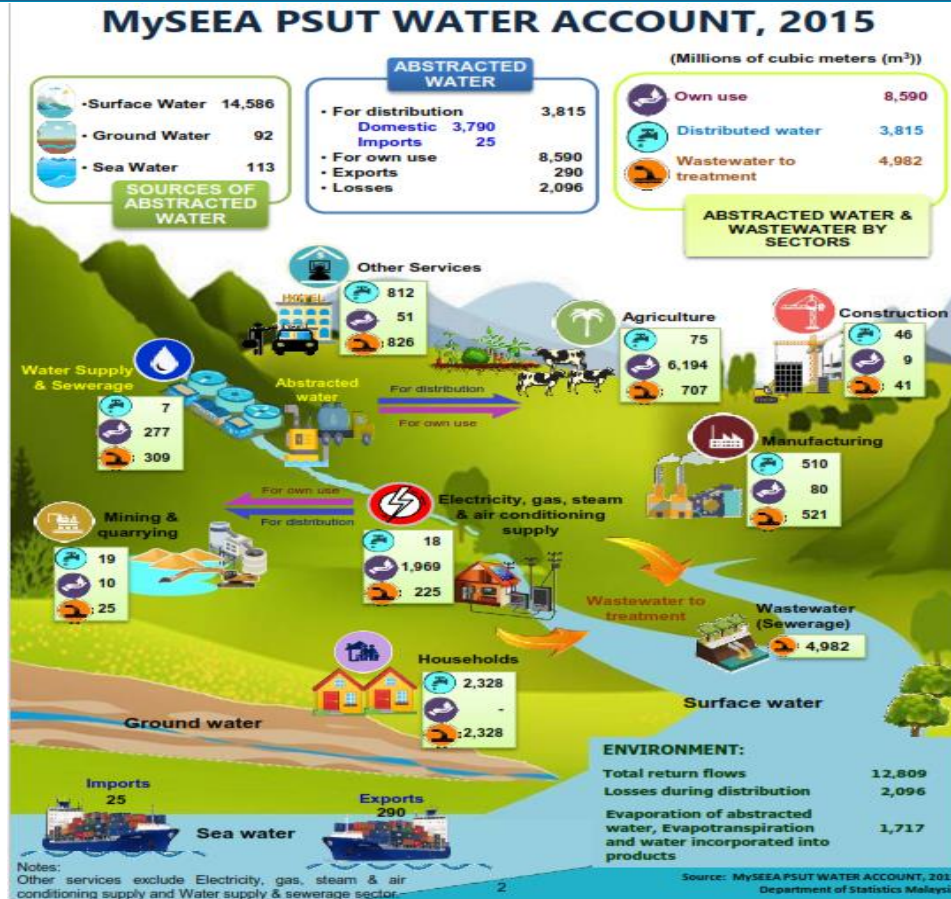
11

MySEEA PSUT WATER 2015
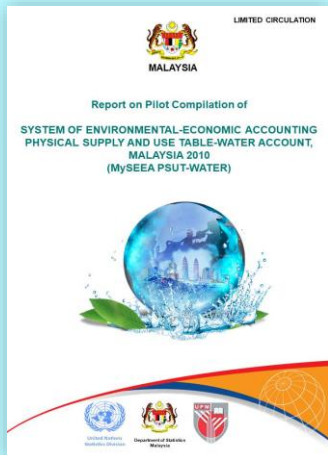
MySEEA PSUT Water, 2010

MySEEA PSUT Water, 2015

- Initially published in 2010 - limited distribution.
- MySEEA PSUT - Water Account, 2015 was the first publication distributed widely on June 16, 2020

- Publication can be accessed :
https://newss.statistics.gov.my/newss-portalx/ep/epProductFreeDownloadSearch.seam
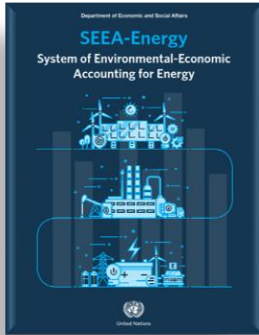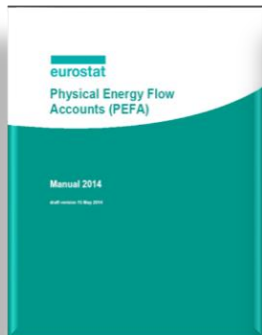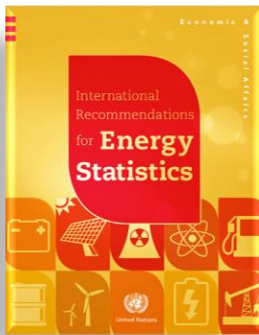
REFERENCES

SEEA CENTRAL FRAMEWORK

SEEA ENERGY

PEFA Manual

IRES

DATA SOURCES

Primary Data
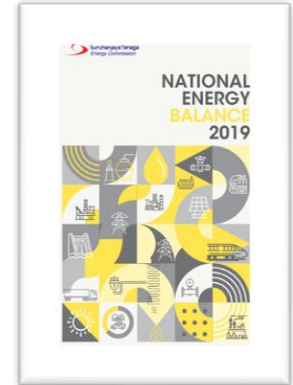
- Input-Output Tables, Malaysia
- Trade Data
- Petroleum & Natural Gas Statistics
- Economic Census
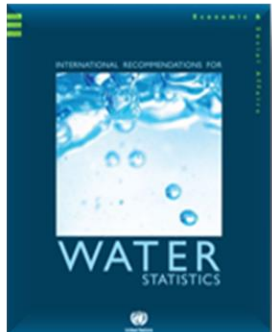- Household Expenditure Survey
- Census of Distributive Trade

Secondary Data

National Energy Balance
Time lag : 2 years
Energy Commission

REFERENCES

System of Environmental-Economic Accounting 2012
Central Framework

INTERNATIONAL RECOMMENDATIONS FOR
WATER STATISTICS

SEEA-Water
System of Environmental-Economic Accounting for Water

DATA SOURCES

Primary Data

- Input-Output Tables, Malaysia
- Annual Economic Survey
- Economic Census
- Household Expenditure Survey
- Trade Data

Secondary Data

SPAN
Service Commission National Water

JABATAN PENGAIRAN DAN SALIRAN MALAYSIA
Department Of Irrigation And Drainage Malaysia

Indah Water
Indah Water Konsortium

JMG
Department of Minerals and Geosciences

MET Malaysia
Department of Meteorology Malaysia

Department Of Environment Malaysia

NAHRIM
National Water Research of Malaysia

BKS@ MELAKA
State Water Regulatory Agency

To compile SDG Reporting

7 AFFORDABLE AND CLEAN ENERGY

Policy Making

Pollution measurement

Disaster-Related Measurement

Climate Change Indicators

IMPORTANCE

Initiatives towards Green GDP

To compile SDG Reporting

Integrated decision-making

natural capital assessment
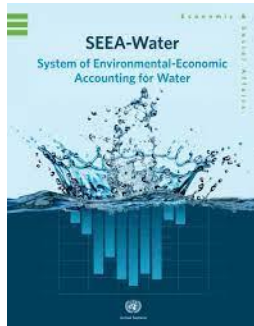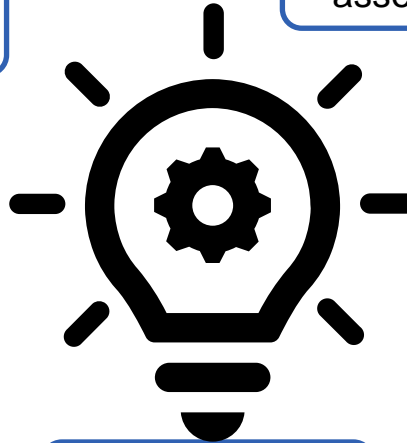
Water Management

Monitoring and reporting

Standardized water accounting

SEEA-Water
System of Environmental-Economic Accounting for Water

IMPORTANCE

Climate change adaptation

Economic Planning

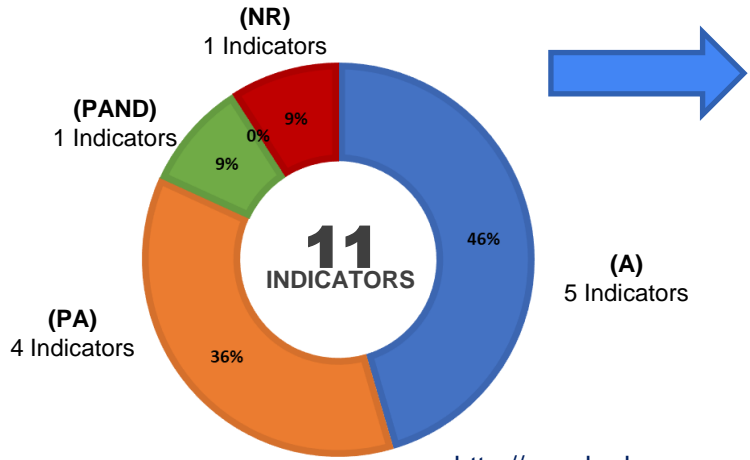# SDG Goal 6

6 CLEAN WATER AND SANITATION

Pursuing green growth for sustainability and resilience – Grouped under Cluster 4

11 INDICATORS

- (NR) 1 Indicators — 9%
- (PAND) 1 Indicators — 9%
- 0%
- (A) 5 Indicators — 46%
- (PA) 4 Indicators — 36%

http://mysdg.dosm.gov.my/

- Available (A)
- Partially Available (PA)
- Partially Available, Need Further Development (PAND)
- Not Available (NA)
- Not Relevant (NR)

INDICATOR 6.1.1
Proportion of population using safely managed drinking water services

INDICATOR 6.2.1
Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water

INDICATOR 6.3.2
Proportion of bodies of water with good ambient water quality

INDICATOR 6.3.1
Proportion of waste water safely treated

INDICATOR 6.5.2
Proportion of bodies of water with good ambient water quality

INDICATOR	INDICATOR EXPLANATION	AGENCY	STATUS
6.1.1	Proportion of population using safely managed drinking water services	National Water Services Commision (SPAN)	Available (A)
6.2.1	Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water	DOSM	Available (A)
6.3.1	Proportion of waste water safely treated	Indah Water Konsortium (IWK), Department of Environment (DOE)	Available (A)
6.3.2	Proportion of bodies of water with good ambient water quality-River basin monitored with clean category	DOE	Available (A)
6.4.1	Change in water-use efficiency over time	NRECC	Partially Available (PA)
6.4.2	Level of water stress: freshwater withdrawal as a proportion of available freshwater resources	SPAN	Partially Available (PA)
6.5.1	Degree of integrated water resources management implementation (0-100)	Department of Irrigation and Drainage (DID)	Partially Available (PA)
6.5.2	Proportion of trans-boundary basin area with an operational arrangement for water cooperation	Department of Irrigation and Drainage (DID)	Available (A)
6.6.1	Change in the extent of water-related ecosystems over time	Forestry Department of Peninsular Malaysia, Forest Department Sarawak, Sabah Forestry Department	Need Further Development (PAND)
6.a.1	Amount of water - and sanitation -related official development assistance that is part of a government-coordinated spending plan	N/A	Not Relevant (NR)
6.b.1	Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management	State Government, Ministry of Health (MOH), Ministry of Housing and Local Government (KPKT), NRECC, JMG	Partially Available (PA)

SDG GOALS 6: CLEAN WATER AND SANITATION

6.4.1 Change in water-use efficiency over time	6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources	6.5.1 Degree of integrated water resources management implementation (0-100)	6.b.1 Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management
Partially Available	**Partially Available**	**Partially Available**	**Partially Available**
Data Available Water Use (MySEEA PSUT Water): Penerbitan 5 Tahun	Data Partially Available Groundwater Abstraction JMG except for selected states.	Data Partially Available Integrated Water Resource Management (IWRM)	Data Partially Available Number of water and sanitation sub-sectors with clearly defined
Data Not Available Water Use for Irrigation, livestock, Aquaculture, MIMEC, Services sector	Data Not Available Data Surface water abstraction due to data sharing restriction by states		Data Not Available Procedures in law or policy for participation by users/communities
Action : DOSM to have continuous discussion with NRECC	Action : DOSM to compile MySEEA Physical Asset Account few discussion session to be held with ministry and state agency.	Action : DOSM to have further discussion with related ministries and agencies.	Action : DOSM to discuss with state authority and local government.

6.6.1
Change in the extent of water-related ecosystems over time

Need Further Development (PAND)

Data Available
-
Data Not Available
- ■ *Nationally derived extend of rivers (square kilometres)*
- ■ *Nationally derived extent of open water bodies (square kilometres)*
- ■ *Nationally derived extent of wetlands (square kilometres)*
- ■ *Nationally derived proportion of water bodies with good quality (%)*
- ■ *Nationally derived quality of groundwater (%)*
- ■ *Nationally derived quality of open water bodies(%)*
- ■ *Nationally derived quality of river(%)*
- ■ *Nationally derived quantity of groundwater (millions of cubic metres per annum)*
- ■ *Nationally derived quantity of open water bodies (million of cubic metres per annum)*
- ■ *Nationally derived quantity of rivers (million of cubic metres per annum)*
- ■ *Nationally derived total extent (square kilometres)*
- ■ *Nationally derived total quantity (millions of cubic metres per annum)*
- ■ *Water body extent (permanent and maybe permanent) (% of total land area)*
- ■ *Water body extent (permanent and maybe permanent) (square kilometres)*
- ■ *Water body extent (permanent) (% of total land area)*
- ■ *Water body extent (permanent) (square kilometres)*

6.a.1
Amount of water - and sanitation -related official development assistance that is part of a government-coordinated spending plan

Not Relevant (NR)

Data Available
-

Data Not Available
Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan.
- ■ Total official development assistance (gross disbursement) for water supply and sanitation, by recipient countries (millions of constant 2018 United States dollars)

Action :
DOSM to discuss with Bank Negara Malaysia and Ministry of Finance regarding this indicator
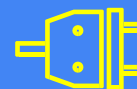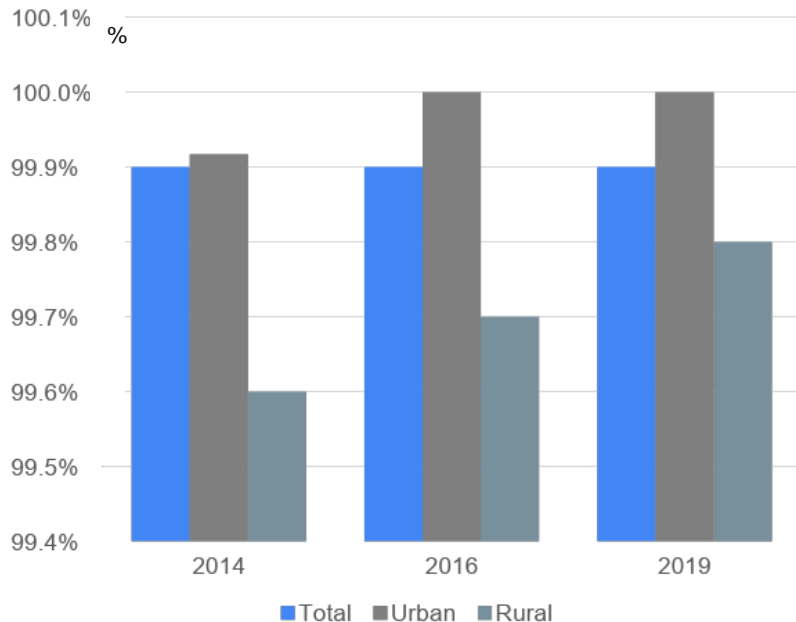
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SDG Goal 7

MINISTRY OF ECONOMY
DEPARTMENT OF STATISTICS MALAYSIA

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www.DOSM.gov.my

| Target | **7.1:** | Universal access to modern energy |

| Indicator | **7.1.1:** | Proportion of Population with Access to Electricity |

99.9%
of the population in Malaysia has access to electricity

%

Methodology UN	❑ Is to the percentage of population with access to electricity. SDG7 ensures access to affordable, reliable, sustainable and modern energy for all. ❑ This indicator refers to the proportion of population with access to electricity. This is expressed in percentage figures and is disaggregated by total, urban and rural access rates per country, as well as by UN regional and global classifications.
Methodology Malaysia	❑ The percentage of households accessing electricity is households that have access to electricity supplied by electricity companies (such as Tenaga Nasional Berhad, Sabah Electricity Sdn. Bhd. and Sarawak Energy Sdn Bhd.). This also includes electricity supplied through power generators either supplied by electricity companies or owned by households. In addition, it also includes electricity supply obtained using solar power.
Data sources	Household Income and Basic Amenities Survey (HIS/BA)
Data release calendar	Twice in 5 years
Sources	Department of Statistics Malaysia

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Target	**7.1:**	Universal access to modern energy

Indicator	**7.1.2:**	Proportion of population with primary reliance on clean fuels and technology

97.6%
of the population in Malaysia using stove (LPG) for cooking

| Methodology UN | Proportion of population with primary reliance on clean fuels and technology is calculated as the number of people using clean fuels and technologies for cooking, heating and lighting divided by total population reporting that any cooking, heating or lighting, expressed as percentage.

"Clean" is defined by the emission rate targets and specific fuel recommendations (i.e. against unprocessed coal and kerosene) included in the normative guidance WHO guidelines for indoor air quality: household fuel combustion. |
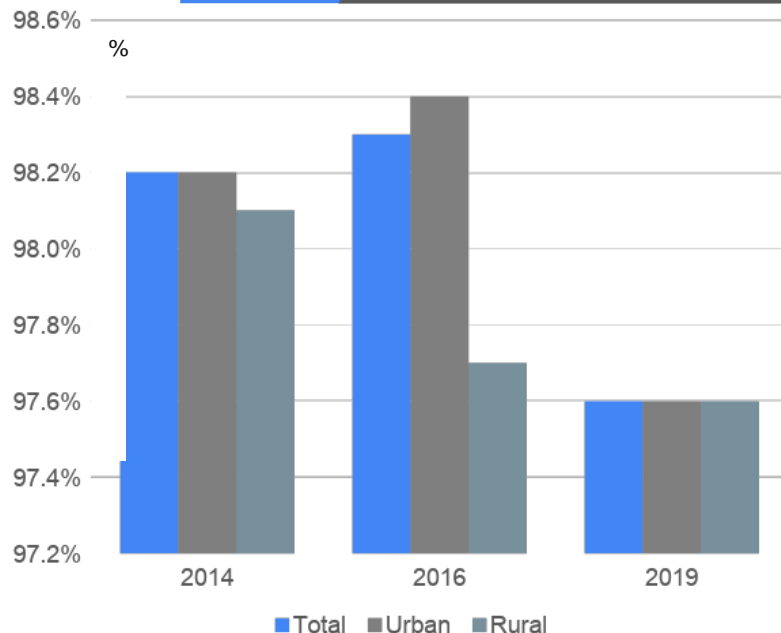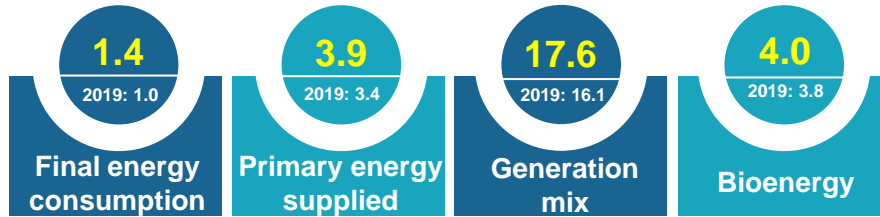|---|---|
Methodology Malaysia	Proportion of population with primary reliance on clean fuels and technology is the percentage of population using stove (LPG-proxy) for cooking.
Data sources	Household Income and Basic Amenities Survey (HIS/BA)
Data release calendar	Twice in 5 years
Sources	Department of Statistics Malaysia

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www.DOSM.gov.my

Target 7.2: Increase global percentage of renewable energy

Indicator 7.2.1: Renewable energy share in the total final energy consumption

1.4
2019: 1.0
Final energy consumption

3.9
2019: 3.4
Primary energy supplied

17.6
2019: 16.1
Generation mix

4.0
2019: 3.8
Bioenergy

The share of renewable energy in total final energy consumption **reached 1.4% in 2020, 40% higher than in 2019**.
The highest contribution was from the generation mix, where the share of renewables now exceeds 17.6%. While, bioenergy and primary energy consumption penetrated 4.0% and 3.9%

Methodology UN	The renewable energy share in total final consumption is the percentage of final consumption of energy that is derived from renewable resources.
Methodology Malaysia	The renewable energy share in total final consumption is the percentage of final consumption of energy that is derived from renewable resources
Data sources	National Energy Balance (NEB) report
Data release calendar	Annually
Sources	Energy Commission

MINISTRY OF ECONOMY
DEPARTMENT OF STATISTICS MALAYSIA

StatsMalaysia
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Target **7.2:** Increase global percentage of renewable energy

Indicator **7.2.1:** Renewable energy share in the total final energy consumption

1.4
2019: 1.0
Final energy consumption

3.9
2019: 3.4
Primary energy supplied

17.6
2019: 16.1
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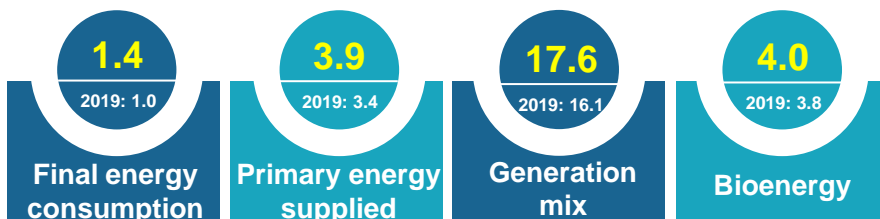The highest contribution was from the generation mix, where the share of renewables now exceeds 17.6%. While, bioenergy and primary energy consumption penetrated 4.0% and 3.9%

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Data sources	National Energy Balance (NEB) report
Data release calendar	Annually
Sources	Energy Commission

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StatsMalaysia
www.DOSM.gov.my

Target	7.3:	Double the improvement in energy efficiency

Indicator	7.3.1:	Energy intensity measured in terms of primary energy and GDP

Primary energy intensity increased from 69.20 toe per 1 million GDP in 2019 to **70.02 TOE** in 2020, with **an average annual improvement rate of 1.2%.**

Note: toe refers to tonnes of oil equivalent

Methodology UN	Energy intensity is defined as the energy supplied to the economy per unit value of economic output.
Methodology Malaysia	Energy intensity is defined as the amount of energy used to produce one unit of economic output.
Data sources	National Energy Balance (NEB) report
Data release calendar	Annually
Sources	Energy Commission

Target 7.B: Expand and upgrade energy services for developing countries

Indicator 7.b.1: Installed renewable energy-generating capacity in developing countries (in watts per capita)

251.73
watts per capita

2019: 238.94

Installed renewable energy-generating capacity in Malaysia increased by **5.4% in 2020 as** compared to the previous year.

Methodology UN	The flows are covered through two complementary sources.
	☐ OECD: The flows covered by the OECD are defined as all official loans, grants and equity investments received by countries on the DAC List of ODA Recipients from foreign governments and multilateral agencies, for the purpose of clean energy research and development and renewable energy production, including in hybrid systems extracted from the OECD/DAC Creditor Reporting System (CRS).
	☐ IRENA: The flows covered by IRENA are defined as all additional loans, grants and equity investments received by developing countries (defined as countries in developing regions, as listed in the UN M49 composition of regions) from all foreign governments, multilateral agencies and additional development finance institutions (including export credits, where available) for the purpose of clean energy research and development and renewable energy production, including in hybrid systems.
Methodology Malaysia	The installed capacity of power plants that generate electricity from renewable energy sources divided by the total population of a country.
Data sources	National Energy Balance (NEB) report
Data release calendar	Annually
Sources	Energy Commission

Target **7.B:** Expand and upgrade energy services for developing countries

Indicator **7.b.1:** Installed renewable energy-generating capacity in developing countries (in watts per capita)

251.73
watts per capita
2019: 238.94

Installed renewable energy-generating capacity in Malaysia increased by **5.4% in 2020 as** compared to the previous year.

Methodology UN	The flows are covered through two complementary sources.
	❑ OECD: The flows covered by the OECD are defined as all official loans, grants and equity investments received by countries on the DAC List of ODA Recipients from foreign governments and multilateral agencies, for the purpose of clean energy research and development and renewable energy production, including in hybrid systems extracted from the OECD/DAC Creditor Reporting System (CRS).
	❑ IRENA: The flows covered by IRENA are defined as all additional loans, grants and equity investments received by developing countries (defined as countries in developing regions, as listed in the UN M49 composition of regions) from all foreign governments, multilateral agencies and additional development finance institutions (including export credits, where available) for the purpose of clean energy research and development and renewable energy production, including in hybrid systems.
Methodology Malaysia	The installed capacity of power plants that generate electricity from renewable energy sources divided by the total population of a country.
Data sources	National Energy Balance (NEB) report
Data release calendar	Annually
Sources	Energy Commission

StatsMalaysia
www.DOSM.gov.my

MINISTRY OF ECONOMY
DEPARTMENT OF STATISTICS MALAYSIA

2016 - 2030

01 DATA CONSISTENCY

Data/information is scattered across various agencies (federal /state).

02 METHOD

Different underlying method or classification used by agencies.

03 COMPLIMENT SDG

Challenges to set proxy for SDG indicator.

04 DATA OWNERSHIP

Especially in the state level (strong ownership of data).

05 PEGAWAI LIAISON

Changes of Liaison Officers

06 MONETARY VALUE

Restriction in obtaining monetary data

08 LIMITED ACCESSIBILITY

Level of data accessibility.

1. Question :   Business statistics have been primarily focused on the measurement of economic performance of businesses. A better integration of environmental information in business statistics has many advantages as it improves the consistency of the information and provides more granularity. **In your views what are the main challenges in the compilation of these indicators encountered in your office?**

   Answer :   Secondary data : Challenges DOMS faces is during the secondary data compilation. Some agencies are obliged to state government and any income or expenses related to value are provided strictly and need to be published at macro level.

   Establishment: Yes we do have some limitation in getting the data related to environment. We will try to get as much data as we could from the agencies and we will match them with the data provided by government agencies and it is subjected to be published at macro level due to some industries that is the main player in the selected industries and might reveal their establishment detail even at MSIC 3 digit level.

MINISTRY OF ECONOMY
DEPARTMENT OF STATISTICS MALAYSIA

2. Question :   The compilation of these indicators often goes across statistical domains and sometimes also across institutions. This may be problematic at times with issues on data sharing, harmonization of concepts, definitions etc. Based on your experience what have been successful strategies to overcome issues in the collaboration with other offices or institutions in your country?

   Answer :   Yes most of the Statistical do face challenges in with such issues. DOSM had taken few measures to overcome the issues as below:

   i.   MOU between agencies;
   ii.   Courtesy visit by Chief Statistician to Government Agencies;
   iii. Initiative by State office to state authority/agencies;
   iv.   Three levels of governance sector to create involvement and ownership on the data published.

"STATISTICS BLOOM IN HARMONY"

Doesn't matter far or near
Strength in numbers
we don't live in fear

Birds of feather flock together
Statistics our form of adour
We, will always live it up

So let us live in solidarity
And in the world arena we'll
succeed
It is statistics that will come to be
The reason we will bloom in
harmony

Everybody undivided
Data's where our hearts reside in
There will always be a bind

Just like fire that ignites
That's how brightly lit our dreams are
We'll reach higher than the stars

Sending love to one another
Leaving no one in a slumber
We will stand with unity

Mustering our courage while
Embracing our disparities
We'll achieve our victory

One dream with unity
One love with harmony

" STATISTICS BLOOM
IN HARMONY"
VIDEO

https://bit.ly/StatisticsBloomInHarmony

THANK YOU

20 OCT   2016 - 2030   PSSN

StatsMalaysia

www.DOSM.gov.my

PEMBANGUNAN *PHYSICAL WATER ASSET ACCOUNTS* DAN *MONETARY WATER ACCOUNTS*

PHYSICAL ASSET ACCOUNT FOR WATER RESOURES	Types of water resource					
	Surface water				Groundwater	Soil water
	Artificial reservoirs	Lakes	Rivers and streams	Snow, Ice and Glaciers		
Opening stock of water resources						
Additions to stock						
Returns						
Precipitation						
Inflow from other territories						
Inflow from other inland water resources						
Discoveries of water in aquifers						
Total additions to stock						
Reductions in stock						
Abstraction						
for hydropower generation						
for cooling water						
Evaporation and actual evapotranspiration						
Outflow to other territores						
Outflow to the sea						
Outflow to other inland water resources						
Total Reductions in stock						
Closing stock of water resources						

- Returns represent the total volume of water that is returned from the economy into surface and groundwater.
- **Examples** : Irrigation water, treated and untreated wastewater.
- **Data sources** : JPS, JAS, IWK, SPAN, DOA
- Precipitation consists of the volume of atmospheric wet precipitation on the territory of reference before evapotranspiration takes place.
- **Examples** : Rain, snow, hail, sleet, etc.
- **Data sources** : JPS, Met Malaysia

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- Inflows represent the amount of water that flows into water resources. Inflow from other territories/countries occur in the case of shared water resources.
- **Data sources** : JPS
- Inflow from other inland water resources include transfers, both natural and artificial among the resources within the territory.
- **Example** : Flows of infiltration and seepage, channels built for water diversion.
- **Data sources** : JPS

- The quantity of water in the newly discovered aquifer as distinct from the overall capacity of the aquifers. Increases in the volume of water in a know aquifer should be included as an inflow of water resources to groundwater
- **Data sources** : JMG, MYSA (DATA SOIL WATER DAN GW DARIPADA JMG)

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PHYSICAL ASSET ACCOUNT FOR WATER RESOURES	Types of water resource					
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- Abstraction represents the amount of water removed from any resource, either permanently or temporarily.
- **Data sources** : BKSA, LUAS

- Water used for hydroelectric power generation is considered part of water abstraction.
- **Data sources** : JMG, TNB, SESB, SEB, KKM

- Cooling water involves using selected filtration technologies and chemical products in order to remove toxic or otherwise damaging impurities from cooling tower system.
- **Data sources** : BKSA/ IWK

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- **Evaporation** refers to the amount of water evaporated from bodies of water.
- **Actual evapotranspiration** refers to the amount of water that is transferred from the soil to the atmosphere by evaporation and plant transpiration.
- **Data sources** : Met Malaysia, MAFI, JPS

- **Outflow to other territories** represent water exchanges between water resources within the territory.
- **Data sources** : JPS

- **Outflow to sea**
- **Data sources** : JPS

- **Outflow to other inland water resources**
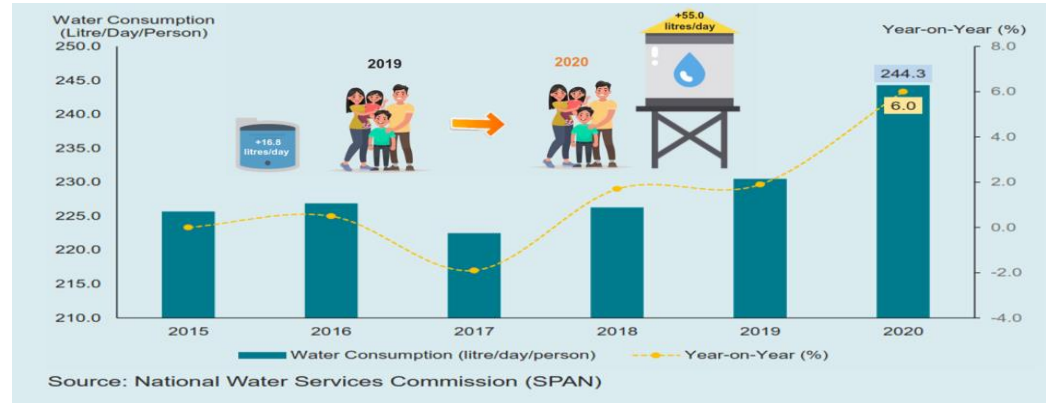- **Data sources** : JPS

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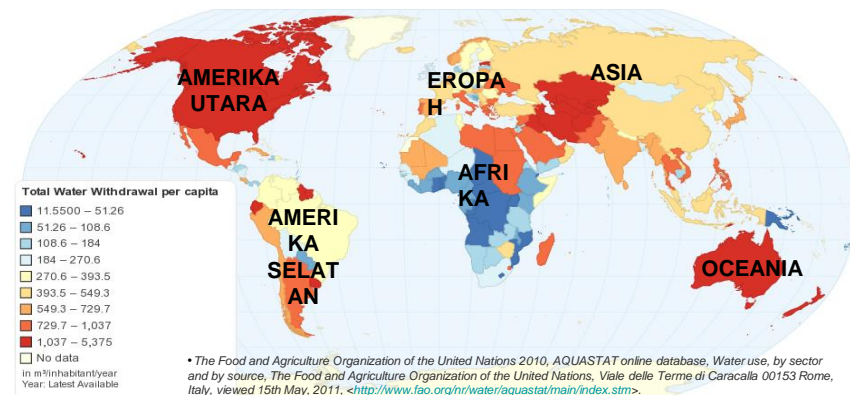# WATER CONSUMPTION, PENINSULAR MALAYSIA, 2015-2020

Piramid yang diterbitkan oleh WHO telah diaspirasikan oleh Abraham Maslow mengenai Hierarki keperluan air (Paparan 2) yang menerangkan keperluan air bagi penggunaan harian. Secara amnya, keperluan air setiap orang untuk bertahan hidup adalah diantara 7.5 - 15 liter sehari. Namun, syarat ini tertakluk kepada amalan budaya dan keutamaan di negara tersebut.

Source: National Water Services Commission (SPAN)

Domestic Water Consumption (litres/day/person), 2015 - 2020

NEGERI	2015	2016	2017	2018	2019	2020
UN benchmark	165.0	165.0	165.0	165.0	165.0	165.0
Malaysia	225.5	226.7	222.4	226.2	230.4	243.6
Johor	224.6	211.7	212.3	215.8	222.0	229.3
Kedah	243.7	247.7	243.9	251.5	253.5	262.7
Kelantan	90.3	90.7	88.6	88.1	86.5	89.2
Melaka	227.2	228.6	225.6	226.6	226.2	230.5
Negeri Sembilan	253.5	261.1	258.5	260.9	261.1	281.7
Pahang	192.2	210.2	202.2	200.0	202.8	218.6
Perak	254.6	263.9	259.9	265.6	270.6	281.2
Perlis	326.0	326.7	309.5	315.6	315.0	306.0
Pulau Pinang	284.4	286.4	276.4	278.5	282.1	300.5
Selangor*	231.6	230.6	226.4	233.2	239.7	259.6
Terengganu	211.9	223.1	211.9	207.6	213.7	227.1
W.P. Labuan	178.8	175.6	174.2	181.8	181.3	170.7

Total Water Use per capita by Country

Total Water Withdrawal per capita

- 11.5500 − 51.26
- 51.26 − 108.6
- 108.6 − 184
- 184 − 270.6
- 270.6 − 393.5
- 393.5 − 549.3
- 549.3 − 729.7
- 729.7 − 1,037
- 1,037 − 5,375
- No data

in m³/inhabitant/year
Year: Latest Available

• The Food and Agriculture Organization of the United Nations 2010, AQUASTAT online database, Water use, by sector and by source, The Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla 00153 Rome, Italy, viewed 15th May, 2011, <http://www.fao.org/nr/water/aquastat/main/index.stm>.

AKAUN	SENARAI DATA	PERKARA	AGENSI	ISU	SDG	GEI	CLIMATE CHANGE	DISASTER RELATED FRAMEWORK
ASSET (WATER)	Opening Stock	Artificial reservoirs Lakes Rivers and Streams Groundwater Soil Water	JPS/ DOA/ IWK JPS JPS JMG JMG	Kekangan mendapatkan taburan hujan di *surface water*. Keperluan data siri 2010-2021	Sustainable Development Goal 6 goes beyond drinking water, sanitation and hygiene.	Water in the green economy focuses on the socio-economic opportunities.	Climate change exacerbates water stress.	Can destroy or contaminate entire water supplies.
	Returns	Artificial reservoirs Lakes Rivers and Streams Groundwater Soil Water	JPS JMG JMG	Keperluan data siri 2010-2021 Kebanyakan data dikumpul secara manual di JMG Negeri				
	Precipitation *Inflow from other territories *Inflow from other inland water resources	Artificial reservoirs Lakes Rivers and Streams Groundwater Soil Water	JPS/ METMalaysia JPS/ METMalaysia JPS/ METMalaysia JMG/NAHRIM JMG	Data Hujan hanya adalah untuk keseluruhan stesen tadahan sahaja.	Target 6.4 : By 2030, substantially increase water-use efficiency across all sector."	GEI Issue Identification.	Climate change can affect the intensity and frequency of precipitation.	From 2001 to 2018, over 5000 water-related disasters (WRDs) occurred globally, accounting for 73.9% of all-natural disasters.

DATA GAP ANALYSIS SEEA ASSET WATER

AKAUN	SENARAI DATA	PERKARA	AGENSI	ISU	SDG	GEI	CLIMATE CHANGE	DISASTER RELATED FRAMEWORK
ASSET	Discoveries of water in aquifers	Artificial reservoirs Lakes Rivers and Streams Groundwater Soil Water	JMG/MYSA	Sehingga kini JMG menjalankan kajian ke atas 5 lembangan sungai sahaja dan tidak meliputi keseluruhan kawasan.	Target 6.6 : "By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes"	Issue Identification on groundwater contamination, resource efficiency, policy formulation,	Climate change does not only affects groundwater quantity, but also its quality.	Groundwater Vulnerability to Floods And Droughts
	Abstraction *for hydropower generation *for cooling water		TNB/ IWK/ BKSA/	DOSM menhadapi kesukaran untuk mendapatkan data daripada pihak BKSA dan sehingga kini data hanya terhad daripada pihak JMG (beberapa negeri belum membekalkan data). Tiada data abstraksi air melalui BKSA dan mengikut aktiviti ekonomi. Perjumpaan dengan pihak TNB akan diadakan bagi mendapatkan kuantiti air yang digunakan untuk tujuan hydropower generation dan cooling power. Kesukaran mendapatkan data kilang yang abstrak air daripada surface water bagi cooling water (data BKSA)			Managed Aquifer Recharge (MAR), involves building infrastructure and/or modifying the landscape to intentionally enhance groundwater recharge.	
	Evaporation and actual evapotranspiration *Outflow to other territories *Outflow to the sea *Outflow to other inland water resources	Artificial reservoirs Lakes Rivers and Streams Groundwater Soil Water	MET MALAYSIA/ NAHRIM/ JPS/ MAFI	Data MET Malaysia merujuk kepada keseluruhan kawasan. Tidak dapat kenalpasti kawasan berdekatan surface water. Data evapotranspiration hanya dapat diperoleh setelah mendapat input daripada pihak MAFI Kesukaran mendapatkan data outflow (Data JPS)	Target 6.4.2: The level of water stress.	GEI Issue Identification.	Climate change affects evaporation and precipitation. More evaporation is causing more precipitation, on average. Evapotranspiration increases with increasing temperature, increasing radiation, decreasing humidity, and increasing wind speed.	Rising temperatures will lead to more evaporation and transpiration, reducing the productivity of dry-land agriculture and increasing dependence on irrigation.