








Natural Resource Use Indicators in the SDGs

For more information, please visit
<http://www.unep.org/asiapacificindicators>
or contact janet.salem@unep.org

SDG Goal	SDG Target	IAEG Indicator ¹	Year 2015	
			Malaysia	Asia-Pacific Developing
6 CLEAN WATER AND SANITATION 	6.4 – Increase water-use efficiency	6.4.1 – Water Intensity (<i>litres per US dollar</i>)	49	220
7 AFFORDABLE AND CLEAN ENERGY 	7.2 – Increase share of renewable energy	7.2.1 – Renewable energy share in total primary energy supply ² (<i>percentage</i>)	5.3%	18.3%
	7.3 – Improve energy efficiency	7.3.1 Energy Intensity (<i>megajoules per dollar</i>)	18	25.1
8 DECENT WORK AND ECONOMIC GROWTH 	8.4 – Resource efficiency and decouple economic growth from environmental degradation	8.4.1 and 12.2.1 – Material Footprint		
		Total (<i>million tonnes</i>)	633	40,728
12 RESPONSIBLE CONSUMPTION AND PRODUCTION 	12.2 – Sustainable management and efficient use of natural resources	Per capita (<i>tonnes</i>)	20.6	10.8
		Per dollar (<i>kilograms per dollar</i>)	2.7	4.5
		8.4.2 and 12.2.2 – Domestic Material Consumption		
		Total (<i>million tonnes</i>)	409	47,813
17 PARTNERSHIPS FOR THE GOALS 	17.11 – Exports of developing countries	Per capita (<i>tonnes</i>)	13.3	12.7
		Per dollar (<i>Kilograms per dollar</i>)	1.8	5.3
		17.11.1 – Developing countries and least developed countries export value		
		Exports (<i>million dollars</i>)	208,890	3,189,657
		Exports (<i>million tonnes</i>)	291.7	2,304
		Unit price of exports (<i>dollars per kilogram</i>)	0.7	1.4

¹ According to the "Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators", Item 3 (a) of the provisional agenda, Forty-seventh session of the Statistical Commission on 8-11 March 2016 at <http://unstats.un.org/unsd/statcom/47th-session/documents/2016-2-SDGs-Rev1-E.pdf>

² Share of Renewables and Hydro of the Total Primary Energy Supply.



Materials

Materials are the 'things' that make up the products and infrastructure of our society. They include biomass (crops, livestock, forest products, fish), fossil fuels (coal, oil, gas), metals and minerals.

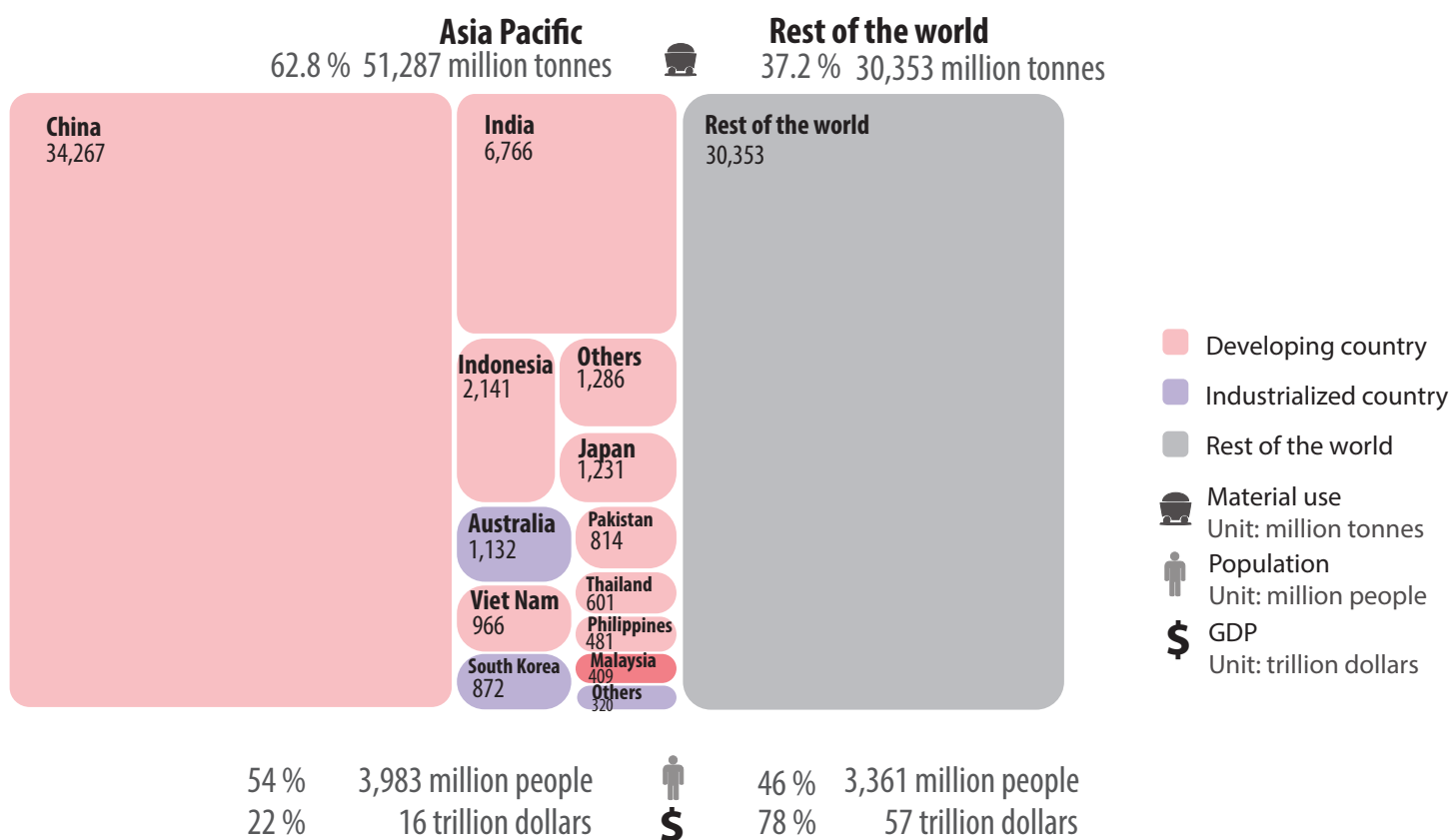
These materials underpin human nutrition and health, fuel energy systems and provide the structural base for buildings, transport networks, vehicles and all consumer goods.

The SDGs relevant to materials are:

SDG Target	IAEG Indicator	Malaysia		Asia-Pacific Developing	
		2010	2015	2010	2015
8.4 – Resource efficiency and decouple economic growth from environmental degradation	8.4.1 and 12.2.1 – Material Footprint				
	Total (<i>million tonnes</i>)	490	633	28,833	40,729
	Per capita (<i>tonnes</i>)	17.3	20.6	7.9	10.8
	Per dollar (<i>Kilograms per dollar</i>)	2.7	2.7	4.4	4.5
12.2 – Sustainable management and efficient use of natural resources	8.4.2 and 12.2.2 – Domestic Material Consumption				
	Total (<i>million tonnes</i>)	391	409	33,885	47,813
	Per capita (<i>tonnes</i>)	13.8	13.3	9.3	12.7
	Per dollar (<i>Kilograms per dollar</i>)	2.2	1.8	5.2	5.3

IAEG indicator 12.2.2:

Malaysia has a Domestic Material Consumption of 409 million tonnes of material per year. It grew by 5% between 2010 and 2015.



IAEG indicator 12.2.1:

Malaysia's Domestic Material Consumption is 409 million tonnes. This consists of 533 million tonnes extracted from its environment plus the 168 million tonnes imported, less 292 million tonnes exported material.

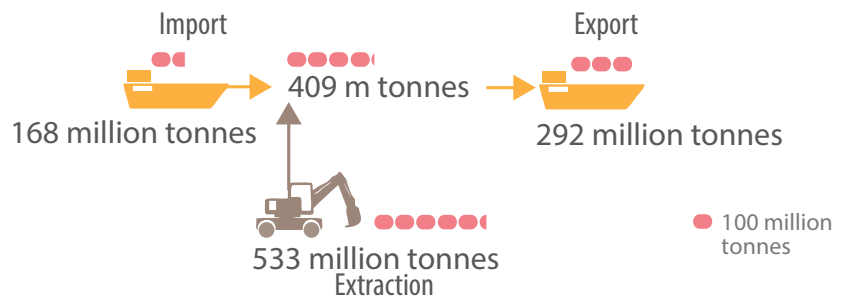
IAEG indicator 12.2.2:

Malaysia uses 1.8 kilograms per dollar - this is called Material Intensity. It is 66% lower than other developing Asia and Pacific countries.

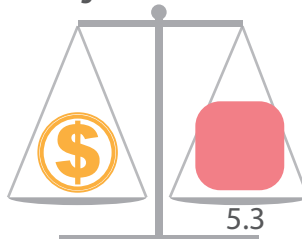
IAEG indicator 12.2.1

What about material footprint per capita in 2015?

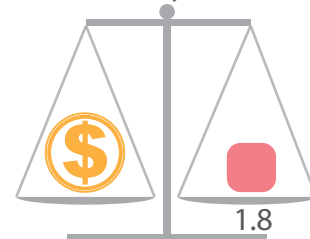
Domestic Material Consumption



Average in the Asia-Pacific



Malaysia



Units: Kilograms per dollar

Material

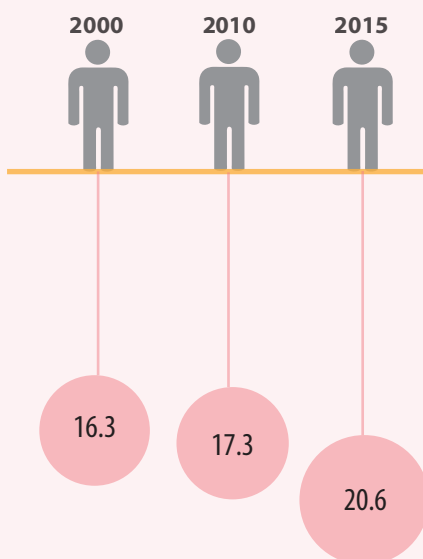
1 USD



The rise of per capita material footprint

(Unit: tonnes per person)

Material footprint



If we only look at Malaysia's material use for its own consumption, and exclude materials used to make exports, then we have the Material Footprint. For Malaysia, this was 633 million tonnes in 2015, far more than its Domestic Material Consumption.

This is 20.6 tonnes per capita per year. It is far more than the regional average but grew 19% in the past 5 years alone.

(Unit: tonnes per person)

Material footprint

40

76



Energy

Energy use is measured with the indicator primary energy supply. This indicator reports the total amount of energy (in joules) available to businesses and households in an economy by summing up domestically produced energy and energy imports and subtracting energy exports. The supply of primary energy may come from different energy sources including coal, petroleum, natural gas, uranium, and renewable energy sources such as hydro, solar and wind. Electricity is only included if it is exported or imported – in all other cases it is derived from one of the energy sources already measured.

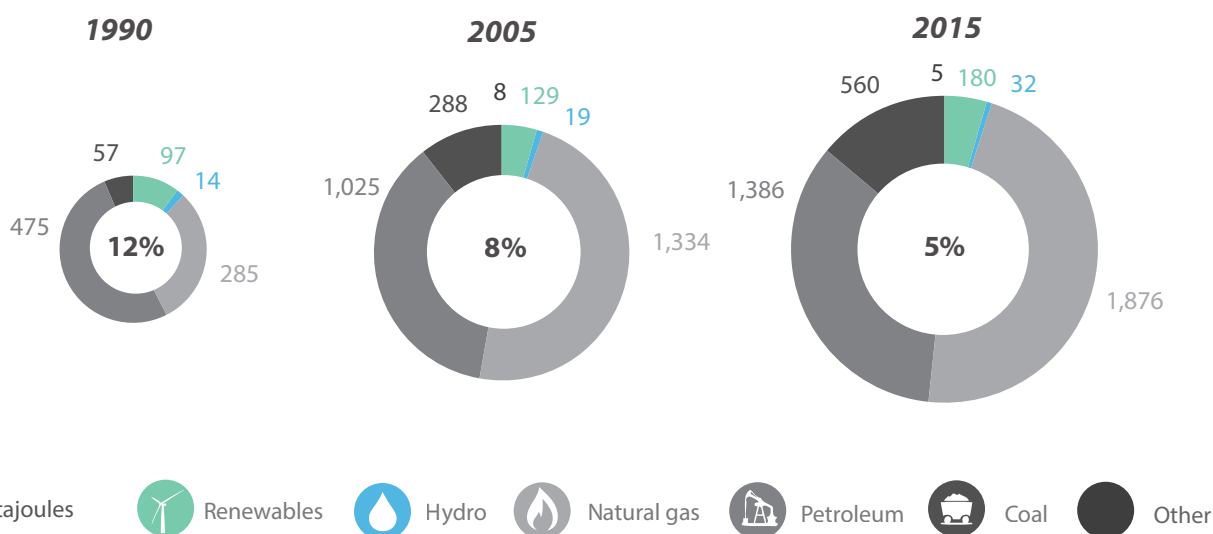
The SDGs relevant to materials are:

SDG Target	IAEG Indicator	Malaysia		Asia-Pacific Developing	
		2010	2015	2010	2015
7.2 – Increase share of renewable energy	7.2.1 – Renewable energy share in total primary energy supply ³ (percentage)	5.2%	5.3%	17.7%	18.32%
7.3 – Improve energy efficiency	7.3.1 – Energy Intensity (Megajoules per dollar)	17.5	17.5	25.0	25.1

IAEG indicator 7.2.1:

Malaysia used 4,028 petajoules of energy in 2015. Of this, 5% was renewable.

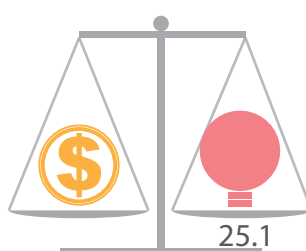
The amount of renewable energy grew each year, but the amount of non-renewable energy grew faster, therefore the share of renewable energy is decreasing.



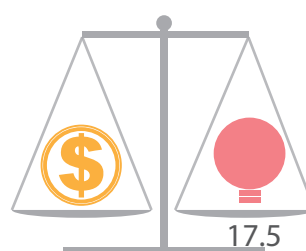
IAEG indicator 7.3.1:

Malaysia uses 17 megajoules per dollar. This is lower than the regional average.

Average in the Asia-Pacific



Malaysia



Units: Megajoules per dollar

Energy (Red circle)
1 USD (Yellow dollar sign)

³ For this report we include "renewables" and "hydro" as renewable energy sources.



Trade

No country is 100% self sufficient in its resource use. Each country imports products that complement domestic supplies, and exports products to generate export earnings. SDG target 17.11 calls on developing countries to increase their share of global exports, measured in economic value. Countries may wish to monitor the amount of natural resources that are exported as well as the value. This will determine whether developing countries are able to increase their share of exports by adding value to their natural resource exports or by increasing the physical amount of exports.

The SDGs relevant to materials are:

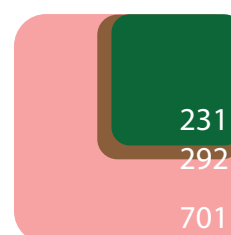
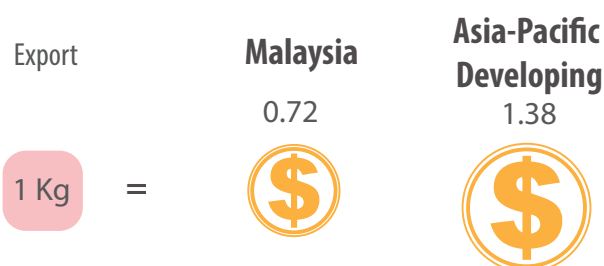
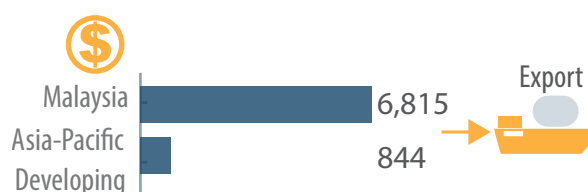
SDG Target	IAEG Indicator	Malaysia		Asia-Pacific Developing	
		2010	2015	2010	2015
17.11 – Exports of developing countries	17.11.1 – Developing countries and least developed countries export value				
	Exports (<i>million dollars</i>)	180,453	208,890	2,299,614	3,189,657
	Exports (<i>million tonnes</i>)	226	292	1,706	2,305
	Unit price of exports (<i>dollars per kilogram</i>)	0.8	0.7	1.3	1.4

Malaysia exported 292 million tonnes of materials in 2015. On a per capita basis, this is 9516 kilograms per year.

In 2015 the value of exports was \$209 billion in total, or \$6815 per capita, which was higher than the value for Asia-Pacific developing countries (\$844 per capita).

The unit price for exports was \$0.72 per kg, which is lower than the regional average of \$1.38 per kg.

The Material Footprint of the exports was 231 million tonnes in 2015, which was 33% of materials entering into Malaysia's economy.



- Materials exported:** 292 million tonnes
- Materials needed to produce exports:** 231 million tonnes
- Materials entering Malaysia's economy:** 701 million tonnes



Water

Unlike other natural resources, water is often reused multiple times in the same year. Furthermore, the great majority of it is extracted from sources which will replenish themselves naturally, via the hydrological cycle, so issues of its usage are really those of managing a renewable resource flow rather than managing a depleting non-renewable resource stock. The water use indicator presented here reports total fresh water abstractions for use in agriculture, industry and in the residential sector, from all surface and underground sources. Direct rain fed onto crops is not included. The total water withdrawals indicator by itself is not an indicator of water stress as it does not include information on the natural availability of water in the region where withdrawals take place.

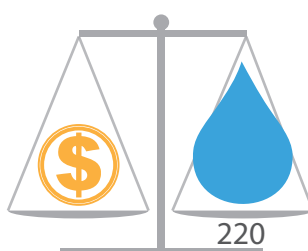
The SDGs relevant to materials are:

SDG Target	IAEG Indicator	Malaysia		Asia-Pacific Developing	
		2010	2015	2010	2015
6.4 – Increase water-use efficiency	6.4.1 – Water Intensity (<i>litres per US dollar</i>)	63	49	304	220

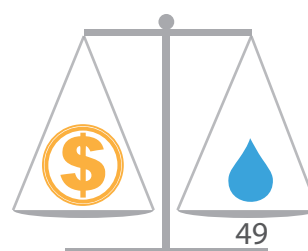
IAEG indicator 6.4.1:

Malaysia used 49 liters of water per dollar GDP in 2015. This is far less than the regional average (220 liters per dollar).

Average in the Asia-Pacific



Malaysia



Units: litres
per dollar



Water



1 USD

Want to know more information?

Indicators for Resource Efficient and Green Asia

<http://www.unep.org/asiapacificindicators>

Indicators data

<http://uneplive.unep.org/>

UNEP

www.unep.org

SWITCH-Asia

<http://www.switch-asia.eu/news/indicators-for-a-resource-efficient-and-green-asia-and-the-pacific>



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