

# Material Flow Accounts (EW-MFA)

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SDG and Environment Statistics Unit, 2025  
Early Warning and Assessment Division, UNEP

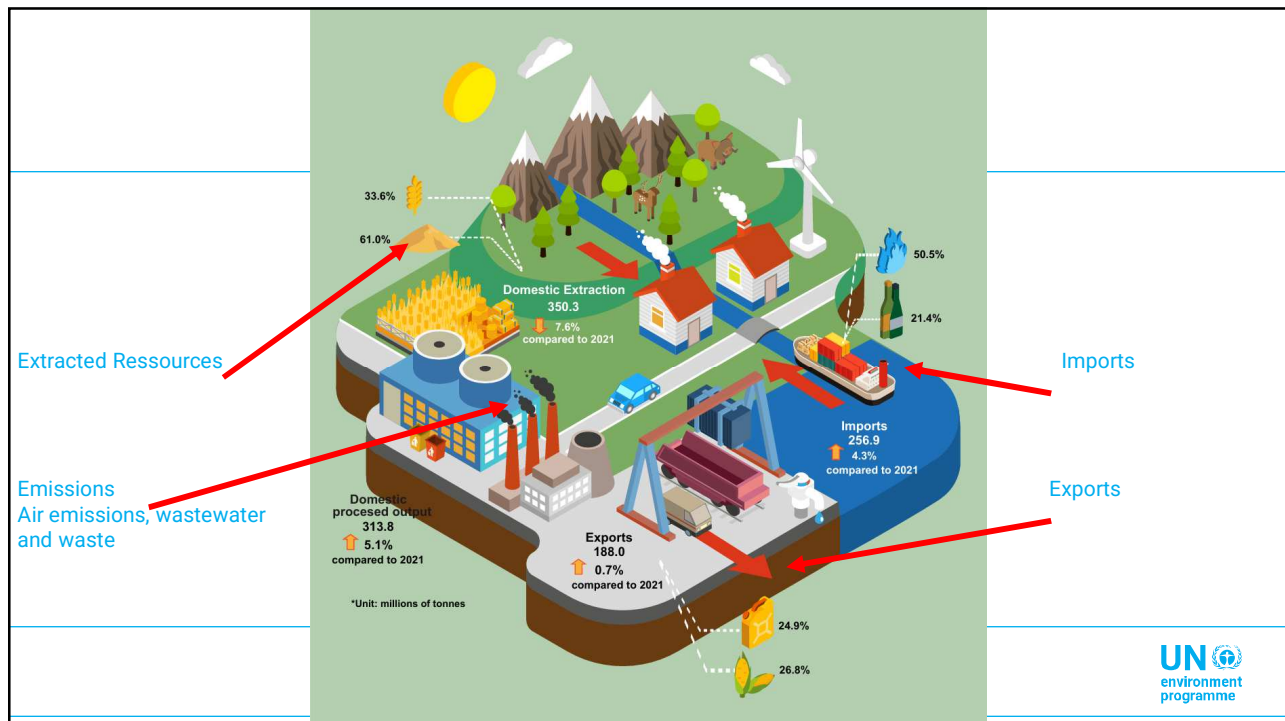
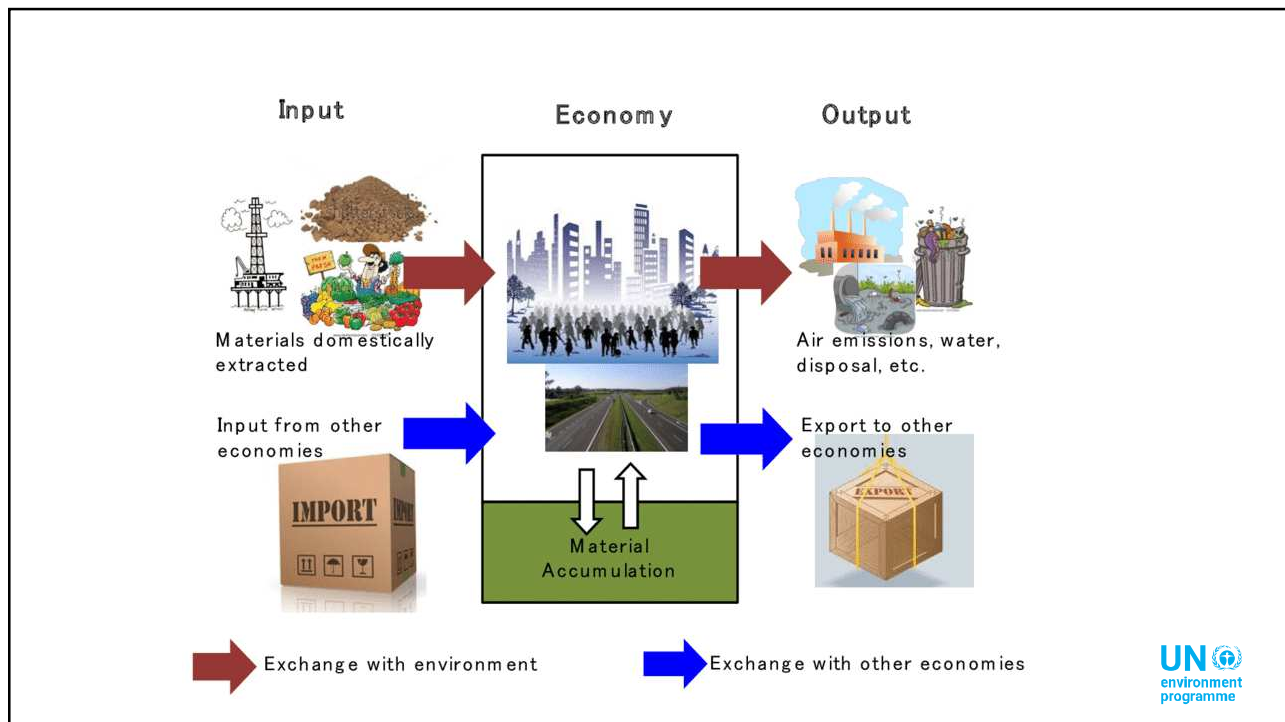
## What's Economy-Wide Material Flow Accounts (EW-MFA)

EW-MFA represents a framework for describing the interaction of a domestic economy with the natural environment and the economy of the rest of the world in terms of flows of materials, waste and emissions.

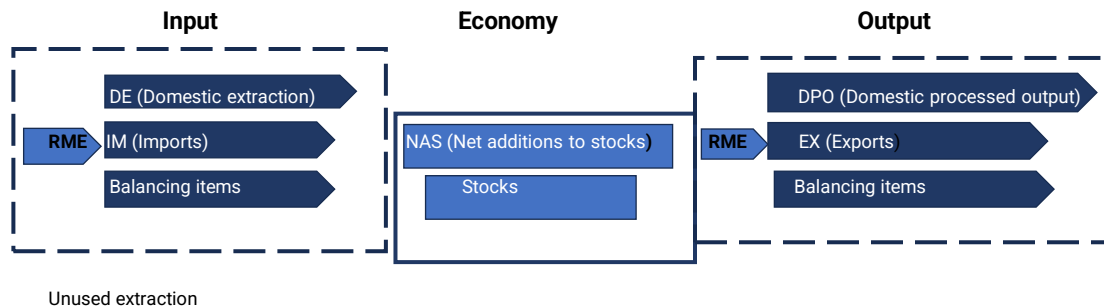
EW-MFA accounts deliver a comprehensive overview of the natural resource extraction, trade in natural resources, waste disposal and emissions.

EW-MFA data sets are basic for calculating SDG indicators related to resource productivity (SDG 8.4) and sustainable use of natural resources (SDG 12.2).

*With financial support from the Programme Cooperation Agreement between the European Commission and UNEP*



## Simplified structure of EW-MFA



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## Concepts related to EW-MFA

**Stocks** is the amount of materials that are stockpiled in buildings and infrastructure in the national economy. It is a proxy for potential material flows that may become secondary raw materials or waste.

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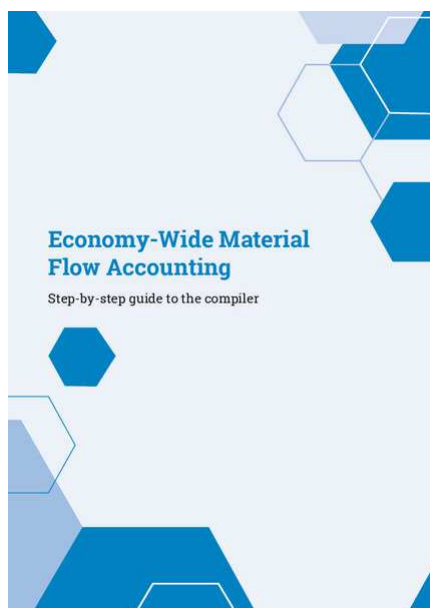


## Methodological support

Global manual on EW-MFA:

[UNEP \(2023\). The use of natural resources in the economy: A Global Manual on Economy-Wide Material Flow Accounting](#)


- First published in 2021
- Revised in 2023



## Methodological support

[UNEP \(2024\). Economy-Wide Material Flow Accounting. Step-by-step guide to the compiler](#)

- Published in 2024

		
United Nations Environment Programme <b>COMPILER FOR ECONOMY-WIDE MATERIAL FLOW ACCOUNTS</b> (EW-MFA Compiler)		
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Table E	Balancing Items	to fill in
Table F	Headline Indicators	to be filled in automatically
Corresp SDMX Codes	Correspondence EW-MFA Codes to SDMX Product Codes	can be used for estimation of selected items
Corresp FAO Crop Codes_DE	Correspondence FAO Crop Codes to EW-MFA Codes, Domestic Extraction	can be used for estimation of selected items
Crop Residues Tool_DE	Calculated totals for Crop Residues - Domestic Extraction	can be used for estimation of selected items
Grazed Biomass Tool_DE	Calculated totals for Grazed Biomass - Domestic Extraction	can be used for estimation of selected items
ConvFact Wood_DE	Conversion Factors Wood - Domestic Extraction	can be used for estimation of selected items
Metal Ores Tool1_DE	Calculated totals for Metal Ores - Mined Ores	can be used for estimation of selected items
Metal Ores Tool2_DE	Calculated totals for Metal Ores - Processed/Shipped Ores	can be used for estimation of selected items
Metal Ores Tool3_DE	Calculated totals for Metal Ores - SMS Back Calculation	can be used for estimation of selected items
ConvFact Non-Met Minerals	Conversion Factors Non-Metallic Minerals	can be used for estimation of selected items
Chalk, Dol and Lime# Tool_DE	Calculated totals for Chalk, Dolomite and Limestone, Domestic Extraction	can be used for estimation of selected items
ConvFact Clays_DE	Conversion Factors Clays - Domestic Extraction	can be used for estimation of selected items
Sand and Gravel Tool_DE	Calculated totals for Sand and Gravel for Construction, Domestic Extraction	can be used for estimation of selected items
Fossil Fuels Tool_DE	Calculated totals for Fossil Fuels - Domestic Extraction	can be used for estimation of selected items
Fossil Fuels Tool_Imp	Calculated totals for Fossil Fuels - Imports	can be used for estimation of selected items
Fossil Fuels Tool_Exp	Calculated totals for Fossil Fuels - Exports	can be used for estimation of selected items
ConvFact Peat	Conversion Factor Peat	can be used for estimation of selected items
ConvFact Crude Oil and NGL	Conversion Factors Crude Oil and Natural Gas Liquids, Domestic Extraction	can be used for estimation of selected items
ConvFact Natural Gas	Conversion Factors Natural Gas	can be used for estimation of selected items
Corresp HS2017_Trade	Correspondence Table HS 2017 Codes to EW-MFA Codes	can be used for estimation of selected items
Corresp SITC Rev.4_Trade	Correspondence Table SITC Rev. 4 Codes to EW-MFA Codes	can be used for estimation of selected items

## Concepts related to EW-MFA (I)

**DE: Domestic extraction** (materials which are further used in economic processes)

- Biomass
- Fossil fuels
- Metal ores
- Non-metallic minerals

**IM: Imports**

**EX: Exports**

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## Concepts related to EW-MFA (II)

**Material outflows** are waste going to landfills, emissions to air and emissions to water.

**Stocks** is the amount of materials that are stockpiled in buildings and infrastructure in the national economy. It is a proxy for potential material flows that may become secondary raw materials or waste.

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## Indicators based on EW-MFA

Domestic extraction (DE)
Imports
Exports
Direct material input (DMI)
Domestic material consumption (DMC)
Physical trade balance (PTB)
Domestic processed output (DPO)
Net additions to stock (NAS)

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## Material flow accounts Main indicators. 2022

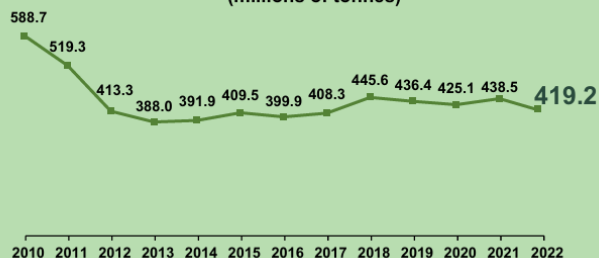
Resource Productivity: 2,845.6  / 



8.8

tonnes of materials  
consumption per capita

### Domestic Material Consumption (millions of tonnes)



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## Global Material Flows Database

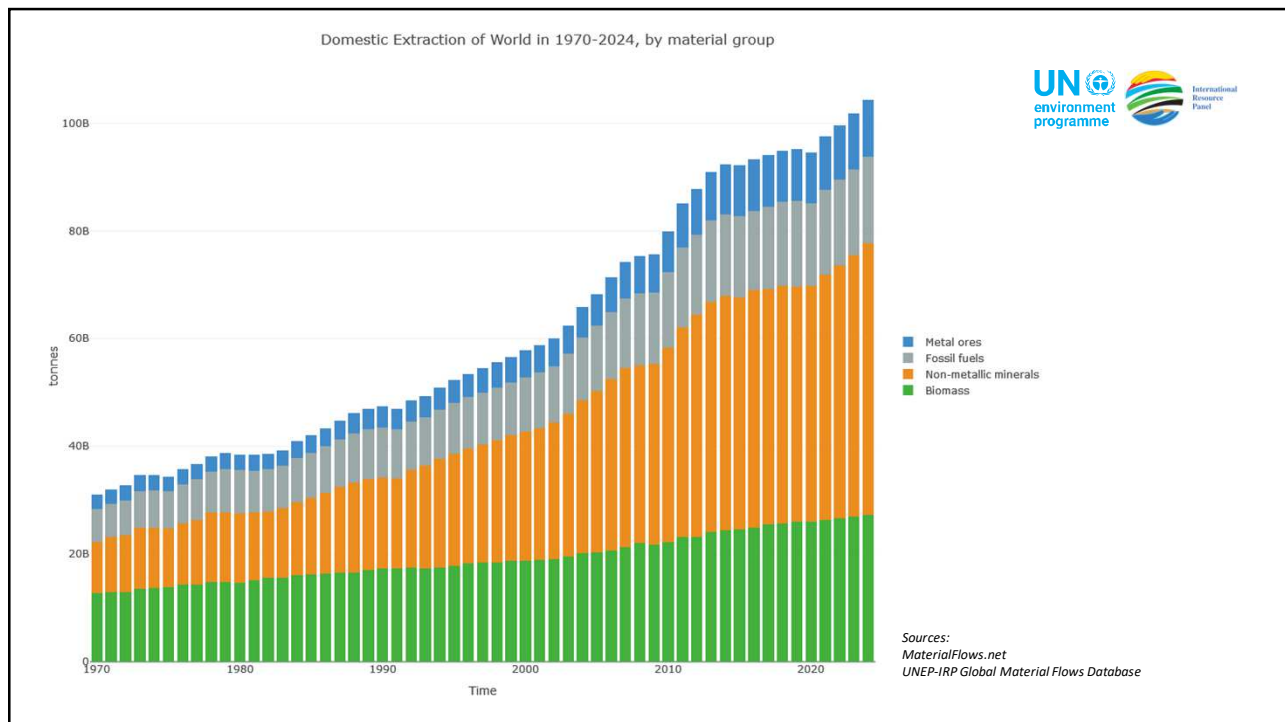
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- Coverage: [217 countries/territories](#)
- Period: [1970 – 2024](#)
- Aligned with the [SEEA Central Framework](#)
- Provides indicators on extraction and direct trade of raw materials, as well as indirect trade flows (including material footprints)
- Material categories: [biomass](#), [fossil fuels](#), [metals](#), [non-metallic minerals](#) (disaggregated into 13 sub-categories)
- Main data sources: FAO, UNSD, UN COMTRADE, IEA, US EIA, World Mining Data, British Geological Survey, US Geological Survey

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# Thank you

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