

Indicator (definition)	Resource productivity is defined as the ratio between gross domestic product (GDP) and domestic material consumption (DMC). Domestic material consumption (DMC) measures the total amount of materials directly used by an economy and is defined as the annual quantity of raw materials extracted from the domestic territory of the focal economy, plus all physical imports minus all physical exports. It is important to note that the term "consumption" as used in DMC denotes apparent consumption and not final consumption. DMC does not include upstream hidden flows related to imports and exports of raw materials and products.
Eurostat Unit	Environmental Accounts and Climate Change
Other Commission DGs	DG Environment
European Statistical System Working Group (WG)	Directors Meeting on Environment Statistics and Accounts – DIMESA Environmental Accounts Working Group
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1. Overall assessment of accuracy and comparability (Description of quality grades under the following link: http://circa.europa.eu/Public/irc/dsis/structind/library?l=/general_information/quality_profiles/annex_enpdf/E_N_1.0_&a=d)

A
 B
 C
 Indicator to be Developed

The quality of data for DMC has been improved in the last years and comparable time series are now available for all Member States, Turkey, Norway and Switzerland.

2. Objective and relevance of the indicator:

The renewed sustainable development strategy encourages the sustainable use of resources and strengthens the synergies between environmental protection and growth. Under the key challenge sustainable consumption and production it is to decouple economic growth from environmental degradation. Under the key challenge 'conservation and management of natural resources', another objective is 'improving resource efficiency, to reduce the overall use of non-renewable natural resources and the related environmental impacts of raw materials use, thereby using renewable resources at a rate that does not exceed their regeneration capacity'.

As DMC measures the annual amount of raw materials extracted from the domestic territory of the focal economic area, plus all physical imports minus all physical exports, resource productivity provides insights into whether decoupling between the use of natural resource and economic growth is taking place. Taken on its own, DMC also provides an assessment of the absolute level of use of extracted and imported resources. Interpretation of this indicator has to take into account that resource use outside the European Union is only partly included and that this is a highly aggregated indicator which might hide some critical trends with respect to certain resources.

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Aggregate material flow accounts (MFA) indicators are Direct Material Input (DMI) and Domestic Material Consumption (DMC) which change very little over time. This is partly due to the high level of aggregation but also due to the types of materials that are being tracked in these statistics. Furthermore the aggregate MFA indicators are closely linked to economic events (and especially large construction projects or changes in mining activity), rather than policies. These two points restrict their value as policy indicators (monitoring the effect of policy measures).

The improvements in the data collected from countries now provide a much greater level of detail than previously (12 types of materials). Having greater detail in the data can provide more information about the types of materials that are increasing or decreasing in the economy.

3. Data availability: details

(t_1 : earliest reference year available; t_2 : latest reference year available in October 2010)

	Member States	Candidate and Acceding Countries	US and Japan	EEA-EFTA
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t ₁	2000: 27 Member States	2000: TR	-	2000: NO, CH
t ₂	2007 27 Member States	2007: TR	-	2007: NO, CH

4. Overall accuracy

High
 Restricted
 (sources, errors, methodology, etc.)

Data on DMC are compiled by Member States reported using the EW-MFA Questionnaire 2009 and the Eurostat EW-MFA Compilation Guide for 2009 reporting. In order to obtain EU aggregates and for calculation of the indicator DMC, missing data has been gap-filled with data from other data sources such Eurostat trade statistics, agriculture statistics, FAO statistics and USGS mining data. The validation of the national data is done in cooperation with the Member States. All data revisions have been approved by the Member States and are flagged as estimates.

Further methodological harmonisation and capacity building in the national statistical offices are joint activities of Eurostat (Task Force on MFA), OECD (WG on Environmental Information and Outlooks) and UNSD (London Group – System of Environmental Economic Accounting). Although methods to compile economy-wide material flow accounts and indicators are already advanced and harmonized, some additional efforts are made to further develop MFA within the environmental accounting framework. In particular the following efforts:

- solve and harmonize some open methodological discussions (differences between EU ewMFA and SEEA methodology),
- provide training to national statistical institutes and provide detailed comments during the data quality checking,,
- Eurostat is currently developing a first set of raw material equivalents (RME) factors for relevant HS/CN products in the trade statistics that can then be used to multiply the quantity of the product group into the "raw material equivalent." Based on these RME factors Eurostat is developing a new indicator Raw Material Consumption (RMC) which would combine Domestic Extraction Used (which by definition is in raw material equivalents – RMEs) and imports and exports which have been converted into RMEs. This new indicator will provide a more balanced view of the materials used in economies.

5. Comparability across countries

High
 Restricted

When making comparisons over time and between countries it is important to use the correct GDP so that the changes in prices over time and purchasing power between countries do not influence the movement in the indicator.

If comparing several geographic areas during one time period then GDP in Purchasing Power Standards (PPS) should be used, variable code RP_PPS.

6. Comparability over time

High
 Restricted

When making comparisons over time and between countries it is important to use the correct GDP so that the changes in prices over time and purchasing power between countries do not influence the movement in the indicator.

If comparing one geographic area (one country or EU-aggregate) over 2 or more time periods then GDP in chain-linked volumes referenced to 2000 (euros) should be used, variable code RP_CLV00.

7. Development perspective for improving the quality of this indicator (including as far as possible an indication of the burden on Member States and respondents.)

The system boundary of the economy-wide MFA has been adjusted where possible to include more of the activities corresponding to the national accounts. This makes combining the MFA data with the economic data from the national accounts less problematic. Unfortunately, by definition, water is excluded in ew-MFA indicators such as DMC whereas it is included in the national accounts indicators such as GDP so combining these two indicators into a ratio indicator is not giving a purely correct combination – but it is the best available at this time.

The other improvement is with respect to the inherent asymmetry between domestic extraction which is in raw materials and traded products found in the imports and exports. The MFA indicators will show improvement when domestic extraction is reduced and replaced by imports. Converting the imported products into their raw materials using factors to gross up the products to materials removes this asymmetry. This is the current development direction being taken by Eurostat. Earlier work related to environmental impacts did not yield results which could be implemented into the statistical system.

8. Contribution to the coherence of the set/potential to qualify for an integrated policy analysis

Resource productivity provides some insights into the SDS objective to decouple economic growth from natural resource use.

Relevant European legislation:

Currently Eurostat is working on the establishment of a legal base for the compilation of environmental accounts by putting forth a proposal for a Regulation of the European Parliament and of the Council on European Environmental Economic Accounts (COM 2010 132). The Regulation provides a framework for the development of various types of accounts, where three modules were included in the first proposal with a view of adding other modules as they reach methodological maturity. Material Flow Accounts are one of the first three modules, included in the annexes to the proposed Regulation.

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