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New Techniques and Technologies for Statistics 2019

Sustainability, consumption, resource productivity: regional material flow accounts

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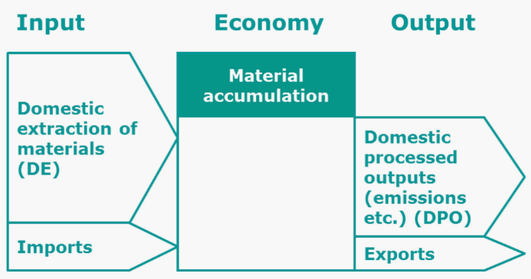
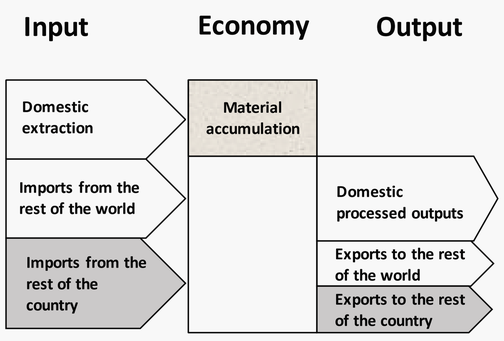
Material flow accounts (MFA) provide an overview of natural resource extraction, trade in natural resources, waste disposal and emissions. MFA show the physical inputs of materials that enter the economic system and the outputs generated in terms of physical units. These accounts enable us to obtain a set of aggregate indicators on the use of natural resources, from which productivity indicators are derived.

WHAT

FROM
Eurostat methodology for national economies



TO
an adaptation to the sub-state scope (NUTS2)



HOW

METHODOLOGICAL CHALLENGES

- **Inclusion of inter-regional trade**
- **Integration of different classifications**

The inclusion of inter-regional trade by means of transport

leads us to converge the different classifications into a common

analytical classification

eurostat

Classification by stage of manufacturing
Raw materials
Semi-finished products
Finished products

eurostat

Classification by type of material
Biomass
Metal ores
Non-metallic minerals
Fossil energy materials
Other products
Waste

WHY

- ✓ **To facilitate a detailed description of the interaction between the economy and the environment**
- ✓ **To provide information on the sustainability of our economic model**
- ✓ **The need to provide indicators that are used to monitor the progress of:**

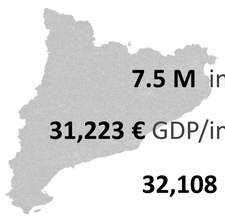
SUSTAINABLE DEVELOPMENT GOALS

8 DECENT WORK AND ECONOMIC GROWTH
Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Indicator 8.4.2: Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP

12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Ensure sustainable consumption and production patterns
Indicator 12.2.2: Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP

Catalonia's Material Flow Accounts

CATALONIA's
Material
Flow
Accounts



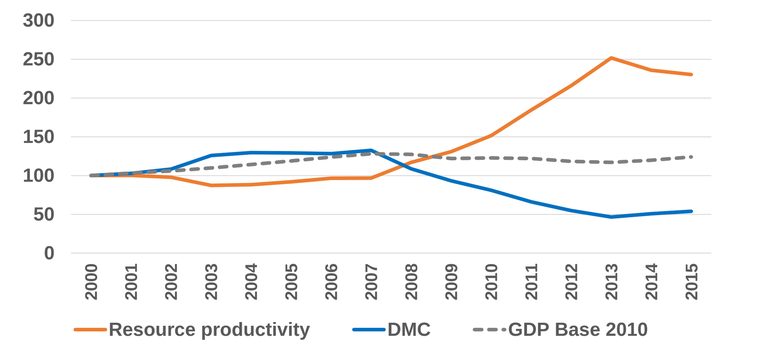
7.5 M inhab.
31,223 € GDP/inhab.
32,108 Km²

Key indicators. 2015

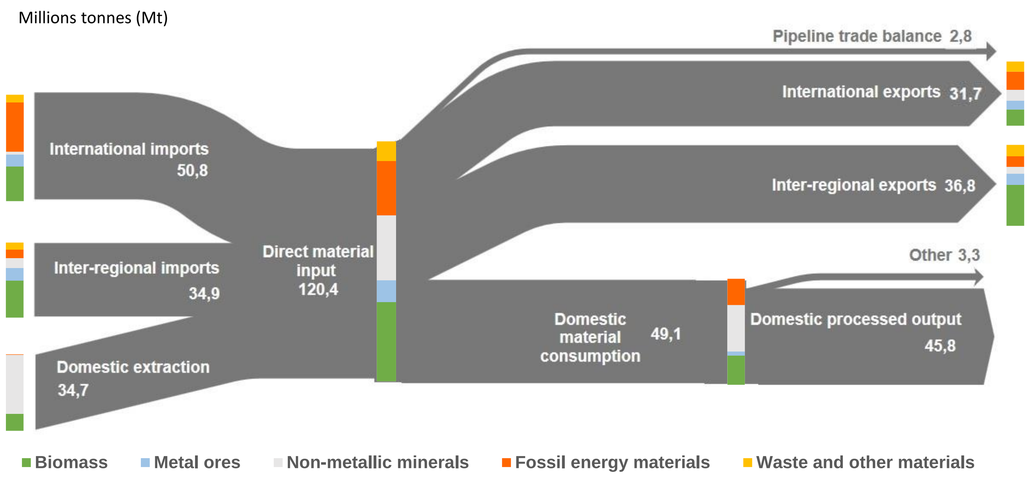
DMC (t per capita)	CO_2 (t per capita)		DMC (Mt)	CO_2 (Mt)	Resource productivity (€ / kg)
6.6	5.7	Catalonia	49	42	4.9
8.8	6.6	Spain	407	304	3.0
13.5	8.1	UE28	6,859	4,122	2.2

DMC = Domestic Material Consumption

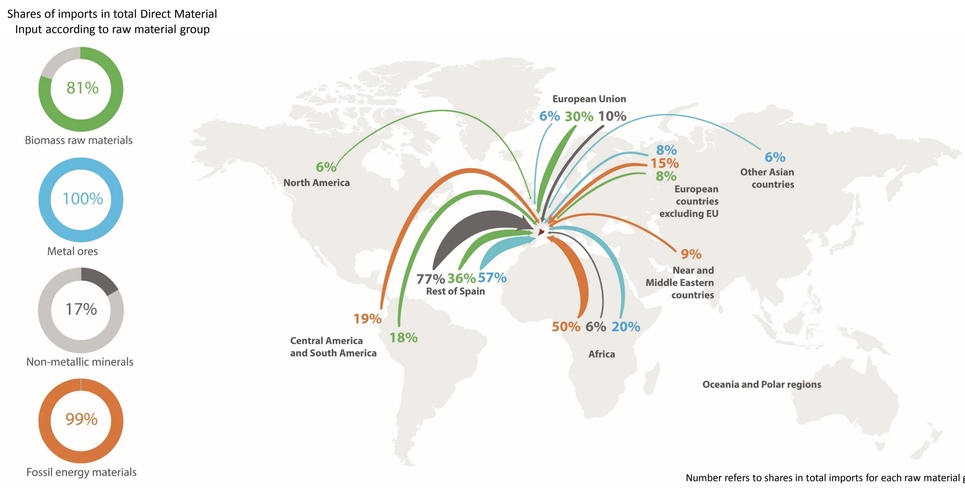
Lead indicator: resource productivity (GDP / DMC)



Flows of material resources. 2015



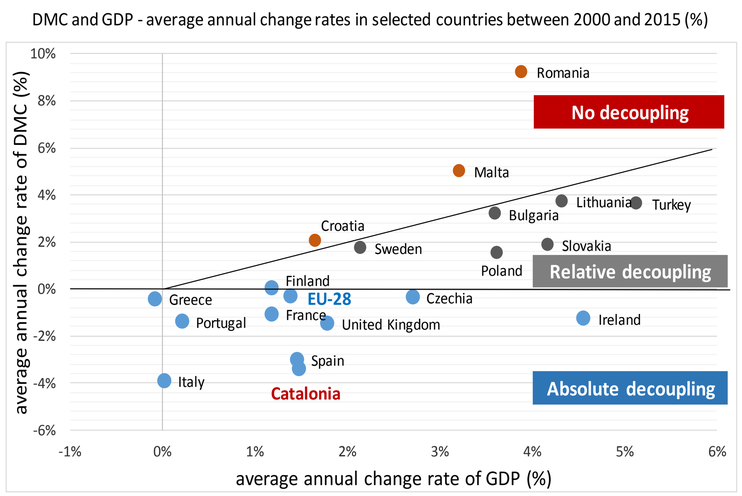
Geographical origin of Catalonia raw materials. 2015



Decoupling between economic activity and pressure on the environment

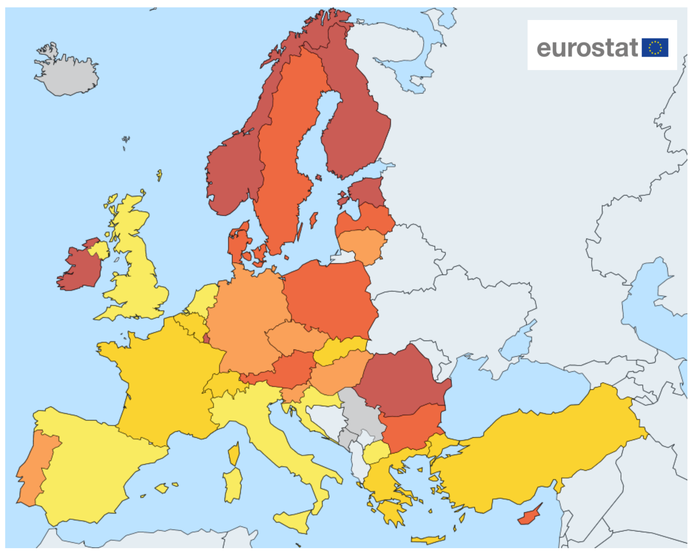
The diagonal line represents same average change rates of both GDP and DMC between 2000 and 2015.

- **No decoupling**: Countries which had higher DMC growth than GDP growth.
- **Relative decoupling**: Below diagonal line are all countries whose GDP increased faster than their DMC.
- **Absolute decoupling**: Below the x-axis where countries which GDP grows and DMC falls.



GDP in chain-linked volumes, reference year 2010

Domestic material consumption per capita



Data for 2017

Legend	Cases
7.219 to 9.716	7
9.716 to 13.302	7
13.302 to 16.936	7
16.936 to 23.484	7
23.484 to 32.296	6
Data not available	1

Exceptions: RS, MK, NO (**2016**) TR (**2015**) AL (**2012**)
Minimum value: 7.219
Maximum value: 32.296
Most recent data