

# Material Consumption and Footprint

**Extract from France's 2021 Environmental Performance Review**



# Material Consumption and Footprint

In 2019, France's apparent domestic consumption of materials, i.e. domestic extraction of materials plus imports and minus exports, amounted to 772 million tonnes, or 11.5 tonnes per capita (t/capita). In 2019, the European average was 13.4 t/capita. French consumption of materials, half of which were for construction, fell sharply between 2007 and 2014, before stabilising.

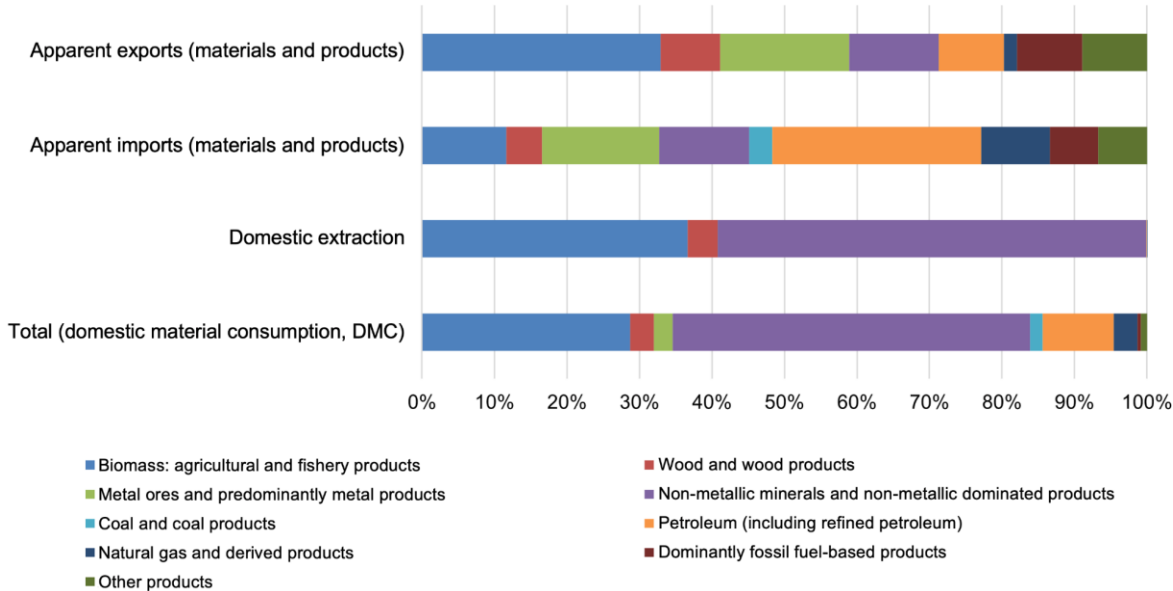
The demand of the country's economy for goods and services is satisfied by extracting natural resources from its land and importing raw materials and manufactured goods. Trends in material flows – renewables such as biomass and marine or non-renewable resources like minerals and fossil fuels – illustrates one of the pressures on the environment caused by lifestyle and production.

## REDUCED CONSUMPTION SINCE THE 2008 RECESSION

In 2019, France's apparent domestic material consumption (DMC), equal to domestic material extraction (633 million tonnes (Mt) plus imports (342 Mt, mostly fossil energy resources and metal ores) and less exports (202 Mt, especially agricultural products) amounted to 772 Mt (Figure 1). At its peak in 2007, the last year of strong growth in the construction sector before the economic and financial crisis of 2008, this consumption was close to 910 Mt.

**Figure 1: Breakdown of domestic extractions, imports and exports of materials from France by category in 2019**

In %



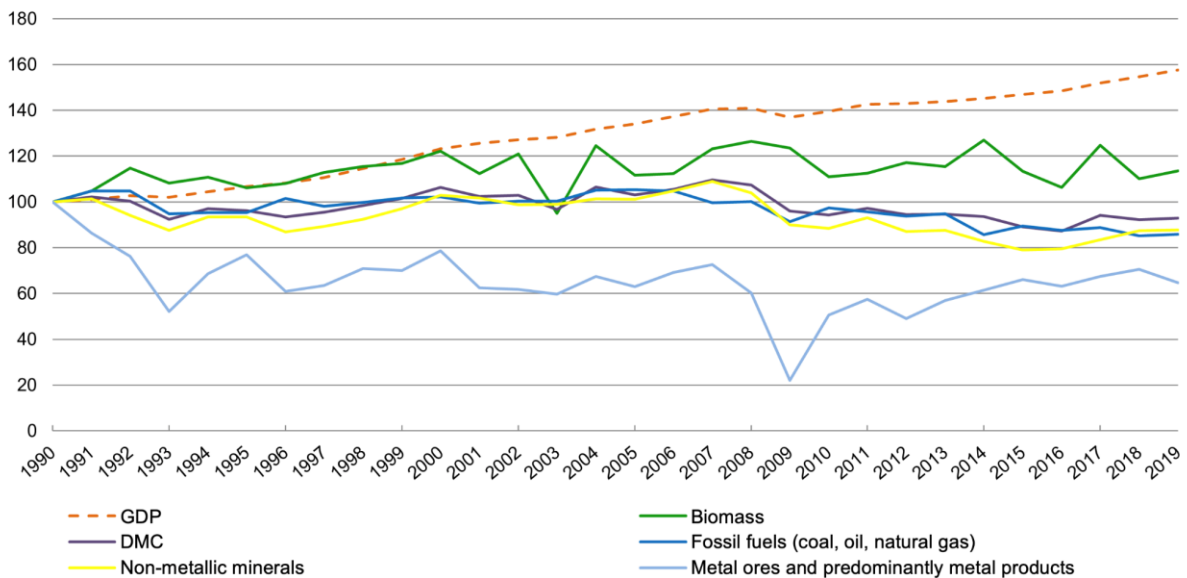
Sources: Agreste; French Customs; INSEE. Treatment: SDES, 2021

## Fact Sheet : Material Consumption and Footprint

Consisting of half of the building materials (gravel and sand, aggregates) necessary for the construction of transport infrastructure and buildings, French consumption of materials fell sharply between 2007 and 2014 before stabilising (Figure 2).

**Figure 2: Trends in apparent domestic material consumption (DMC) and GDP in France**

Base index value 100 in 1990



Note: volume GDP, chain-linked prices, base 2014.

Sources: Agreste/SSP; French Customs; INSEE. Treatment: SDES, 2021

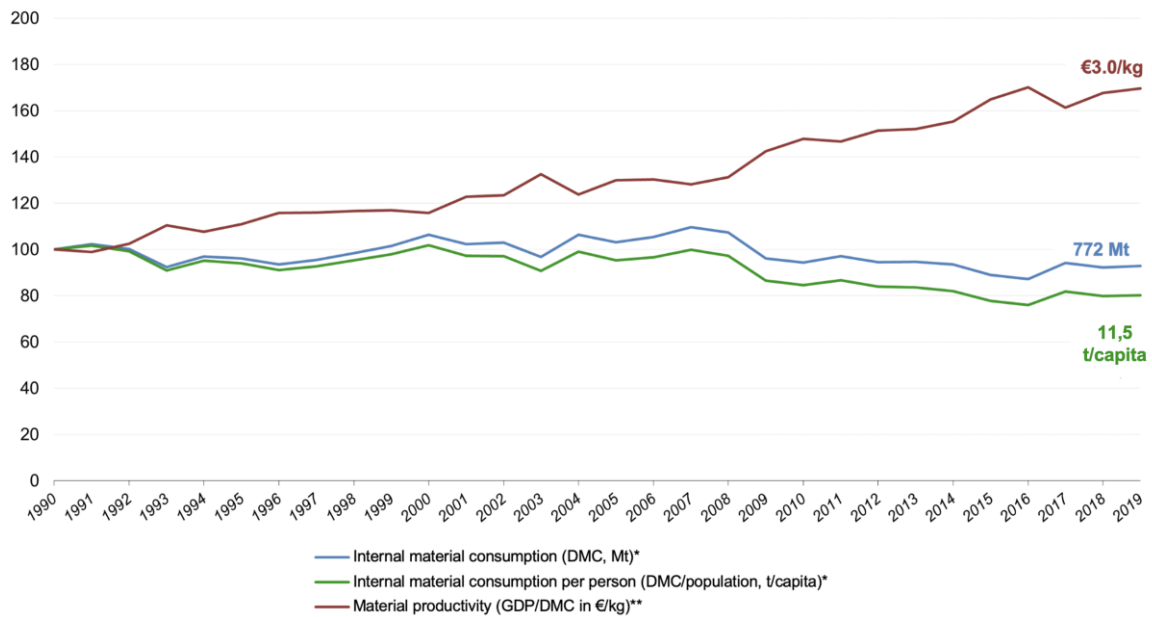
### BETTER PRODUCTIVITY OF MATERIALS

The trend in material productivity, i.e. the ratio of GDP to DMC, measures the transition towards more resource-efficient practices. France aimed to increase material productivity by 30% between 2010 and 2030, which means producing more value with less primary raw materials.

In 2019, productivity reached €3 per kilo (€/kg) which was an increase of 14% on 2010, and almost 30% compared to 2007 (€2.3/kg). European productivity was €2.4/kg in 2019 (1.6 in 2007) – (Figure 3).

## Fact Sheet: Material Consumption and Footprint

**Figure 3: Trend in materials consumption and productivity in the French economy**  
Base index value 100 in 1990



\*apparent domestic consumption of material aggregates, in tonnes, fossil fuels, mineral and agricultural products extracted from the country (metropolitan France and overseas departments) or imported in the form of raw materials or finished products less exports. \*\*volume, chain-linked prices, base 2014.

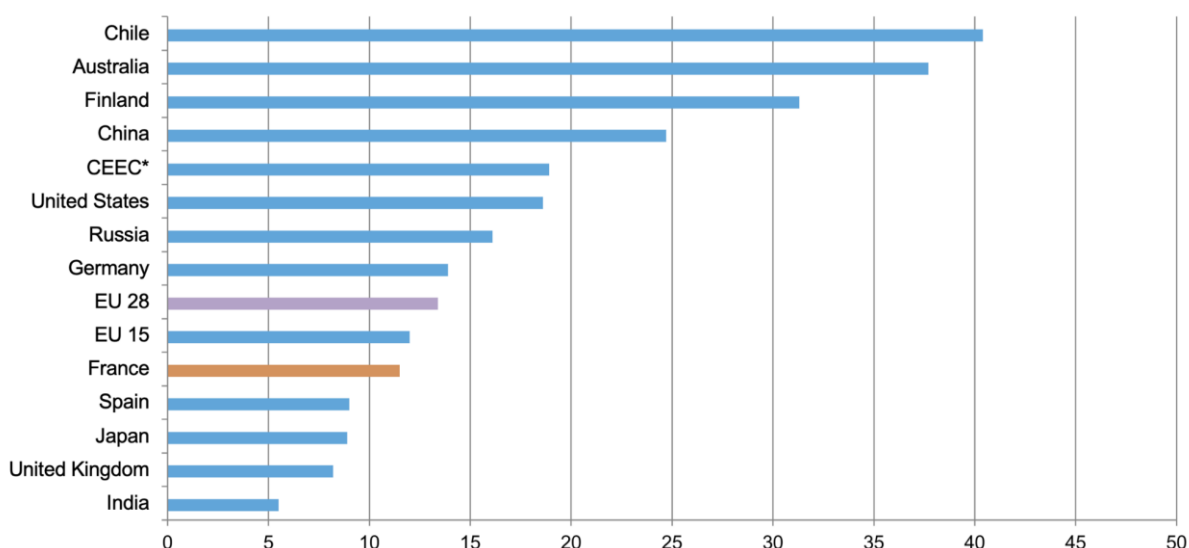
Sources: Agreste/SSP; French Customs; INSEE. Treatment: SDES, 2021

### CONSUMPTION OF MATERIALS VARIES FROM COUNTRY TO COUNTRY

A population's needs depend on demographic, economic and technical factors. A country's characteristics, such as their history, population density and natural resources, influence their consumption of materials.

In 2019, the EU's domestic material consumption was 13.4 tonnes per capita (t/capita). Nearly 12 t/capita in the EU at 15 countries in recent years, it rose sharply in Central and Eastern Europe (CEECs) to 18.9 t/capita. In 2019, at Member State level, it was the lowest in Italy, Spain and the United Kingdom (between 8 and 9 t/capita) and the highest in Finland (32 t/capita). Outside the EU, Chile (40 t/capita) and Australia (38 t/capita) have the highest per capita material consumption, followed by China (25 t/capita) and the United States (19 t/capita). Japan and India, on the other hand, have low material consumption (Figure 4).

**Figure 4: International comparison of material consumption per capita in 2019**  
In tonnes per capita



\*CEEC: Central and Eastern European countries.  
Sources: Eurostat; OECD; SDES, 2021

#### A MORE INCLUSIVE MATERIAL FOOTPRINT FOR MEASURING FLOWS

The material footprint is a more comprehensive indicator than the domestic consumption of materials to measure France's domestic demand on material flows. Apart from flows extracted from French land and direct imports, the material footprint also includes materials sourced outside the country to produce and transport all imported products, such as consumption of fuels and minerals. Taking into account indirect material flows increases the measure of materials used by a country.

France's material footprint was estimated at 13.7 t/capita in 2019, compared to domestic material consumption evaluated at 11.5 t/capita. The material footprint is generally higher than domestic material consumption for countries that import more raw materials than they export such as the European Union, the United States and Japan. The opposite is the case for countries with high exports such as Chile, Australia, Russia and China.

#### FOR MORE INFORMATION

- [L'utilisation des ressources naturelles - Notre-environnement](#)
- [Indicateurs clés pour le suivi de l'économie circulaire – Édition 2021, SDES, Datalab, April 2021, 44 pp.](#)
- [L'empreinte matières, un indicateur révélant notre consommation réelle de matières premières, SDES, Datalab Essentiel, April 2018, 4 pp.](#)
- [Rapport sur l'état de l'environnement en France – Focus « Ressources naturelles, CGDD, May 2020, 241 pp.](#)
- [Domestic Material Consumption in EU countries, SDES, Datalab Essentiel, 2022, 4 pp. \(forthcoming\)](#)