

The Material Footprint of Global Consumption

ABOUT THIS GRAPHIC

This graphic applies the visualization methods created by TRUTHstudio (www.truthstudio.com) for Economy Map (www.economymap.org), in order to visualize data developed by CREEA (www.creea.eu), a project of the European Union's 7th Framework Programme for Research and Technological Development (FP7), using EXIOBASE 2.1 (www.exiobase.eu).

In general, Economy Map offers a consistent method for visualizing how economic demand from the consumption of goods and services (on the right) drives environmental impacts in the supply chains (on the left) that respond to this economic demand. The direct impacts of each sector are connected, in grey, to a bar representing the economy's total impacts.

In this case, CREEA used EXIOBASE data to show how global demand for goods and services drives global materials extraction: the 'material footprint' of consumption. A version of this graphic was published in CREEA's *The Global Resource Footprint of Nations*.

HOW TO INTERPRET THE GRAPHIC

Each of the dark orange blocks represents one industry sector in the global economy. For each sector, the total height of the block represents the proportion of total, economy-wide extraction or impacts that are caused, directly or indirectly, by the sector's activities.

The shape of each block shows, on the left, what proportion of the extraction or impacts caused by the sector's activities occur upstream or on site and, on the right, what proportion occur in response to industry demand or final consumption demand (see example).

The flow lines show how the economic demand pulls material through the economy, driving extraction. On the far left, all of the sectors' direct extraction or impacts are collected and ranked to show which sectors are most directly responsible. On the far right, all of the final consumption demand is collected and ranked to show the proportion of total extraction or impacts that occurs in response to consumption demand for the output of each sector in the economy.

SECTORS ORGANIZED BY SUPPLY CHAIN

In this layout, individual sectors have been manually organized into supply chain groups (each surrounded by a dotted line). A supply chain is understood as a group of sectors that tend to have more economic transactions with each other than with other sectors in the economy, as a whole.

For each supply chain, the extraction that occur as a direct result of the activities of all sectors in the supply chain is indicated as a percentage of economy-wide total extraction.

For example, the group of sectors that generally make up the Construction & Materials supply chain (Sand and Clay, Wood, Stone, Construction, etc.) are collectively estimated to cause ±46% of total extraction as a result of their activities. The group of sectors that generally make up the Food & Agriculture supply chain (Crops, Cereal grains, Cattle, Food products, etc.) are collectively estimated to cause ±26% of total extraction as a result of their activities.

MAKING SENSE OF FINAL CONSUMPTION

The large orange block at the right of the graphic represents the total final consumption demand in the economy: the total economic demand for goods and services from households, government, and exports. All of the extraction or impacts that occur in the economy occur in response, ultimately, to this economic demand, and the height of the bar is equal to the total domestic extraction that occurs in the economy as a result: the 'footprint' of the economy.

The thickness of each of the flow lines connecting final demand to a sector in the economy represents the proportion of total domestic extraction that occurs in response to final demand for the output of that sector.

For example, consumption demand for Construction is estimated to be the largest driver, by far, of domestic material extraction, followed by consumption demand for Food products. Intermediate flow lines show how this demand filters up through the economy.

EXAMPLE: Raw Milk

Where do impacts occur?

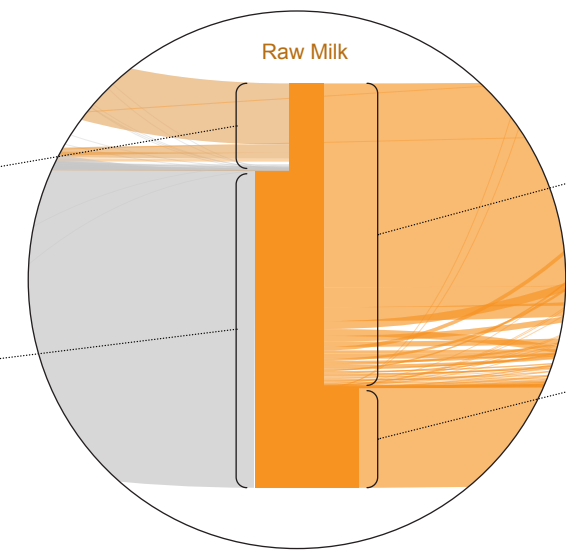
The left side of each sector block shows where in the economy the extraction or impacts occur as a result of the sector's activities.

Upstream Impacts

The portion total domestic extraction or impacts that occur, somewhere upstream, as a result of this sector's economic demand for the output of other sectors, such as the Cattle or Cereal grains sectors.

Direct Impacts

The portion total domestic extraction or impacts that occur on site, as a direct result of this sector's activities, such as the use of land for livestock.



Where does demand come from?

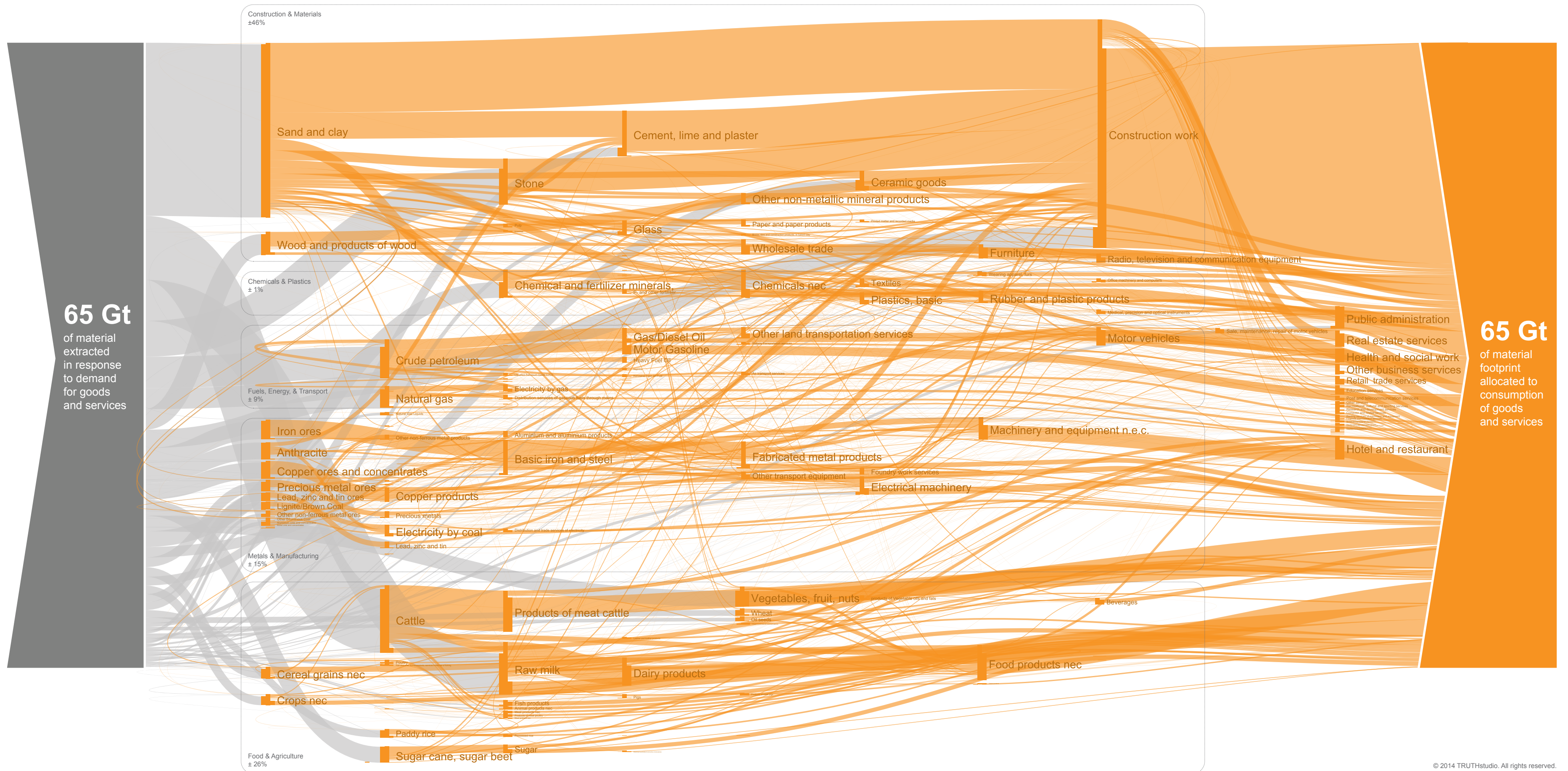
The right side of each sector block shows where demand for the sector's output comes from.

Downstream Impacts

The portion of this sectors total (combined upstream and direct) domestic extraction that occurs in response to economic demand for its output from other industry sectors, such as the Dairy products or Food products sectors.

Consumption Impacts

The portion of this sectors total (combined upstream and direct) domestic extraction that occurs in response to final economic demand for its output from households, government, or foreign countries.



65 Gt
of material
extracted
in response
to demand
for goods
and services

65 Gt
of material
footprint
allocated to
consumption
of goods
and services