Population grew by 35% and GDP multiplied more than threefold.

Domestic extraction, domestic material consumption and material footprint slightly increased (slower than G20 average).

In 2015, domestic extraction, domestic material consumption and material footprint were all at 10 tonnes per capita (below G20 average of 15 tonnes per capita for all three indicators).

There was relative decoupling of domestic extraction, domestic material consumption, material footprint and all environmental impacts from GDP. Outdoor particulate matter health impacts related to resource extraction and processing more than doubled and showed the lowest degree of decoupling.
Non-metallic minerals and biomass resources represented one third each of domestic extraction amounts and material footprint.

The extraction and processing of natural resources accounted for more than 50% of Mexico’s total climate change impacts from both a production and a consumption perspective (similar to G20 average).

From a production perspective, about half of outdoor particulate matter related health impacts are caused by resource extraction and processing. This was higher than the G20 average.

Both from a production and consumption perspectives, households contributed to about 30% of particulate matter related health impacts.

In line with other G20 countries, Mexico’s water stress and land use-related biodiversity impacts were caused mainly by biomass production.

The material sector contributed to approximately 30% of value added, slightly higher than the G20 average.

One third of the workforce in Mexico was employed in the resource extraction and processing sectors (most of them in agriculture).

**Glossary**

Consumption perspective: The consumption perspective allocates the use of natural resources or the related impacts throughout the supply chain to the region where these resources, incorporated in various commodities, are finally consumed by industries, governments and households.

Decoupling: Decoupling is when resource use or some environmental pressure either grows at a slower rate than the economic activity that is causing it (relative decoupling) or declines while the economic activity continues to grow (absolute decoupling).

Domestic extraction (DE): Direct, gross physical extraction of materials within a country’s territory (production perspective).

Domestic material consumption (DMC): Amount of materials directly used by an economy (DMC = DE + Material Imports – Material Exports).

Material resources: - metals, - non-metallic minerals, - biomass, - fossils.

*Remaining economy refers to activities other than resource extraction and processing (e.g. manufacturing of finished products, construction).

Source: IRP database, Exiobase v3.4, Cabernard et al. 2019
Material-related climate change impacts were mainly caused by petroleum extraction and refining, cattle farming and cement manufacturing.

Material related climate change impacts remained below the G20 average (-20%) from both the production and consumption perspectives.

Most materials with large climate change impacts (petroleum products, beef and other food) are directly consumed by households.

Construction is the major industrial end-use sector of climate-intensive materials (16% of total material-related impacts), followed by manufacture of motor vehicles (6%) and furniture production (4%).

Mexico has many water-scarce regions. Water stress impacts were comparable to the G20 average from a production perspective and lower than this average from a consumption perspective.

Water stress was caused mainly by the production of cereal grains (mainly corn), wheat, vegetables, fruits, nuts, and sugar cane. Water stress was lower from a consumption perspective than from a production perspective. This was due to exports of vegetables, fruits, nuts and wheat.

Land use related biodiversity loss was more than three and two times higher than the G20 average in the production and consumption perspectives, respectively. Biodiversity loss was mainly caused by forestry, beef and dairy production and reflects rich megadiverse status of Mexico.
THE ENVIRONMENTAL EFFECTS OF TRADE

Figure 7: Per-capita consumption footprints (above) and net traded impacts (below) in Mexico (1995-2015)*

Mexico is a net exporter of fossils and metals and an importer of non-metallic minerals and biomass. Traded amounts are low in comparison to overall material consumption.

Climate change impacts related to traded materials were low in comparison to overall consumption impacts.

Only trade of metals created net value added within Mexico. For fossils and biomass, cheap resources were exported (e.g. crude oil) while more expensive ones were imported (e.g. refined oil and chemicals).

FUTURE TRENDS AND POTENTIAL DECOUPLING

Scenarios developed by the IRP forecast a more than threefold increase of GDP and a population growth of between +9% and +25% until 2060.

If ambitious resource efficiency policies are introduced, Mexico could achieve an absolute decoupling of domestic material extraction and domestic material consumption from GDP by 2060. Overall, domestic extraction and domestic material consumption are projected to increase until 2060 by ~20% and ~25%, respectively, in the resource efficiency scenario.

Mexico harbors valuable ecosystems at high risk of biodiversity loss. Policies to protect biodiversity and regulate agriculture and forestry are critical.

An increase in water use efficiency for agricultural production could reduce water scarcity impacts.

Mexico suffers from particulate matter pollution caused by metal processing (iron and steel production), cement production and resource use (e.g. traffic from households). Installing air abatement technologies and improving transportation are essential steps to decrease pollution.

Circular economy solutions, including proper waste management and increased material recycling rates would also be beneficial.

A large build-up of infrastructure is anticipated in the next decades. This will result in enhanced resource demands and environmental impacts. Material efficient urban design is therefore critical.

*Data after 2011 was nowcasted.
*Consumption: Impacts throughout the supply chain from goods imported and consumed in Mexico.
*Net traded impacts: Difference between material-related impacts from a production and consumption perspective.
Source: IRP database, Exiobase v3.4, Cabernard et al. 2019

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