

SDG trade-related spillover effects and EU regulation on timber: assessing imported deforestation patterns

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Deforestation and forest degradation

Deforestation and forest degradation are driven by many different factors, including (FAO, 2020):

- growing population (food and feed global demand)
- bio-energy
- timber and timber-related commodities

Among these major drivers, several studies recognize a prominent role to the **international trade** of timber and timber-related commodities.

In particular, illegally harvested and traded commodities are estimated to represent almost half of world timber-related trade (Bösch, 2021; Tacconi, Rodrigues, and Maryudi, 2019).

The SDGs Framework

Among this framework, **SDG 15 Life on Land** aims to “protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss”.

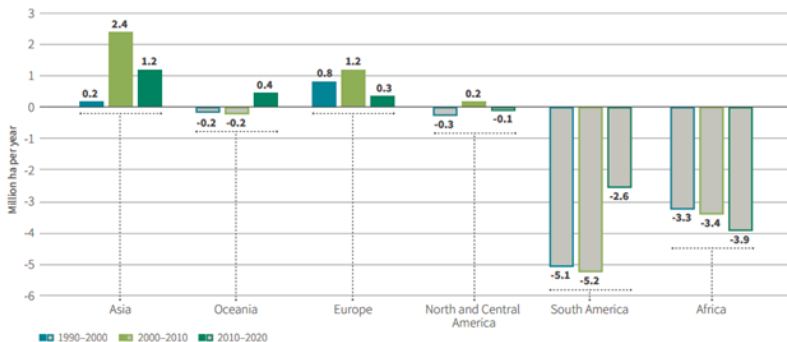
As far as **forests** are concerned,

- **target 15.1** includes forests among the terrestrial ecosystems whose conservation, restoration and sustainable use have to be ensured by 2020
- **target 15.2** is committed to promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally by 2020

Deforestation at glance

An estimated 420 million ha of forest has been lost worldwide through deforestation since 1990, but the rate of forest loss has declined substantially (FAO, 2020).

Annual forest area net change, by decade and region, 1990–2020



SDGs Spillover effects

Each country's actions can have positive or negative effects on other countries' abilities to achieve the SDGs. According to Sachs et al., 2023, we can recognize:

- environmental and social impacts embodied into trade. Among others:
 - **Imported deforestation**
 - GHG emissions embodied in imports
 - Scarce water consumption embodied in imports
 - Fatal-work related accidents embodied in imports
- spillovers related to economic and financial flows;
- multilateralism, peacekeeping and security spillovers.

Negative spillovers can delay or even prevent the achievement of the SDGs by reducing the impact of domestic investments, especially in resource-limited contexts (e.g. LMICs and Emerging Economies)

The role of global trade

In an increasingly interconnected world - characterized by long, complex and often cross-border supply chains - it becomes essential to measure **the externalities generated by countries' consumption levels** in other economies.

The **environmental stress** caused and transmitted through trade systems is significant: **more than half of the total deforestation** caused by Germany, India, Turkey, France, Italy, China, South Korea, the United Kingdom, and Japan is generated outside of the borders of these countries (Ishii et al., 2024).

- **Imported deforestation** (m^2/capita): Deforestation abroad caused by goods imported for final consumption locally (Sachs et al., 2023).

Regulation (EU) 2023/1115

EU rules to guarantee that the products EU citizens consume do not contribute to deforestation or forest degradation worldwide.

By promoting the consumption of **deforestation-free products** and reducing the EU's impact on global deforestation and forest degradation, the new [Regulation \(EU\) 2023/1115 on deforestation-free products](#) is expected to bring down greenhouse gas emissions and biodiversity loss.

This commitment builds on the **EU Forest Law Enforcement Governance and Trade (FLEGT) Action Plan** and was confirmed by the European Green Deal.

As a major economy and consumer of these commodities linked to deforestation and forest degradation, the EU is partly responsible for this problem and it wants to lead the way to solving it.

Directorate-General for Environment (European Commission)

Despite a growing literature on socio-economic spillovers – such as child labour (Gómez-Paredes et al., 2016) and occupational health (Malik, Lafortune, Carter, et al., 2021; Malik, Lafortune, Mora, et al., 2024) – the environmental dimension remains overlooked.

Assessing SDGs environmental spillover

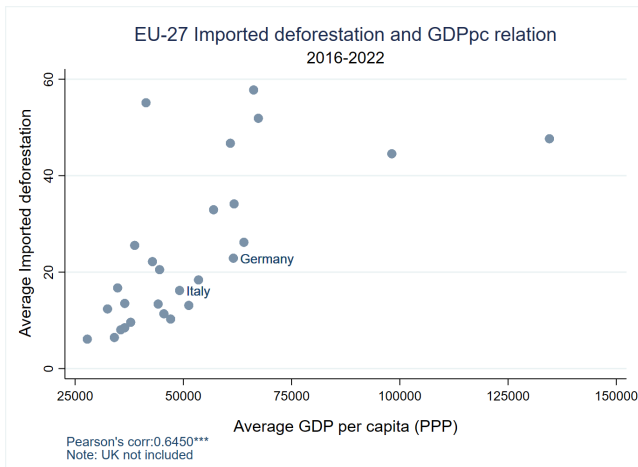
We undertake a comprehensive assessment of the **imported deforestation** embodied in the goods that are ultimately consumed by European countries, particularly focusing on **timber and timber-related commodities**.

Twofold aim:

- providing a systematic exploration of the EU-consumption impact
- identifying entry points to improve policy-related tools and facilitate coherence between national and international policies

Of course, GDPpc matters

High-income countries tend to produce larger negative spillovers since their higher levels of consumption have not been sufficiently decoupled from environmental and socio-economic impacts (Ishii et al., 2024).



Overview of EU member states

The EU-27 imports contributed to an **average imported deforestation rate of 23.36 m²/capita** in 2022, roughly corresponding to a surface of 8,313 km².

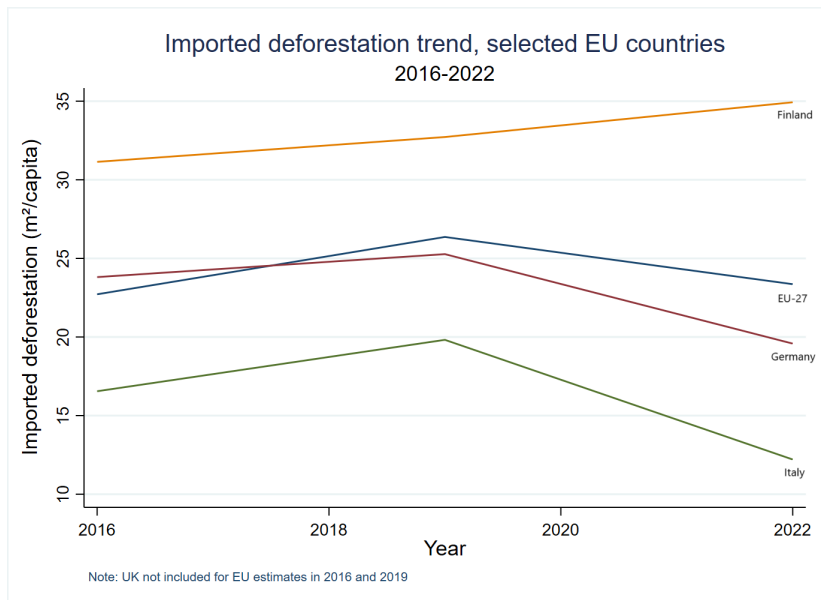
- China: 6.33 m²/capita in 2022, corresponding to 8,939 km²

After a remarkable increase of the imported deforestation rate between 2016 and 2019, today the EU is on its path to reduce such spillover (overall variation= - **2.84%**)

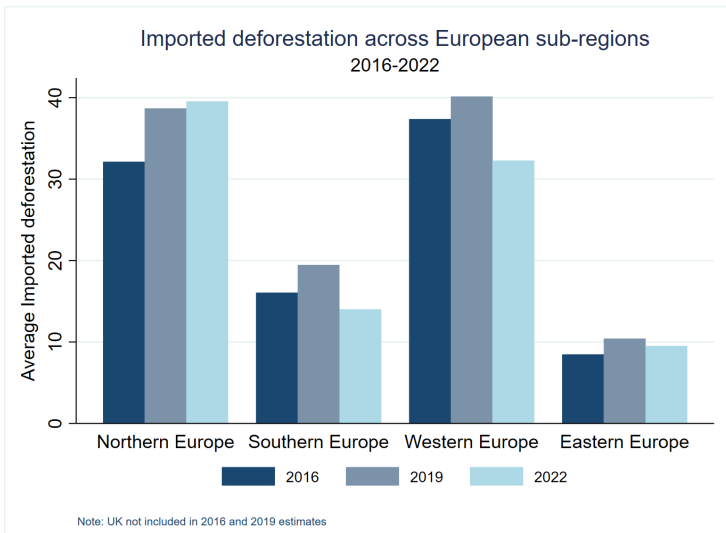
However, **heterogeneous trends** are reported across European countries.

GHG emissions

Imported deforestation trend



Imported deforestation across European sub-regions



sub-regions

Top 10 sectors of origin for EU deforestation spillovers

According to the Global Commons Stewardship Index 2024 the sectors of origin where the negative impact (i.e. deforestation) is caused are:

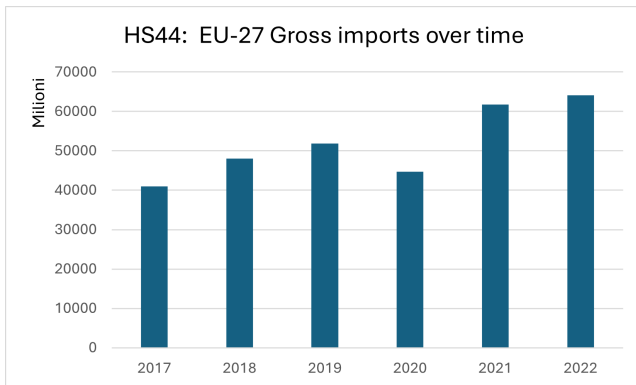
- **Forestry and Logging (61%)**
- Fruits and Nuts (10%)
- Leguminous Crops and Oil Seeds (9%)
- Maize (5%)
- Cattle (4%)
- Beverage Crops (4%)
- Other Crops (3%)
- Vegetables, Roots, Tubers (1%)
- Cereals (1%)
- Fiber Crops (1%)

Among the products imported for final consumption:

- Fruits and Nuts (7%)
- (...)
- **Forestry and Logging (5%)**

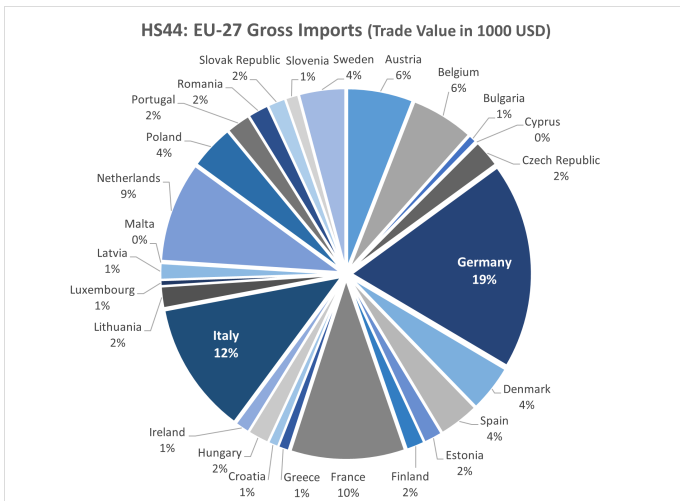
Forestry and Logging imports by the European market

We refer to the HS44 (2-digits) category - i.e. Wood and articles of wood - to roughly measure the trade flow in the selected production sector.
EU-27 gross imports in 2022 corresponds to 64,073.33 (milionsUSD).



Data gathered from the UN COMTRADE database.

HS44 gross imports: shares



Data gathered from the UN COMTRADE database.

Top-10 extra-EU countries of origin for Italy and Germany

Among the major extra-EU countries of origin, up to 50% are countries belonging to the Global South. Three of them are implementing or negotiating a **Voluntary Partnership Agreement (VPA)** with the EU under the FLEGT.

Italy		Germany	
Country	Trade Value ^(*)	Country	Trade Value ^(*)
China	302738,8	China	1034791,3
Brazil	170162,9	Russian Federation	365542,3
Ukraine	130604,7	Ukraine	272358,9
United States	124707,9	Switzerland	245247,6
Switzerland	96716,2	Indonesia	148958,2
Bosnia-Herzegovina	80878,9	Norway	113259,7
Russian Federation	65203,1	Brazil	111073,6
Turkey	64527,1	United States	109050,9
Gabon	62664,7	Bosnia-Herzegovina	84643,6
Cameroon	60664,4	Belarus	82530,5

(*) In 1000USD, 2022 value.

Preliminary reflections and unanswered questions (yet)

- **Despite an increasing number of countries adopting forest regulation measures**, forestry and logging remains the primary production sector connected with environmental spillovers (**national governance**).

Considering timber and timber-related commodities trade, where are the greatest impacts (=imported deforestation) of European consumption recorded? Which regulations are adopted?

- The world currently does not have a **global governance mechanism** to coherently address spillover impacts associated with **unsustainable global supply chains**.

With the EU being one of the largest importing markets, can EU forest policy achieve effective results in reducing spillover impacts on forests globally?

Next steps

- First, analyze where European - and in particular, Italian - consumption causes negative spillovers through the import of goods and scrutinize the forest regulations adopted.
 - Global Resource Input Output Assessment (GLORIA) - MRIO data
- Second, use the current data as baseline to provide scenario analysis on the effect generated by the implementation of the Regulation (EU) 2023/1115 on deforestation-free products.



Thank you for your attention!

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Table: List of European countries by sub-region.

EU sub-regions			
Northern	Southern	Western	Eastern
Denmark	Cyprus	Austria	Bulgaria
Estonia	Greece	Belgium	Croatia
Finland	Italy	France	Czechia
Ireland	Malta	Germany	Hungary
Latvia	Portugal	Luxembourg	Poland
Lithuania	Spain	Netherlands	Romania
Sweden			Slovakia
			Slovenia

