

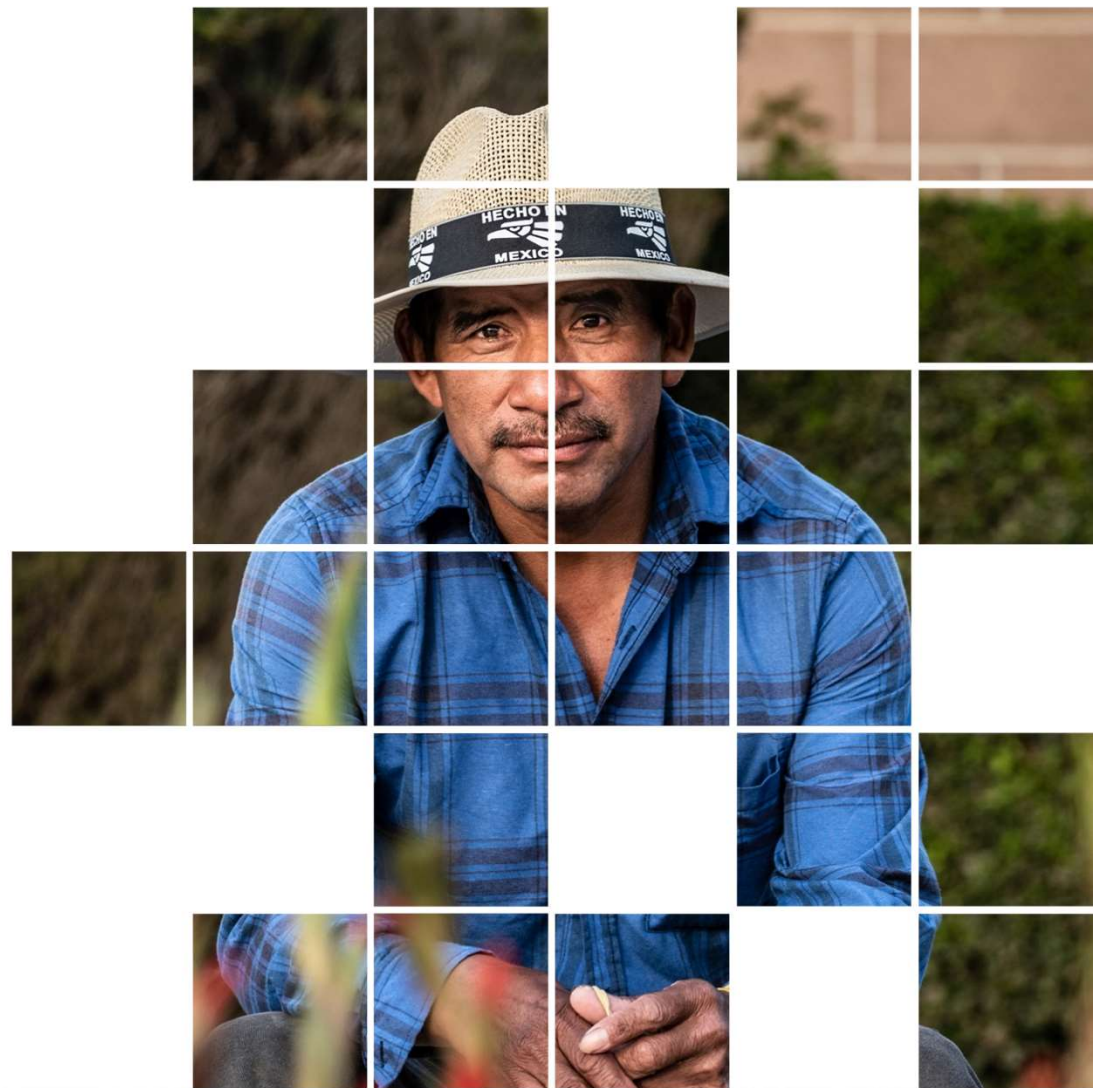
G20

DATA GAPS INITIATIVE 3

Recommendation 1: Greenhouse Gas (GHG) Emissions and Carbon Footprints

G20 DGI-3 GLOBAL CONFERENCE: JUNE 13, 2023 – SESSION II

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Content

- Vision
- Policy context
- Illustrative examples

Vision

global data sets of ...

- National accounts (supply and use tables)
- Trade
- Greenhous gas emissions accounts



...feeding into...

- global model

... governed by international organizations,

... fit for policy making at global, regional and national levels.

Policy Context

Climate change = global

Emissions of greenhouse gases = mitigation

Perspectives (taking into account: globalized economic transactions):

- Production (actual emitters)



Data to inform policy making

- Consumption (beneficiaries)

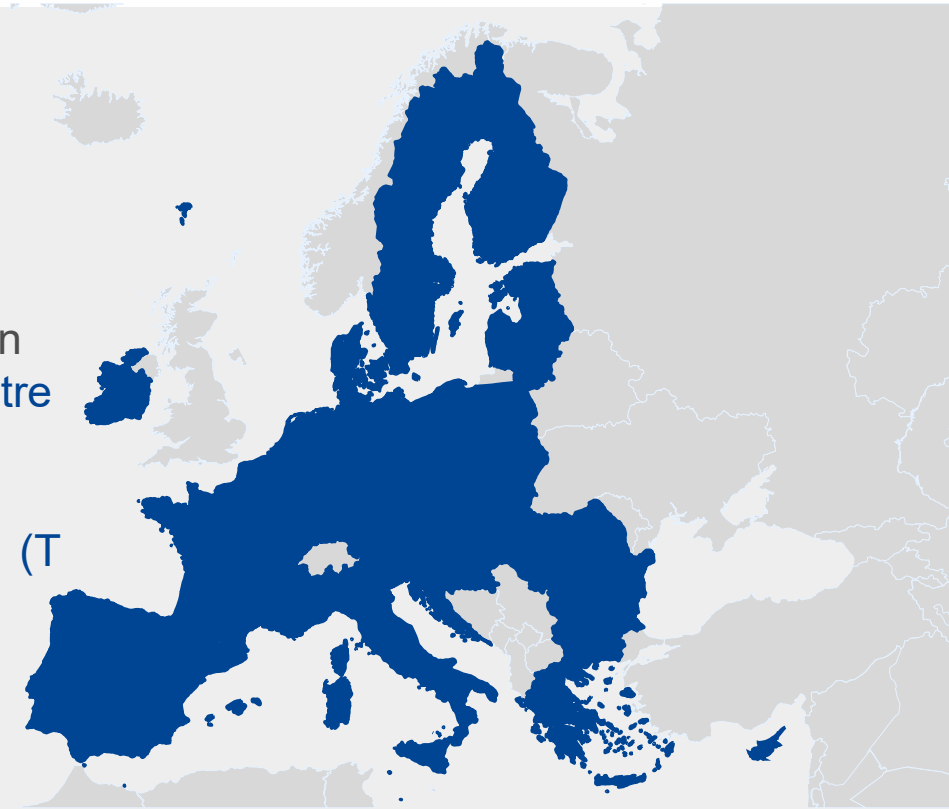


Examples

Derived from European project FIGARO

FIGARO – (1/3)

- FIGARO - 'Full International and Global Accounts for Research in input-Output analysis'
- EU Inter-Country Supply, Use and Input-Output Tables
- Long-term collaboration between European Commission Directorates General: Eurostat and Joint Research Centre
- Since 2021, produced by Eurostat as official statistics: benchmarked to the latest macroeconomic aggregates (T + 24 months)
- Years 2010-2020



<https://ec.europa.eu/eurostat/web/esa-supply-use-input-tables/figaro>

FIGARO – (2/3)



27 EU Member States
+ NO, CH

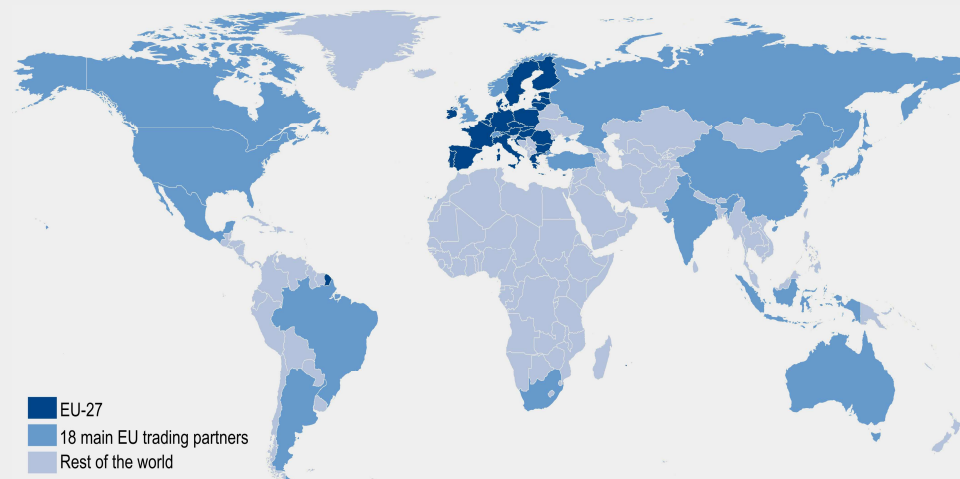


16 main
trading partners

Rest of the world
(ROW)



FIGARO COVERAGE (45 COUNTRIES + ROW)



Argentina, Brazil, Mexico covered explicitly

NACE Rev. 2 A*21 → A*64



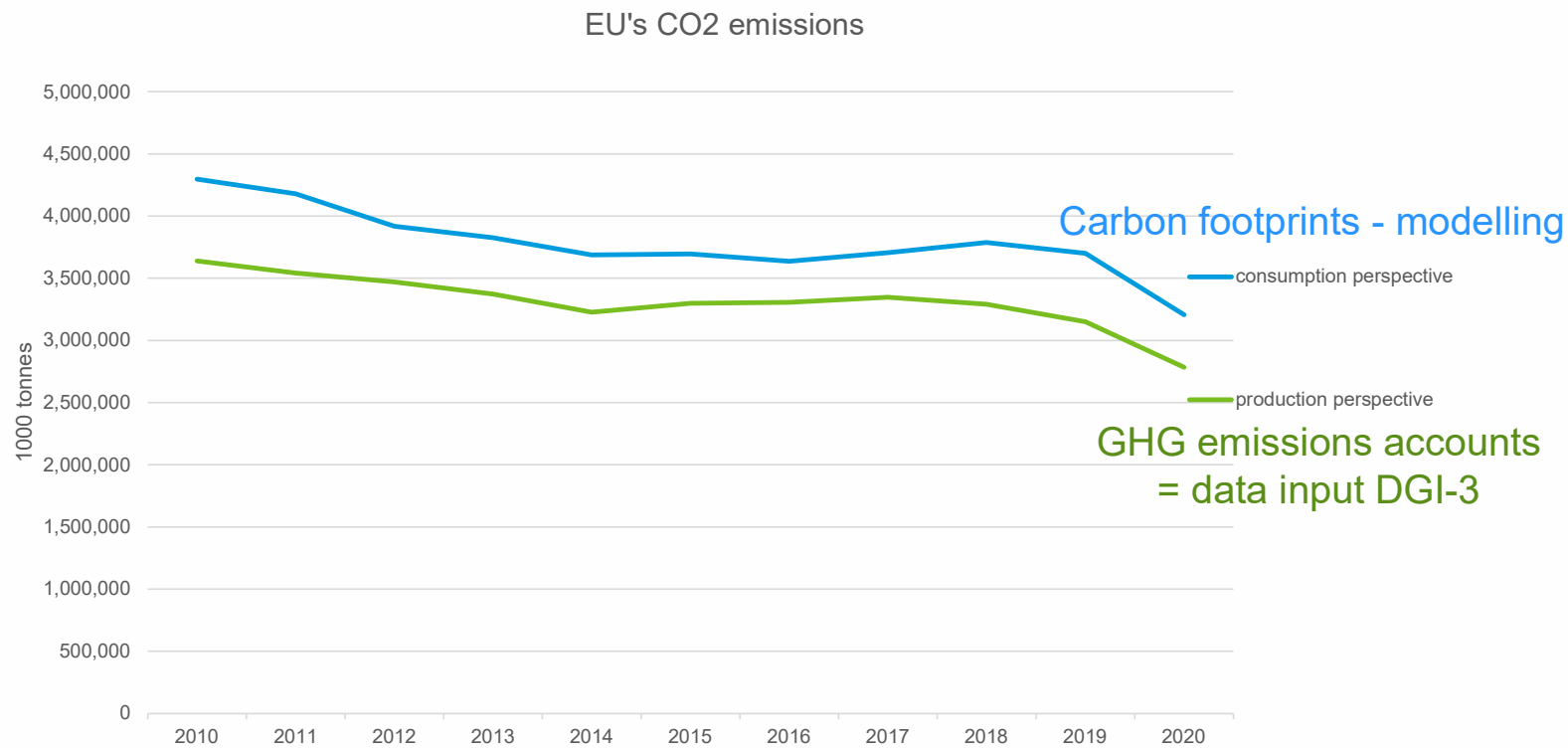
<https://ec.europa.eu/eurostat/web/esa-supply-use-input-tables/figaro>

FIGARO – (3/3)

FIGARO applications

- Employment and value added supported by EU exports
 - Years 2010-2020
 - NACE Rev.2: A*21 → A*64
 - Trade in services among non-EU countries
- Update of CO₂ footprints from final consumption expenditure in Q4 2022

Application: EU's CO2 Emissions



EU versus the Rest of the World

2020 [Gt]	serving EU's consumption	serving consumption in the non-EU rest of the world	Total produced
produced in EU	2.3 7%	0.5 2%	2.8 8%
produced in the non-EU rest of the world	0.9 3%	30.7 89%	31.7 92%
Total consumed	3.2 9%	31.2 91%	34.4 100%

EU's Consumption-Based Emissions by Origin

CO2 emissions serving EU's consumption by origin

	2010		2015		2019		2020	
	Gt	%	Gt	%	Gt	%	Gt	%
European Union	3.057	71%	2.672	72%	2.556	69%	2.258	70%
Argentina	0.006	0%	0.003	0%	0.004	0%	0.004	0%
Australia	0.008	0%	0.006	0%	0.008	0%	0.007	0%
Brazil	0.012	0%	0.012	0%	0.011	0%	0.010	0%
Canada	0.021	0%	0.017	0%	0.026	1%	0.026	1%
Switzerland	0.006	0%	0.004	0%	0.005	0%	0.004	0%
China	0.300	7%	0.251	7%	0.253	7%	0.211	7%
United Kingdom	0.033	1%	0.024	1%	0.025	1%	0.020	1%
Indonesia	0.012	0%	0.009	0%	0.010	0%	0.008	0%
India	0.041	1%	0.039	1%	0.049	1%	0.037	1%
Japan	0.022	1%	0.017	0%	0.017	0%	0.014	0%
South Korea	0.024	1%	0.018	1%	0.019	1%	0.017	1%
Mexico	0.010	0%	0.011	0%	0.013	0%	0.012	0%
Norway	0.013	0%	0.013	0%	0.012	0%	0.010	0%
Russia	0.181	4%	0.153	4%	0.163	4%	0.112	4%
Saudi Arabia	0.016	0%	0.021	1%	0.015	0%	0.011	0%
Turkey	0.021	0%	0.023	1%	0.033	1%	0.038	1%
United States of America	0.092	2%	0.075	2%	0.084	2%	0.070	2%
South Africa	0.029	1%	0.019	1%	0.024	1%	0.019	1%
Rest of the World (non-G20 & no	0.395	9%	0.307	8%	0.375	10%	0.319	10%
Total	4.298	100%	3.694	100%	3.700	100%	3.207	100%

EU's Production-Based Emissions by Destination

EU's CO2 emissions serving consumption by destination								
	2010		2015		2019		2020	
	Gt	%	Gt	%	Gt	%	Gt	%
European Union	3.057	84%	2.672	81%	2.556	81%	2.258	81%
Argentina	0.004	0%	0.004	0%	0.003	0%	0.003	0%
Australia	0.012	0%	0.011	0%	0.010	0%	0.009	0%
Brazil	0.018	1%	0.017	1%	0.016	1%	0.011	0%
Canada	0.013	0%	0.014	0%	0.014	0%	0.012	0%
Switzerland	0.028	1%	0.026	1%	0.024	1%	0.024	1%
China	0.054	1%	0.078	2%	0.085	3%	0.084	3%
United Kingdom	0.049	1%	0.036	1%	0.033	1%	0.024	1%
Indonesia	0.006	0%	0.006	0%	0.006	0%	0.005	0%
India	0.020	1%	0.019	1%	0.020	1%	0.016	1%
Japan	0.024	1%	0.023	1%	0.022	1%	0.019	1%
South Korea	0.012	0%	0.013	0%	0.013	0%	0.009	0%
Mexico	0.010	0%	0.012	0%	0.011	0%	0.009	0%
Norway	0.012	0%	0.009	0%	0.011	0%	0.009	0%
Russia	0.032	1%	0.022	1%	0.022	1%	0.019	1%
Saudi Arabia	0.012	0%	0.018	1%	0.013	0%	0.010	0%
Turkey	0.024	1%	0.024	1%	0.018	1%	0.013	0%
United States of America	0.099	3%	0.118	4%	0.109	3%	0.092	3%
South Africa	0.007	0%	0.006	0%	0.006	0%	0.004	0%
Rest of the World (non-G20 & no	0.146	4%	0.168	5%	0.160	5%	0.154	6%
Total	3.641	100%	3.297	100%	3.151	100%	2.783	100%

Summary

EU's consumption-based CO2 emissions are bigger than production-based

EU's carbon footprint in the world ...

- has been decreasing from 4.3 (2010) to 3.2 (2020) billion tonnes
- shares in global CO2 emissions decreased from 13% to 9%

EU's 'self-sufficiency' rather stable (ca. 70%)

Important 'trading partners':

- Rest of the World and China: asymmetry is getting less
- Russia: asymmetry stable US: stable balance

Data Requirements (DGI-3)

- Supply and use tables
- Trade
- CO2-emissions accounts

Inter country input-output table (IC IO)
representing the global economy



Thank you

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