TraBio Statistical Tool – Training material

March 2025

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Introduction to the TraBio statistical tool

Important links

UNCTAD BioTrade Initiative: https://unctad.org/topic/trade-and-environment/biotrade

Video introduction: https://youtu.be/wOinsXRzkjI

TraBio statistical tool provides information on trade in biodiversity-based products since 2010 for more than 185 economies for over 1'800 biodiversity-based products.

This tool has been developed by UNCTAD under the Global BioTrade Programme "Linking Trade, Biodiversity and Sustainable Development", funded by the Swiss State Secretariat for Economic Affairs SECO.

TraBio is based on 3 pillars:

- A selection and **classification of over 1'800 products of biodiversity** from the WCO Harmonized Commodity Description and Coding System (called "HS").
- Free access data on trade flows and market indicators on biodiversity-based products (as included in the classification), available on **UNCTAD Data Centre**
- **Data visualization tool** to facilitate analysis

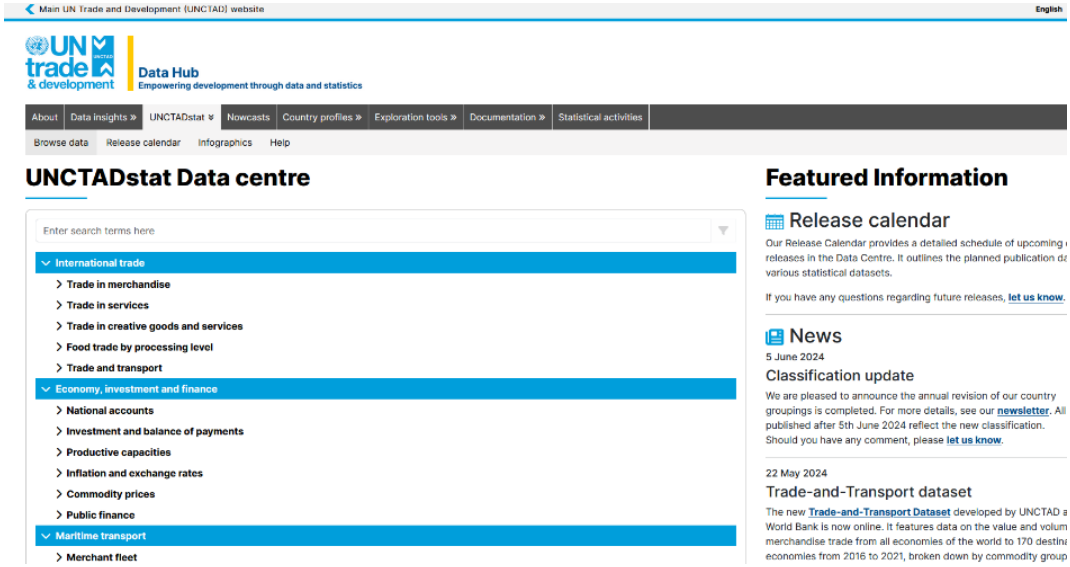
UNCTAD baseline data on trade in biodiversity-based products

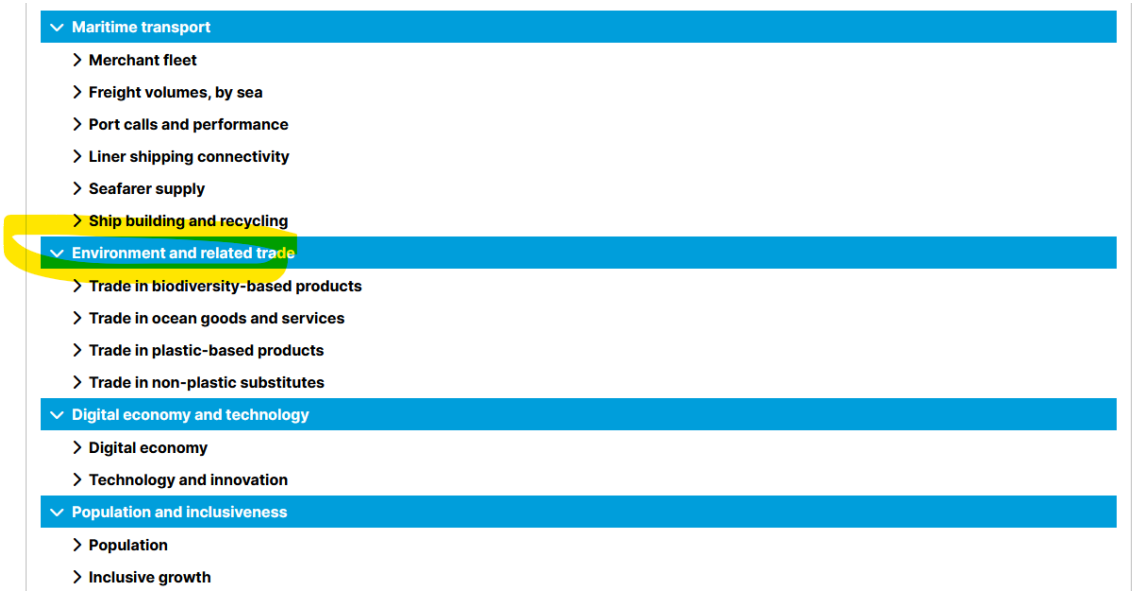
Important links

Data Centre: https://unctadstat.unctad.org/datacentre/

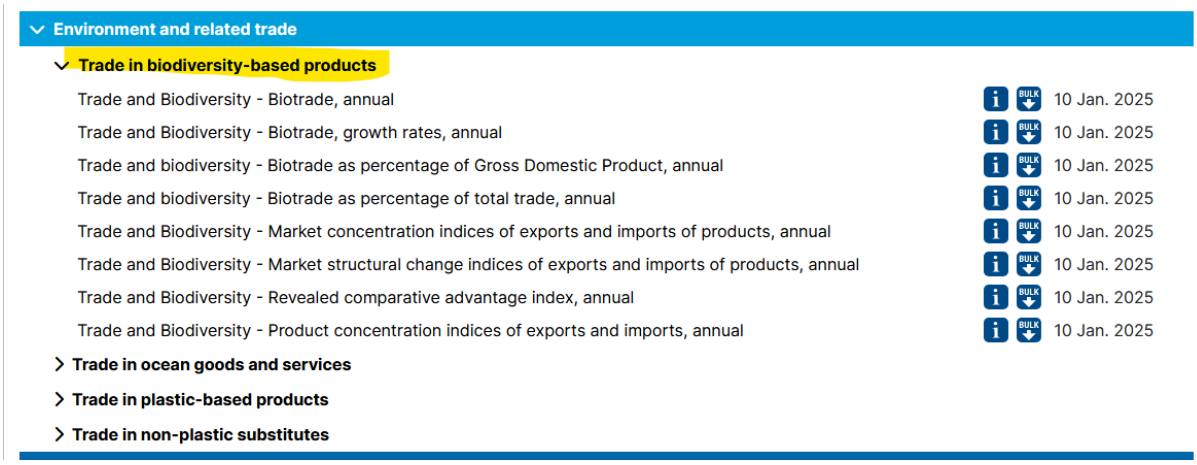
Video tutorial: https://youtu.be/oabjFrmwHgU

UNCTAD Statistics Data Centre has a section dedicated to statistics related to environment-related trade.





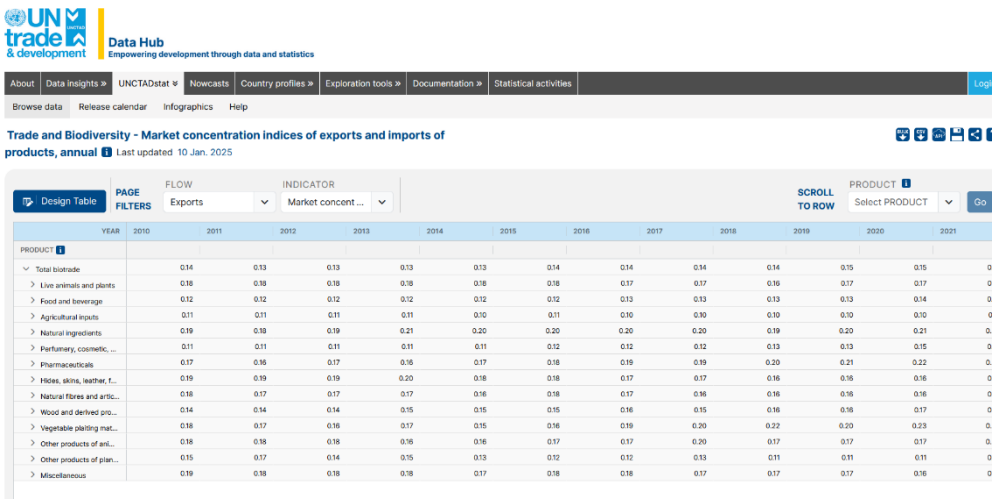
Among environment and related trade, a section is dedicated to trade and biodiversity-based data



The last update is quite recent, but a new data update will be release in May 2025 to cover major data gaps for 2023.

A group of **8 indicators** are available:

- The main one (first) is dedicated to international trade, namely import and export of biodiversity-based products. The trade is measured in **value**. Volume data are not included in consideration of the low quality and availability of data from customs transactions, which are used to build this database.
- The second, third and fourth are dedicated to annual growth rates, biotrade as percentage of GDP, and biotrade as percentage of total trade.
- A bunch of statistics on biotrade market indicators are also available. These include:
    - **Market concentration indices for exports and imports of products** (annual), measuring the degree of concentration of exports and imports of a product around few markets, or whether it is traded more homogeneously by a larger number of countries. A value close to 1 indicates that export or imports for the analyzed product are highly concentrated around few markets. On the contrary, a value closer to 0 reflects a more homogeneous distribution of market shares among economies. This indicator is available only globally.



- **Market structural change indices of exports and imports of products,** measuring changes in the market structure of a product with respect to a base year. More specifically, it describes how the distribution of imports and exports in a specific product among markets (economies) has changed over time. A value close to 1 for a product indicates a significant change in the market shares among exporters (or importers) compared to a reference year. This indicator is also available only globally.

Trade and Biodiversity - Market structural change indices of exports and imports of products, annual Last updated 10 Jan. 2025

Design Table | PAGE FILTERS | FLOW: Exports | INDICATOR: Structural chan ... | SCROLL TO ROW | PRODUCT: Select PRODUCT | Go

YEAR / PRODUCT	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total biotrade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Live animals and plants	0.41	0.31	0.34	0.32	0.27	0.31	0.32	0.25	0.35	0.32	0.35	0.1
Food and beverage	5.60	4.94	4.86	4.51	4.65	4.57	4.29	3.75	3.77	3.56	4.50	4.4
Agricultural inputs	0.74	0.65	0.85	0.68	0.67	0.68	0.69	0.57	0.57	0.61	1.06	1.0
Natural ingredients	2.03	1.61	1.48	1.38	1.08	1.19	1.36	1.05	1.25	1.20	1.28	1.1
Perfumery, cosmetic, ...	1.10	0.66	0.92	0.80	0.94	0.55	0.66	0.61	0.71	0.66	0.84	0.7
Pharmaceuticals	1.85	1.93	2.13	1.26	1.89	2.27	1.57	1.34	1.65	1.65	1.74	1.8
Hides, skins, leather, f...	0.49	0.64	0.60	0.70	0.84	0.50	0.38	0.29	0.34	0.28	0.75	0.7
Natural fibres and artic...	2.63	2.83	2.83	2.94	3.00	2.56	2.59	1.92	1.59	1.46	2.28	1.7
Wood and derived pro...	2.66	2.29	2.11	1.81	1.79	2.18	2.17	2.02	2.25	2.21	2.65	2.5
Vegetable plaiting mat...	0.09	0.11	0.17	0.19	0.15	0.14	0.14	0.11	0.12	0.13	0.12	0.0
Other products of ani...	0.11	0.11	0.18	0.22	0.23	0.17	0.41	0.51	0.22	0.23	0.27	0.4
Other products of plan...	1.82	2.29	2.12	1.78	0.95	0.87	0.68	0.96	1.15	0.78	0.92	1.0
Miscellaneous	0.57	0.50	0.42	0.63	0.69	0.60	0.36	0.38	0.33	0.47	0.55	0.5

- **Revealed comparative advantage index (annual).** This indicator is available by country (economy). A Country A is said to have a revealed comparative advantage in a given product *i* when its ratio of exports of product *i* to its total exports of all goods (products) exceeds the same ratio for the world as a whole.

- **Product concentration indices of exports and imports**, annual. It is available by country. It shows the product concentration index of trade in overall biodiversity-based products.

Trade and Biodiversity - Product concentration indices of exports and imports, annual Last updated 10 Jan. 2025

Design Table | PAGE FILTERS | FLOW: Exports | INDICATOR: Product concen ... | SCROLL TO ROW | ECONOMY: Select ECONOMY | Go

YEAR / ECONOMY	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
World	0.09	0.08	0.08	0.08	0.08	0.08	0.09	0.08	0.09	0.09	0.10	0.0
Africa	0.09	0.13	0.15	0.10	0.10	0.11	0.10	0.09	0.09	0.09	0.08	0.0
Americas	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.
Asia	0.06	0.06	0.06	0.06	0.05	0.06	0.05	0.05	0.06	0.06	0.06	0.0
Europe	0.15	0.14	0.14	0.13	0.13	0.14	0.14	0.14	0.14	0.15	0.16	0.
Oceania	0.13	0.14	0.14	0.14	0.15	0.14	0.13	0.13	0.13	0.13	0.13	0.
Individual economies	..	..	..	..	..	..	..	..	..	..	..	
Asia and Oceania	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.0
Asia	0.06	0.06	0.06	0.06	0.05	0.06	0.05	0.05	0.06	0.06	0.06	0.0
Oceania	0.13	0.14	0.14	0.14	0.15	0.14	0.13	0.13	0.13	0.13	0.13	0.
Northern America and Eu...	0.14	0.13	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.14	0.15	0.
Europe, Northern Americ...	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.14	0.
Central and Southern Asia	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.13	0.
Eastern and South-Easte...	0.06	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.06	0.06	0.0
Western Asia and Northe...	0.09	0.09	0.08	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.07	0.0

UNCTAD TraBio data visualization tools

Important links

Visualization Tool: https://unctadstat.unctad.org/EN/Biotrade.html

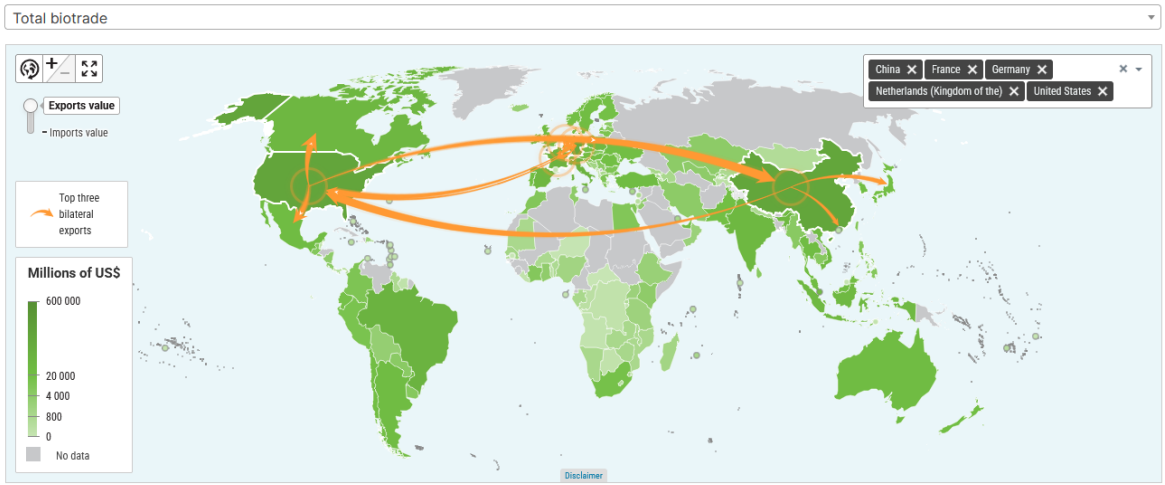
Video tutorial: https://youtu.be/qT1WzyyhUBk

The tool allows to visualize easily the data from the Data Centre.

The **first map** allows to quickly visualize import and exports, with arrows scales based on the value of them. Arrows are available only for the top three trade partners.

World map – Trade flows of biodiversity-based products, 2022

This map presents the bilateral import and export flows of biodiversity-based product aggregates at the Group level of the TraBio product classification hierarchy for the selected economies (can select up to 15). By selecting imports or exports the map shows trade flows to/from the top 3 partners for the selected economies and products.



Notes: Top 5 countries (imports + exports of the selected product aggregate) are shown in the default selection.

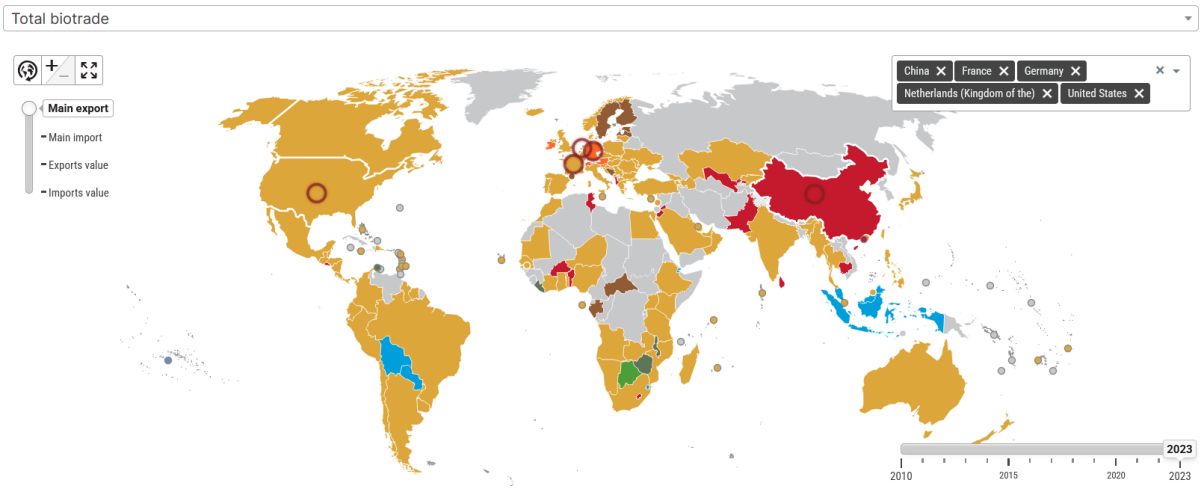
The **second map** allows to quickly visualize the mainly traded biodiversity-based products, with detailed information on the subgroups, categories and subcategories of products. It also allows to quickly visualize changes overtime, allowing to select the year thanks to the bottom-right bar available in the map tool.

World map – Trends in biodiversity-based trade

This map aims to give a visual representation of the main products traded by geographical location, as well as their value between 2010 and the latest year for which data is available. This map offers an additional level of detail in the selection of products with respect to the previous one, with the possibility of selecting aggregates at the *Group*, *Subgroup*, and *Category* level of the TraBio product classification hierarchy.

The bar charts below disaggregate the selected product aggregate into its sub-aggregates with an increased level of detail for the selected countries (up to 15), as colour coded by the legend.

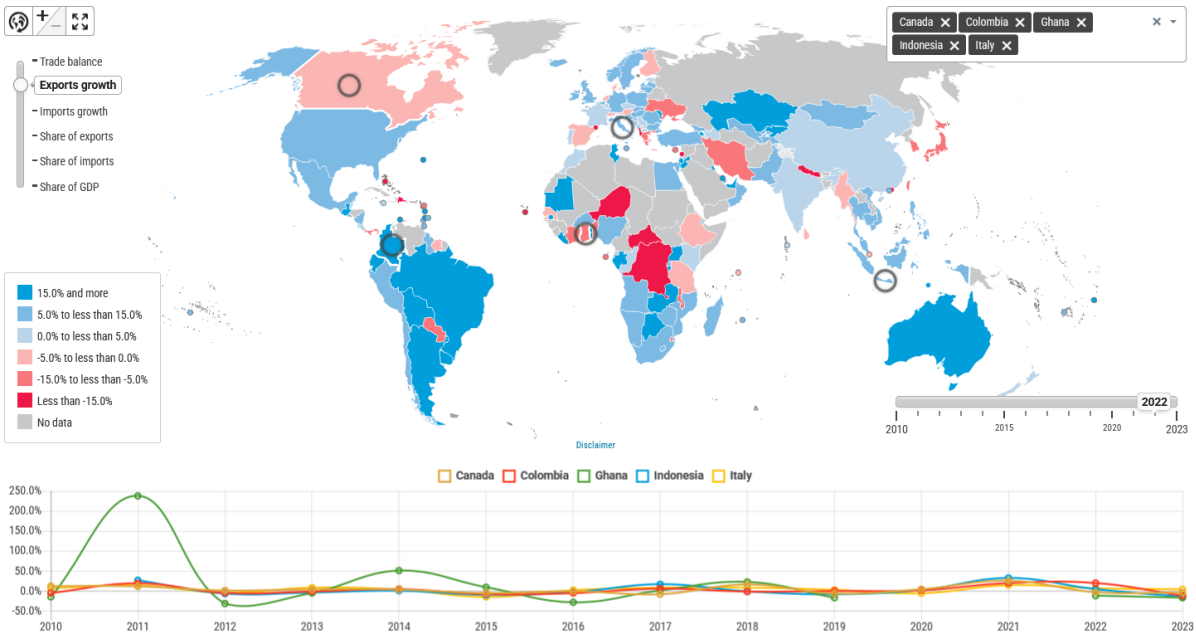
When the dial is set to *Main export* or *Main import*, the countries' colour indicates its most exported/imported sub-aggregate, whereas if the dial is switched to *Exports value* or *Imports value* their shading varies according of the trade value of the selected product aggregate.



The **third map** adds data visualization on other series on *total* trade in biodiversity-based products, such as 1) **trends** (export and import annual growth), 2) **biotrade as a % of total trade**, 3) **biotrade as a % of GDP**.

World map – Trends in biodiversity-based indicators

This map allows to visualise several trade indicators by selecting the desired indicator from the dial on the left: trade balance, growth in exports and imports of biotrade, biotrade as a share of total trade, and biotrade as a share of GDP. The map will show each country with a different shade based on the scale on the left for the selected year. A time series will be shown below the map for the selected indicator and countries over the past 10 years.



Practical exercises

Exercise 1: The Ministry of Planning and Investment of your country would like to understand:

a) the trends of exports in biodiversity-based products in terms of trade (value)

b) how much this trade represents in terms of your country's GDP in 2022 (or the latest available data)

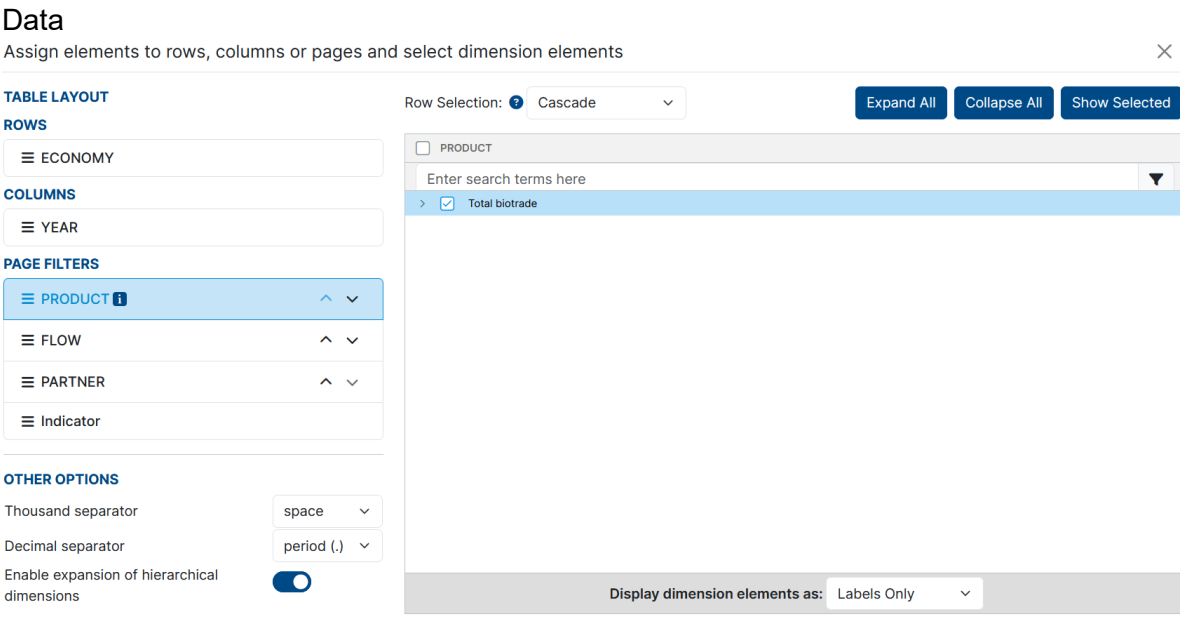
c) how much this trade represents in terms of your total trade in 2022 (or the latest available data)

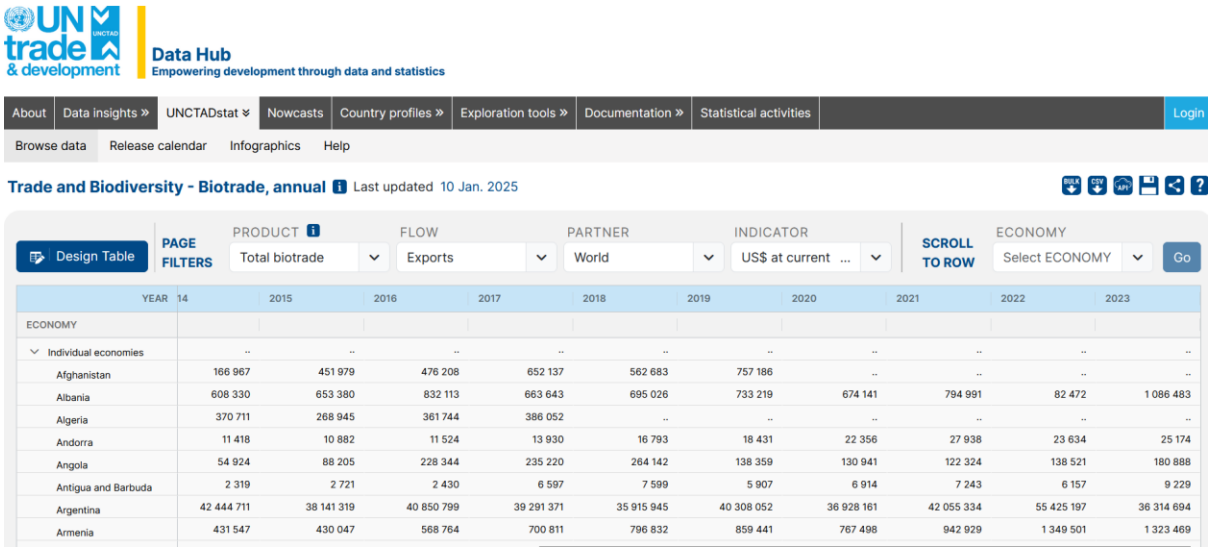
Important link

Video tutorial: https://youtu.be/skCMyGwu-V4

Solution

a) Trends of **exports in total biodiversity-based products** (value)

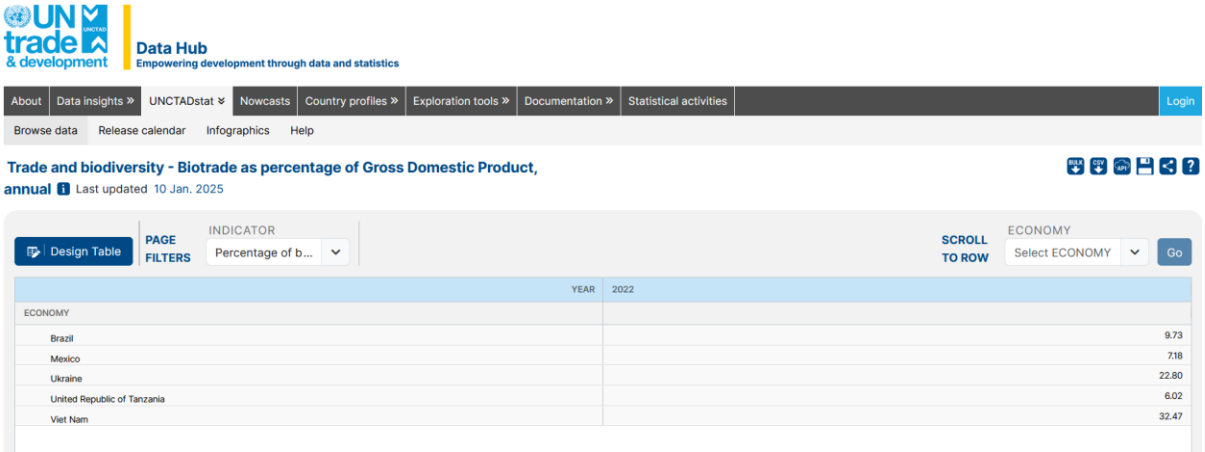




YEAR	14	2015	2016	2017	2018	2019	2020	2021	2022	2023
ECONOMY										
Individual economies	..	..	..	..	..	..	..	..	..	..
Afghanistan	166 967	451 979	476 208	652 137	562 683	757 186	..	..	..	..
Albania	608 330	653 380	832 113	663 643	695 026	733 219	674 141	794 991	82 472	1 086 483
Algeria	370 711	268 945	361 744	386 052	..	..	..	..	..	..
Andorra	11 418	10 882	11 524	13 930	16 793	18 431	22 356	27 938	23 634	25 174
Angola	54 924	88 205	228 344	235 220	264 142	138 359	130 941	122 324	138 521	180 888
Antigua and Barbuda	2 319	2 721	2 430	6 597	7 599	5 907	6 914	7 243	6 157	9 229
Argentina	42 444 711	38 141 319	40 850 799	39 291 371	35 915 945	40 308 052	36 928 161	42 055 334	55 425 197	36 314 694
Armenia	431 547	430 047	568 764	700 811	796 832	859 441	767 498	942 929	1 349 501	1 323 469

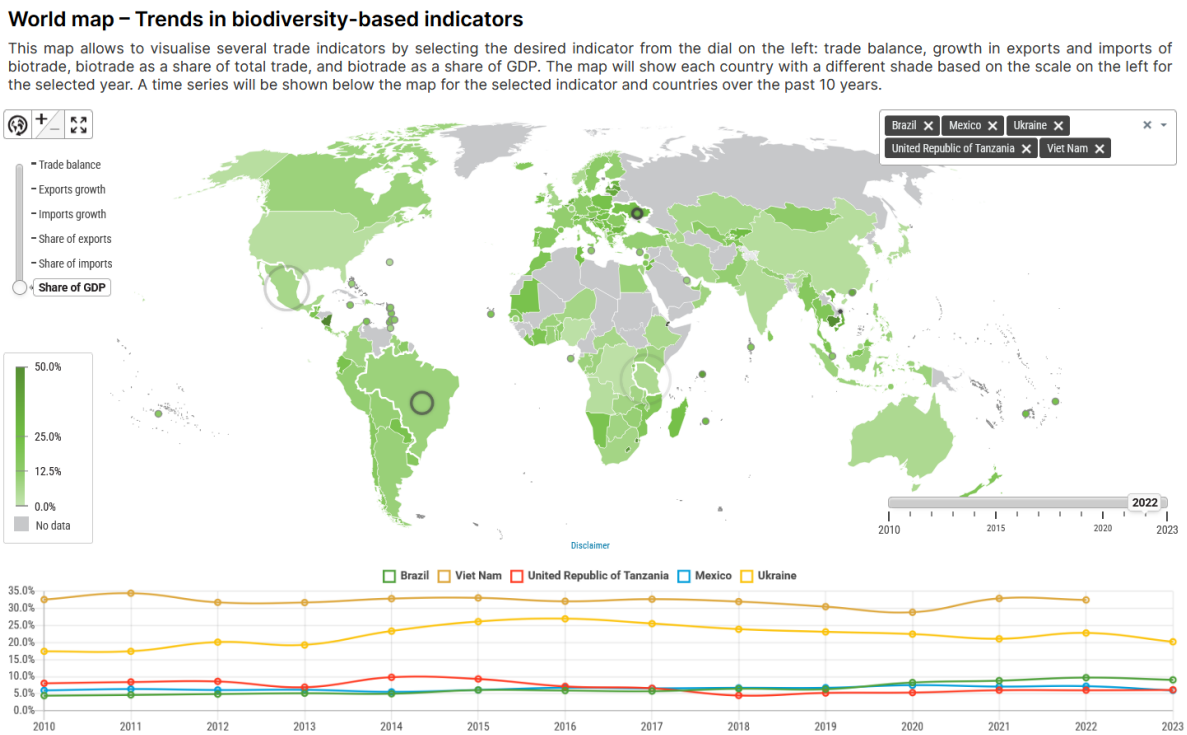
b) **Trade** in biodiversity-based products as a **percentage of GDP** in 2022 (*example on Brazil, Mexico, Ukraine, United Rep. of Tanzania, Viet Nam*)

Data



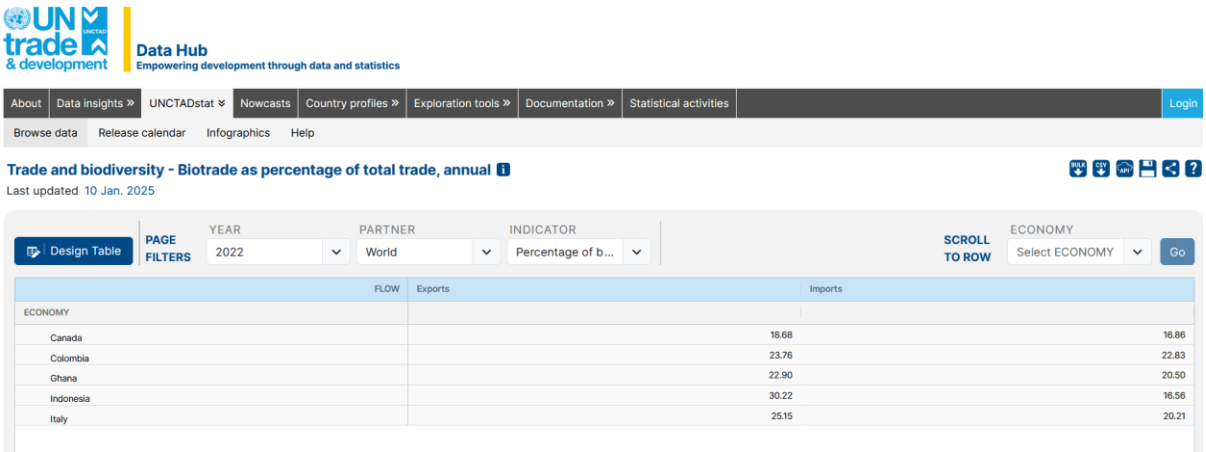
YEAR	2022
ECONOMY	
Brazil	9.73
Mexico	7.18
Ukraine	22.80
United Republic of Tanzania	6.02
Viet Nam	32.47

Map



c) **Trade** in biodiversity-based products as a **percentage of total trade** in 2022 (*examples on Canada, Colombia, Ghana, Indonesia, Italy*)

Data

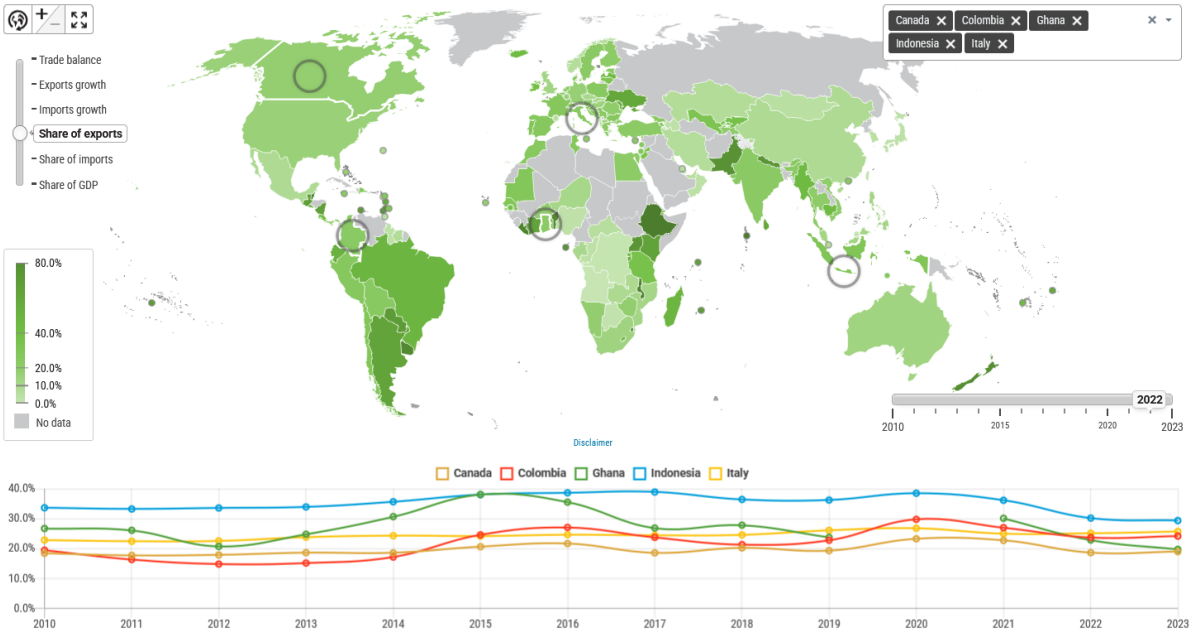


ECONOMY	FLOW: Exports	Imports
Canada	18.68	16.86
Colombia	23.76	22.83
Ghana	22.90	20.50
Indonesia	30.22	16.56
Italy	25.15	20.21

Map: Export

World map – Trends in biodiversity-based indicators

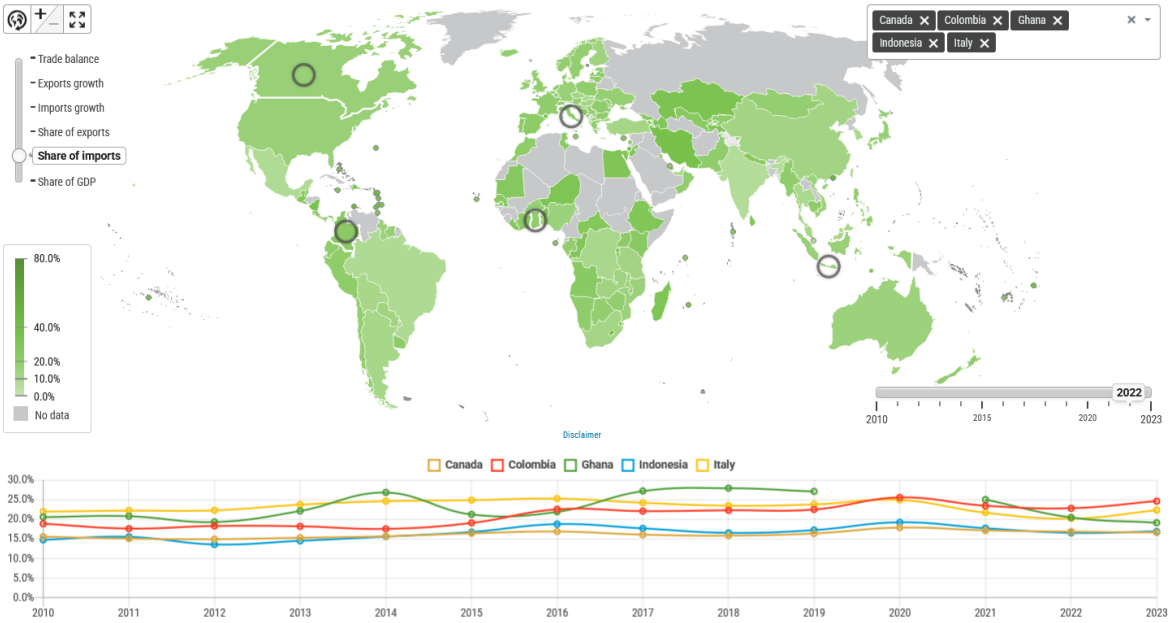
This map allows to visualise several trade indicators by selecting the desired indicator from the dial on the left: trade balance, growth in exports and imports of biotrade, biotrade as a share of total trade, and biotrade as a share of GDP. The map will show each country with a different shade based on the scale on the left for the selected year. A time series will be shown below the map for the selected indicator and countries over the past 10 years.



Map: Imports

World map – Trends in biodiversity-based indicators

This map allows to visualise several trade indicators by selecting the desired indicator from the dial on the left: trade balance, growth in exports and imports of biotrade, biotrade as a share of total trade, and biotrade as a share of GDP. The map will show each country with a different shade based on the scale on the left for the selected year. A time series will be shown below the map for the selected indicator and countries over the past 10 years.

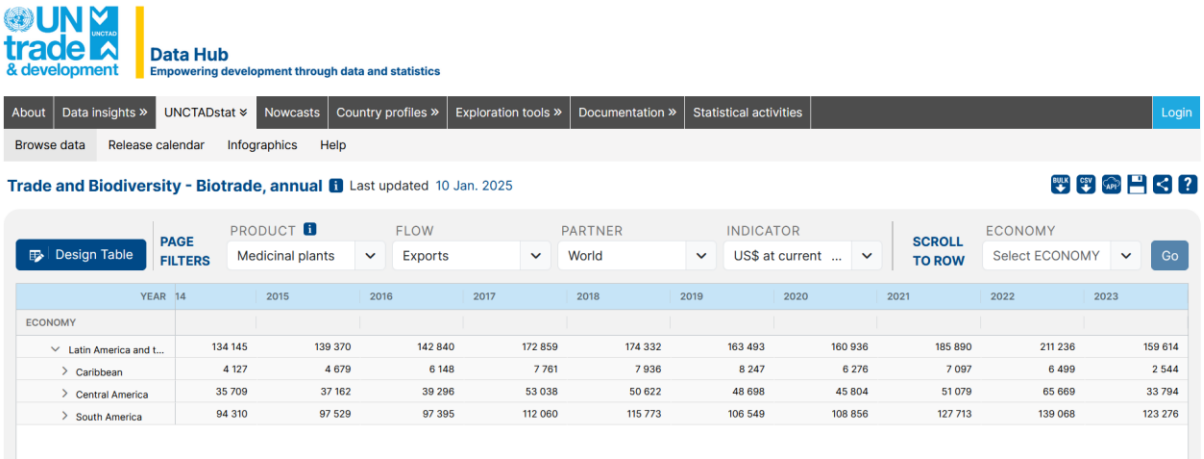


Exercise 2: What are the trends in the trade of Medicinal Plants in your country (2010 – 2023)?

Important link

Video tutorial: https://youtu.be/cKIRpa9aNJU

Data



YEAR	14	2015	2016	2017	2018	2019	2020	2021	2022	2023
ECONOMY										
Latin America and t...	134 145	139 370	142 840	172 859	174 332	163 493	160 936	185 890	211 236	159 614
Caribbean	4 127	4 679	6 148	7 761	7 936	8 247	6 276	7 097	6 499	2 544
Central America	35 709	37 162	39 296	53 038	50 622	48 698	45 804	51 079	65 669	33 794
South America	94 310	97 529	97 395	112 060	115 773	106 549	108 856	127 713	139 068	123 276

Frequently Asked Questions

Watch FAQ in this video: https://youtu.be/DR4fcHOhfUs

More information

For latest updates on UNCTAD BioTrade activities and events, visit https://unctad.org/topic/trade-and-environment/biotrade or follow the social media channels (X, LinkedIn or Facebook).

For any further request or information, do not hesitate to contact UNCTAD at biotrade@unctad.org.

The tutorials have been realized within the scope of training events on the TraBio Statistical Tool, organized by Helvetas in February and March 2025.