



## **DANUBE COMMISSION**

An update on the Secretariat's recent activities in the fields of Statistics and Economic Analysis

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Budapest, 11th of April, 2024

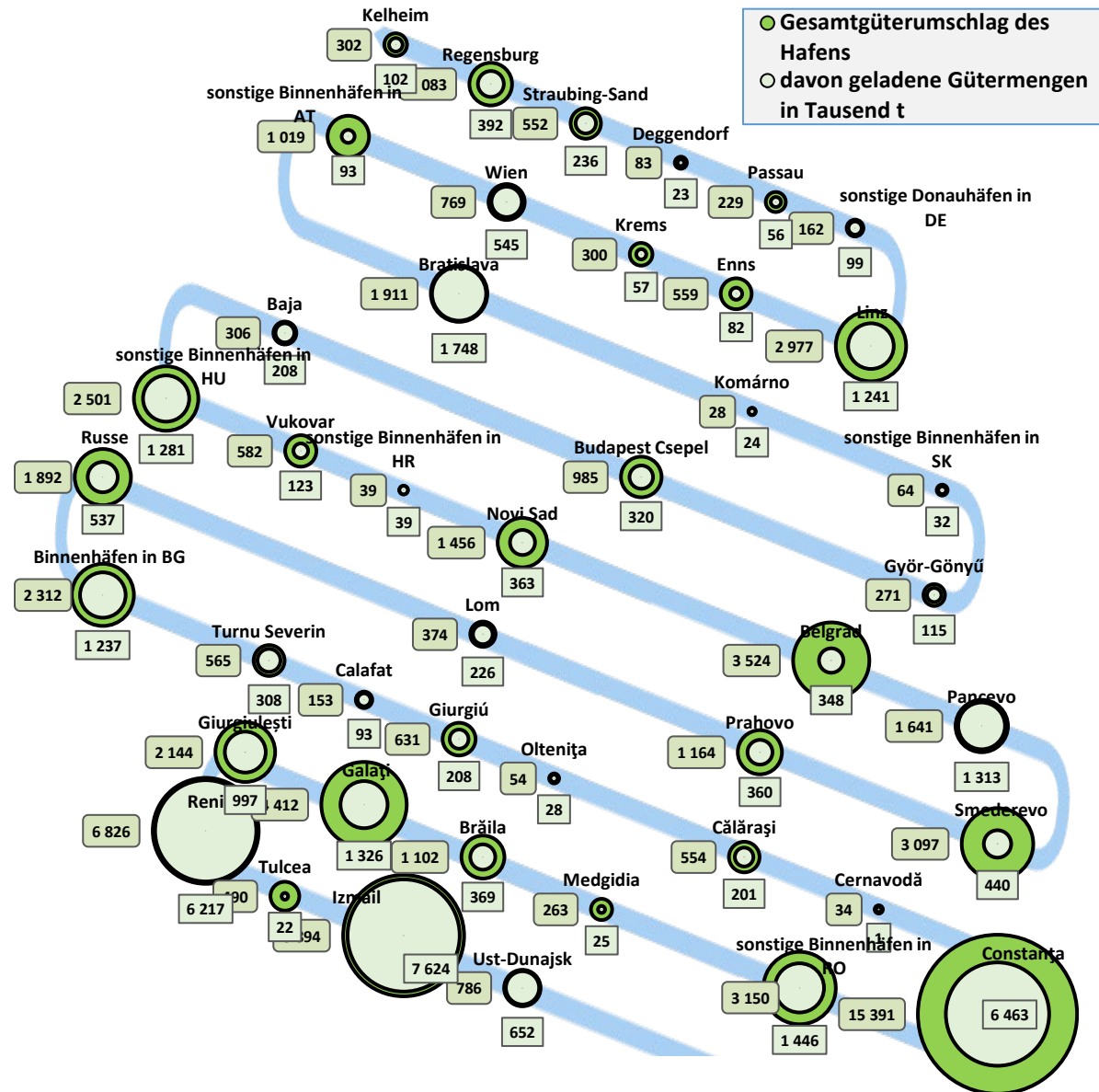
## 1. An overview of the Secretariat's main activities over the past semester



1. Data collection for **the Annual Statistical Yearbooks of 2022 and 2023**
2. The preparation of **the Quarterly Market Observation Reports** and **the annual MO Report for 2023**
3. The creation of **three new layers on the interactive map of DC** with unique data query and visualization opportunities
4. The planning of an **Economic report** for the workshop organized by the DC in June 2024 on the trade flows between **DC member states and Türkiye**

## 2. The Annual Statistical Yearbooks

- In addition to providing comprehensive and static descriptions of trade and transport on the Danube River, the Secretariat has begun to **emphasize dynamic data presentation** and data visualization
- The final version of 2022 and the draft version of 2023 will be presented at the **2024 autumn session of the WG TECH**
- In the future the Secretariat will strive to update **the online PDFs** of the older yearbooks with any additional retrospective information received
- Also in the near future, almost all key information from the yearbooks will be displayed on **the DC'S new interactive online map/database**



## 2.1 We need all our member states' help



- For the years 2022 and 2023, **only 5 of the 10 member states** have completed the DC's official statistical forms
- The latest dates of the updates:
  - **Serbia, 2023.08.28.**
  - **Moldova, 2024.01.25.**
  - **Croatia, 2024.02.19.**
  - **Ukraine, 2024.04.03.**
  - **Slovakia, 2024.04.09.**
- If even one country's data is missing, it could lead to **false or inaccurate aggregated results**
- For the member states and stakeholders, our yearbook offers an opportunity to contribute to and be featured in a collection of IWT data that is **unique across Europe**
- In the future data Secretariat will identify all the data points that are available on the websites of the member states' national statistical offices and **only ask for the remaining data** from the member states

### 3. Hermes - The three new layers on the DC's online map



- The economic data provided in the DC's paper based reports (1) + the DC's online interactive map (2)
  - an improved information service system: **Hermes: 'Online Danube Market Observation' database and data visualization tools** in the form of three new additional layers on the DC's interactive map
- **What is not possible on paper is possible online**
  - 1. From static to dynamic point of view** → 'easier and faster to actualize', up to date information
  - 2. From one-sided to interactive point of view** → filtering and data query options based on the different variables
  - 3. From numerical to visual point of view** → more sophisticated visualization perspectives – e.g. The possibilities of an interactive real map instead of single graphic lines
    - **Uniqueness** in the level of detailedness in the online portrayal of inland waterway transport data

Select the volumes to display:

Only the top 10 volumes

Display the volumes on the bars

Instead of only examining the originally selected port, you can also choose other Danube ports to become subjects of filtering/visualization:

Straubing-Sand - statistical port  
Kelheim / Saal Enns-Ennsdorf  
Linz - statistical port

Select all ports Deselect all ports

Select the direction - loaded/unloaded/total:

Total

Select the year:

2021

Download the filtered data

Download the plot for better readability

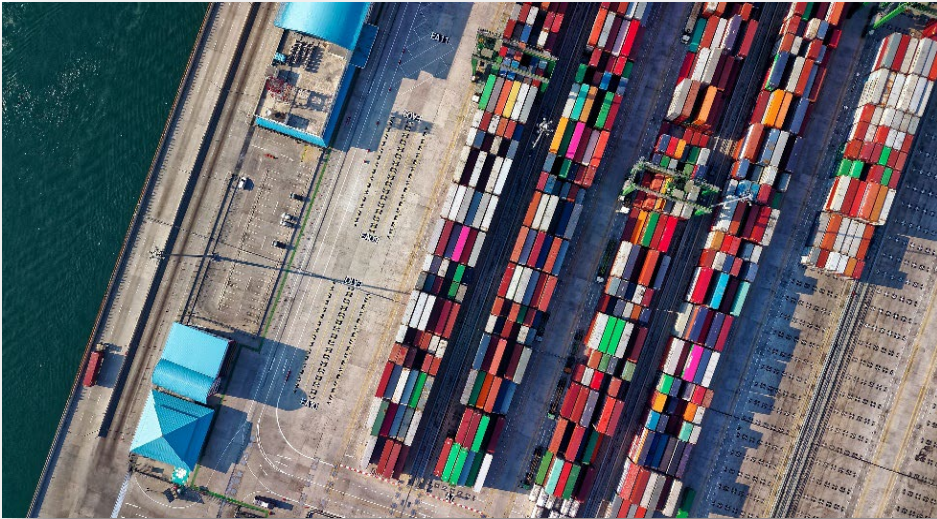
Save link

## 3.1 Our methodology

- We use the **statistical programming language R** in the environment of Rstudio extended with package Shiny → by that we create **data filtering and data visualisation options based on our new database** with the possibility of **queries/downloads** as well
- We **link** each filtered version of the future applications to their matching pair entity (e.g. settlement, port) **on the map**
- **A few extra details**
  - Almost **50 port entities** on the map
  - The application is using a more than **40.000 row long Excel file** as a new online data base about transport volumes
  - **Bookmarking** and unique **download options**

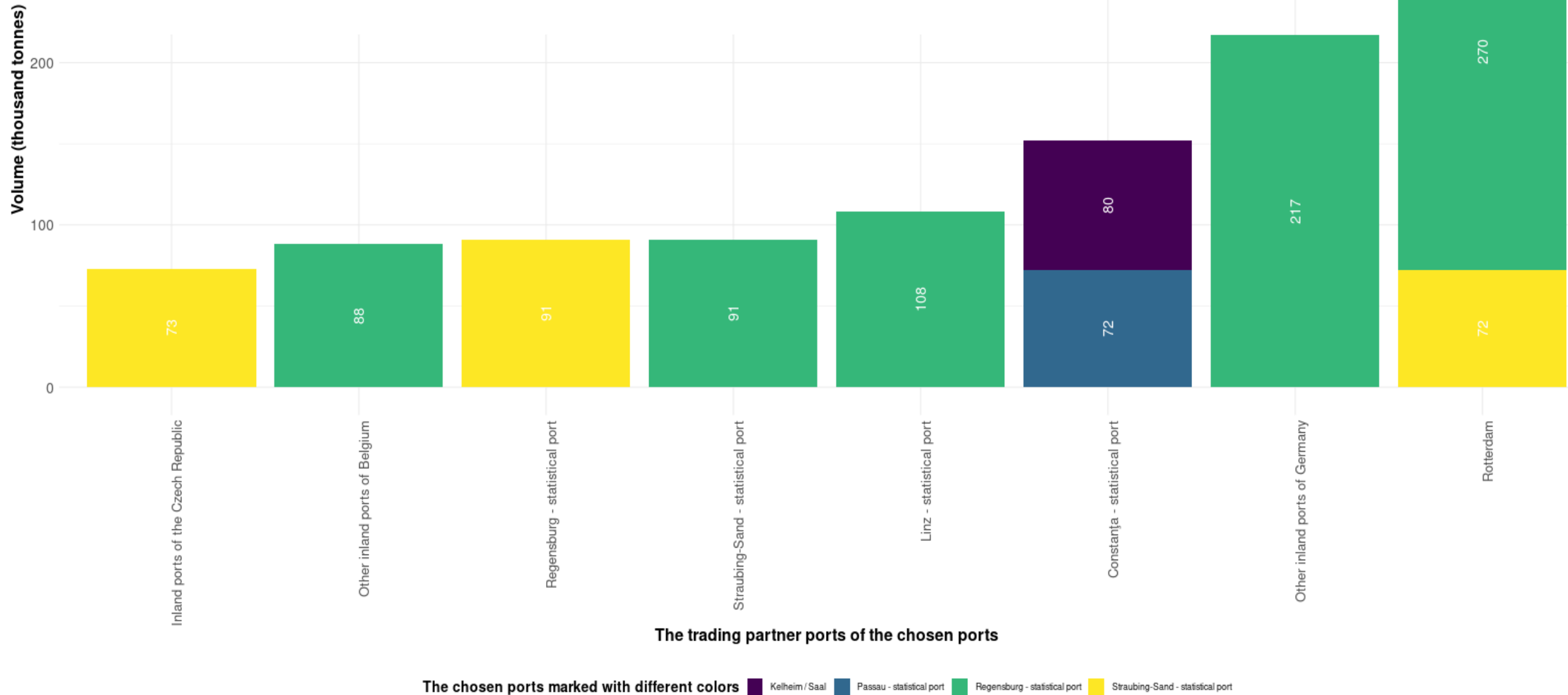
<https://www.danubecommission.org/dc/en/danube-navigation/danube-navigation-statistics/ports/>

## 3.2 The new layers and the variables presented on them

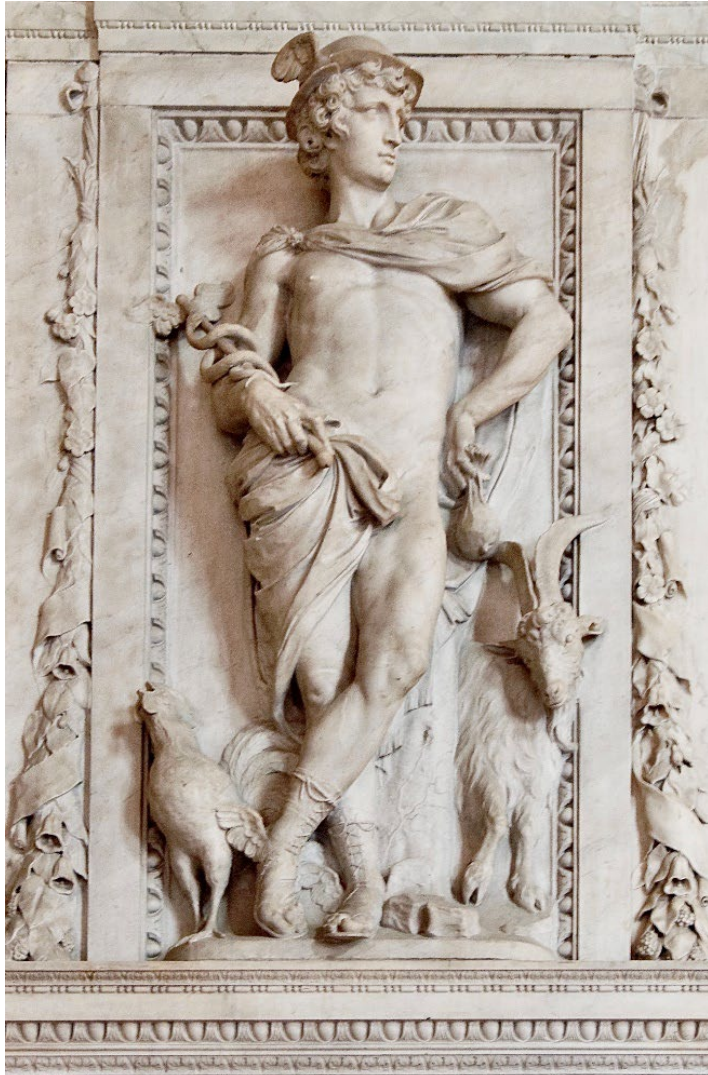


- **Hermes 1 - for each port:** → yearly actualization plans - **transported volumes (in thousand tonnes) filtered by:** **A:** direction (loaded/unloaded/total); **B:** trade destination or origin (port/country); (**C:** distance (in river kms);) **D:** year
- **Hermes 2 - for selected Danube bordering points (e.g. Gabčíkovo, Mohács):** monthly actualization plans - **A:** passed volumes (in thousand tonnes); **B:** type of goods (NST 2007); **C:** type of vessels; **D:** year → **the constantly developing/“final” versions of H1 and H2 are already accessible on our web page**
- **Hermes 3 - for each country:** yearly actualization plans- **A:** transported volumes (in thousand tonnes); **B:** flag of transportation; **C:** trade destination or origin; **D:** estimated distance: (in river kms); **E:** year; **F:** type of goods (NST 2007) → **soon to be ready**

### 3.3 A visualization example of Hermes 1. - The top10 total volumes of the transported goods between some chosen ports and their trading partner ports in 2021







### 3.4 Directions for future development

- Constantly improving **Hermes 1 and Hermes 2** and finishing **Hermes 3**
- Making the current database **more comprehensive** by requesting additional data from the member states
- The inclusion of **new variables**: e.g. average transport distance
- The portrayal of **not only Danube entities** on the map: e.g. Turkey's or ARA countries' ports
- A **better segmentation** of the data coming from the same port locations



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**Thank you for  
your attention!**

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