



**Integrating Danube Region into Smart & Sustainable
Multi-modal & Intermodal Transport Chains**

Report on IWT cargo potential

Summary report DR Countries

Version: 2.0

Date: 21/07/2021

Status: FINAL

Author: PP11 AAOPFR

Document History

Version	Date	Authorised
0.1 (Template)	07/02/2021	AAOPFR
1.0	10/07/2021	AAOPFR
2.0	21/07/2021	AAOPFR

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Abbreviations

Abbreviation	Explanation
BNS	National Bureau of Statistics
GIFP	Giurgiulesti International Free Port
RM	Republic of Moldova
CIS	Commonwealth of Independent States
EU	European Union
IWT	Inland waterways transport
USA	United States of America

1 Focus of the summary report

The report is built on the previous reports of this activity and investigates potential cargo flows using the Danube waterway. In this analysis of IWT cargo potentials, cost comparisons to the other transport modes are elaborated for the most promising types of cargo and transport relations. Conditions for shifting cargo from land transport modes to IWT will be described on a cargo type and transport relation basis. These conditions refer to the required infrastructure and to service levels in ports as well as to technical provisions of the inland vessels. In addition, necessary changes in the regulatory framework of Danube transportation and related administrative procedures will be investigated. The report will use secondary sources such as existing studies but will also be based on expert opinion being derived from stakeholder groups of the DIONYSUS project as well as from internal and external experts of the PPs.

2 Executive summary

Bulgaria

According to the European Commission the inland waterway transport and river-sea shipping are an alternative to road and rail transport. Inland Waterway Transport (IWT) can also support socio-economic development in the European regions by e.g. linking ports with hinterland and centres of commerce and consumption, this way creating jobs and growth perspectives. A multifunctional use of inland waterways and its infrastructure contributes to regional and interregional development.

The navigable inland waterway network within the EU exceeds 40 000 km and covers all important economic areas in Central Europe. Many industrial and population centres are located along inland waterways. Half of Europe's population lives close to the coast or to inland waterways and most European industrial centres can be reached by inland navigation.

Transport is one of the main sectors of the Bulgarian economy, which has been developing rapidly in recent years. The cargo flows in Bulgaria can vary between the different modes of transportation. Domestic cargo transport in the country is almost exclusively by road and rail at the present. The goods transported by sea and inland waterways are minimal quantities - less than 1% of the total transported goods on inland waterways and less than 0.2% on sea transport.

On the Danube, the introduction of new tariffs in international trade did not prevent the transport of raw materials for the steel industry (iron ore, pellets, coking coal) to grow in 2019. A stronger increase was recorded in the transport of food products and foodstuffs. At the same time, the transport of cereals (mainly wheat and maize) from the ports of the Middle Danube to the estuary ports at the Black Sea remained at the 2018 level. The transport of petroleum and chemical products (fertilizers) remained quite stable as well. Iron ore is entirely transported upstream on the Middle Danube, while grain, food products and foodstuffs are entirely transported downstream.

The Inland waterway transport (IWT) is an environmentally friendly alternative to other transport modes and the increase in its use is seen as favourable. From the data collected and analysed for the purpose of the current report, it is observed that IWT transport cost is between 0,31 and 0,94 of the road transport cost. Based on this, it can be assumed that at least 30% of the current road transport flows can be transferred to the IWT.

Hungary

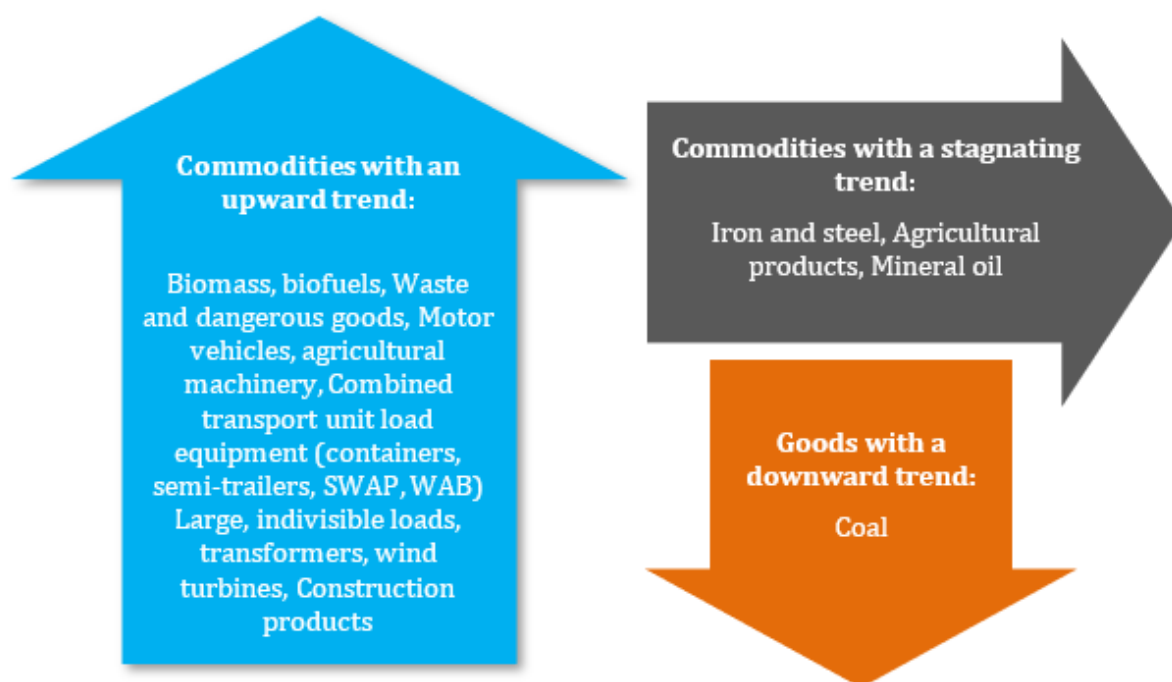
The transport system is closely linked to society, the economy and the environment. In order to keep pace with mobility needs and economic development, it is essential to provide adequate transport and logistics infrastructure, with easy accessibility as a key element. Environmental sustainability can be ensured by designing and operating a transport system that uses resources efficiently and minimises external negative impacts.

Our country is rich in surface water. There is almost equal availability of navigable waterways for large vessels on the Tisza and the Danube and their tributaries. The length of waterways suitable for large vessels is about 1600 km. Of this, 85% is permanently navigable and 15% intermittently. Of the total length of the waterway network, 53% is in the Danube basin and 47% in the Tisza basin. The Danube

is the most important inland waterway in Europe, as it forms part of Europe's most important waterway axis.

The main trends in river freight transport in Hungary are shown in the figure below. This figure is an important element for future IWT planning in Hungary, and it also partly indicates the development directions that should be taken into account when planning investments.

1. Figure: Trends in IWT in Hungary



The other more global trend, and a responsibility, which must be taken into account for the future of IWT and its cost drivers, is sustainability. In this respect, important lessons can be drawn from the calculation carried out by EcoTransIT in the present study.

After sustainability, another important factor is the regulatory environment, for which this study includes proposals for improvement. The main elements for streamlining the regulatory environment are listed below. Toll reductions or toll reimbursement should be granted for lorries carrying goods that are also used for inland waterway transport with intermodal freight. Even with the increasing number of ships, which is increasing with the growing volume of goods, it is necessary to ensure the operability of the border inspection post at Mohács, with sufficient throughput capacity, without increasing transit times. Given that port activity is considered a hazardous activity, it is essential to consider occupational safety, accident and damage prevention aspects when developing and operating ports.

Republic of Moldova

In the Republic of Moldova, all multimodal transportations, including IWT, are carried out through the GIFP port. Delivery of goods to the client is carried out by two modal transportations: IWT - railway transport, IWT - road transport.

Due to the current critical situation on the railway, a significant load falls on road transport. The program for overcoming the crisis of the state enterprise "Railway of Moldova" envisages, first of all, an increase in the volume of traffic from the port of Giurgiulești. As a result, the main investments in the railway are provided for the renewal of rolling stock and traction stock, as well as for the rehabilitation of the "Giurgiulești-Chișinău" railway section.

Transportation from GIFP is carried out via two transport corridors:

- railway: Giurgiulești - Bassarabesca - Chisinau - Balti - Ochnița;
- road: Giurgiulești - Vulcănești - Comrat - Chișinău - Bălți.

At the moment, the potential of railway transport is not fully realized.

The report assesses the potential of IWT in the Republic of Moldova, as well as suggests ways to increase the volume of IWT traffic.

Romania

Potential for IWT for Romania is identified first in relation with imports and exports of 4 Romanian regions, that have a good accessibility to the Danube ports, from/to DR countries. Based on the current trade flows, the IWT potential to be attracted above the existing traffic is estimated to 1.57 mln tonnes per year.

Regarding the trade flows of the DR countries with the Black Sea countries, the IWT potential to be attracted above the current traffic is estimated to 821 thousand tonnes per year.

Thus, it can be concluded that the total potential to be attracted above the current flows is estimated to 2.4 mln tonnes per year.

3 Methodology

The methodology is based on the following elements:

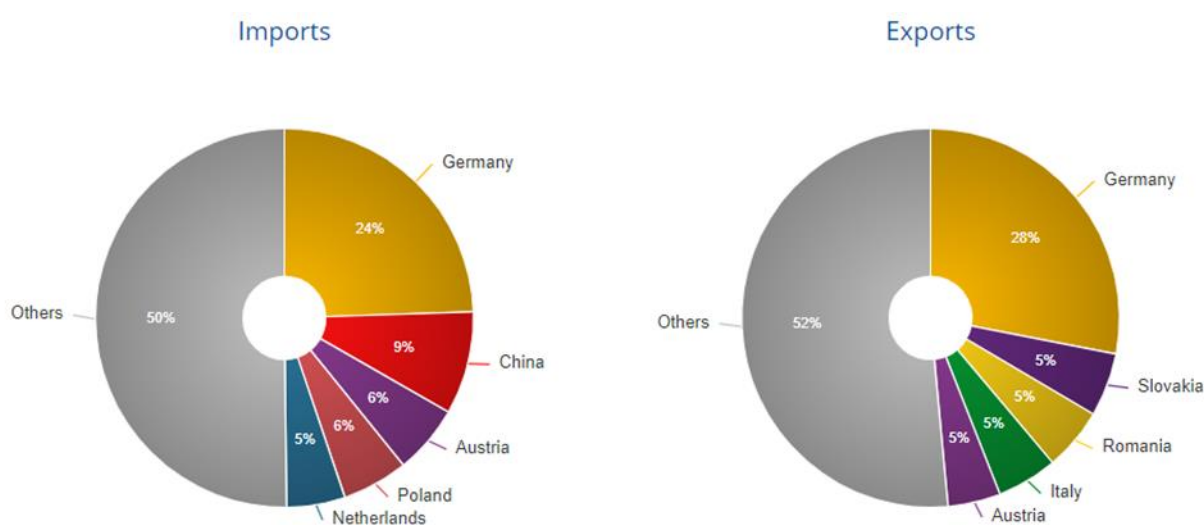
- Collect data on transport costs on different corridors and combination of transport modes (various transport chains) for the most promising types of cargo and transport relations
- Identify potential for IWT based on transport cost comparison
- Investigate necessary changes in the regulatory framework of Danube transportation and related administrative procedures
- Reporting

Bulgaria

As data on intra-EU traffic are not available in an appropriate breakdown (type of goods / transport mode / quantity), we present below

- the country's most important foreign trade partners;
- quantitative aspects of trade with key partner countries, division into chapters;
- and the most important statistics describing the directions and characteristics of international transport.

2. Figure: Hungary's most important foreign trade partners and their share of the country's foreign trade turnover. 2020



Source: https://ec.europa.eu/eurostat/cache/infographs/trade/trade_2020/

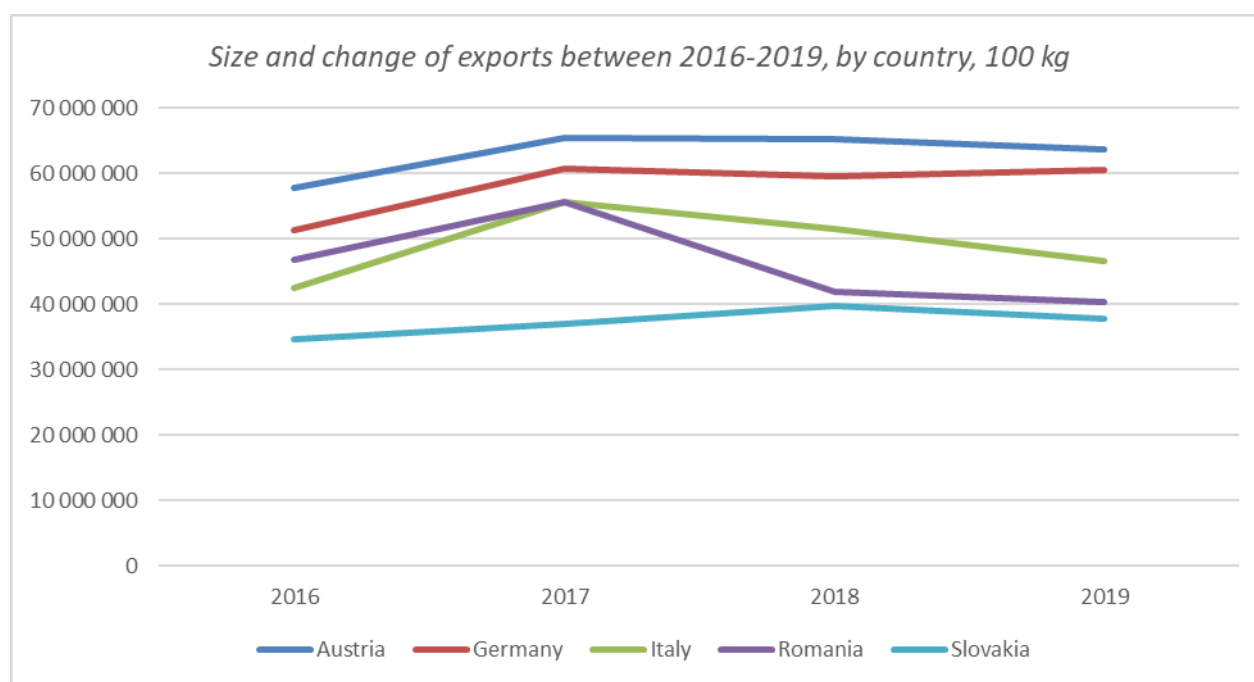
The figure shows that Germany is the number one trading partner with a share of 24-28%; Austria is an important foreign trade partner for both exports and imports; it can also be seen that the neighboring countries are considered to be the most important export partners; China and the Netherlands are prominent in terms of imports (as an entry point for goods entering the EU from outside the EU). The country's foreign trade turnover is approx. half are realized in 8 countries. -

The following two graphs show the countries with the 15 largest shares in Hungary's foreign trade turnover, depending on the size of their share in world trade and the increase between 2015 and 2019, as well as their share in Hungary's trade.

It can also be seen how the growth of Hungary's imports / exports towards a given partner country is related to the growth of the given partner country's exports / imports in the world.

Export

3. Figure: Volume and change of quantitative turnover between Hungary and its 5 most important partner countries between 2016-2019, 100 kg



Source: <https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

The figure shows that by 2017, the volume of turnover per hundred kilograms increased for all five countries (the largest proportion compared to Romania); traffic with Austria was the most intensive in quantitative terms throughout the period under review; turnover in 2019 is 110% of the value in 2016; at the same time, the largest increase in exports is to Germany: the turnover in 2019 is 118% of the turnover in 2016, the exports with Italy to 110% of the value in 2016, the exports to Slovakia are 109% of the value in 2016 -increased to 2019. Exports to Romania by 2019 are 86% of the 2016 level.

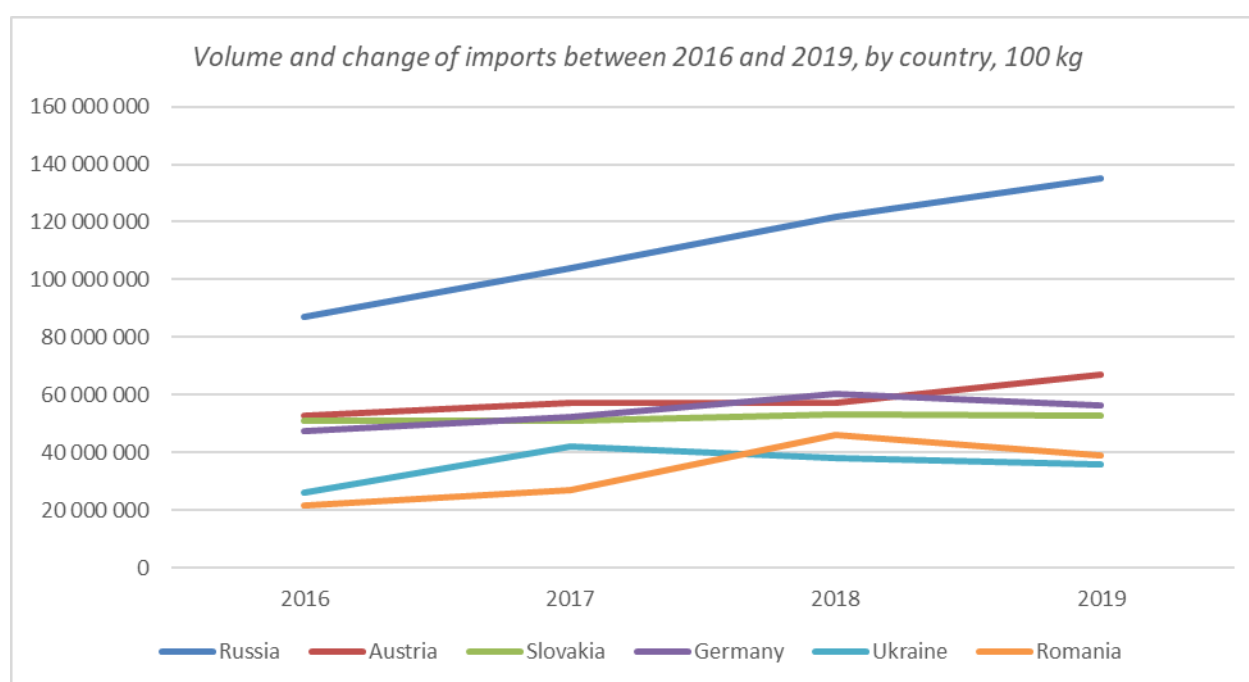
In terms of exports of the food and live animals product category, the country's number one partner is Italy (27,343,769 glazes), beverages and tobacco Romania (1,104,591 glazes), crude materials Austria (23,816,059 glazes), mineral fuels, lubricants and related materials Ukraine (29,184,348 glazes),

animal and vegetable oils, fats and waxes the Netherlands (1,936,237 glazes), chemicals and related products Poland (7,842,826 glazes), manufactured goods classified chiefly by material Germany (10,358,695 glazes), machinery and transport equipment Germany (15,269,221 glazes), for miscellaneous manufactured articles, Germany (2,613,454 glazes), commodities and transactions not classified elsewhere in sitc (116,902 glazes).

Source: <https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

Import

4. Figure: Volume and change of the volume turnover between Hungary and the 6 most important partner countries between 2016-2019, 100 kg



Source: <https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

The figure shows that Russia has a prominent role in terms of volume-based traffic (pipeline transport); the volume of imports shows an increasing trend throughout the period; the 2019 volume is 155% compared to the 2016 volume. “Second place” Austria shows an increasing trend over the period under review; the volume imported from Austria in 2019 is 126% of the 2016 value. Imports with Slovakia essentially stagnated during the period considered. Imports from Germany will increase until 2018, but will decrease somewhat by 2019, but overall, they will continue to grow as follows: 2019 is 119 percent of 2016, and Slovakia is in third place, followed by Russia and Austria in 2017. Germany takes the third place in terms of imports to Hungary. The importance of Romania increases significantly during the period under review; the volume imported from Romania in 2019 is 181% of the 2016 value.

Germany (6,080,667 glazes), Poland (1,517,486 glazes) for beverages and tobacco, Romania (22,889,249 glazes) for crude materials, Russia (128,101,374 glazes) for mineral fuels, lubricants and

related materials, animal and vegetable oils, fats and waxes for the Czech Republic (392,333 glaze), chemicals and related products for Germany (8,592,978 glaze), manufactured goods classified chiefly by material for Slovakia (20,941,451 glaze), machinery and transport equipment for Germany (20,589,943 glaze), for miscellaneous manufactured articles Germany (2,139,912 glaze) and for commodities and transactions not classified elsewhere in sitc Poland (1,018 glaze).

Source: <https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

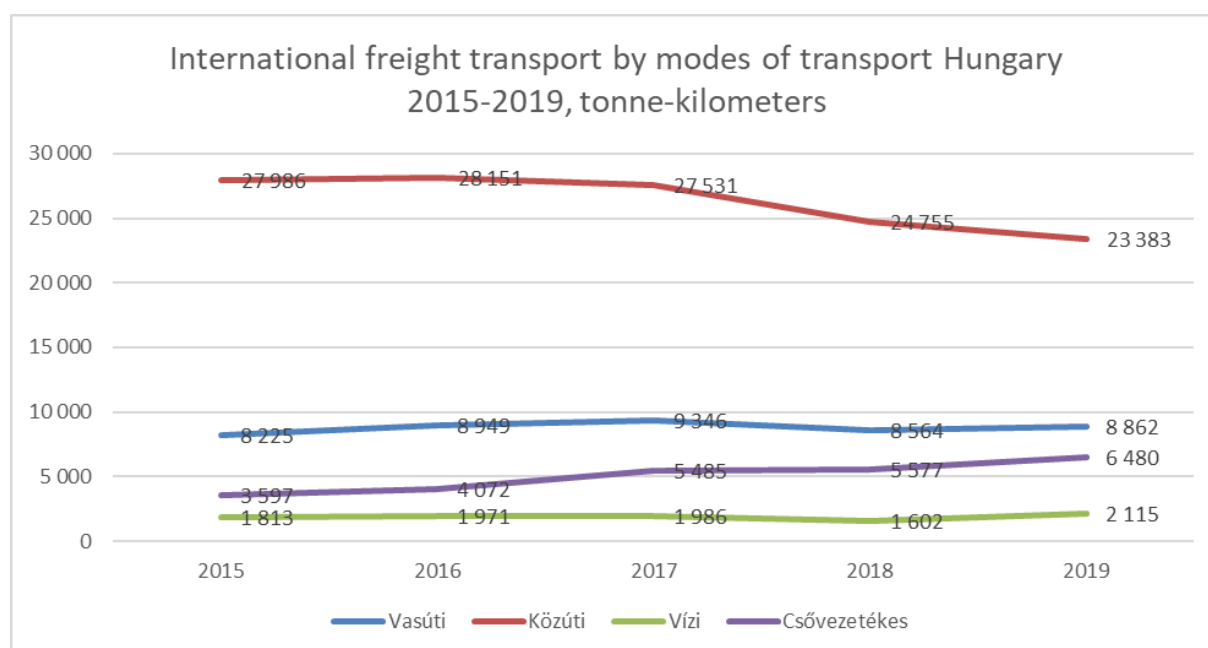
Below we present the modes of freight transport characterizing Hungary's foreign trade turnover.

1. Table: International freight transport by modes of transport Hungary 2015-2019

Year	Freight tonne-kilometers, million	Of which:			
		Rail	Road	Waterway	Pipeline
2015	41 651	8 225	27 986	1 813	3 597
2016	43 192	8 949	28 151	1 971	4 072
2017	44 398	9 346	27 531	1 986	5 485
2018	40 542	8 564	24 755	1 602	5 577
2019	40 916	8 862	23 383	2 115	6 480

Source: https://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_odmv002.html

5. Figure: International freight transport by modes of transport Hungary 2015-2019, on graph



Source: https://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_odmv002.html

It can be seen that international road freight transport is the most significant mode of transport in 2019; the performance of road freight transport in 2019 was 23,382 million freight tonne-kilometers; this represents a decrease of 17% compared to 2015 - and shows the largest decrease among all modes of transport, although road transport performance will continue to be overwhelming in 2019: 57% of total freight tonne-kilometers traveled.

The performance of rail transport in 2019 accounted for 21% of total performance, water transport for 5.1% and pipeline for 15%. The performance of water transport in 2019 is 116% of the performance of 2015, that of rail transport is 107%, and that of pipeline transport is 180%.

Regarding international road transport, Hungary's main export partners were Austria, Germany, Italy, Slovakia and Romania. In terms of import traffic, Austria also came in first, followed by Germany, Slovakia, Italy and Romania with the most goods arriving by road in 2018.

In rail transport, the country's main trading partners were Austria, Slovakia, Italy, Germany, Romania, and non-EU countries were Ukraine, Russia and Serbia. The main destinations for rail transit through the country are Romania, Germany, Austria, Slovakia and Slovenia. In 2018, Romania, Slovakia and Poland led the list of countries sending goods in transit. In 2018, 14% of the volume of goods transported by rail, expressed in freight tonne-kilometers, was performed in combined transport.

According to inland port statistics, in 2018, 86% of goods were traded with EU member states. Serbia outside the EU was also an important partner. In 2018, goods imported to Hungary by inland water came from Austrian, Romanian and Serbian ports. The most important destinations for Hungarian exports were Romanian ports. One third of the total volume of goods transported by inland waterway was loaded at the three large National Public Ports (Baja, Csepel and Győr-Gönyű).

The average transport distance was 184 kilometers by road and 202 kilometers by rail.

Source: <http://www.ksh.hu/docs/hun/xftp/idoszaki/jelszall/jelszall18.pdf>

Republic of Moldova

The methodology is based on the following elements:

- Collection of data on transport costs for various logistic chains of import and export of goods to / from the Republic of Moldova, carried out also thanks to the IWT;
- Assessment of IWT potential based on comparison of transport costs, traffic volumes and stability of trade relations,
- Examine the necessary changes in the legal and regulatory framework for transport on the Danube and related administrative procedures.

The following trade flows data has been collected at the minimum at NUTS 2 level

4 Data collection

Data category: data on transport costs on different corridors and combination of transport modes (various transport chains) for the most promising types of cargo and transport relations

Data sources:

- National Transport Master Plan
- Data from various projects on national and/or European level
- Database of the National Bureau of Statistics;
- Annual reports on GIFP activity (Republic of Moldova).

Bulgaria

As a result of the difficulties in obtaining the right data it was hard to determine the real current marginal infrastructure costs for inland waterways in the different case studies. As a second-best solution, in order to get an indication of the marginal costs, the average user-dependent costs have been determined. These costs are determined by dividing the total (freight) user dependent costs by the total number of (freight) vessel kilometres (average (freight) user-dependent costs = total (freight) user dependent costs / total (freight) number of vessel kilometres). The following table gives an overview of the range of the average user-dependent costs per freight vessel-kilometre, which have been assessed in the various case studies.

6. Figure: Average user-dependent costs for freight vessels per waterway

Waterways	CEMT	Lower	Upper
Amsterdam-Rhine Channel (NL)	VIb (6 400t-12 000 t)	€ 1.14	€ 1.15
Prinses Margriet Channel (NL)	Va (1 500t-3 000 t)	€ 0.27	€ 0.45
Van Starckenborgh Channel (NL)	Va (1 500t-3 000 t)	€ 0.67	€ 0.91
Basin Rhone-Saone (F)	1 500 up to 6 000 t	€ 0.06	€ 0.50
Danube – Austria (A)	VIa-c (3 200t-18 000 t)	€ 0.14	€ 0.18
Main-Danube Channel (D)	Vb (3 200t-6 000 t)	€ 2.45	€ 3.31

Source: [Strengthening Inland Waterway Transport \(internationaltransportforum.org\)](http://internationaltransportforum.org)

5 Identification of the potential for IWT

5.1 Select the most promising types of cargo and transport relations based on the results of the previous activity

Austria

5.1.1 Railway Transport Data of Austria / Import / Export

IMPORT

7. Figure: Import / Export 2019 - 2020 per goods

Verkehrsbereich	IMPORT											
	Goods (NST/R)		Agricultural and forestry products	Other food and feeding stuff	Solid mineral fuels	petroleum & petroleum products	Ores and metal waste	Iron, steel and non-ferrous metals	Stones, earth and building materials	Fertilizers	Chemical products	Vehicles, machines, other goods
	2019	Tonnes	3.047.466	286.940	3.801.689	2.234.465	5.276.834	1.594.642	1.112.721	335.761	2.072.005	7.443.654
	2017	Tonnes	2.779.180	134.697	3.709.858	2.376.057	5.437.902	2.382.828	1.087.588	367.567	2.315.861	8.080.143
	2018	Tonnes	3.347.110	239.119	3.420.368	2.266.244	4.435.110	2.389.793	1.186.626	298.662	2.190.892	7.280.649
	2020 (1.-3. Quartal)	Tonnes	2.234.517	147.788	2.253.871	1.681.675	3.110.451	1.127.792	870.244	206.446	1.449.188	4.839.276
	EXPORT											
	Goods (NST/R)		Agricultural and forestry products	Other food and feeding stuff	Solid mineral fuels	petroleum & petroleum products	Ores and metal waste	Iron, steel and non-ferrous metals	Stones, earth and building materials	Fertilizers	Chemical products	Vehicles, machines, other goods
	2019	Tonnes	891.119	717.310	310	1.104.931	644.697	3.091.058	1.293.329	45.890	1.051.948	8.213.088
	2017	Tonnes	822.119	574.873	3.506	1.083.732	700.706	3.191.863	1.373.886	70.821	923.426	8.971.379
	2018	Tonnes	922.455	678.991	5.136	1.262.772	708.762	3.239.167	1.303.324	28.080	1.026.444	8.648.520
	2020 (1.-3. Quartal)	Tonnes	543.853	541.984	-	1.011.656	435.735	2.003.781	830.527	39.023	707.099	5.724.412

8. Figure: Import to Austria, NUTS 2, 2017 in TEUs

Country	Burgenland	Carinthia	Lower Austria	Upper Austria	Salzburg	Styria	Tyrol	Vorarlberg	Vienna
Belgium	-	-	-	-	-	2	-	-	2.584
Bulgaria	-	-	-	144	-	-	-	-	-
Germany	283	2.861	90	128.184	2.093	51.108	5.605	14.687	143.723
France	-	-	-	891	-	-	832	-	-
Greece	-	-	-	292	-	-	-	-	-
Italy	-	5.559	4.504	17.779	2.535	1.497	9.391	1.303	2.955
Netherlands	-	-	-	5.815	-	-	-	5.981	-
Poland	-	-	-	-	-	25.111	-	-	-
Romania	-	-	-	1.648	-	-	-	-	-
Slovakia	-	-	2.548	3.933	3.593	2.576	-	-	20.056
Slovenia	-	1.313	136	1.799	1.198	29.559	-	363	2.092
Czech Republic	-	-	12.121	6.815	19.154	6.966	5	5	1.444
Hungary	-	88	75	15.216	423	3.247	-	216	3.872
Switzerland & Liechtenstein	6	-	-	10.673	-	-	624	2.483	-
Turkey	-	-	-	-	-	1.622	-	-	893
Ukraine	-	-	-	-	-	48	42	-	-

9. Figure: Import to Austria, NUTS 2, 2018 in TEUs

Country	Burgenland	Carinthia	Lower Austria	Upper Austria	Salzburg	Styria	Tyrol	Vorarlberg	Vienna
Belgium	-	-	-	-	-	-	-	-	3.322
Germany	-	4.037	18	134.760	2.986	17.161	4.956	15.239	105.419
France	-	-	-	827	-	-	501	-	-
Italy	-	5.418	876	22.044	3.630	1.508	9.036	1.863	2.798
Croatia	-	-	-	-	-	273	-	-	-
Netherlands	-	-	-	9.812	-	-	-	5.997	-
Poland	-	-	-	-	-	21.996	-	-	-
Slovakia	-	288	8.384	7.952	2.254	4.730	-	-	9.915
Slovenia	-	1.284	85	1.997	621	29.230	12	563	2.122
Czech Republic	-	57	10.231	4.523	29.029	611	5	-	918
Hungary	-	-	236	20.790	811	2.707	-	-	6.824
Switzerland & Liechtenstein	36	-	93	13.227	12	8	1.944	2.805	-
Turkey	-	-	-	540	-	-	-	-	3.246
Ukraine	-	-	-	-	-	222	-	-	-

10. Figure: Import to Austria, NUTS 2, 2019 in TEUs

Country	Burgenland	Carinthia	Lower Austria	Upper Austria	Salzburg	Styria	Tyrol	Vorarlberg	Vienna
Belgium	-	-	-	36	-	-	-	-	2.334
Denmark	-	-	6	-	-	-	-	-	-
Germany	-	3.691	195	134.087	1.705	16.608	22.679	16.497	115.329
France	-	-	-	869	-	8	680	-	-
Italy	-	5.056	777	18.913	2.416	1.179	8.906	2.168	5.076
Croatia	-	-	-	-	-	762	-	-	-
Netherlands	-	-	-	6.477	-	-	-	5.454	-
Poland	-	88	-	-	-	23.308	-	19	126
Romania	-	-	-	84	-	-	-	-	-
Slovakia	-	360	8.324	6.320	1.338	4.531	-	-	3.041
Slovenia	-	1.099	30	1.859	553	32.324	12	412	1.561
Czech Republic	-	60	8.182	9.696	20.176	1.892	45	80	425
Hungary	-	-	96	16.567	-	3.147	-	-	11.152
Switzerland & Liechtenstein	42	-	110	9.317	5	18	818	2.894	3
Turkey	-	-	-	2.741	-	546	-	-	3.314
United Kingdom	-	-	-	-	-	-	-	-	1.268

11. Figure: Import to Austria, NUTS 2, 2017 in tons

Country	Burgenland	Carinthia	Lower Austria	Upper Austria	Salzburg	Styria	Tyrol	Vorarlberg	Vienna
Belgium	-	1.210	57.086	28.952	8.145	19.100	3.670	1.211	158.330
Bulgaria	-	133	1.038	3.085	-	19	76	-	16.403
Denmark	-	-	43	90	-	10	-	-	-
Germany	19.304	96.482	595.227	5.336.692	167.562	1.413.890	526.810	255.504	1.873.769
France	231	-	11.338	39.498	-	15.502	10.089	258	1.054
Greece	-	-	1.557	1.365	-	-	-	-	-
Italy	-	206.702	96.660	297.800	100.356	195.058	438.258	16.517	43.330
Croatia	-	307	91.663	65.184	-	177.432	-	-	451
Luxembourg	3.924	5.323	14.030	19.157	-	2.106	2.526	6.207	-
Netherlands	-	4.520	226.600	204.609	595	4.857	3.815	145.162	13.283
Poland	-	5.909	200.705	749.782	3.313	976.946	5.484	685	46.594
Romania	19.202	3.570	172.116	20.760	25.000	944	1.891	-	36.714
Sweden	365	14.495	15.099	11.212	4.295	21.856	-	2.309	15.712
Slovakia	1.092	42.474	352.036	1.013.002	84.320	410.751	53.071	-	156.576
Slovenia	-	102.702	137.320	3.203.642	87.743	1.885.746	128.494	19.281	23.985
Spain	-	298	218	48	7.122	50	48	-	104
Czech Republic	5.240	31.340	308.807	1.136.002	165.373	572.667	17.637	16.437	110.273
Hungary	44.405	28.401	192.523	855.895	9.429	940.242	1.810	4.841	557.341
Bosnia & Herzegovina	-	6.708	1.388	1.517	-	23.330	1	-	-
Switzerland & Liechtenstein	13	2.777	10.111	87.509	3.023	4.591	30.083	37.518	87
Serbia	-	1	47.876	14	-	3.187	-	-	1.087
Turkey	-	5	14.455	-	-	35.703	3.392	-	10.149
Ukraine	-	-	-	232.069	-	93	84	-	-

12. Figure: Import to Austria, NUTS 2, 2018 in tons

Country	Burgenland	Carinthia	Lower Austria	Upper Austria	Salzburg	Styria	Tyrol	Vorarlberg	Vienna
Belgium	-	633	52.390	14.398	2.320	2.201	3.618	1.520	145.737
Bulgaria	-	156	236	-	-	7	-	-	3.256
Germany	24.842	142.124	720.584	5.115.520	227.479	971.785	735.917	285.022	1.402.550
France	339	-	12.256	9.794	-	3.370	2.056	722	2.062
Greece	-	-	1.613	-	-	-	-	-	-
Italy	6.779	170.506	57.620	366.138	100.549	210.079	365.164	18.555	44.839
Croatia	-	527	107.866	29.607	-	337.879	1.155	-	1.121
Lithuania	-	-	1.412	-	-	11	-	-	-
Luxembourg	4.021	5.408	11.364	17.741	-	1.951	2.546	3.857	-
Netherlands	-	-	175.854	321.829	372	7.353	185	90.969	12.325
Poland	-	11.134	161.455	843.806	4.234	826.266	11.534	251	36.150
Romania	5.322	1.183	248.104	25.499	120	6.082	-	-	27.014
Sweden	8.359	13.644	13.471	1.174	7.286	9.443	-	365	26.927
Slovakia	5.841	57.707	348.569	766.079	37.884	455.892	42.626	72	109.298
Slovenia	-	124.051	105.619	2.740.304	13.832	1.961.332	71.674	26.054	24.761
Spain	-	50	-	-	6.885	-	-	-	-
Czech Republic	7.916	106.609	288.567	1.165.170	295.872	536.331	39.342	24.433	142.371
Hungary	35.285	24.091	232.889	688.350	4.005	723.026	1.608	45	543.629
Belarus	-	-	3.479	-	-	-	-	-	-
Bosnia & Herzegovina	-	9.315	-	-	-	13.446	-	-	-
Macedonia	-	454	-	0	-	14	-	-	2
Switzerland & Liechtenstein	83	4.259	16.010	127.956	444	10.823	97.647	86.654	1.116
Serbia	-	1	15.218	3	-	1.656	-	-	8.020
Turkey	-	-	8.636	5.041	-	286	9.328	-	58.428
Ukraine	-	-	-	168.836	-	429	-	-	-

13. Figure: Import to Austria, NUTS 2, 2019 in tons

Country	Burgenland	Carinthia	Lower Austria	Upper Austria	Salzburg	Styria	Tyrol	Vorarlberg	Vienna
Belgium	-	-	-	36	-	-	-	-	2.334
Denmark	-	-	6	-	-	-	-	-	-
Germany	-	3.691	195	134.087	1.705	16.608	22.679	16.497	115.329
France	-	-	-	869	-	8	680	-	-
Italy	-	5.056	777	18.913	2.416	1.179	8.906	2.168	5.076
Croatia	-	-	-	-	-	762	-	-	-
Netherlands	-	-	-	6.477	-	-	-	5.454	-
Poland	-	88	-	-	-	23.308	-	19	126
Romania	-	-	-	84	-	-	-	-	-
Slovakia	-	360	8.324	6.320	1.338	4.531	-	-	3.041
Slovenia	-	1.099	30	1.859	553	32.324	12	412	1.561
Czech Republic	-	60	8.182	9.696	20.176	1.892	45	80	425
Hungary	-	-	96	16.567	-	3.147	-	-	11.152
Switzerland & Liechtenstein	42	-	110	9.317	5	18	818	2.894	3
Turkey	-	-	-	2.741	-	546	-	-	3.314
United Kingdom	-	-	-	-	-	-	-	-	1.268

EXPORT

14. Figure: Export from Austria to Countries, tons/TEU's, 2017 – 2019

Country	Tonnes			TEU's		
	2017	2018	2019	2017	2018	2019
Belgium	412.013	377.764	253.203	2.689	2.889	2.100
Bulgaria	56.920	63.924	39.265	72	-	-
Denmark	7.322	-	499	-	-	6
Germany	8.008.280	7.737.796	7.634.658	295.398	249.721	254.984
Finland	100	-	-	-	-	-
France	134.471	98.875	92.090	2.219	1.613	1.807
Greece	111.972	89.023	106.033	3.929	1.892	4.000
Italy	3.011.808	3.109.925	2.955.258	54.192	58.932	55.933
Croatia	96.416	56.240	37.283	3	264	771
Latvia	218	215	217	-	-	-
Lithuania	429	566	121	-	-	-
Luxembourg	11.151	9.913	12.953	-	-	-
Netherlands	239.351	335.976	370.295	11.516	17.133	17.688
Poland	478.568	487.285	464.510	25.203	22.171	23.525
Romania	233.934	251.985	243.072	1.688	-	-
Sweden	101.765	68.165	72.413	-	93	12
Slovakia	396.665	301.232	241.935	13.840	13.342	11.208
Slovenia	2.016.735	2.060.111	1.980.880	24.507	29.197	25.318
Spain	5.151	79	529	-	-	-
Czech Republic	853.389	827.430	778.503	46.539	41.006	35.494
Hungary	486.214	663.307	624.403	21.980	34.184	29.280
Albania	1.241	1.992	193	-	-	-
Belarus	-	646	-	-	-	-
Bosnia Herzegovina	215	381	106	-	-	-
Macedonia	7.795	10.635	9.987	-	-	-
Moldova	-	-	-	-	-	-
Norway	877	3.519	228	-	-	-
Russian Federation	2.573	1.991	2.614	-	-	-
Switzerland and Liechtenstein	980.745	1.159.132	1.006.439	12.533	16.823	11.307
Serbia	16.847	23.112	14.954	-	-	-
Turkey	32.160	66.589	78.613	295	3.050	4.786
Ukraine	10.983	15.843	9.260	429	438	-
United Kingdom	-	-	23.168	-	-	1.056

5.1.2 Road Transport Import / Export

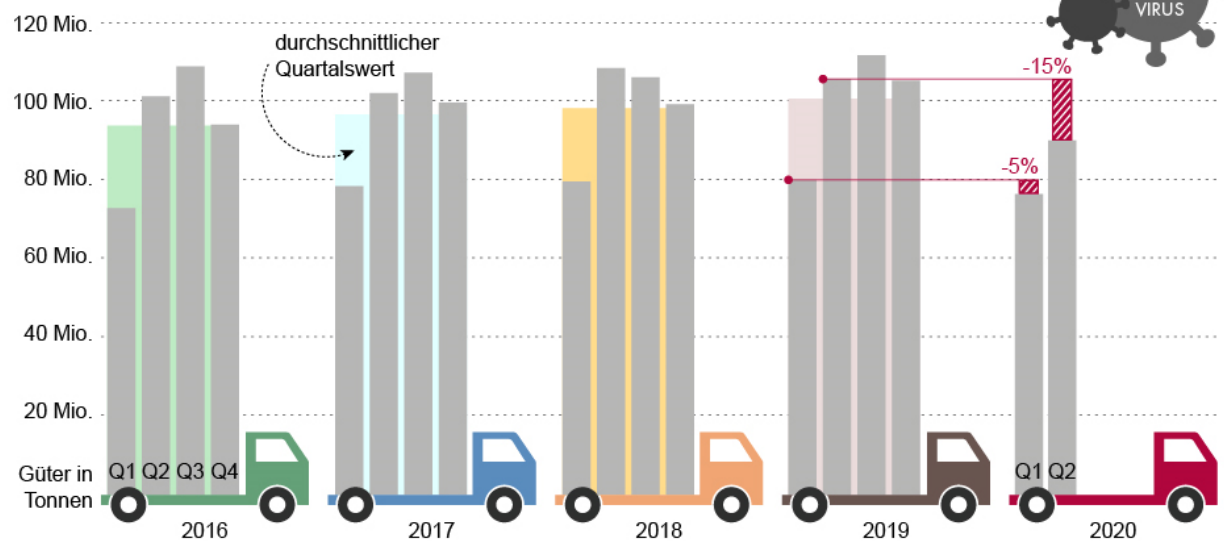
15. Figure: Import / Export / Transit / other foreign traffic to Austria, 2015 – 2019

YEAR	VALUE	Domestic Transport	Import	Export	Transit	other foreign traffic
2015	TONS	325.615.685	9.869.587	10.538.555	1.702.157	3.266.120
	1000 Tonnenkilometer Inland	14.842.993	974.554	1.153.459	189.807	-
	1000 Tonnenkilometer Ausland	641.404	2.534.192	2.973.940	1.100.943	1.046.233
	TONS	350.208.525	10.727.028	10.410.476	1.519.479	3.460.293
2016	1000 Tonnenkilometer Inland	15.766.401	1.028.624	1.118.722	176.886	-
	1000 Tonnenkilometer Ausland	740.694	2.540.327	2.781.517	861.169	1.123.330
	TONS	360.295.806	10.725.085	10.886.942	1.183.324	3.765.885
	1000 Tonnenkilometer Inland	16.214.139	986.985	1.075.258	123.461	-
2017	1000 Tonnenkilometer Ausland	590.364	2.492.858	2.756.050	622.221	1.117.030
	TONS	367.576.259	10.335.650	10.623.659	977.779	3.801.786
	1000 Tonnenkilometer Inland	16.393.030	971.335	1.122.707	106.536	-
	1000 Tonnenkilometer Ausland	521.244	2.386.269	2.624.348	560.729	1.076.671
2018	TONS	377.349.621	9.943.427	9.878.527	1.203.886	3.812.927
	1000 Tonnenkilometer Inland	16.693.136	1.000.051	1.063.819	148.135	-
	1000 Tonnenkilometer Ausland	525.383	2.403.233	2.654.649	749.560	1.263.839
	TONS	377.349.621	9.943.427	9.878.527	1.203.886	3.812.927

16. Figure: Transport Volume on Road 2016 - 2020

Transport Volume on Road 2016 - 2020

Transportaufkommen im Straßengüterverkehr



Quelle und Grafik: STATISTIK AUSTRIA, Straßengüterverkehr österreichischer Unternehmen 2020, Flash Estimates. – Erstellt am 03.08.2020.

IMPORT

17. Figure: Import to Austria from Countries, tonnes, 2015 - 2019

IMPORT to Austria					
LOADING COUNTRY GROUPS	2015	2016	2017	2018	2019
	TONS	TONS	TONS	TONS	TONS
Germany	25.015.450	25.990.233	26.493.164	26.408.662	28.529.729
Italy	5.804.080	5.970.530	5.743.091	7.200.367	8.486.163
Croatia	862.136	744.066	659.898	797.575	763.273
Poland	1.194.168	1.468.230	1.722.516	2.028.861	2.094.434
Slovakia	2.964.853	2.481.234	2.726.993	2.701.308	2.676.353
Slovenia	2.439.102	3.400.555	3.515.128	3.445.277	2.816.119
Czech Republic	5.777.899	7.138.886	7.799.612	8.508.856	8.687.473
Hungary	4.188.353	4.821.238	6.151.825	6.473.359	6.541.239
Bulgaria/Romania	1.359.236	1.150.431	1.415.168	1.418.154	2.071.319
Estonia/Latvia Lithuania	200.501	145.904	220.045	187.162	152.257
France/Spain Portugal	1.492.926	1.621.713	2.274.972	1.962.946	2.192.462
Greece / Cyprus	32.960	70.484	118.737	238.262	79.603
Norway/ Sweden Finland /Denmark	477.501	464.598	382.661	568.787	415.885
Switzerland +Liechtenstein	1.049.496	791.590	883.108	823.354	806.237
United Kingdom+Ireland Benelux	2.879.860	2.642.939	2.508.121	2.831.768	2.904.496
Third States	1.281.348	1.204.032	1.270.916	1.457.054	1.680.662

EXPORT

18. Figure: Export from Austria to Countries, tonnes, 2015 - 2020

Unloading Country	Export from Austria					
	2015	2016	2017	2018	2019	2020
	tons	tons	tons	tons	tons	tons
Bulgaria	2.413	1.151	3.989	2.257	14.149	2.831
Germany	5.393.235	5.376.577	5.707.867	5.628.464	5.170.918	5.879.164
France	129.256	106.592	93.378	110.047	121.132	96.511
Greece	12.907	17.815	17.729	11.318	21.126	10.148
Italy	2.243.418	2.375.987	2.345.552	2.204.533	2.218.004	1.950.445
Croatia	54.339	40.604	57.261	97.088	66.683	51.676
Poland	25.384	14.497	26.343	14.289	17.868	27.334
Romania	9.463	1.150	2.606	2.541	742	5.384
Slovakia	191.288	181.902	173.175	190.693	174.289	149.692
Slovenia	328.830	332.930	298.863	378.613	205.561	267.952
Czech Republic	209.333	286.739	246.933	247.904	251.997	231.264
Hungary	187.728	228.500	194.323	221.645	255.194	162.330
United Kingdom	57.700	42.134	26.569	51.279	58.116	35.257
Bosnia & Herzegovina	619	-	2.990	-	-	-
Serbia	1.490	1.935	-	6.101	5.694	-
Ukraine	-	-	-	-	-	-
Belarus	3.003	-	-	-	-	-
Russian Federation	-	-	1.321	1.931	1.352	-

5.1.3 Waterway Transport Import / Export

19. Figure: Total Import by IWT to Austria, goods & tonnes, 2015 - 2020

IMPORT											
YEAR	Tonnes	Agricultural and forestry products	Other food and feeding stuff	Solid mineral fuels	Petroleum, petroleum products	Ores and metal waste	Iron, steel and non-ferrous materials	Stones, earth and building materials	Fertilizers	chemical products	vehicles, machines and other goods
2015	Tonnes	493.518	234.830	214.375	503.152	2.311.675	133.728	221.912	183.354	-	28.476
2016	Tonnes	472.143	188.769	120.872	543.697	2.406.819	167.585	228.879	151.473	504	19.111
2017	Tonnes	601.501	191.819	269.147	640.628	2.563.651	197.266	233.858	105.175	1.522	17.665
2018	Tonnes	583.645	150.884	80.466	563.538	1.912.590	212.469	224.403	50.717	-	14.652
2019	Tonnes	870.284	181.799	49.919	557.347	1.949.922	190.020	307.768	68.458	-	17.822
2020	Tonnes	816.466	143.958	24.935	562.071	2.045.092	158.126	172.805	47.720	-	18.109

20. Figure: Total Export by IWT from Austria, goods & tonnes, 2015 -2020

EXPORT											
YEAR	Tonnes	Agricultural and forestry products	Other food and feeding stuff	Solid mineral fuels	Petroleum, petroleum products	Ores and metal waste	Iron, steel and non-ferrous materials	Stones, earth and building materials	Fertilizers	chemical products	vehicles, machines and other goods
2015	Tonnes	166.439	59.220	1.131	365.881	13.771	404.856	184.307	532.218	5.558	30.593
2016	Tonnes	156.506	57.659	1.973	389.035	10.759	591.597	233.740	502.841	3.411	28.071
2017	Tonnes	98.708	108.205	221	472.531	15.631	753.543	354.989	513.393	3.502	60.051
2018	Tonnes	79.723	43.324	-	537.131	7.943	551.733	204.313	327.983	-	24.543
2019	Tonnes	135.694	44.817	-	637.221	15.157	530.969	289.971	584.863	924	18.995
2020	Tonnes	109.852	81.411	-	570.006	13.205	489.064	187.110	582.991	-	27.341

EXPORT

21. Figure: Number of transports / loaded journeys, from AT public ports to ports of foreign countries, 2015 - 2020

Number of transports / loaded journeys																																				
Port of Loading	Port of Vienna (AT)							Port of Linz (AT)							Port of Krems (AT)						Ennshafen Port (AT)								Other ports (AT)							
Port of Unloading	DE	SK	HU	RS	BG	RO	UA	DE	SK	HU	HR	RS	BG	RO	UA	DE	HU	HR	RS	BG	RO	DE	SK	HU	HR	RS	MD	BG	RO	UA	DE	HU	RS	BG	RO	UA
2015	95	2	262	7	2	24	4	286	53	84	16	79	35	267	1	32	1	-	3	2	33	45	2	17	-	50	1	2	63	1	9	1	6	9	7	
2016	33	8	316	-	21	26	3	278	28	146	43	84	48	320	-	11	-	-	5	5	18	17	1	2	4	66	-	4	31	-	7	-	8	17	11	
2017	51	5	375	25	5	38	-	305	13	124	41	78	33	347	-	103	-	-	3	4	25	27	1	3	1	79	1	8	51	2	13	-	3	21	2	
2018	23	5	515	16	8	18	-	280	37	121	32	31	21	311	4	29	1	-	4	4	18	11	4	23	2	44	-	7	17	-	23	1	4	13	7	
2019	17	6	551	10	13	14	-	336	63	157	28	58	34	315	-	5	3	1	5	-	42	26	1	16	-	59	-	4	69	-	19	1	5	11	8	
2020	9	4	535	8	7	13	-	272	63	155	7	97	44	323	-	12	7	-	-	1	50	50	15	12	-	44	-	2	20	1	35	2	6	1	4	

22. Figure: Import of loaded journeys to Austrian public Port of Linz, 2016 - 2020

Port of Unloading	Port of Linz (AT)										
Port of Loading	Germany (DE)	Bratislava (SK)	Budapest (HU)	Dunajvaros (HU)	Komárom (HU)	Szony (HU)	Szazhalombatta (HU)	Vidin (BG)	Constanta (RO)	Turnu Magurele (RO)	Ismail (UA)
2016	5	956	7	35	-	38	3	1	3	-	685
2017	-	1029	23	15	-	25	2	-	4	1	679
2018	1	845	21	1	6	86	-	-	1	-	598
2019	2	625	18	-	-	14	1	-	49	-	584
2020	11	838	14	-	-	25	3	-	-	-	630

23. Figure: Import of loaded journeys to Austrian public Port of Krems, 2016 - 2020

Port of Unloading	Port of Krems (AT)																												
Port of Loading	Germany (DE)	Bratislava (SK)	Adony (HU)	Baja (HU)	Budapest (HU)	Dunaújváros (HU)	Dunajvaros (HU)	Győr (HU)	Komárom (HU)	Mohács (HU)	Fadd-Dombor (HU)	Vukovar (HR)	Apatin (RS)	Backa Palanka (RS)	Beograd (RS)	Novi Sad (RS)	Pancevo (RS)	Smederevo (RS)	Bogojev (RS)	Lom (BG)	Ruse (BG)	Svistov (BG)	Constanta (RO)	Galati (RO)	Oltenta (RO)	Orsova (RO)	Tumu Magurele (RO)	Ismail (UA)	Reni (UA)
2016	40	-	2	1	2	3	21	1	-	-	-	7	-	-	-	-	3	20	-	3	1	9	59	-	-	-	-	-	-
2017	27	1	-	4	1	-	38	-	-	-	1	4	-	4	1	-	-	24	-	-	5	7	45	15	2	-	-	-	3
2018	30	-	1	3	1	-	49	-	1	-	3	3	5	3	-	-	1	24	-	-	9	3	50	21	1	1	2	1	-
2019	23	1	-	-	1	-	12	-	-	1	-	12	2	6	-	6	4	42	4	-	2	3	36	15	-	-	-	-	-
2020	19	-	-	-	2	-	13	-	-	-	-	5	-	-	1	-	-	43	-	2	2	5	39	23	-	-	-	-	-

24. Figure: Import of loaded journeys to Austrian public Ennschafen Port, 2016 - 2020

Port of Unloading	Ennschafen Port (AT)																		
Port of Loading	Germany (DE)	Bratislava (SK)	Komarno (SK)	Klížská Nemá (SK)	Adony (HU)	Baja (HU)	Budapest (HU)	Dunaújváros (HU)	Dunajvaros (HU)	Győr (HU)	Komárom (HU)	Mohács (HU)	Bogyiszlás (HU)	Dunavécse (HU)	Fadd-Dombori (HU)	Paks (HU)	Solt (HU)	Fajsz (HU)	Osijek (HR)
2016	198	2	2	-	2	5	33	-	-	2	-	4	-	-	9	-	-	-	1
2017	205	4	6	-	5	4	29	2	-	7	-	7	-	-	19	-	-	-	-
2018	200	10	-	-	5	-	50	-	-	2	1	3	-	-	3	-	-	-	-
2019	219	7	1	-	4	8	53	-	-	2	3	11	-	-	-	5	-	-	-
2020	242	1	-	3	15	30	37	1	6	7	7	16	8	2	4	13	2	2	-

Port of Unloading	Ennshafen Port (AT)															
Port of Loading	Vukovar (HR)	Sisak (HR)	Apatin (RS)	Backa Palanka (RS)	Beograd (RS)	Novi Sad (RS)	Pancevo (RS)	Prahovo (RS)	Smederevo (RS)	Beocin (RS)	Bogojevo (RS)	Giurgiu Iesti (MD)	Lom (BG)	Ruse (BG)	Silistra (BG)	Vidin (BG)
2016	1	-	7	-	-	9	-	-	-	-	-	-	8	10	-	-
2017	1	-	10	3	-	9	-	-	-	-	-	-	4	9	1	-
2018	-	-	41	3	-	3	1	-	-	-	-	-	5	6	-	1
2019	2	-	2	31	19	40	13	2	5	2	35	1	7	4	-	-
2020	6	1	-	29	1	28	17	2	1	1	20	-	6	2	1	-

Port of Unloading	Ennshafen Port (AT)																
Port of Loading	Basarabi (RO)	Braila (RO)	Calafat (RO)	Calarsi (RO)	Cernavoda (RO)	Constanta (RO)	Corabia (RO)	Drobeta Turnu Severin (RO)	Galati (RO)	Giurgiu (RO)	Orsova (RO)	Tulcea (RO)	Turnu Magurele (RO)	Zimnicea (RO)	Moldova Veche (RO)	Ismail (UA)	Reni (UA)
2016	-	1	-	-	-	2	2	2	1	1	3	1	2	-	-	1	9
2017	10	5	2	-	-	2	3	-	1	3	-	3	-	-	-	4	15
2018	5	3	1	-	2	5	-	-	1	-	-	-	3	7	-	-	12
2019	1	2	-	1	-	2	-	-	-	2	-	1	-	-	2	-	10
2020	-	4	-	-	-	2	-	-	-	-	-	-	-	-	-	3	7

25. Figure: Import of loaded journeys to Austrian public Port of Vienna, 2016 - 2020

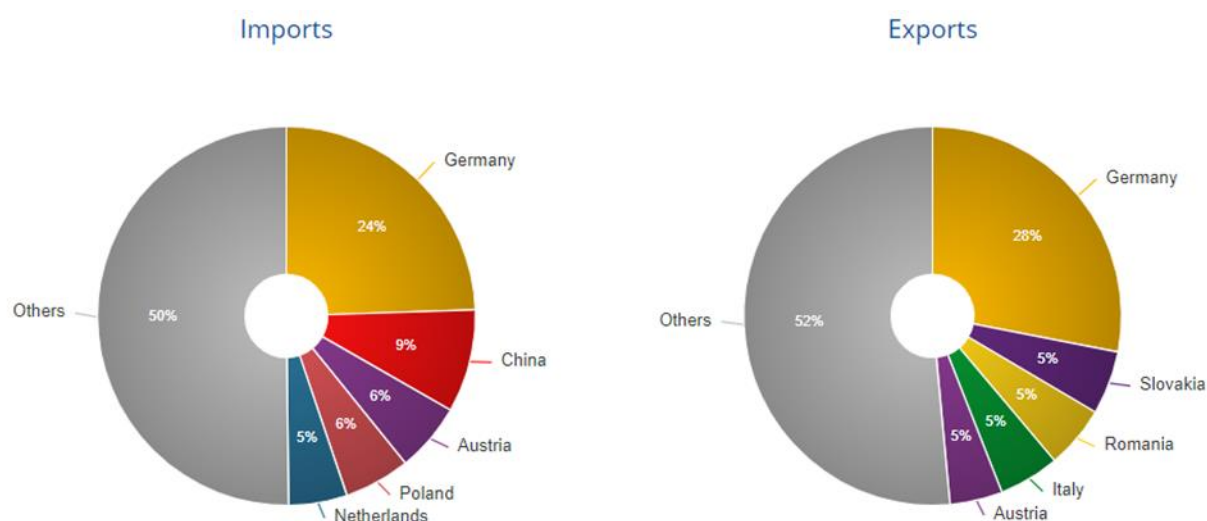
Port of Unloading	Port of Vienna (AT)																									
Port of Loading	Germany (DE)	Bratislava (SK)	Baja (HU)	Budapest (HU)	Dunajvaros (HU)	Komárom (HU)	Mohacs (HU)	Szony (HU)	Szazhalombatta (HU)	Osijek (HR)	Vukovar (HR)	Apatin (RS)	Beograd (RS)	Pancevo (RS)	Smederevo (RS)	Lom (BG)	Ruse (BG)	Svistov (BG)	Braila (RO)	Constanta (RO)	Drobeta Turnu Severin (RO)	Galati (RO)	Giurgiu (RO)	Tulcea (RO)	Galati Area (RO)	Reni (UA)
2016	23	21	-	2	20	-	2	3	4	4	1	3	1	5	65	1	6	3	-	25	7	12	2	2	-	3
2017	19	61	1	2	26	-	-	20	4	-	-	-	3	3	80	-	23	2	-	6	10	17	1	3	-	3
2018	27	33	2	3	34	-	-	14	-	-	-	-	-	-	76	-	4	-	2	2	-	18	-	-	-	1
2019	24	39	-	-	15	1	-	7	1	-	-	-	-	6	91	-	3	-	-	4	-	15	-	-	-	-
2020	20	22	-	4	23	10	-	1	-	-	-	-	-	2	59	-	7	-	-	-	6	17	-	-	6	-

Bulgaria

As data on intra-EU traffic are not available in an appropriate breakdown (type of goods / transport mode / quantity), we present below

- the country's most important foreign trade partners;
- quantitative aspects of trade with key partner countries, division into chapters;
- and the most important statistics describing the directions and characteristics of international transport.

26. Figure: Hungary's most important foreign trade partners and their share of the country's foreign trade turnover. 2020



Source: https://ec.europa.eu/eurostat/cache/infographs/trade/trade_2020/

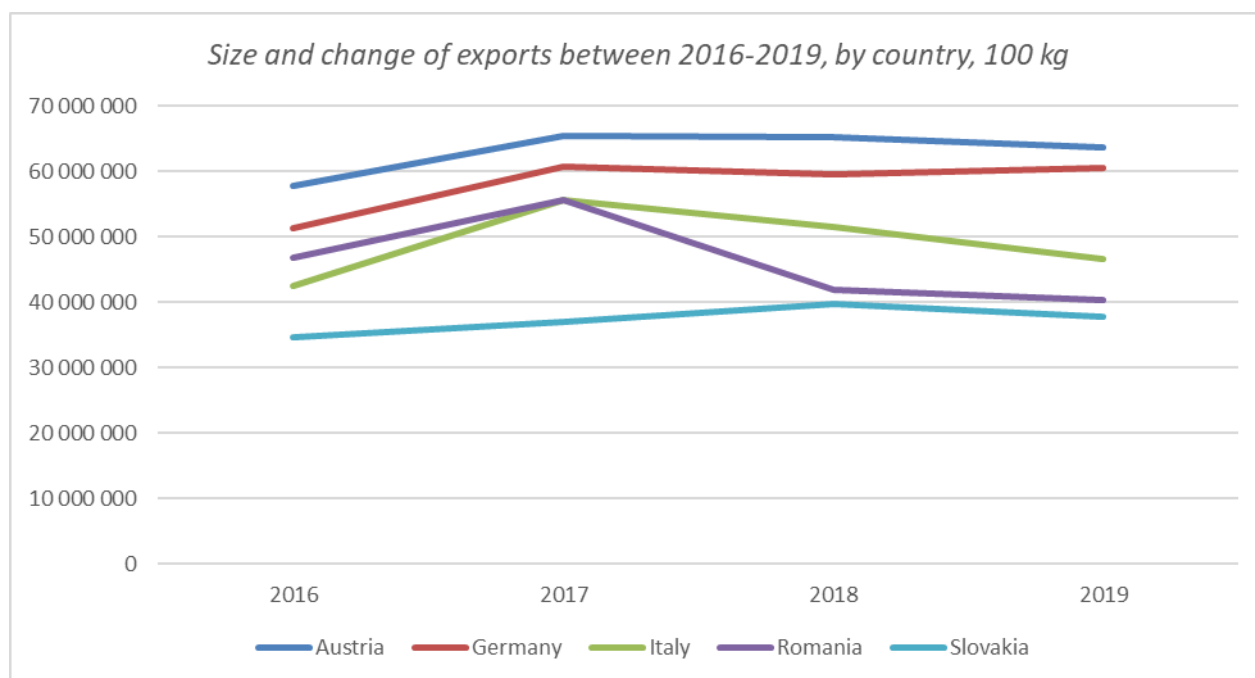
The figure shows that Germany is the number one trading partner with a share of 24-28%; Austria is an important foreign trade partner for both exports and imports; it can also be seen that the neighboring countries are considered to be the most important export partners; China and the Netherlands are prominent in terms of imports (as an entry point for goods entering the EU from outside the EU). The country's foreign trade turnover is approx. half are realized in 8 countries. -

The following two graphs show the countries with the 15 largest shares in Hungary's foreign trade turnover, depending on the size of their share in world trade and the increase between 2015 and 2019, as well as their share in Hungary's trade.

It can also be seen how the growth of Hungary's imports / exports towards a given partner country is related to the growth of the given partner country's exports / imports in the world.

Export

27. Figure: Volume and change of quantitative turnover between Hungary and its 5 most important partner countries between 2016-2019, 100 kg



Source: <https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

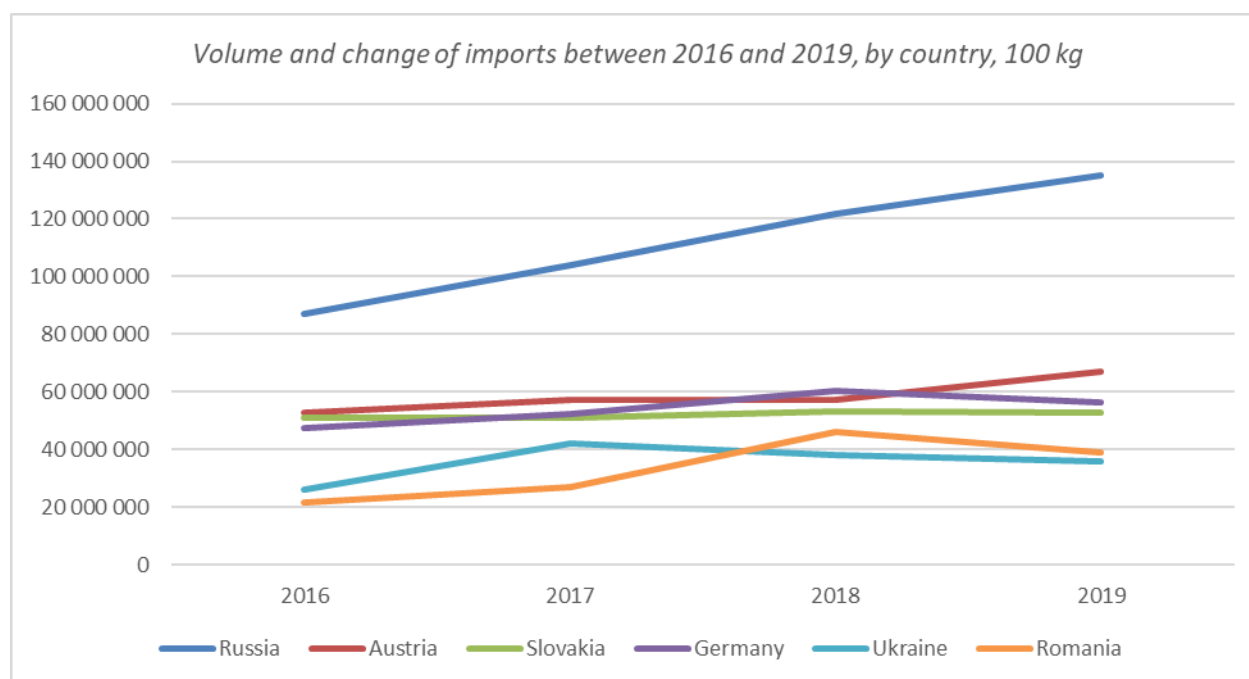
The figure shows that by 2017, the volume of turnover per hundred kilograms increased for all five countries (the largest proportion compared to Romania); traffic with Austria was the most intensive in quantitative terms throughout the period under review; turnover in 2019 is 110% of the value in 2016; at the same time, the largest increase in exports is to Germany: the turnover in 2019 is 118% of the turnover in 2016, the exports with Italy to 110% of the value in 2016, the exports to Slovakia are 109% of the value in 2016 -increased to 2019. Exports to Romania by 2019 are 86% of the 2016 level.

In terms of exports of the food and live animals product category, the country's number one partner is Italy (27,343,769 glazes), beverages and tobacco Romania (1,104,591 glazes), crude materials Austria (23,816,059 glazes), mineral fuels, lubricants and related materials Ukraine (29,184,348 glazes), animal and vegetable oils, fats and waxes the Netherlands (1,936,237 glazes), chemicals and related products Poland (7,842,826 glazes), manufactured goods classified chiefly by material Germany (10,358,695 glazes), machinery and transport equipment Germany (15,269,221 glazes), for miscellaneous manufactured articles, Germany (2,613,454 glazes), commodities and transactions not classified elsewhere in sitc (116,902 glazes).

Source: <https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

Import

28. Figure: Volume and change of the volume turnover between Hungary and the 6 most important partner countries between 2016-2019, 100 kg



Source: <https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

The figure shows that Russia has a prominent role in terms of volume-based traffic (pipeline transport); the volume of imports shows an increasing trend throughout the period; the 2019 volume is 155% compared to the 2016 volume. "Second place" Austria shows an increasing trend over the period under review; the volume imported from Austria in 2019 is 126% of the 2016 value. Imports with Slovakia essentially stagnated during the period considered. Imports from Germany will increase until 2018, but will decrease somewhat by 2019, but overall, they will continue to grow as follows: 2019 is 119 percent of 2016, and Slovakia is in third place, followed by Russia and Austria in 2017. Germany takes the third place in terms of imports to Hungary. The importance of Romania increases significantly during the period under review; the volume imported from Romania in 2019 is 181% of the 2016 value.

Germany (6,080,667 glazes), Poland (1,517,486 glazes) for beverages and tobacco, Romania (22,889,249 glazes) for crude materials, Russia (128,101,374 glazes) for mineral fuels, lubricants and related materials, animal and vegetable oils, fats and waxes for the Czech Republic (392,333 glaze), chemicals and related products for Germany (8,592,978 glaze), manufactured goods classified chiefly by material for Slovakia (20,941,451 glaze), machinery and transport equipment for Germany (20,589,943 glaze), for miscellaneous manufactured articles Germany (2,139,912 glaze) and for commodities and transactions not classified elsewhere in sitc Poland (1,018 glaze).

Source: <https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

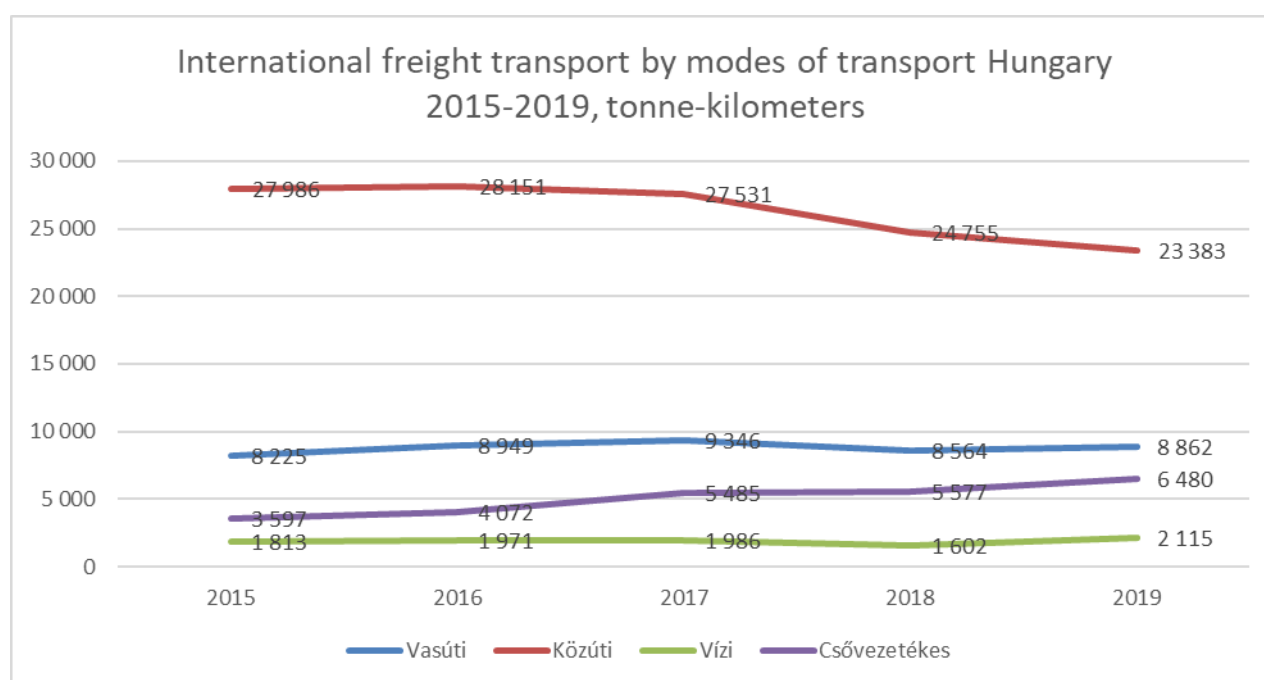
Below we present the modes of freight transport characterizing Hungary's foreign trade turnover.

2. Table: International freight transport by modes of transport Hungary 2015-2019

Year	Freight tonne-kilometers, million	Of which:			
		Rail	Road	Waterway	Pipeline
2015	41 651	8 225	27 986	1 813	3 597
2016	43 192	8 949	28 151	1 971	4 072
2017	44 398	9 346	27 531	1 986	5 485
2018	40 542	8 564	24 755	1 602	5 577
2019	40 916	8 862	23 383	2 115	6 480

Source: https://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_odmv002.html

29. Figure: International freight transport by modes of transport Hungary 2015-2019, on graph



Source: https://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_odmv002.html

It can be seen that international road freight transport is the most significant mode of transport in 2019; the performance of road freight transport in 2019 was 23,382 million freight tonne-kilometers; this represents a decrease of 17% compared to 2015 - and shows the largest decrease among all modes of transport, although road transport performance will continue to be overwhelming in 2019: 57% of total freight tonne-kilometers traveled.

The performance of rail transport in 2019 accounted for 21% of total performance, water transport for 5.1% and pipeline for 15%. The performance of water transport in 2019 is 116% of the performance of 2015, that of rail transport is 107%, and that of pipeline transport is 180%.

Regarding international road transport, Hungary's main export partners were Austria, Germany, Italy, Slovakia and Romania. In terms of import traffic, Austria also came in first, followed by Germany, Slovakia, Italy and Romania with the most goods arriving by road in 2018.

In rail transport, the country's main trading partners were Austria, Slovakia, Italy, Germany, Romania, and non-EU countries were Ukraine, Russia and Serbia. The main destinations for rail transit through the country are Romania, Germany, Austria, Slovakia and Slovenia. In 2018, Romania, Slovakia and Poland led the list of countries sending goods in transit. In 2018, 14% of the volume of goods transported by rail, expressed in freight tonne-kilometers, was performed in combined transport.

According to inland port statistics, in 2018, 86% of goods were traded with EU member states. Serbia outside the EU was also an important partner. In 2018, goods imported to Hungary by inland water came from Austrian, Romanian and Serbian ports. The most important destinations for Hungarian exports were Romanian ports. One third of the total volume of goods transported by inland waterway was loaded at the three large National Public Ports (Baja, Csepel and Győr-Gönyű).

The average transport distance was 184 kilometers by road and 202 kilometers by rail.

Source: <http://www.ksh.hu/docs/hun/xftp/idoszaki/jelszall/jelszall18.pdf>

Dry bulk cargo

The amount of processed dry bulk cargo in the main Bulgarian ports – two on the Danube River (Ruse and Lom) and two on the Black Sea (Varna and Burgas) is presented in the table below.

3. Table: Processed dry bulk cargo in the main Bulgarian ports, 2017-2019

Amount of dry bulk cargo processed, in thousand tonnes			
	2017	2018	2019
Port of Ruse	645	445	340
Port of Lom	325	N/A	N/A
Port of Varna	6302	5371	4982
Port of Burgas	3300	3000	3281

The Port of Varna processes by far the most amount of dry bulk cargo – nearly 5 million tonnes in 2019, which equals 59% of the entire processed cargo. The trend for the Port of Varna in the last few years shows

a slight decrease in the quantity of processed dry bulk cargo, starting from 6.3 million tonnes in 2017, then falling to 5.3 mil. tonnes in 2018 (63% of the entire cargo).

The Port of Burgas is composed of three terminals (East-1, East-2 and West), managed by two different port operators. The table above represents the combined cargo turnover of all three terminals.

In 2017, Port Terminal East-1 has processed 297 thousand tonnes of dry cargo, which is equal to 66% of the overall cargo, while in 2018, its share drops to 63%. Percentage-wise, there is an even bigger decrease in 2019, when the dry bulk cargo is only 42.6% of the entire processed cargo in the port.

Port Terminals East-2 and West are operated by one port operator and their combined processed cargo for 2019 is equal to 6.27 million tonnes. 3.28 million tonnes was the processed dry bulk cargo and 55% of it were cereals, while the rest of the dry bulk cargo is unspecified. In 2018, the overall processed cargo was 5.81 million tonnes with 2.73 million tonnes (47%) being dry bulk cargo. The share of cereals was 42% of the processed dry bulk cargo and the rest is, again, unspecified. In 2017, the overall processed cargo was 5.17 million tonnes with 3.02 million tonnes (58%) being dry bulk cargo. The share of cereals was 40% of the processed dry bulk cargo and the rest is unspecified.

In 2017, the Port of Lom has processed 536 thousand tonnes of cargo, 374 thousand of which (roughly 70%) were dry bulk cargo, mainly cereals, coal and fertilizers and to a much lesser extent – ores and ore concentrates, as well as coke. Unfortunately, there is no data for 2018 and 2019.

The Port of Ruse has processed 727 thousand tonnes of cargo in 2017 and 89% of it was dry bulk cargo. The main products in this category for the Port of Ruse are by far coal and cereals. To a lesser extent the port also processes chemicals and fertilizers, clay and coke. There is a significant decrease in the amount of processed cargo in 2018, falling from 727 thousand tonnes to 604 thousand tonnes, which is a 17% decrease. The amount of dry bulk cargo in particular has decreased even more – by 31%, to 445 thousand tonnes, comprising 74% of the overall cargo turnover. Another decrease happened in 2019 – by 20% in the overall processed cargo and by 24% in the dry bulk cargo, although it more or less still preserved its share of 70% from the overall processed cargo.

Coal

Coal volumes will decrease strongly in the next two decades, as many countries have decided to close coal fired power plants, in line with the aim to fight climate change. For Bulgaria and Romania, a rising coal demand is expected based on Oxford Economics forecasts. This result is similar to the findings about steel demand and iron ore transport in Eastern Europe.

Coal is one of the main types of bulk cargo, which is processed in the Bulgarian ports. The following table shows the amounts of coal, processed in the main Bulgarian ports:

4. Table: Processed coal in the main Bulgarian ports, 2017 – 2019

Amount of coal processed, in thousand tonnes			
	2017	2018	2019
Port of Ruse	277	249	122
Port of Lom	131	N/A	N/A
Port of Varna	N/A	N/A	N/A
Port of Burgas	N/A	N/A	N/A

The amount of processed coal in the Port of Ruse for 2017 is 277 thousand tonnes. There is a 10% decrease in 2018, resulting in only 249 thousand tonnes of processed coal. An even bigger decrease took place in 2019, the processed coals were only 122 thousand tonnes, more than 50% less than the previous year.

The only available data for the Port of Lom in terms of processed coal is for 2017, when the amount was 131 thousand tonnes.

Cereals and fodder

Data on the amount of cereals and fodder processed in the Bulgarian ports is provided in the table below:

5. Table: Processed cereals and fodder in the main Bulgarian ports, 2017 – 2019

Amount of cereals and fodder processed, in thousand tonnes			
	2017	2018	2019
Port of Ruse	114	68	101
Port of Lom	165	N/A	N/A
Port of Varna	N/A	N/A	N/A
Port of Burgas	1201	1140	1810

There data for the ports in Lom and Varna is missing, so for the purposes of the current report it is difficult to determine the amount of processed cereals and fodder in these two ports. The only available information is for 2017, when 165 thousand tonnes of cereals were processed in the Port of Lom.

The Port of Ruse shows some inconsistencies when it comes to the quantities of processed cereals throughout the observed period. The largest quantity was in 2017 – 114 thousand tonnes. Then there was a 40% decrease in the next year and the processed amount reached only 68 thousand tonnes. The next

year, 2019, saw an increase of 48%, which brought the amount of processed cereals and fodder to 101 thousand tonnes.

The Port of Burgas has processed significantly more cereals in general and for the observed period. There was a slight decrease between 2017 and 2018, although the quantity stayed pretty much the same. Between 2018 and 2019 there was a huge increase of 59%, when the processed quantity of cereals reached 1.81 million tonnes.

General cargo

The table below shows the amount of processed general cargo in the different ports:

6. Table: Processed general cargo in the main Bulgarian ports, 2017-2019

Amount of general cargo processed, in thousand tonnes			
	2017	2018	2019
Port of Ruse	82	159	145
Port of Lom	211	N/A	N/A
Port of Varna	925	825	817
Port of Burgas	900	1371	857

In 2017, the general cargo processed in the Port of Ruse was equal to 82 thousand tonnes. Its share in the overall cargo turnover was 11%. The general cargo with the biggest share was metals – slightly less than 30 thousand tonnes. The transshipment of trailers and containers amounted to 22 thousand tonnes (2082 TEU). The processed machines and equipment (outside of those that passed through the Ro-ro terminal, since they are registered separately) were 16.6 thousand tonnes. Finally, there were an additional 1 thousand tonnes of packaged chemicals and fertilizers, which were processed in 2017.

In 2018, the general cargo reached a share of 28% of the overall cargo turnover in the Port of Ruse. The increase in physical tonnes was 77 thousand, which resulted in 159 thousand tonnes of processed general cargo for 2018. The amount of processed metals increased significantly, more than 3 times as much as the previous year – 109 thousand tonnes. The processed machines and equipment have almost doubled compared to the previous year – 31 thousand tonnes (once again, this excludes the machines and equipment that passed through the Ro-ro terminal, which was equal to 8 thousand tonnes). Finally, the packaged chemicals and fertilizers increased to 3 thousand tonnes.

In 2019, the processed general cargo decreased a bit, amounting to 145 thousand tonnes. The largest share belonged to metals – 103 thousand tonnes. The amount of processed machines and equipment slightly decreased compared to last year – 17 thousand tonnes (the Ro-ro terminal processed an additional 7

thousand tonnes, bringing the total to 24 thousand tonnes). The packaged chemicals and fertilizers, which were processed in the Port of Ruse, increased 4 times and were equal to 12 thousand tonnes.

The next table shows the general cargo processed in the Port of Ruse, by type:

7. Table: Processed general cargo in the Port of Ruse, by type, 2017-2019

Types of general cargo processed in the Port of Ruse, in thousand tonnes			
	2017	2018	2019
Metals	30	109	103
Machines and equipment	17 (24)*	31 (39)*	17 (24)*
Packaged chemicals and fertilizers	1	3	12

* The value in the brackets is the overall amount of processed machines and equipment, including those, which were processed by the ro-ro terminal

The Port of Varna saw a decrease of more than 100 thousand tonnes in the amount of processed general cargo throughout the observed period – from 925 thousand in 2017 to 817 thousand in 2019. There is no data on the types of general cargo, processed by the port.

The three terminals in the Port of Burgas demonstrate some inconsistencies when it comes to the handling of general cargo, making it difficult to spot a trend. They have processed a combined 900 thousand tonnes of general cargo in 2017. There was more than a 50% increase in 2018 and then a sharp 38% decline in 2019. There is no data on the types of general cargo, processed by the port.

Liquid bulk cargo

The biggest trade exchange by water is with the Russian Federation, followed by Turkey, Romania and Ukraine. The amounts of processed cargo for other destinations are very small.

The table below provides data on the amount of processed liquid bulk cargo in the Bulgarian ports:

8. Table: Processed liquid bulk cargo in the Bulgarian ports, 2017-2019

Amount of liquid bulk cargo processed, in thousand tonnes			
	2017	2018	2019
Port of Ruse	N/A	N/A	N/A
Port of Lom	N/A	N/A	N/A
Port of Varna	878	295	534
Port of Burgas	455	917	986

The largest amount of processed liquid bulk cargo in the Port of Varna in the observed period was in 2017, when 878 thousand tonnes of cargo passed through the port. There was a sharp 66% decline in 2018, when only 295 tonnes were processed. After that, there was an 81% increase in 2019, when the processed liquid bulk cargo reached 534 thousand tonnes. The share of processed liquid cargo is between 3-6% of the overall cargo handled by the port.

Liquid bulk cargo in the Port of Burgas is only processed through Terminal East-2. It has increased with more than 100% within the observed period – from 455 thousand tonnes in 2017 to 986 thousand in 2019. There is no data on any further breakdown of the different types of processed liquid cargo.

The ports of Ruse and Lom have not processed any liquid bulk cargo for the 2017-2019 period.

Containerized cargo

The type of cargo, which is transported in shipping containers and carried by container ships generally can vary between finished products, product parts, raw materials etc.

The following table provides the amount of processed containerized cargo in the Bulgarian ports:

9. Table: Processed containerized cargo in the Bulgarian ports, 2017-2019

Amount of containerized cargo processed, in thousand tonnes			
	2017	2018	2019
Port of Ruse	N/A	N/A	N/A
Port of Lom	N/A	N/A	N/A
Port of Varna	1892	2060	2119
Port of Burgas	951	957	1144

In the Port of Burgas, containerized cargo is only processed within Terminal West. There is a 20% increase of processed cargo of that type in the observed period, starting from 951 thousand tonnes in 2017 and reaching 1144 tonnes in 2019.

Port of Varna is by far the most used when it comes to processing containerized cargo. Just like with the Port of Burgas, there is a clear trend of increasing the amount of handled containers from year to year. In 2017 the port has handled 1892 tonnes of containers and that number increases to 2119 in 2019 – a 12% increase. The processing of containerized cargo is approximately 25% of the overall cargo handling in the Port of Varna.

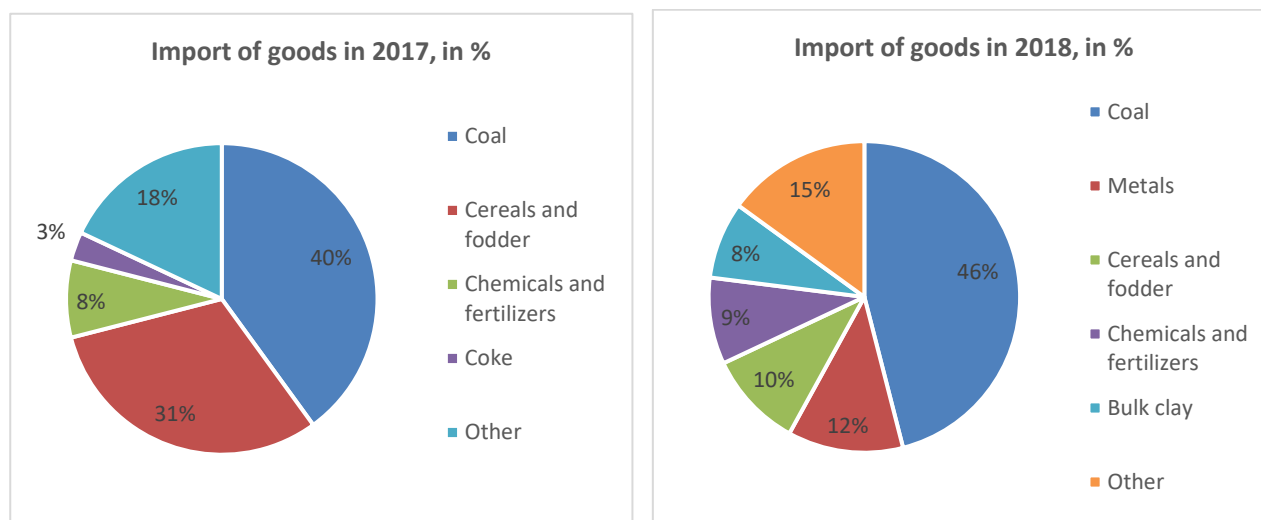
The ports of Ruse and Lom have not processed any containerized cargo for the 2017-2019 period.

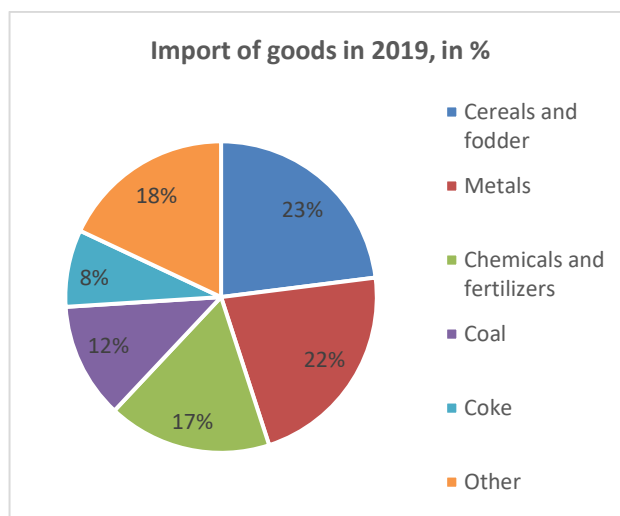
Import / export

Only the Ports of Ruse and Lom provide any data regarding the types of goods, which were intended for import and export respectively.

The next few Figures present the share of import goods, by type and year, in the Port of Ruse:

30. Figure: Imports of goods, by type, 2017-2019

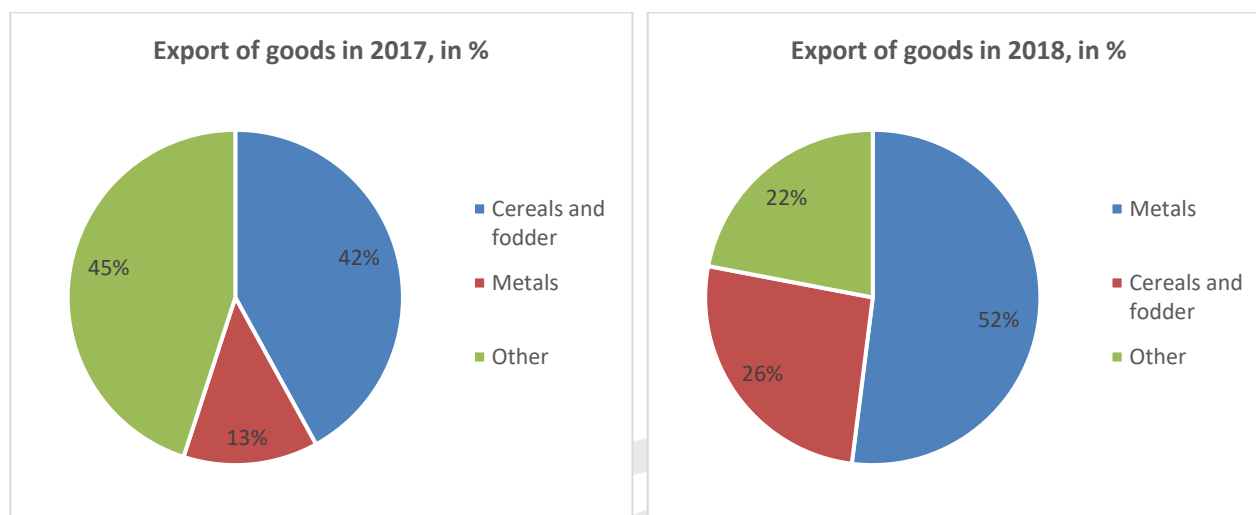


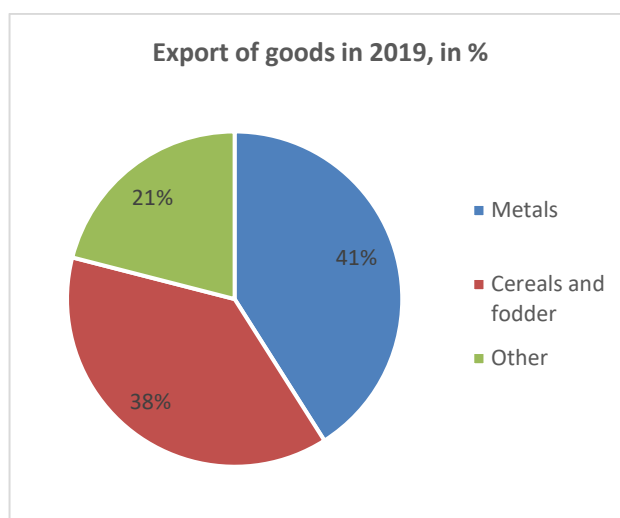


The import's share in the overall cargo turnover in the Port of Ruse varies throughout the years. In 2017 it takes 81%, in 2018 – 73% and in 2019 – 64%. There is an easily identifiable trend of reduction of imports in the observed period.

The share of export goods, by type and year, in the Port of Ruse are presented below:

31. Figure: Exports of goods, by type, 2017-2019





There are two main types of goods, which are exported through the Port of Ruse – cereals and fodder and metals. Their share in the overall export varies throughout the period.

Regarding the Port of Lom, the only available data is for 2017, when 63% of the cargo turnover was intended for import and 37% - for export. There is no available breakdown by types of cargo.

Cargo flows through the railway network

There is a trend in Bulgaria, which shows a decreasing share of the cargo transported through the railway network. That cargo, which would have been transported by trains in the past, is now transported on the road, by trucks. The railway transportation currently holds approximately 15% of all cargo transported by land, the other 85% belong to road transportation.

The following table shows the amount of cargo transported by railway in the last years. The quantities are in thousand tonnes:

10. Table: Cargo transported by railway, 2017 - 2019

	2017	2018	2019
Local transportation	11374,1	10405,8	9893,4
International transportation	4655,8	4390,2	5054,7
Overall	16029,9	14796,0	14948,1

Source: NSI

There is one major railroad cargo company in Bulgaria, which is owned by the state – BDZ Freight Services. It owns approximately 45% market share in terms of railway cargo transportation (data from 2018). The other 55% are divided among 10 other railroad carriers, who are licensed for cargo transportation. The data provided below is about the types and quantities of cargo, which BDZ Freight Services have transported in the last few years, which, given its large market share, will provide a good understanding of the cargo flows, which pass through the railway network.

Rail transport is preferred mainly for the transport of solid mineral fuels, oil and petroleum products, iron ore and scrap, non-ferrous metal ores, metal products, natural and chemical fertilizers.

The types and quantities of cargo, transported by BDZ Freight Services, is provided in the next table:

11. Table: Cargo transported by BDZ Freight Services, by type, 2017-2019

<i>The listed quantities are in thousand tonnes</i>			
Type of cargo	2017	2018	2019
Processed and unprocessed non-ore raw materials	1426	1434	1285
Petrol and petrol-based products	1096	1383	1402
Ore and metal waste	975	1172	1581
Products for the ferrous and non-ferrous metallurgy	637	633	637
Chemical substances and products	400	667	1271
Solid mineral fuels	530	365	222
Machines, transport equipment	388	421	377
Food products and fodder	360	278	368
Fertilizers	249	190	256
Agricultural products and livestock	169	120	175
Overall	6230	6663	7574

The difference in the overall amount of transported cargo between 2019 and 2018 is mainly due to the significant increase in transported chemical substances and products in 2019. There has been a trend of

increasing the transported quantities of some type of products – petrol, ores, and chemical substances. Other types of cargo, like solid mineral fuels, have seen a decrease. The other types of cargo are more or less keeping the same quantities throughout the revised period, therefore it is difficult to spot a developing trend.

Import/export

The data below presents information on the shares that import, export and transit transportation take in the overall cargo processing:

12. Table: Overall amount and shares of the import, export and transit transportation, 2017-2019

	2017		2018		2019	
	Amount (thousand tonnes)	Share	Amount (thousand tonnes)	Share	Amount (thousand tonnes)	Share
Import	722.4	30.3%	710.9	29.7%	508	22.2%
Export	1292	54.1%	1266.5	52.9%	1376.7	60.2%
Transit	372.1	15.6%	416.4	17.4%	402.1	17.6%

Biggest countries, from which there is import of goods via the railroad network:

13. Table: Top countries, from which there are imports via the railroad network, 2018-2019

	2018		2019	
	Amount (thousand tonnes)	Share	Amount (thousand tonnes)	Share
Romania	149.27	21%	79.75	15.7%
Turkey	137.44	19.3%	121.05	23.8%
Serbia	98.46	13.8%	89.70	17.7%
Russia	69.02	9.7%	75.02	14.8%
Austria	65.60	9.2%	37.06	7.3%

1. Romania – Bulgaria mainly imports petrol and petrol products, ores and metal waste, as well as chemical substances and products.
2. Turkey – main types of cargo imported from Turkey are processed and unprocessed non-ore raw materials, machines and transport equipment, as well as chemical substances and products.
3. Serbia – the main types of imported cargo are products for the ferrous and non-ferrous metallurgy, ores and metal waste, machines and transport equipment, as well as chemical substances and products.
4. Russia – mainly gas propane-butane, petrol and petrol products, machines, as well as products for the ferrous and non-ferrous metallurgy.
5. Austria – machines and transport equipment, petrol and petrol products, food products and various other goods

The biggest export destinations for Bulgaria's railway cargo transportation are as follows:

14. Table: Top export destinations via the railroad network, 2018-2019

	2018		2019	
	Amount (thousand tonnes)	Share	Amount (thousand tonnes)	Share
Turkey	426.21	33.6%	515.14	37.4%
Romania	242.23	19.1%	224.01	16.3%
Serbia	167.56	13.2%	189.59	13.8%
North Macedonia	115.92	9.2%	193.34	14%

1. Turkey – Bulgaria's main exports to Turkey are processed and unprocessed non-ore raw materials, chemical substances and products, food products and fodder, as well as agricultural products.
2. Romania – mainly products for the ferrous and non-ferrous metallurgy, processed and unprocessed non-ore raw materials, as well as fertilizers.
3. Serbia - petrol and petrol products, chemical substances and products (ammonia), agricultural products.
4. North Macedonia – mainly ores, metal waste and fertilizers.

Bulgaria is also a transit country for many of the cargo flows between European countries and Turkey. Information on the destinations of the transit cargo, which passes through the railway network of Bulgaria can be found in the table below:

15. Table: Cargo passing through the Bulgarian railroads in transit, by destination, 2018-2019

	2018		2019	
	Amount (thousand tonnes)	Share	Amount (thousand tonnes)	Share
From Turkey to Austria	75.02	18%	67.06	16.7%
From Hungary to Turkey	65.03	15.6%	58.13	14.5%
From Romania to Turkey	29.43	7%	24.20	6%
From Austria to Turkey	29.43	7%	21.88	5.4%
From Poland to Turkey	28.78	6.9%	10.38	2.6%
From Slovakia to Turkey	15.87	3.8%	15.02	3.7%
From Turkey to Germany	22.81	5.5%	40.85	10.2%
From the Czech Republic to Turkey	9.21	2.2%	5.50	1.4%

1. From Turkey to Austria - processed and unprocessed non-ore raw materials and minerals, machines and transport equipment.
2. From Hungary to Turkey - chemical substances and products, machines and transport equipment.
3. From Romania to Turkey - machines and transport equipment, various other goods.
4. From Austria to Turkey - machines and transport equipment, products for the ferrous and non-ferrous metallurgy.
5. From Poland to Turkey - chemical substances and products, machines and transport equipment.
6. From Slovakia to Turkey – food products and fodder, chemical substances and products, machines.
7. From Turkey to Germany - machines and transport equipment, food products and fodder, various other goods.
8. From the Czech Republic to Turkey - chemical substances and products, machines and transport equipment, various other goods.

The biggest share of the transportation for import and export belongs to dry bulk cargo – grains, ore, coke, fuel, etc. Out of all of them, those with largest quantities and steady export growth rate are agricultural products, while the imports consist mostly of metals and fuels.

In the last five years the overall cargo turnover varies and there is no clear growth.

Cereals are shaping up to be one of the most promising types of cargo, transported through the Bulgarian ports. In Burgas in particular, there was a significant increase in the amount of processed cereals in 2019. The management has also invested in increasing the capacity of the port's silo complex. This decision was taken in response to the needs of the market.

Imports and exports of Bulgaria in relation with selected key partner countries

16. Table: Number of countries for import and export of the Top 20 partner countries by transport modes

Transport modes	Number of partner countries for export	Number of partner countries for import	Key partners for export	Key partners for imports
Air	157	101	Russia, Norway, Serbia	China, the United States of America, Hong Kong
Maritime	184	149	Turkey, Singapore, Egypt	Russia, Ukraine, Turkey
Railway	74	56	Turkey, Serbia, Macedonia	Serbia, Ukraine, Turkey
Road	167	136	Turkey, Serbia, Macedonia	Turkey, Macedonia, Serbia
Inland waterways	69	35	Turkey, Serbia, Ukraine	Ukraine, Russia, Serbia

The following commodity groups have been considered individually by transport mode as structurally defining for exports and imports and are presented below:

17. Table: Structuring commodity groups for exports and imports by transport modes

Commerce / Transport		Inland Waterways		Railway Transport		Road Transport		Maritime Transport	
Export	3	3	PETROLIUM PRODUCTS	8	CHEMICALS	9	MACHINES, TRANSPORT EQUIPMENT, ITEMS	8	CHEMICALS

							AND VARIOUS ITEMS		
	9	1	FOODS AND FOOD FOR ANIMALS	1	FOODS AND FOOD FOR ANIMALS	8	CHEMICALS	3	PETROLIUM PRODUCTS
	8	6	RAW AND PROCESSED MINERALS, CONSTRUCTION MATERIALS	6	RAW AND PROCESSED MINERALS, CONSTRUCTION MATERIALS	1	FOODS AND FOOD FOR ANIMALS	1	FOODS AND FOOD FOR ANIMALS
Import	9	2	SOLID MINERAL FUELS	3	PETROLIUM PRODUCTS	9	MACHINES, TRANSPORT EQUIPMENT, ITEMS AND VARIOUS ITEMS	3	PETROLIUM PRODUCTS
	8	5	METAL PRODUCTS	5	METAL PRODUCTS	6	RAW AND PROCESSED MINERALS, CONSTRUCTION MATERIALS	7	FERTILIZERS
	1	7	FERTILIZERS	4	ORES AND METAL WASTE	8	CHEMICALS	5	METAL PRODUCTS

Source: Integrated Transport Strategy of Bulgaria 2030

Export cargoes are mainly steel, grain, some meal, rapeseed, sunflower seed, fertilizers, biodiesel, etc. Import volumes comprise coal, clay, rapeseed, sunflower seed, fertilizers, machinery, equipment etc.

Overall cargo turnover of the Bulgarian Danube ports for 2020:

Export: 2.823 mln tonnes

Import: 1.799 tonnes

Cabotage: 0.809 mln tonnes

Total: 5.431 mln tonnes

Export breakdown:

Dry bulk cargo – 51.5%

General cargo – 6.31%

Liquid cargo – 2.8%

Ro-Ro – 39.4%

Import breakdown:

Dry bulk cargo – 31.2%
General cargo – 23.25%
Liquid cargo – 17.5%
Ro-Ro – 28.1%

18. Table: Cargo turnover in the terminals within the former Port Complex Ruse for the first half of 2020

Terminal	Cargo turnover by month						Total	Cargo
	1	2	3	4	5	6		
Ruse-East 1	18,216	15,110	13,495	8,981	8,572	4,245	68,619	Clay, sunflower seed, machinery and equipment
Ruse-East 2	18,463	18,791	13,494	11,368	13,540	10,102	85,758	Steel, fertilizers, sunflower seed
Ruse-West	8,579	14,120	14,063	15,308	14,266	12,655	78,991	Chemicals, steel, sunflower seed
Svishtov	15,055	29,485	20,389	19,349	36,451	15,419	136,148	Inert materials, corn, liquid fertilizers
Somovit	4,205	18,917	16,209	22,519	40,728	14,450	117,028	
Nikopol	0	0	0	0	0	0	0	
Tutrakan	0	0	0	0	0	0	0	
Svishtov ferry	30,862	17,939	0	0	0	25,704	74,505	
Nikopol ferry	51,071	66,096	32,096	0	0	41,619	190,882	
Silistra ferry	0	0	0	0	0	0	0	
Total	146,451	180,458	109,746	77,525	113,557	124,194	751,931	

19. Table: Cargo turnover in the terminals within the former Port Complex Lom for the first half of 2020

Terminal	Cargo turnover by month						Total	Cargo
	1	2	3	4	5	6		
Lom (concession)	41,236	60,190	65,724	64,782	51,263	9,458	292,653	Fertilizers, steel, wheat

Vidin-South (concession)	4,346	16,689	14,135	16,514	5,991	988	58,663	Corn, wheat, barley
Vidin-North (concession)		3,486	1,387	0	0	0	4,873	Fertilizers, wheat, barley
Vidin ferry				0	0	0	0	
Orjahovo (concession)	4,723	15,192	26,135	22,236	4,609	11,753	84,648	Corn, fertilizers
Total	50,305	95,557	107,381	103,532	61,863	22,199	440,837	

Regarding the relations with Black Sea countries, the total imports of Bulgaria are shown below.

20. Table: Imports in Bulgaria from the Black Sea countries

Bulgaria				
All goods	Georgia	Russian Federation (Russia)	Turkey	Ukraine
Unknown	0	0	0	0
Sea	357441	5283058	770810	1175320
Rail	0	106128	30930	12338
Road	1965	86980	978617	157442
Air	0	77	234	10
Post	0	2	9	1
Fixed mechanism	0	2050755	0	0
Inland water	0	46340	40008	424640
Self propulsion	2	27	2085	2
All modes	359408	7573367	1822693	1769753

21. Table: Exports of Bulgaria to the Black Sea countries

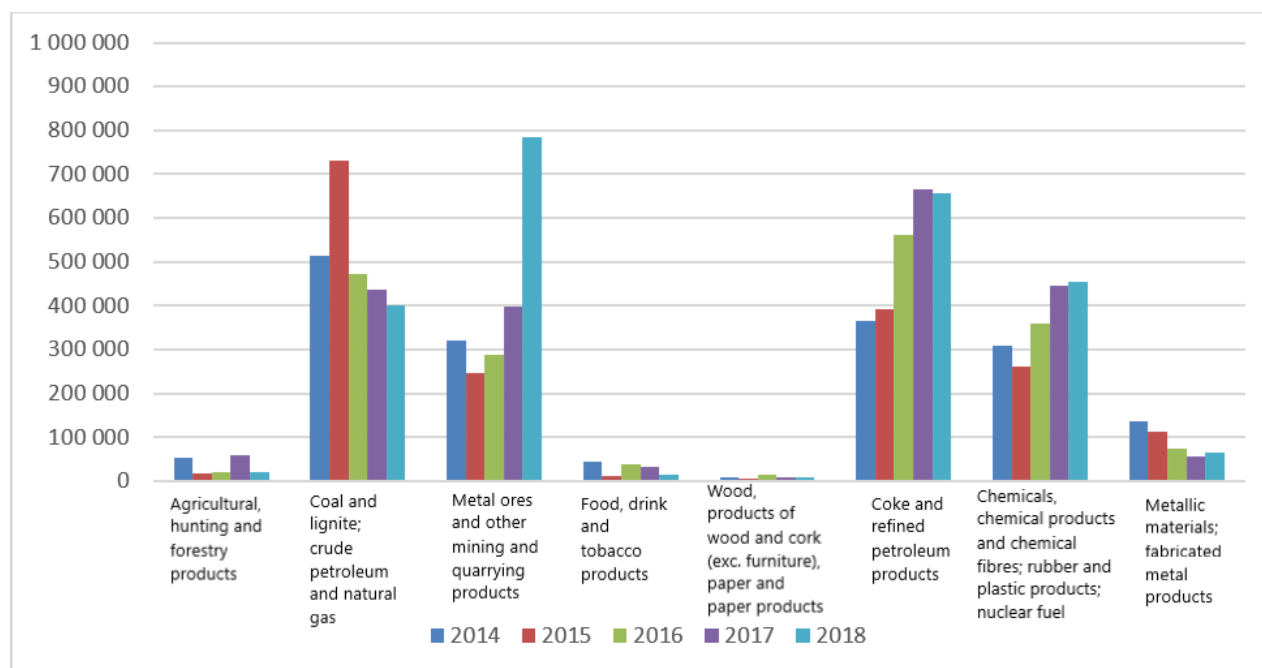
Bulgaria				
All goods	Georgia	Russian Federation (Russia)	Turkey	Ukraine

Unknown	0	0	0	0
Sea	204322	8632	2358770	146601
Rail	0	506	237917	0
Road	13632	56718	826798	81308
Air	22	202	65	18
Post	0	1	0	0
Fixed mechanism	0	0	0	0
Inland water	0	0	0	714
Self propulsion	1721	0	3	35
All modes	219697	66059	3423553	228676

Hungary

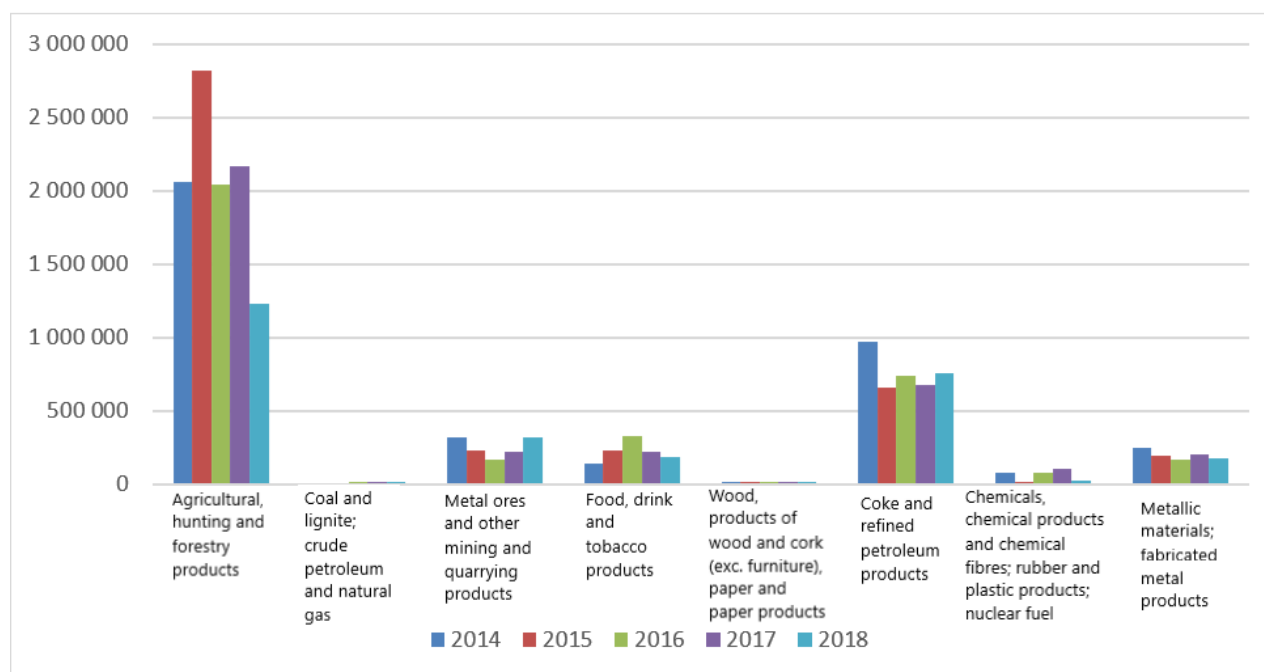
Looking at the breakdown of the volume of goods loaded in inland ports by commodity group (NST 2007), three commodity groups accounted for 72% of the total volume loaded in 2018: (i) agricultural products, (ii) metallic ores and other mining and quarrying products, and (iii) coke and refined petroleum products. In 2018, one third of the goods imported into and unloaded in our country were metal ores and other mining and quarrying products, with a significant share of coke and refined petroleum products, chemicals and chemical products, and coal and lignite. In 2018, 44% of the goods loaded in inland ports were agricultural products (a much higher share than in previous years), with a significant share of coke and refined petroleum products (27%). In 2018, the volume and share of goods loaded in inland ports was 1.3 M mtons of agricultural products (24%), 1.1 M mtons of ores (21.3%) and 0.4 M mtons of coal.

32. Figure: Volume of goods landed in inland ports by main categories of goods (tonnes)



Forrás: KSH data

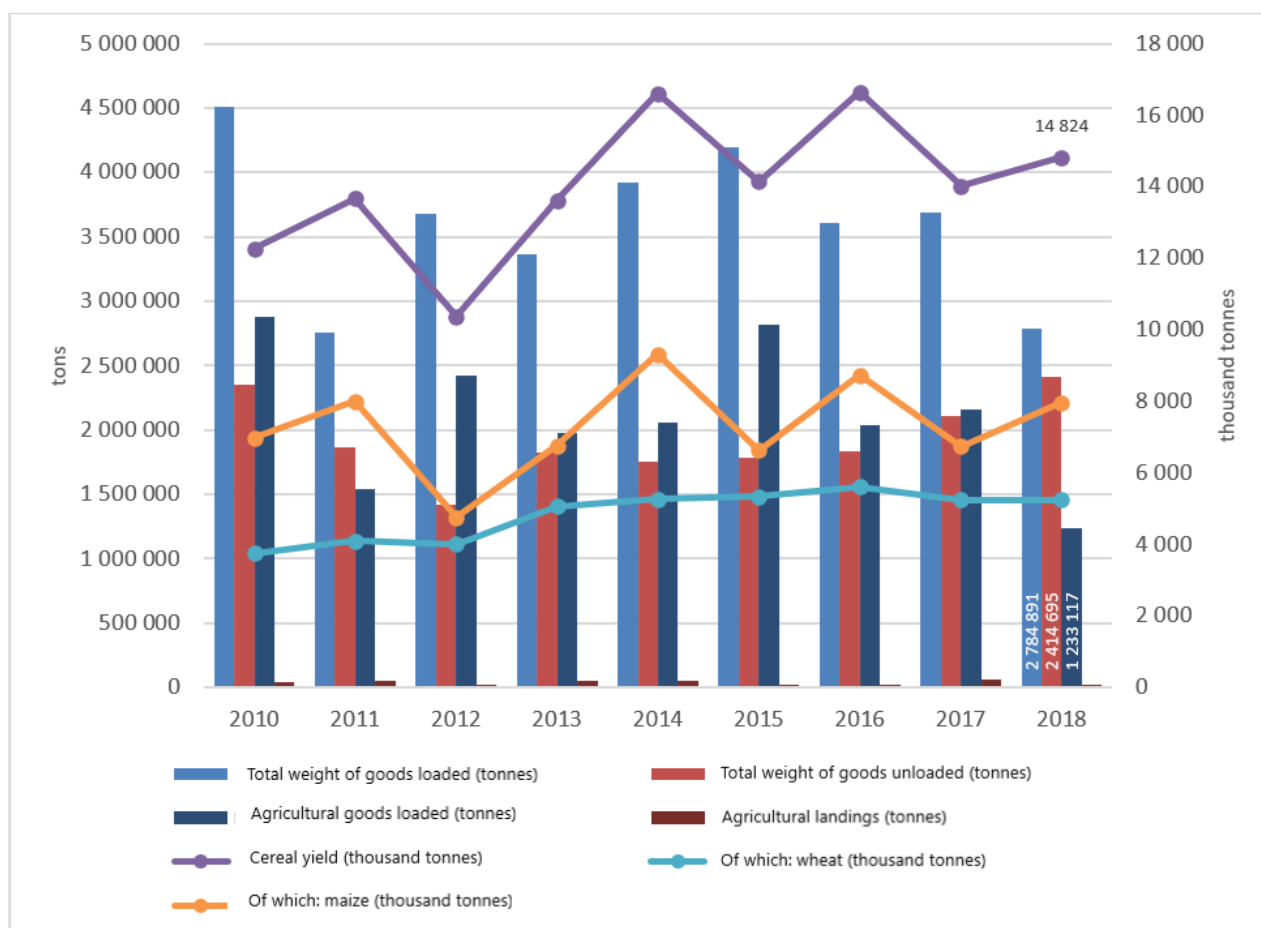
33. Figure: Volume of goods loaded in inland ports by main categories of goods (tonnes)



Forrás: KSH data

Looking at the port's cargo throughput in recent years (total volume loaded and volume of agricultural products loaded) and the performance of agriculture, it can be seen that the weight of goods loaded varies in line with the previous year's crop.

34. Figure: Inland port cargo traffic (weight of goods loaded and unloaded) and grain yield

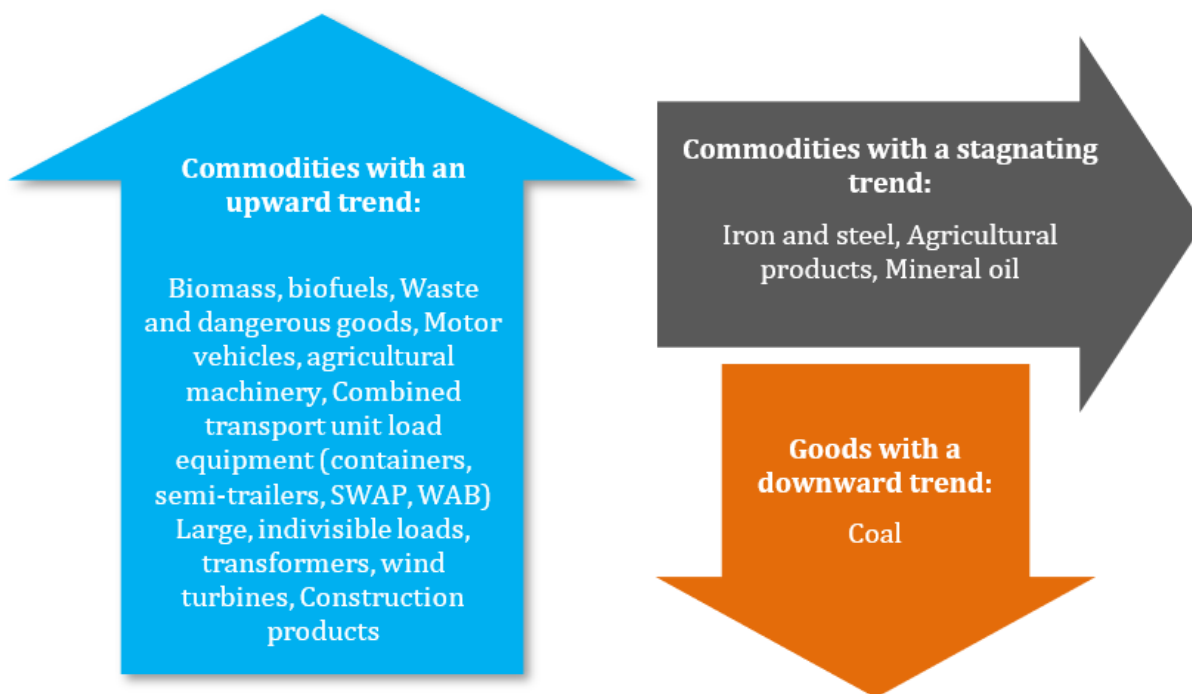


Forrás: KSH and ITM data

The volume of goods loaded in inland ports is influenced not only by the performance of agriculture, but also by the number of days available for navigation. In Hungary, the average of the last 20 years is 67%, or roughly eight and a half months, when the Danube is open to navigation without restrictions.

For freight transport to be predictable, this period would need to be longer (300 days per year, or 85-90%). With a water depth of 2.5 metres, which the European Union also expects on the Hungarian stretch, navigation in Hungary would be much smoother.

In 2018, 178 days (48.7%) were below 2 metres (mostly in the second half of the year) due to the low water levels of the Danube.



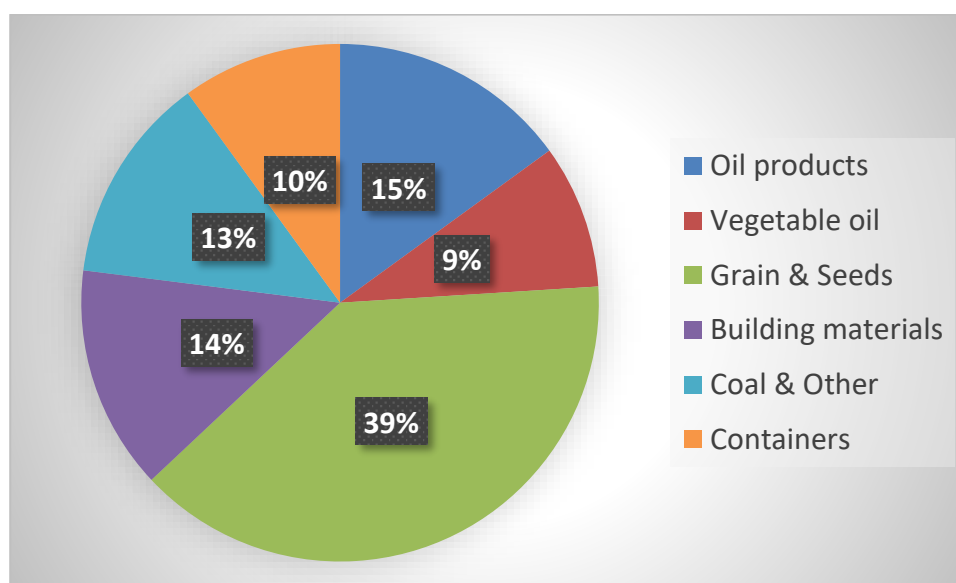
Republic of Moldova

Analysis of GIFP port activity shows that in 2019 the volume of cargo transshipment is 10,076.9 MT. The volumes of cargo transshipment in the port are presented in Table 1, and their structure in Figure 35.

22. Table: Characteristics of cargo transshipment in the port (GIFP) in 2019

n/o	List of cargoes	Traffic volumes, MT/an	Percent, %
1	Oil products	163	15
2	Vegetable oil	98	9
3	Grain & Seeds	416	39
4	Construction materials	151	14
5	Coal & Other	145	13
6	Containers	104	10

35. Figure: Structure of cargo transported by GIFP in 2019

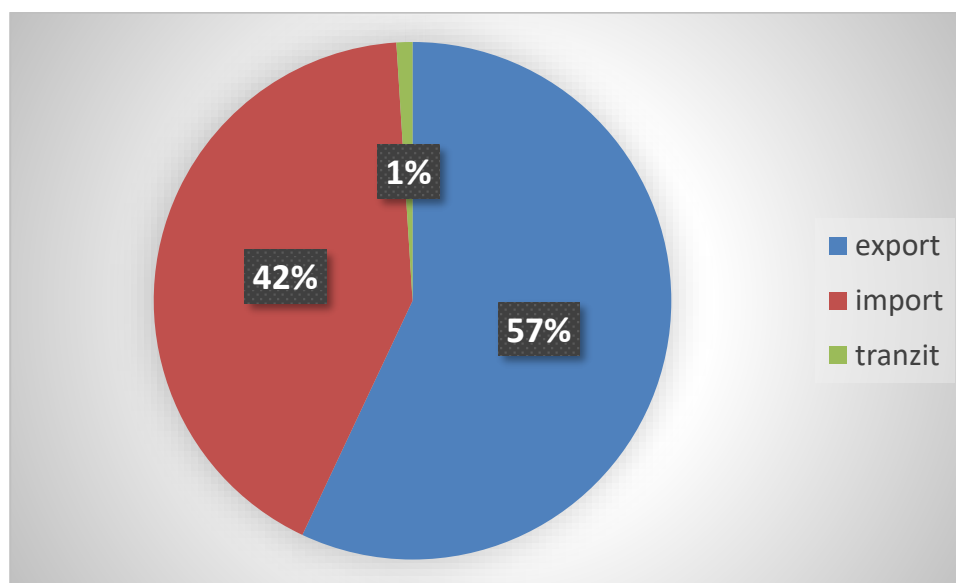


From the information provided, it follows that in the Republic of Moldova, the main goods transported by IWT are oil products, grain & seeds, construction materials.

These cargoes are traditional for IWT, as they correspond to its main advantages, namely, the transportation of large volumes over long distances at a minimum cost.

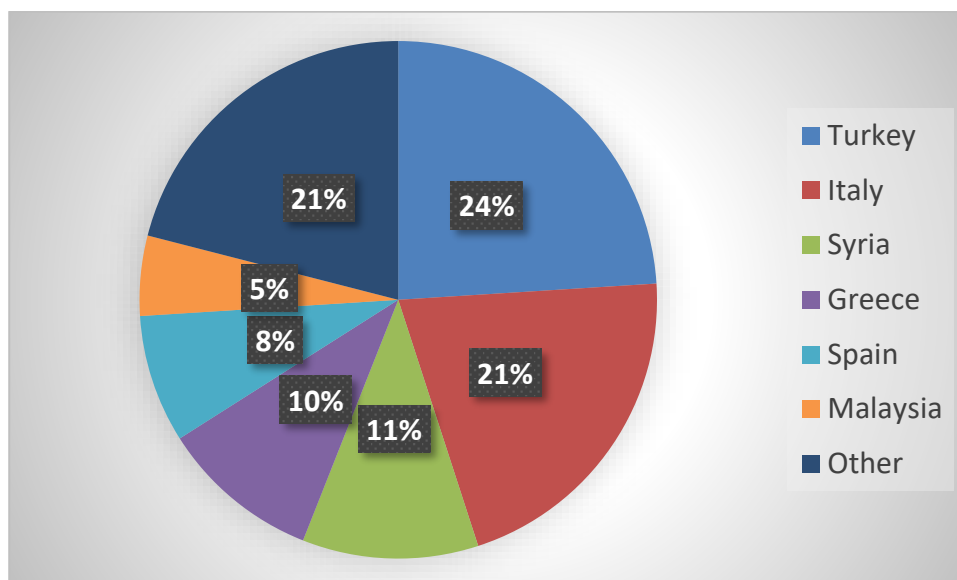
Of the total volume of cargo transported through the port, 57% is export of products (Figure 36), 42% is import and 1% is transit. In general, through the port, imports are carried out from 27 countries, and exports to 44 countries.

36. Figure: The structure of foreign trade, achieved through GIFP in 2019



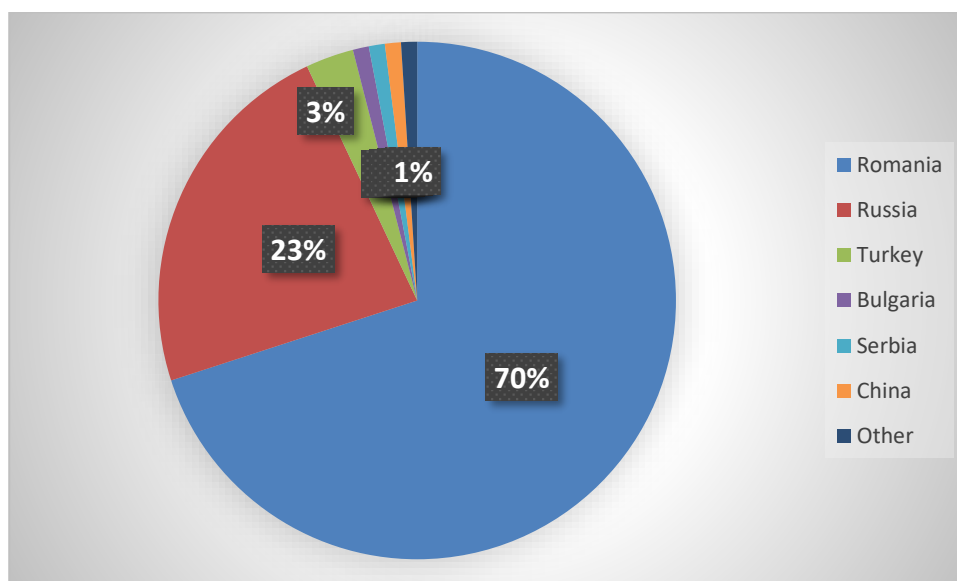
The analysis of exported goods through the GIFP port (Figure 37) shows that 24% of exports go to Turkey, 21% to Italy and Greece. The list of countries to which goods are exported from the Republic of Moldova through the port of Giurgiulești allows us to conclude that the importing country is a maritime power. Transshipment of goods in other ports for the purpose of delivering goods from the Republic of Moldova to other countries is practically not carried out. In this case, road or rail transport is used for the purpose of direct delivery of cargo to the recipient.

37. Figure: The structure of Moldova's export, achieved through GIFP in 2019



Analysis of the structure of imports of goods to the Republic of Moldova through the port shows that the main volumes fall on Romania - 70% and Russia - 23% (Figure 38).

38. Figure: The structure of the import of the Republic of Moldova, made through GIFP in 2019

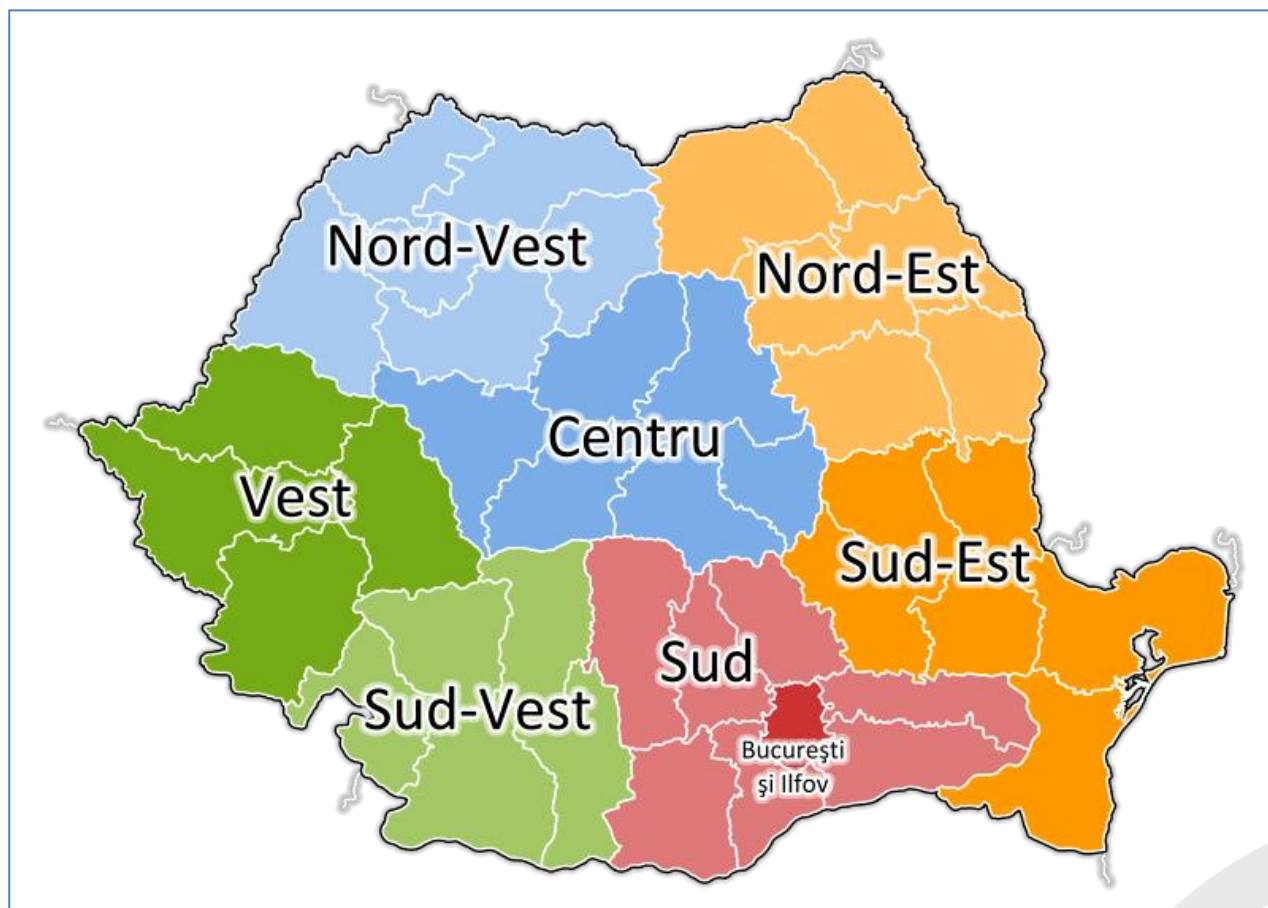


As in the case of exports, the import of goods is carried out directly from a country that is a maritime power or a country in the Danube Region.

Romania

Romanian NUTS2 regions are shown below:

Figure 39: Map of the NUTS2 regions for Romania



Based on the results of the previous activities, the following transport relations have been selected:

I. Imports and exports of Romania in relation with selected DR countries

The following regions of Romania with a good or reasonable accessibility to the Danube ports are considered:

- Sud-Vest;
- Sud;
- București – Ilfov;
- Sud-Est.

As shown in DT 1.2.2, imports of the selected regions from the DR countries are as follows:

Table 23: Imports All goods 2020 NTM

Region RO	Transport mode	Bulgaria	Hungary	Slovakia	Croatia	Austria	Germany	Total
2 South East	Road	388785	55871	12271	7519	28285	38474	531206
	Rail	212370	32583	6140	6604	21470	60083	339251
	IWT	270456	28395	88651	0	151713	48483	587699
	All modes	871611	116849	107063	14123	201469	147040	1458155
3 South Muntenia	Road	256662	153075	9040	772	15892	56808	492250
	Rail	99929	36714	646	263	13154	58697	209404
	IWT	1625	5374	2464	0	4872	3822	18157
	All modes	358217	195163	12149	1036	33919	119328	719811
4 South West Oltenia	Road	103534	92619	6492	1592	6325	21594	232156
	Rail	24261	9827	387	308	2320	10320	47423
	IWT	29158	3343	2329	0	3881	1635	40346
	All modes	156953	105788	9208	1899	12527	33549	319924
8 Bucharest-Ilfov	Road	676820	213728	4503	1916	23364	79792	1000123
	Rail	73182	13083	216	199	2470	10661	99811
	IWT	0	7402	153	0	839	2267	10662
	All modes	750002	234213	4872	2116	26672	92720	1110596
All regions	Road	1425801	515293	32306	11799	73866	196668	2255735
	Rail	409742	92207	7389	7374	39414	139761	695889
	IWT	301239	44514	93597	0	161305	56207	656864
	All modes	2136783	652013	133292	19174	274587	392637	3608486

The total imports counts to 3.6 million tonnes per year. Current IWT market counts to 657 thousand tonnes per year.

As shown in DT 1.2.2, exports of the selected regions to the DR countries are as follows:

Table 24: Exports All goods 2020 NTM

Region RO	Transport mode	Bulgaria	Hungary	Slovakia	Croatia	Austria	Germany	Total
2 South East	Road	350906	46986	2996	22993	68022	27797	519701
	Rail	152488	32044	1269	16692	49861	68137	320491
	IWT	223654	19619	13636	0	413647	70125	740680
	All modes	727048	98649	17901	39685	531531	166059	1580873
3 South Muntenia	Road	231485	150509	8383	399	13973	49862	454611
	Rail	40188	15415	110	10	6043	27504	89269

	IWT	297	1313	92	0	783	438	2924
	All modes	271970	167238	8585	409	20799	77804	546804
4 South West Oltenia	Road	118100	93996	7062	4939	20062	21916	266075
	Rail	34428	3078	302	2351	4634	3644	48436
	IWT	106418	2359	1924	0	56389	9650	176740
	All modes	258945	99433	9288	7290	81085	35211	491251
8 Bucharest-Ilfov	Road	659607	209205	4287	1769	22291	74158	971319
	Rail	10922	2872	92	20	298	721	14925
	IWT	0	719	11	0	22	67	819
	All modes	670529	212797	4390	1789	22612	74946	987063
All regions	Road	1360098	500696	22728	30100	124348	173733	2211706
	Rail	238026	53409	1773	19073	60836	100006	473121
	IWT	330369	24010	15663	0	470841	80280	921163
	All modes	1928492	578117	40164	49173	656027	354020	3605991

The total exports counts to 3.6 million tonnes per year. Current IWT market counts to 921 thousand tonnes per year.

II. Port of Constanta flows 2020

Table 25: Constanta Port hinterland domestic and international, containers & non-containers, tonnes/year, 2020 NTM

<i>NCT & CT, 1000 tonnes</i>	FROM CTA		TO CTA		FROM	TO	TOTAL
	<i>DOM</i>	<i>INT</i>	<i>DOM</i>	<i>INT</i>	<i>All</i>	<i>All</i>	
Agricultural Products	1644	876	4560	49	2520	4609	7129
Foodstuffs	168	2	209	7	170	216	386
Solid Mineral Fuels	329	42	180	505	371	685	1057
Crude Oil	55	10	50	0	64	50	114
Ores, Metal Waste	1156	133	1358	1673	1290	3031	4321
Metal Products	681	1	1521	10	682	1531	2213
Building Minerals & Materials	4510	2353	3415	138	6862	3553	10415
Fertilizers	519	114	2176	105	634	2281	2915
Chemicals	249	14	310	2	263	313	576
Machinery & Heavy Manufacturing	131	0	82	3	132	84	216
Petroleum Products	125	3	442	1	128	443	571
Mail & Parcels	38	9	87	0	47	87	135
Manufactured Goods	575	122	1279	32	697	1311	2008
Domestic & Industrial Waste	30	0	63	1	30	63	93

Forestry Products	123	31	591	10	154	601	755
Livestock	12	0	0	0	12	0	12
All goods	10346	3711	16323	2536	14056	18858	32914

Table 26: Constanta Port hinterland domestic and international, non-containers, tonnes/year, 2020 NTM

<i>1,000 tonnes - NCT</i>	FROM CTA		TO CTA		FROM	TO	TOTAL
	<i>DOM</i>	<i>INT</i>	<i>DOM</i>	<i>INT</i>			
Agricultural Products	1644	876	4560	49	2520	4609	7129
Foodstuffs	3	0	92	0	2	92	94
Solid Mineral Fuels	329	42	180	505	371	685	1057
Crude Oil	55	10	50	0	64	50	114
Ores, Metal Waste	1156	133	1358	1673	1290	3031	4321
Metal Products	292	0	1084	0	292	1084	1375
Building Minerals & Materials	4510	2353	3415	138	6862	3553	10415
Fertilizers	367	102	1666	93	468	1759	2227
Chemicals	107	0	169	0	107	169	276
Machinery & Heavy Manufacturing	15	0	12	0	15	12	27
Petroleum Products	113	0	401	0	113	401	513
Mail & Parcels	38	9	87	0	47	87	135
Manufactured Goods	40	93	39	0	132	39	172
Domestic & Industrial Waste	4	0	21	0	4	22	25
Forestry Products	130	55	675	10	185	686	871
Livestock	12	0	0	0	12	0	12
All goods	8813	3673	13809	2469	12485	16278	28763

Table 27: Constanta Port hinterland domestic and international, containers, tonnes/year, 2020 NTM

<i>1,000 tonnes - CT</i>	FROM CTA		TO CTA		FROM	TO	TOTAL
	<i>DOM</i>	<i>INT</i>	<i>DOM</i>	<i>INT</i>			
Agricultural Products	0	0	0	0	0	0	0
Foodstuffs	165	2	117	7	168	124	292
Solid Mineral Fuels	0	0	0	0	0	0	0
Crude Oil	0	0	0	0	0	0	0
Ores, Metal Waste	0	0	0	0	0	0	0
Metal Products	389	1	437	10	390	447	837
Building Minerals & Materials	0	0	0	0	0	0	0

Fertilizers	153	13	509	13	165	522	687
Chemicals	142	14	142	2	156	144	300
Machinery & Heavy Manufacturing	116	0	70	3	117	73	189
Petroleum Products	12	3	42	1	15	43	58
Mail & Parcels	0	0	0	0	0	0	0
Manufactured Goods	535	29	1240	32	564	1271	1836
Domestic & Industrial Waste	26	0	41	1	26	42	68
Forestry Products	42	29	283	3	71	286	356
Livestock	0	0	0	0	0	0	0
All goods	1582	91	2881	70	1673	2951	4624

III. Relations with Black Sea countries

Imports from the Black Sea countries

Regarding the relations with Black Sea countries, the total imports of the DR countries are shown below.

The following trade relations are of interest:

- Austria with Ukraine, Georgia and Turkey: 3.6 million tonnes, of which 1.75 million tonnes on IWT and 450 thousand tonnes on road;
- Hungary with Ukraine, Georgia and Turkey: 4.1 million tonnes, of which 245 thousand tonnes on IWT and 730 thousand tonnes on road;
- Slovakia with Ukraine, Georgia and Turkey: 4.9 million tonnes, of which 0 tonnes on IWT and 320 thousand tonnes on road.

The above volumes are on all modes and goods. Fixed mechanism, sea and rail will be not considered as for a modal shift to IWT. The focus will be on the road flows that might be shifted to IWT.

Table 28: Imports of DR countries from the Black Sea countries

	Austria				Bulgaria				Croatia			
	Georgia	Russian Federation (Russia)	Turkey	Ukraine	Georgia	Russian Federation (Russia)	Turkey	Ukraine	Georgia	Russian Federation (Russia)	Turkey	Ukraine
All goods												
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Sea	0	665416	146867	185447	357441	5283058	770810	1175320	0	942910	95596	7260
Rail	0	12382	71373	953241	0	106128	30930	12338	0	20	1884	1173
Road	1247	88645	283146	157136	1965	86980	978617	157442	16	19004	60826	22564
Air	4	46	663	11	0	77	234	10	0	10	65	50
Post	0	3	10	1	0	2	9	1	0	0	5	1
Fixed mechanism	0	277796	0	0	0	2050755	0	0	0	0	0	0
Inland water	0	13960	54081	1702588	0	46340	40008	424640	0	42985	1	0
Self propulsion	2	10	8810	1	2	27	2085	2	0	3	1050	0
All modes	1253	1058258	564950	2998425	359408	7573367	1822693	1769753	16	1004932	159427	31048

	Hungary				Romania				Slovakia			
All goods	Georgia	Russian Federation (Russia)	Turkey	Ukraine	Georgia	Russian Federation (Russia)	Turkey	Ukraine	Georgia	Russian Federation (Russia)	Turkey	Ukraine
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Sea	126	1070	19128	588	28446	5299078	1462193	352318	0	117	15241	205
Rail	0	757208	20848	2467259	0	424418	1521	1850979	0	3361321	7210	4523421
Road	406	709144	233603	495416	346	296786	1087608	522875	47	194071	86344	230185
Air	3	41	1217	27	0	70	512	42	0	52	302	39
Post	0	2	0	16	0	1	1	3	0	1	0	4
Fixed mechanism	0	10613637	0	583588	0	930200	0	0	0	7991945	0	0
Inland water	0	94301	4194	244526	0	383298	5097	213100	0	3178	0	0
Self propulsion	0	33	263	7	0	896	68	10760	2	3	2500	4
All modes	535	12175436	279253	3791427	28792	7334747	2557000	2950077	49	11550688	111597	4753858

Exports to the Black Sea countries

Regarding the relations with Black Sea countries, the total exports of the DR countries are shown below.

The following trade relations are of interest:

- Austria with Ukraine, Georgia and Turkey: 740 thousand tonnes, of which 20 thousand tonnes on IWT and 382 thousand tonnes on road;
- Hungary with Ukraine, Georgia and Turkey: 3.3 million tonnes, of which 65 thousand tonnes on IWT and 480 thousand tonnes on road;
- Slovakia with Ukraine, Georgia and Turkey: 1.14 million tonnes, of which 7 thousand tonnes on IWT and 375 thousand tonnes on road.

The above volumes are on all modes and goods. Fixed mechanism, sea and rail will be not considered as for a modal shift to IWT. The focus will be on the road flows that might be shifted to IWT.

Table 29: Exports of DR countries to the Black Sea countries

	Austria				Bulgaria				Croatia			
All goods	Georgia	Russian Federation (Russia)	Turkey	Ukraine	Georgia	Russian Federation (Russia)	Turkey	Ukraine	Georgia	Russian Federation (Russia)	Turkey	Ukraine
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Sea	5662	83427	223312	685	204322	8632	2358770	146601	5	97	241116	9600
Rail	807	40958	79451	25523	0	506	237917	0	0	369	0	0
Road	8788	229927	223016	150217	13632	56718	826798	81308	962	13073	10354	4275
Air	48	585	896	233	22	202	65	18	7	33	31	5
Post	0	0	0	0	0	1	0	0	0	0	0	1
Fixed mechanism	0	0	0	0	0	0	0	0	0	0	0	0
Inland water	0	0	20395	0	0	0	0	714	0	0	6891	0
Self propulsion	30	535	21	1035	1721	0	3	35	0	0	0	0
All modes	15335	355432	547091	177693	219697	66059	3423553	228676	974	13572	258392	13881

	Hungary				Romania				Slovakia			
All goods	Georgia	Russian Federation (Russia)	Turkey	Ukraine	Georgia	Russian Federation (Russia)	Turkey	Ukraine	Georgia	Russian Federation (Russia)	Turkey	Ukraine
Unknown	0	0	0	0	0	0	0	0	0	0	0	17
Sea	150	7626	31229	601	308016	44190	2218574	61205	390	12324	9533	122
Rail	421	68850	79964	43657	0	23404	900	4055	44	123747	66654	604580
Road	2678	191301	142824	337831	2634	152625	403287	160948	1293	119620	103048	222082
Air	1080	9435	7389	3189	428	3421	11964	505	18	84	108	62
Post	0	0	0	0	0	17	0	0	0	3	0	0
Fixed mechanism	0	0	0	2611723	0	0	0	0	0	0	0	0
Inland water	0	0	53666	11888	0	2	1445	123596	0	0	6815	0
Self propulsion	0	0	0	453	0	0	0	82	217	10	8	1244
All modes	4329	277212	315072	3009342	311078	223659	2636170	350391	1962	255788	186166	828107

Serbia

Areas and regions in Serbia are shown on the Figure 40.

Figure 40: Map of the areas and regions in Serbia



Identification of the IWT cargo potentials in Serbia is done based on the following methodology:

1. Elaboration of the total cargo flows by road, rail and IWT in Serbia in period 2008-2019;
2. Determination of the average IWT share in the modal split;
3. Elaboration of the total amounts of cargo, by cargo type, transported on inland waterways in Serbia in the period 2017-2019;

- 3.1. Cargoes transported on IWT in domestic services;
- 3.2. Cargoes transported on IWT in export;
- 3.3. Cargoes transported on IWT in import;
- 3.4. Cargoes transported on IWT in upstream transit;
- 3.5. Cargoes transported on IWT in downstream transit;
- 3.6. Cargoes transported on IWT between foreign ports;
4. Ranking and selection of most important types of cargoes for transport on inland waterways;
5. Elaboration of the total export and import flows in Serbia per cargo types selected in the step 4 in the period 2017-2020 with the following groups of countries:
 - 5.1. All countries
 - 5.2. EU countries
 - 5.3. CEFTA countries¹
 - 5.4. DR countries and Bosnia & Herzegovina
 - 5.5. Black Sea, non-Danube, countries (Georgia, Russia, Turkey)
6. Determination of the IWT cargo potentials based on the IWT share obtained in the step 2 for the cargo types selected in the step 5 for the following group of countries:
 - 6.1. DR and Black Sea countries
 - 6.2. Overseas countries (all countries – EU countries – CEFTA countries).

IV. Total cargo flows by road, rail and IWT in Serbia

30 gives total cargo amounts transported by road, rail and inland waterway transport in Serbia in the period 2008-2019.

Table 30: Total cargo flows by road, rail and IWT in Serbia

	IWT		Road		Rail		Total		Share in cargo transported - tonnes (%)			Share in transport performance - tkm (%)		
	000 t	tkm (millions)	000 t	tkm (millions)	000 t	tkm (millions)	000 t	tkm (millions)	IWT	Road	Rail	IWT	Road	Rail
2008	5356	1369	5446	1112	14130	4339	24932	6820	21,48	21,84	56,67	20,07	16,30	63,62
2009	1931	865	5665	1185	10419	2967	18015	5017	10,72	31,45	57,84	17,24	23,62	59,14
2010	1952	875	6180	1689	12581	3552	20713	6116	9,42	29,84	60,74	14,31	27,62	58,08
2011	2146	726	5071	1907	12620	3611	19837	6244	10,82	25,56	63,62	11,63	30,54	57,83
2012	1998	605	6047	2474	9451	2769	17496	5848	11,42	34,56	54,02	10,35	42,31	47,35

¹ The CEFTA 2006 Agreement was signed in Bucharest in 2006 by: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Moldavia, Romania, Montenegro, Serbia and the United Nations Interim Administration Mission in Kosovo in accordance with the UN Security Council Resolution 1244. By the end of 2007, the Agreement came into force in all signatory countries (<https://www.mei.gov.rs/eng/documents/agreements-with-eu/the-agreement-on-free-trade-in-the-balkans-cefta/>).

2013	1928	701	6486	2824	10463	3022	18877	6547	10,21	34,36	55,43	10,71	43,13	46,16
2014	2010	759	6884	2959	10826	2988	19720	6706	10,19	34,91	54,90	11,32	44,12	44,56
2015	1537	865	7964	2975	11887	3249	21388	7089	7,19	37,24	55,58	12,20	41,97	45,83
2016	2014	926	9897	4299	11896	3087	23807	8312	8,46	41,57	49,97	11,14	51,72	37,14
2017	1448	725	10120	4980	12352	3288	23920	8993	6,05	42,31	51,64	8,06	55,38	36,56
2018	1553	580	13056	6443	12297	3187	26906	10210	5,77	48,52	45,70	5,68	63,10	31,21
2019	1697	727	15858	8175	11475	2861	29030	11763	5,85	54,63	39,53	6,18	69,50	24,32

Source: Statistical Office of the Republic of Serbia, Statistical Yearbook, ISSN 0354-4206, 2019.

V. Average IWT share in the modal split

After analysing the modal split given in Table 30, we can find out that the average IWT share is the following:

- 9,80 % in the total cargo flows;
- 11,57 % in the transport performance.

VI. IWT cargo flows in Serbia

The analysis of IWT cargo flows takes into account the total amounts of cargo transported on inland waterways in Serbia in the period 2017-2019. Data for 2017 is given in Table 31, Table 32 for 2018, while Table 33 contains data for 2019.

Table 31: Cargos transported on inland waterways in Serbia in 2017²

2017	Cargo transported on inland waterways in Serbia		Domestic		Export		Import		Transit - downstream		Transit - upstream		Transport between foreign ports	
	t	tkm (000)	t	tkm (000)	t	tkm (000)	t	tkm (000)	t	tkm (000)	t	tkm (000)	t	tkm (000)
Cereals and cereal preparations	26784	24076			26784	24076								
Coal and lignite	50254	21945	35895	8947			14359	12997						
Iron ore	524514	524255					524514	524255						
Salt	12082	11817					12082	11817						
Stone, sand, gravel, clay, peat	659828	43420	647885	39808	11943	3611								
Coke and tar	12505	10728					12505	10728						
Liquid refined petroleum products	33951	8774	24462	1984	4493	2951	4996	3837						
Solid or dense petroleum products	0	0												
Nitrogen products and fertilizers (except natural fertilizers)	71722	44264	10277	4378	39148	24473	22297	15413						
Pharmaceutical and paracheimical products	1133	879			1133	879								
Base plastics and synthetic products in primary forms														
Rubber and plastic products														
Ferrous metallurgy and ferro-alloy products and basic iron and steel products (except pipes and tubes)	54531	33776			49553	28128	998	1010	3980	4636				
Other machines, machine tools and parts	1000	437	1000	437										
Other products														
Containers and replaceable boxes in use, empty														

² Source: Statistical Office of the Republic of Serbia, Transport and Telecommunications in the Republic of Serbia 2017, Bulletin. 644, ISSN 0354-3641, 2019.

Table 32: Cargos transported on inland waterways in Serbia in 2018³

2018	Cargo transported on inland waterways in Serbia		Domestic		Export		Import		Transit - downstream		Transit - upstream		Transport between foreign ports	
	t	tkm (000)	t	tkm (000)	t	tkm (000)	t	tkm (000)	t	tkm (000)	t	tkm (000)	t	tkm (000)
Cereals and cereal preparations	53481	52575			46031	43645			7450	8930				
Coal and lignite	91564	37121	64111	12776	4882	5087	19814	15862			2757	3397		
Iron ore	285743	308787					244074	247247			41669	61540		
Salt	0	0												
Stone, sand, gravel, clay, peat	963410	84654	930869	69845	12037	6847	20003	7730	501	232				
Coke and tar	21916	18095	1163	160	1243	272	19510	17662						
Liquid refined petroleum products	2009	1320			2009	1320								
Solid or dense petroleum products	1000	1116					1000	1116						
Nitrogen products and fertilizers (except natural fertilizers)	76450	40132	44321	18617	32129	21515								
Pharmaceutical and paracheimical products														
Base plastics and synthetic products in primary forms	1538	672	1538	672										
Rubber and plastic products	1466	641	1466	641										
Ferrous metallurgy and ferro-alloy products and basic iron and steel products (except pipes and tubes)	59839	33796			51382	25571	1000	464	7457	7761				
Other machines, machine tools and parts														
Other products	1059	967			1059	967								
Containers and replaceable boxes in use, empty														

³ Source: Statistical Office of the Republic of Serbia, Transport and Telecommunications in the Republic of Serbia 2018, Bulletin. 656, ISSN 0354-3641, 2019.

Table 33: Cargos transported on inland waterways in Serbia in 2019⁴

2019	Cargo transported on inland waterways in Serbia		Domestic		Export		Import		Transit - downstream		Transit - upstream		Transport between foreign ports	
	t	tkm (000)	t	tkm (000)	t	tkm (000)	t	tkm (000)	t	tkm (000)	t	tkm (000)	t	tkm (000)
Cereals and cereal preparations	38437	31403			28660	26447							9777	4956
Coal and lignite	43617	20159	26416	3869			8758	7768			8443	8882		
Iron ore	350762	370009					310654	314693			35482	52939		
Salt	3083	3289					3083	3289						
Stone, sand, gravel, clay, peat	916967	68992	896590	60324	9422	2625	3630	1727						
Coke and tar	15941	13928					15941	13928						
Liquid refined petroleum products														
Solid or dense petroleum products														
Nitrogen products and fertilizers (except natural fertilizers)	251978	169583	47066	19466	109510	68563	95402	81554						
Pharmaceutical and paracheimical products														
Base plastics and synthetic products in primary forms														
Rubber and plastic products														
Ferrous metallurgy and ferro-alloy products and basic iron and steel products (except pipes and tubes)	76424	48714			47227	22881	20888	16977	8309	8856				
Other machines, machine tools and parts														
Other products														
Containers and replaceable boxes in use, empty	408	396			408	396								

⁴ Source: Statistical Office of the Republic of Serbia, Transport and Telecommunications in the Republic of Serbia 2019, Bulletin. 669, ISSN 0354-3641, 2019.

VII. Ranking and selection of most important types of cargoes for transport on inland waterways

Ranking of the cargoes was based on the total amounts of cargoes transported on inland waterways in Serbia for all three considered years, i.e. 2017, 2018 and 2019. This approach enables the selection of those types of cargoes that are most often transported on inland waterways. These are such cargoes:

- Stone, sand, gravel, clay, peat;
- Iron ore;
- Fertilizers (except crude fertilizers);
- Ferrous metallurgy and ferro-alloy products and basic iron and steel products (except pipes and tubes);
- Coal and lignite;
- Cereals and cereal preparations;
- Coke and tar;
- Liquid refined petroleum products.

VIII. Elaboration of the total export and import flows in Serbia

Total trade flows, both in export and import direction, in the period 2017 to 2020 are given for the flowing groups of countries:

- All countries, EU countries and CEFTA countries;
- Danube countries including Bosnia and Herzegovina;
- Black Sea, non-Danube, countries (Georgia, Russia, Turkey).

Data on trade flows is given in the following tables:

- for the first group of countries (All countries, EU countries and CEFTA countries) – Table 34 for 2017;
Table 38 for 2018;
Table 42 for 2019 and Table 46 for 2020;
- for the second group of countries (Danube countries and B&H) – Table 35 and Table 36 for 2017; Table 39 and Table 40 for 2018; Table 43 and Table 44 for 2019 and Table 47 and Table 48 for 2020;
- for the third group of countries (Black Sea, non-Danube, countries) – Table 37 for 2017; Table 41 for 2018; Table 45 for 2019 and Table 46 for 2020.

All data given in the Table 34 to Table 49 is obtained from the Dissemination database search of the Statistical Office of the Republic of Serbia (<https://data.stat.gov.rs/?caller=SDDB&languageCode=en-US>).

Table 34: Export and import flows of Serbia in 2017 – All countries, EU countries and CEFTA countries

Flows	Product	Country	All countries	European Union (28)	CEFTA countries
		Data type	t	t	t
Export flows	Cereals and cereal preparations		2458128,80	1523910,20	911646,20
	Fuel wood (excluding wood waste) and wood charcoal		49825,80	20636,20	28404,70
	Fertilizers, crude		827,60	32,80	790,20
	Stone, sand and gravel		600282,80	539949,40	58246,00
	Sulphur and unroasted iron pyrites		24094,00	24080,50	13,50
	Metalliferous ores and metal scrap		411370,60	190107,50	168943,50
	Coal, coke and briquettes		77020,00	3773,00	73207,00
	Petroleum and petroleum products and related materials		635330,80	391094,30	221828,70
	Inorganic chemical elements, oxides and halogen salts		148023,20	121126,60	26344,70
	Medicinal and pharmaceutical products		18572,80	8073,60	5433,80
	Fertilizers (other than crude)		340153,30	252300,10	56700,20
	Plastics in primary forms		163050,40	130943,10	21838,20
	Plastics in non-primary forms		88025,30	52955,80	27571,20
	Rubber tyres, interchangeable tyre flaps and inner tubes		147809,20	101157,80	4807,70
	Articles of rubber n.e.s.		9910,50	6987,70	623,30
	Iron and steel		1142455,20	818880,80	229507,20
	Articles, n.e.s., of plastics		121962,10	67790,10	19472,50
Import flows	Cereals and cereal preparations		60071,00	40600,50	10451,80
	Fuel wood (excluding wood waste) and wood charcoal		7346,70	151,30	7170,30
	Fertilizers, crude		538131,70	48446,40	0,00
	Stone, sand and gravel		113293,90	48692,60	38593,40
	Sulphur and unroasted iron pyrites		1320,10	1293,10	0,00
	Metalliferous ores and metal scrap		2306962,70	57587,10	26643,10
	Coal, coke and briquettes		1372626,50	545921,00	685513,70
	Petroleum and petroleum products and related materials		3336054,50	721226,80	47197,20
	Inorganic chemical elements, oxides and halogen salts		268116,30	213566,00	8113,10
	Medicinal and pharmaceutical products		15085,20	9653,40	3867,40
	Fertilizers (other than crude)		769179,20	295281,40	10375,10
	Plastics in primary forms		452093,50	300122,60	4845,30
	Plastics in non-primary forms		105789,40	83922,20	3294,90
	Rubber tyres, interchangeable tyre flaps and inner tubes		21532,40	8636,20	30,10
	Articles of rubber n.e.s.		7775,70	5665,70	16,80
	Iron and steel		830556,10	460975,50	220463,30
	Articles, n.e.s., of plastics		59108,60	39514,10	9134,20

Table 35: Export flows of Serbia in 2017 – Danube countries and B&H

Flows	Product	Country	Austria	Bosnia & Herzegovina	Bulgaria	Germany	Croatia	Hungary	Romania	Slovakia	Ukraine
		Data type									
Export flows	Cereals and cereal preparations	t	26981,20	469839,50	217817,70	5367,8	25652,30	14842,50	955940,40	74,8	395,30
	Fuel wood (excluding wood waste) and wood charcoal	t	4870,50	6718,30	237,00	334,9	5038,00	0,00	619,60		
	Fertilizers, crude	t	15,50	0,00	0,00	0	17,80	0,00	1,70		
	Stone, sand and gravel	t	30,90	47130,60	2967,50	54,9	299840,10	137130,30	62119,80	1,60	1917,20
	Sulphur and unroasted iron pyrites	t	0,00	1,40	0,00	0	1562,00	5,00	119,40		
	Metalliferous ores and metal scrap	t	366,60	926,10	118253,40	3648	0,00	9080,60	6661,90	658,7	0,50
	Coal, coke and briquettes	t	0,00	69340,30	554,60	0	4,70	19,30	3185,90	0	0,00
	Petroleum and petroleum products and related materials	t	4828,90	151497,70	141861,40	4533,1	57721,70	13209,10	136431,90	698,6	137,10
	Inorganic chemical elements, oxides and halogen salts	t	1852,00	17949,60	23688,70	185,30	9951,00	18440,60	39195,20	212,90	159,90
	Medicinal and pharmaceutical products	t	293,00	2070,50	91,90	2577,00	21,40	36,20	3196,20	15,30	150,10
	Fertilizers (other than crude)	t	566,00	37545,30	50869,10	0,20	35412,80	127208,30	29095,30	1320,00	30873,60
	Plastics in primary forms	t	4334,10	14756,90	20632,40	1398,50	11801,20	11859,20	11945,40	12173,40	1179,20
	Plastics in non-primary forms	t	795,70	12334,20	3935,60	3667,00	9044,40	6199,30	4014,20	2826,90	289,40
	Rubber tyres, interchangeable tyre flaps and inner tubes	t	254,70	2858,10	2490,70	8665,30	1287,60	6685,30	5075,00	1133,70	943,00
	Articles of rubber n.e.s.	t	64,30	295,90	66,70	3679,40	37,60	827,50	312,10	43,00	1256,70
	Iron and steel	t	81990,60	73696,40	123511,70	70787,90	20274,20	92141,50	33348,70	38359,70	2869,40
	Articles, n.e.s., of plastics	t	1662,60	7550,60	3062,70	5839,50	9946,40	4528,90	7137,20	1329,30	11773,50

Table 36: Import flows of Serbia in 2017 – Danube countries and B&H

Flows	Product	Country	Austria	Bosnia & Herzegovina	Bulgaria	Germany	Croatia	Hungary	Romania	Slovakia	Ukraine
		Data type	t	t	t	t	t	t	t	t	t
Import flows	Cereals and cereal preparations		1365,20	3769,30	3669,10	1600,20	1697,80	4382,40	10692,70	648,40	30,80
	Fuel wood (excluding wood waste) and wood charcoal		13,20	7100,70	0,00	0,80	22,00	33,60	73,60		
	Fertilizers, crude			0,00	46,60	17,90	10,50	33,60	43818,40		
	Stone, sand and gravel		4261,70	19881,80	17049,60	1372,10	10060,70	52,60	8883,20	216,00	300,00
	Sulphur and unroasted iron pyrites		0,00	0,00	36,20	148,10	0,00	0,00	0,00		
	Metalliferous ores and metal scrap		193,30	25468,00	43505,70	38,90	88,40	7155,60	0,00	399,60	1300425,70
	Coal, coke and briquettes		0,00	589834,80	28022,80	3840,20	22,00	13923,50	21357,50	728,40	3335,60
	Petroleum and petroleum products and related materials		30633,80	35979,60	59862,50	4809,70	36219,30	356747,40	164868,20	31477,50	0,00
	Inorganic chemical elements, oxides and halogen salts		225,90	7393,70	145184,10	2182,40	2817,80	41897,60	8302,40	1912,10	716,60
	Medicinal and pharmaceutical products		486,40	418,20	164,90	2744,30	100,80	280,90	525,30	8,30	16,80
	Fertilizers (other than crude)		93846,20	9824,20	1680,20	1814,60	94444,70	52619,90	40429,80	1509,20	62104,00
	Plastics in primary forms		17500,60	1255,90	10532,80	54839,60	4597,80	31792,30	26222,90	4670,40	165,50
	Plastics in non-primary forms		4620,60	1636,40	8670,90	17172,20	2648,60	5617,30	5727,60	1093,00	335,70
	Rubber tyres, interchangeable tyre flaps and inner tubes		149,90	30,10	43,60	1390,90	155,40	533,20	465,60	341,40	4,10
	Articles of rubber n.e.s.		47,20	15,00	1032,10	1015,00	81,70	403,90	337,10	10,70	20,10
	Iron and steel		27550,30	122432,20	33467,20	10536,00	3543,10	37058,30	63528,80	41269,70	56520,40
	Articles, n.e.s., of plastics		1907,10	7969,20	4558,30	5930,00	1593,50	5090,90	1332,70	486,10	43,40

Table 37: Export and import flows of Serbia in 2017 – Black Sea, non-Danube, countries

Flows	Product	Country	Georgia	Russia	Turkey
		Data type	t	t	t
Export flows	Cereals and cereal preparations		86,3	2983,50	463,90
	Fuel wood (excluding wood waste) and wood charcoal				
	Fertilizers, crude			0,00	4,50
	Stone, sand and gravel			49,50	
	Sulphur and unroasted iron pyrites				
	Metalliferous ores and metal scrap				33863,30
	Coal, coke and briquettes			40,00	
	Petroleum and petroleum products and related materials			1939,20	2537,30
	Inorganic chemical elements, oxides and halogen salts			0,30	262,30
	Medicinal and pharmaceutical products	33,10	3827,80	3,00	
	Fertilizers (other than crude)			147,00	36,30
	Plastics in primary forms			3407,30	4217,20
	Plastics in non-primary forms	6,40	2173,20		176,40
	Rubber tyres, interchangeable tyre flaps and inner tubes	469,90	13273,50		11766,50
	Articles of rubber n.e.s.	2,60	340,00		344,70
	Iron and steel	2,30	1855,70		60345,30
	Articles, n.e.s., of plastics	2,50	13109,70		3509,20
Import flows	Cereals and cereal preparations			2116,00	1154,90
	Fuel wood (excluding wood waste) and wood charcoal				
	Fertilizers, crude			5,80	
	Stone, sand and gravel				43,60
	Sulphur and unroasted iron pyrites				22,00
	Metalliferous ores and metal scrap			637572,50	121670,70
	Coal, coke and briquettes			137748,30	
	Petroleum and petroleum products and related materials			1042606,50	26425,50
	Inorganic chemical elements, oxides and halogen salts			42869,60	1621,30
	Medicinal and pharmaceutical products			6,80	249,50
	Fertilizers (other than crude)			393245,00	24,00
	Plastics in primary forms			53150,50	12554,50
	Plastics in non-primary forms			1510,10	8700,10
	Rubber tyres, interchangeable tyre flaps and inner tubes			3852,20	1750,50
	Articles of rubber n.e.s.			13,50	499,10
	Iron and steel	3,50	18667,40		23159,50
	Articles, n.e.s., of plastics			135,10	5397,40

Table 38: Export and import flows of Serbia in 2018 – All countries, EU countries and CEFTA countries

Flows	Product	Country	All countries	European Union (28)	CEFTA countries
			t	t	t
Export flows	Cereals and cereal preparations		2777034,30	1842433,60	922352,60
	Fuel wood (excluding wood waste) and wood charcoal		39456,10	19880,80	18756,60
	Fertilizers, crude		561,30	54,00	473,80
	Stone, sand and gravel		392172,40	319072,30	70457,90
	Sulphur and unroasted iron pyrites		19535,40	19460,40	49,60
	Metalliferous ores and metal scrap		274537,70	123607,70	110627,70
	Coal, coke and briquettes		84924,70	366,10	84558,60
	Petroleum and petroleum products and related materials		717872,90	437221,60	245721,80
	Inorganic chemical elements, oxides and halogen salts		177043,00	138354,40	34186,30
	Medicinal and pharmaceutical products		20843,80	10002,90	5565,70
	Fertilizers (other than crude)		389954,70	307911,20	50407,90
	Plastics in primary forms		166096,50	126293,40	24126,70
	Plastics in non-primary forms		99408,20	62453,50	28491,00
	Rubber tyres, interchangeable tyre flaps and inner tubes		151965,30	106973,80	5647,50
	Articles of rubber n.e.s.		9362,60	6300,00	611,50
	Iron and steel		1473940,20	1171809,80	223782,50
	Articles, n.e.s., of plastics		130158,10	72127,00	21482,80
Import flows	Cereals and cereal preparations		67737,50	48221,90	10673,10
	Fuel wood (excluding wood waste) and wood charcoal		2368,20	115,10	2067,60
	Fertilizers, crude		540296,40	25840,30	0,10
	Stone, sand and gravel		105657,00	33604,30	51073,30
	Sulphur and unroasted iron pyrites		1285,60	1234,10	0,00
	Metalliferous ores and metal scrap		2351463,30	47823,40	8412,50
	Coal, coke and briquettes		1427089,80	394219,00	755924,00
	Petroleum and petroleum products and related materials		3505640,80	658182,60	40581,30
	Inorganic chemical elements, oxides and halogen salts		359206,50	305472,50	10819,30
	Medicinal and pharmaceutical products		16137,10	10553,80	3962,80
	Fertilizers (other than crude)		518130,70	227313,80	3607,80
	Plastics in primary forms		474709,50	317738,50	4216,30
	Plastics in non-primary forms		114903,00	88247,10	4079,60
	Rubber tyres, interchangeable tyre flaps and inner tubes		24537,40	8412,10	0,80
	Articles of rubber n.e.s.		6472,10	4278,90	15,20
	Iron and steel		920448,30	480069,20	245547,30
	Articles, n.e.s., of plastics		67859,80	45745,30	9053,80

Table 39: Export flows of Serbia in 2018 – Danube countries and B&H

Flows	Product	Country		Austria	Bosnia & Herzegovina	Bulgaria	Germany	Croatia	Hungary	Romania	Slovakia	Ukraine
		Data type		t	t	t	t	t	t	t	t	t
Export flows	Cereals and cereal preparations			84901,50	441158,80	18827,40	3843	44112,40	8508,40	1292215,90	290,90	125,50
	Fuel wood (excluding wood waste) and wood charcoal			5209,40	4505,30	297,40	588,8	1894,90	29,40	698,70	16,70	0,00
	Fertilizers, crude			0,00	9,10	0,00	23,50	20,70	0,00	0,70	0,00	0,00
	Stone, sand and gravel			24,00	47123,50	2860,40	41,2	17106,70	213164,50	44059,70	6,70	1268,80
	Sulphur and unroasted iron pyrites			0,00	34,50	1,00	0	3398,20	107,70	1104,70	0,00	0,20
	Metalliferous ores and metal scrap			700,30	1447,60	57691,70	8314,5	892,10	4462,30	2354,70	324,70	0,00
	Coal, coke and briquettes			0,00	64213,10	121,30	0,1	45,80	192,20	6,00	0,00	0,00
	Petroleum and petroleum products and related materials			3038,00	180596,10	147888,60	5001,5	64771,30	11638,10	162403,70	3956,40	3068,80
	Inorganic chemical elements, oxides and halogen salts			3070,20	23072,40	34088,50	1575,9	6226,90	22563,80	43894,10	193,60	1174,30
	Medicinal and pharmaceutical products			242,00	2229,50	115,20	2466,2	8,60	478,90	5017,50	25,80	73,30
	Fertilizers (other than crude)			5326,60	28076,30	40227,20	1190,6	40265,30	147572,00	55399,50	4939,40	27140,10
	Plastics in primary forms			4722,30	17267,00	19978,70	623,8	12286,90	16491,10	10239,30	11288,20	1092,20
	Plastics in non-primary forms			717,10	12271,70	4570,60	4138,7	10551,40	8052,80	4091,10	3129,00	266,90
	Rubber tyres, interchangeable tyre flaps and inner tubes			185,60	3181,40	2035,30	10447,8	1254,90	6612,10	5063,40	1239,20	2544,50
	Articles of rubber, n.e.s.			70,00	321,50	86,60	3104,1	54,80	496,70	324,20	177,80	1437,70
	Iron and steel			107309,60	110557,90	200188,70	56496	37302,70	102963,50	87168,90	39748,20	2561,60
	Articles, n.e.s. of plastics			1784,00	8491,40	2873,60	6769,2	10523,90	5022,40	9404,50	1439,50	12220,30

Table 40: Import flows of Serbia in 2018 – Danube countries and B&H

Flows	Product	Country	Austria	Bosnia & Herzegovina	Bulgaria	Germany	Croatia	Hungary	Romania	Slovakia	Ukraine
		Data type									
Import flows	Cereals and cereal preparations	t	2429,60	4268,20	4185,60	4187,1	1926,10	4757,50	8424,40	966,30	2429,60
	Fuel wood (excluding wood waste) and wood charcoal	t	0,00	2067,60	0,00	2,90	1,50	0,00	0,00	0,00	0,00
	Fertilizers, crude	t	0,10	0,10	23,70	1,90	24,30	498,90	22543,80	0,20	0,10
	Stone, sand and gravel	t	3911,20	32098,10	17293,90	1022,2	362,10	64,10	2485,90	382,80	3911,20
	Sulphur and unroasted iron pyrites	t	46,00	0,00	30,80	5,90	27,30	0,00	0,00	46,00	46,00
	Metalliferous ores and metal scrap	t	392,80	7833,50	32016,50	76,7	987,80	6234,00	1294,80	259,40	392,80
	Coal, coke and briquettes	t	11,60	667206,20	44349,80	5010,6	0,00	31368,20	16528,50	356,80	11,60
	Petroleum and petroleum products and related materials	t	23193,70	20352,90	57209,50	4533,8	11929,20	361728,30	136005,60	12056,60	23193,70
	Inorganic chemical elements, oxides and halogen salts	t	84,70	7845,10	229556,10	7334,8	3645,70	42714,80	9575,30	1356,50	84,70
	Medicinal and pharmaceutical products	t	275,70	402,60	131,00	3423,3	89,10	242,00	433,60	6,60	275,70
	Fertilizers (other than crude)	t	33033,30	2861,00	7594,30	914,4	81980,10	59214,70	31189,20	2316,50	33033,30
	Plastics in primary forms	t	16235,70	892,50	10520,50	55796,4	6620,20	44727,10	29112,20	5407,80	16235,70
	Plastics in non-primary forms	t	5242,50	2195,90	8660,70	18904,9	4034,50	5642,70	4999,40	1036,60	5242,50
	Rubber tyres, interchangeable tyre flaps and inner tubes	t	147,00	0,00	73,00	1416,1	96,20	456,00	475,90	381,70	147,00
	Articles of rubber n.e.s.	t	51,40	13,50	116,70	1140,8	29,70	215,30	450,80	65,20	51,40
	Iron and steel	t	26432,70	137384,50	34286,10	14357	3341,40	32283,00	75021,70	29687,00	26432,70
	Articles, n.e.s., of plastics	t	1592,80	7925,80	5615,40	6994,4	1210,10	5866,20	2094,80	497,10	1592,80

Table 41: Export and import flows of Serbia in 2018 – Black Sea, non-Danube, countries

Flows	Product	Country	Georgia	Russia	Turkey
		Data type	t	t	t
Export flows	Cereals and cereal preparations		79,70	5105,20	40,70
	Fuel wood (excluding wood waste) and wood charcoal				0,00
	Fertilizers, crude			27,90	4,00
	Stone, sand and gravel			0,00	0,00
	Sulphur and unroasted iron pyrites			0,00	
	Metalliferous ores and metal scrap			0,20	32412,00
	Coal, coke and briquettes			0,00	
	Petroleum and petroleum products and related materials		0,00	4652,30	4589,10
	Inorganic chemical elements, oxides and halogen salts		0,00	0,00	158,60
	Medicinal and pharmaceutical products		42,50	3663,20	2,10
	Fertilizers (other than crude)		115,10	200,80	195,50
	Plastics in primary forms			3873,10	7525,40
	Plastics in non-primary forms		0,10	1962,30	809,60
	Rubber tyres, interchangeable tyre flaps and inner tubes		492,00	14871,90	6942,70
	Articles of rubber n.e.s.		0,10	295,10	396,00
	Iron and steel		0,10	2225,90	20905,00
	Articles, n.e.s., of plastics		0,80	11402,80	2425,30
Import flows	Cereals and cereal preparations		0,00	1880,00	1036,80
	Fuel wood (excluding wood waste) and wood charcoal				4,60
	Fertilizers, crude			32,90	0,00
	Stone, sand and gravel			0,30	170,40
	Sulphur and unroasted iron pyrites			40,50	
	Metalliferous ores and metal scrap			158051,50	53001,90
	Coal, coke and briquettes			276770,30	
	Petroleum and petroleum products and related materials		0,00	1337101,00	19341,90
	Inorganic chemical elements, oxides and halogen salts		1,30	37343,40	2691,30
	Medicinal and pharmaceutical products		0,00	1,10	292,30
	Fertilizers (other than crude)		0,00	228361,80	20,10
	Plastics in primary forms			33388,30	15472,30
	Plastics in non-primary forms		0,00	2141,80	10964,20
	Rubber tyres, interchangeable tyre flaps and inner tubes		0,00	5050,50	2541,30
	Articles of rubber n.e.s.		0,00	16,00	581,60
	Iron and steel		2,20	17692,60	30337,80
	Articles, n.e.s., of plastics		0,00	314,40	6697,70

Table 42: Export and import flows of Serbia in 2019 – All countries, EU countries and CEFTA countries

Flows	Product	Country	All countries	European Union (28)	CEFTA countries
			t	t	t
Export flows	Cereals and cereal preparations		3760167,60	2956512,90	777117,00
	Fuel wood (excluding wood waste) and wood charcoal		33887,10	16559,30	16405,50
	Fertilizers, crude		389,70	151,60	235,70
	Stone, sand and gravel		597770,40	511955,60	82123,00
	Sulphur and unroasted iron pyrites		15514,00	13308,20	37,90
	Metalliferous ores and metal scrap		302785,70	140317,50	150196,00
	Coal, coke and briquettes		102324,30	5976,30	96348,00
	Petroleum and petroleum products and related materials		712071,20	329901,10	347645,30
	Inorganic chemical elements, oxides and halogen salts		150592,70	119210,90	29277,50
	Medicinal and pharmaceutical products		20946,60	9368,40	6599,00
	Fertilizers (other than crude)		446982,30	286708,20	65653,60
	Plastics in primary forms		141472,40	106403,00	22889,60
	Plastics in non-primary forms		114240,60	73944,00	28990,00
	Rubber tyres, interchangeable tyre flaps and inner tubes		160873,50	112947,70	5118,40
	Articles of rubber n.e.s.		10150,80	5894,30	1121,30
	Iron and steel		1543494,00	1214863,10	208216,60
	Articles, n.e.s., of plastics		143463,40	80401,80	24410,30
Import flows	Cereals and cereal preparations		87868,70	65257,90	11223,50
	Fuel wood (excluding wood waste) and wood charcoal		3616,10	887,70	2066,50
	Fertilizers, crude		665151,60	22173,60	24,00
	Stone, sand and gravel		152828,70	47560,50	78123,00
	Sulphur and unroasted iron pyrites		1307,00	1298,90	0,00
	Metalliferous ores and metal scrap		2670194,30	119010,00	9073,50
	Coal, coke and briquettes		1455520,70	421029,20	705684,80
	Petroleum and petroleum products and related materials		3510169,10	866721,50	38041,10
	Inorganic chemical elements, oxides and halogen salts		370768,30	309432,20	9775,10
	Medicinal and pharmaceutical products		16964,30	12463,20	2550,30
	Fertilizers (other than crude)		790335,50	314279,40	3817,50
	Plastics in primary forms		527286,20	342799,70	4505,20
	Plastics in non-primary forms		120930,50	94690,50	4025,00
	Rubber tyres, interchangeable tyre flaps and inner tubes		27276,20	9044,30	0,20
	Articles of rubber n.e.s.		8925,90	4748,30	49,00
	Iron and steel		1172619,70	491259,30	260748,20
	Articles, n.e.s., of plastics		74470,20	48911,00	9286,40

Table 43: Export flows of Serbia in 2019 – Danube countries and B&H

Flows	Product	Country	Austria	Bosnia & Herzegovina	Bulgaria	Germany	Croatia	Hungary	Romania	Slovakia	Ukraine
		Data type	t	t	t	t	t	t	t	t	
Export flows	Cereals and cereal preparations		274988,10	319506,80	11294,40	7120,00	35841,30	23229,90	1990829,20	226,50	910,10
	Fuel wood (excluding wood waste) and wood charcoal		5084,70	5104,20	243,30	229,00	312,50		426,20		0,00
	Fertilizers, crude			29,00	0,00	120,90	25,30	0,00	0,00	2,00	530,70
	Stone, sand and gravel		37,10	45582,00	3701,10	19,10	88021,50	325200,40	47028,00		
	Sulphur and unroasted iron pyrites		0,00	21,60	1,00	0,00	1970,10	63,70	863,20		
	Metalliferous ores and metal scrap		317,80	1027,80	65194,10	13132,50	160,30	2186,00	1898,40	479,20	0,40
	Coal, coke and briquettes		0,10	75369,60	0,00	0,20	967,10	715,30	4198,30	0,00	
	Petroleum and petroleum products and related materials		2879,70	289062,50	106147,90	5930,70	54890,90	11569,70	122901,30	5011,90	1898,50
	Inorganic chemical elements, oxides and halogen salts		3794,10	18619,90	20191,30	302,80	771,10	25030,00	36060,20	175,50	1565,40
	Medicinal and pharmaceutical products		243,20	2737,10	166,00	2143,80	5,90	0,60	4629,60	22,20	81,60
	Fertilizers(other than crude)		259,10	39251,40	34177,10	25,70	38849,80	100831,50	77277,40	5301,60	80015,80
	Plastics in primary forms		2916,70	17005,20	19796,40	361,60	8548,10	21084,20	9563,10	8891,00	633,00
	Plastics in non-primary forms		858,30	12320,20	4711,20	6520,60	9949,90	10753,60	6210,00	3214,70	352,70
	Rubber tyres, interchangeable tyre flaps and inner tubes		244,40	3092,50	2773,40	9973,20	1207,30	6524,60	5834,10	1241,50	3436,90
	Articles of rubber n.e.s.		46,20	507,20	66,30	2492,40	181,80	471,70	348,70	252,00	1764,80
	Iron and steel		121200,30	94925,80	233466,70	18497,70	31107,60	95453,40	77423,90	50251,80	13732,40
	Articles, n.e.s., of plastics		1928,80	9791,90	3275,90	8200,50	10298,30	6828,30	11029,40	1298,30	12925,00

Table 44: Import flows of Serbia in 2019 – Danube countries and B&H

Flows	Product	Country	Austria	Bosnia & Herzegovina	Bulgaria	Germany	Croatia	Hungary	Romania	Slovakia	Ukraine
		Data type									
Import flows	Cereals and cereal preparations	t	1344,90	5572,70	7114,00	8447,70	4929,50	7229,40	5731,00	525,90	81,60
	Fuel wood (excluding wood waste) and wood charcoal	t	275,90	2066,50	0,00	98,10	0,70	2,10	0,00		80015,80
	Fertilizers, crude	t		0,00	23,40	11,60	200,40	68,60	19649,70	1416,00	633,00
	Stone, sand and gravel	t	4413,90	61218,40	21878,40	1179,80	706,60	0,00	10989,80		352,70
	Sulphur and unroasted iron pyrites	t	115,00	0,00	34,30	9,00	4,80	0,00	0,00		3436,90
	Metalliferous ores and metal scrap	t	326,90	8289,40	27670,60	1410,60	385,00	5849,70	68947,10	312,40	1764,80
	Coal, coke and briquettes	t	11,00	604937,60	50317,00	4077,20	13,00	22770,80	397,30	418,80	13732,40
	Petroleum and petroleum products and related materials	t	20534,90	18239,20	107734,80	4617,40	33040,70	352866,70	234256,30	22786,60	12925,00
	Inorganic chemical elements, oxides and halogen salts	t	258,20	7797,20	223920,10	10665,10	8383,10	43546,50	10114,80	1387,50	160,00
	Medicinal and pharmaceutical products	t	327,30	426,70	146,70	3711,30	99,50	274,80	440,00	11,30	
	Fertilizers(other than crude)	t	77948,00	3056,60	20596,30	2237,30	102502,30	52278,60	41699,50	3795,50	12,50
	Plastics in primary forms	t	15971,40	1153,30	16160,20	59112,40	6893,80	38613,70	30668,50	5984,40	42,50
	Plastics in non-primary forms	t	4727,00	2173,30	8948,60	20116,20	4364,30	5455,30	4822,70	1080,70	
	Rubber tyres, interchangeable tyre flaps and inner tubes	t	123,80	0,00	63,20	1635,80	66,30	556,30	521,90	462,90	1657283,10
	Articles of rubber n.e.s.	t	70,50	45,60	245,00	982,60	27,10	633,40	442,70	88,40	
	Iron and steel	t	23695,10	153863,60	30245,80	11713,20	3112,70	33810,20	106734,20	19431,50	0,10
	Articles, n.e.s., of plastics	t	1704,50	8262,00	5787,90	8374,10	1525,60	5748,60	2482,90	539,00	741,20

Table 45: Export and import flows of Serbia in 2019 – Black Sea, non-Danube, countries

Flows	Product	Country	Georgia	Russia	Turkey
		Data type	t	t	t
Export flows	Cereals and cereal preparations		58,90	2748,20	11349,40
	Fuel wood (excluding wood waste) and wood charcoal				0,00
	Fertilizers, crude				1,20
	Stone, sand and gravel			0,00	9,70
	Sulphur and unroasted iron pyrites				
	Metalliferous ores and metal scrap			21,60	11888,70
	Coal, coke and briquettes			0,00	0,00
	Petroleum and petroleum products and related materials		0,00	6895,10	3461,40
	Inorganic chemical elements, oxides and halogen salts		0,00	0,20	52,00
	Medicinal and pharmaceutical products		38,90	3282,60	5,90
	Fertilizers (other than crude)		72,00	238,00	209,70
	Plastics in primary forms			3417,70	824,50
	Plastics in non-primary forms		3,40	2458,80	1219,40
	Rubber tyres, interchangeable tyre flaps and inner tubes		990,60	16641,80	10051,50
	Articles of rubber n.e.s.		0,00	404,10	375,50
	Iron and steel		0,10	3097,00	68180,10
	Articles, n.e.s., of plastics		10,30	11645,40	2612,00
Import flows	Cereals and cereal preparations		0,00	4066,10	1345,20
	Fuel wood (excluding wood waste) and wood charcoal				0,90
	Fertilizers, crude				42,20
	Stone, sand and gravel			0,60	236,60
	Sulphur and unroasted iron pyrites				
	Metalliferous ores and metal scrap			266264,30	87141,10
	Coal, coke and briquettes			328365,10	1,00
	Petroleum and petroleum products and related materials		0,00	1453782,70	8144,80
	Inorganic chemical elements, oxides and halogen salts		7,50	47585,60	996,30
	Medicinal and pharmaceutical products		0,00	20,40	422,00
	Fertilizers (other than crude)		0,00	406554,50	22,20
	Plastics in primary forms			41894,40	21071,30
	Plastics in non-primary forms		0,00	2663,80	9906,30
	Rubber tyres, interchangeable tyre flaps and inner tubes		0,00	3465,00	3568,60
	Articles of rubber n.e.s.		0,00	11,00	712,50
	Iron and steel		7,40	211516,20	55253,00
	Articles, n.e.s., of plastics		0,00	271,70	7799,30

Table 46: Export and import flows of Serbia in 2020 – All countries, EU countries and CEFTA countries

Flows	Product	Country	All countries	European Union (28)	CEFTA countries
			t	t	t
Export flows	Cereals and cereal preparations		4457669,60	3656395,00	775202,10
	Fuel wood (excluding wood waste) and wood charcoal		26990,50	12256,40	14019,30
	Fertilizers, crude		777,40	196,50	570,40
	Stone, sand and gravel		494944,00	436582,00	57472,90
	Sulphur and unroasted iron pyrites		21441,20	19305,70	22,90
	Metalliferous ores and metal scrap		397196,70	186208,70	163160,10
	Coal, coke and briquettes		77258,40	1150,00	76105,60
	Petroleum and petroleum products and related materials		748495,30	341672,30	386730,50
	Inorganic chemical elements, oxides and halogen salts		143004,10	113690,40	27263,40
	Medicinal and pharmaceutical products		18901,80	9261,80	5447,70
	Fertilizers (other than crude)		413368,00	261227,30	76274,50
	Plastics in primary forms		178668,60	111453,60	25385,40
	Plastics in non-primary forms		125815,20	83583,20	28709,40
	Rubber tyres, interchangeable tyre flaps and inner tubes		147161,50	81499,20	3795,30
	Articles of rubber n.e.s.		11014,70	7670,00	1738,60
	Iron and steel		1065330,70	850394,40	168100,00
	Articles, n.e.s., of plastics		132715,30	78015,70	20963,80
Import flows	Cereals and cereal preparations		103318,00	78040,60	14687,80
	Fuel wood (excluding wood waste) and wood charcoal		4765,70	943,60	3710,50
	Fertilizers, crude		875090,70	36416,40	0,00
	Stone, sand and gravel		154273,70	42263,80	89753,10
	Sulphur and unroasted iron pyrites		1105,90	1081,50	0,00
	Metalliferous ores and metal scrap		1489062,50	108520,40	8116,30
	Coal, coke and briquettes		1030531,20	245130,20	542298,70
	Petroleum and petroleum products and related materials		3148768,30	693044,30	8861,80
	Inorganic chemical elements, oxides and halogen salts		451450,90	386026,40	10030,30
	Medicinal and pharmaceutical products		17155,30	12398,40	2475,70
	Fertilizers (other than crude)		1158759,90	453970,90	6603,10
	Plastics in primary forms		542491,20	362093,90	4361,30
	Plastics in non-primary forms		130427,80	96587,00	4370,90
	Rubber tyres, interchangeable tyre flaps and inner tubes		28540,00	8832,20	2,40
	Articles of rubber n.e.s.		8007,80	4646,10	51,90
	Iron and steel		969158,30	468498,50	245052,70
	Articles, n.e.s., of plastics		86651,40	54956,50	9672,10

Table 47: Export flows of Serbia in 2020 – Danube countries and B&H

Flows	Product	Country	Austria	Bosnia & Herzegovina	Bulgaria	Germany	Croatia	Hungary	Romania	Slovakia	Ukraine
		Data type									
Export flows	Cereals and cereal preparations	t	64066,20	301667,70	13961,50	10253,20	36827,10	26430,30	2873300,70	239,50	720,10
	Fuel wood (excluding wood waste) and wood charcoal	t	5546,90	4844,60	124,90	354,70	663,70	0,10	392,60		
	Fertilizers, crude	t		18,00	0,00	0,00	152,60	0,00	0,00		
	Stone, sand and gravel	t	60,70	44036,40	1980,60	51,90	134597,60	187428,20	72206,70	51,00	668,80
	Sulphur and unroasted iron pyrites	t		4,80	3,00	0,00	2239,70	648,60		0,00	
	Metalliferous ores and metal scrap	t	111,50	1044,20	95403,30	14597,20	136,20	23,40	6376,60	1011,90	0,40
	Coal, coke and briquettes	t	0,20	41944,30	954,50	0,00	50,40	78,40	0,00	0,00	
	Petroleum and petroleum products and related materials	t	4285,00	313775,20	127518,60	1417,70	61068,90	11675,40	127288,50	2011,50	1347,10
	Inorganic chemical elements, oxides and halogen salts	t	3454,30	16112,70	25042,80	270,80	976,40	20761,00	29505,00	56,90	1459,40
	Medicinal and pharmaceutical products	t	170,10	2341,50	278,80	3283,90	20,70	10,60	2995,80	81,60	59,90
	Fertilizers (other than crude)	t	23,80	36874,30	31976,70	212,80	49748,60	69939,30	73076,90	6383,30	52101,20
	Plastics in primary forms	t	4388,00	16690,50	23170,90	513,60	10506,30	25075,60	6684,20	8023,90	493,00
	Plastics in non-primary forms	t	1608,10	12730,20	5828,00	8063,40	11465,90	9777,20	8415,70	3358,40	593,40
	Rubber tyres, interchangeable tyre flaps and inner tubes	t	341,90	1988,30	2523,50	7786,40	881,30	5505,10	4510,40	1015,60	3148,40
	Articles of rubber n.e.s.	t	40,80	478,70	11,70	3865,70	156,10	444,50	318,50	382,40	285,10
	Iron and steel	t	76275,50	104318,60	165005,80	5838,90	23364,00	72307,40	54062,00	37951,90	15155,20
	Articles, n.e.s., of plastics	t	1738,80	8156,60	3501,50	7297,70	11549,40	6534,40	11082,60	1461,80	12572,70

Table 48: Import flows of Serbia in 2020 – Danube countries and B&H

Flows	Product	Country	Austria	Bosnia & Herzegovina	Bulgaria	Germany	Croatia	Hungary	Romania	Slovakia	Ukraine
		Data type									
Import flows	Cereals and cereal preparations	t	1479,10	7985,10	10492,10	10833,10	7905,90	10037,30	5930,50	1677,90	71,20
	Fuel wood (excluding wood waste) and wood charcoal	t	390,70	3710,50	20,50	73,00	428,00	0,00	0,00		
	Fertilizers, crude	t		0,00	28,40	9,10	7,00	135,40	32992,80		
	Stone, sand and gravel	t	4576,40	59339,80	25707,90	1455,40	772,00	35,80	1119,40	432,20	113,70
	Sulphur and unroasted iron pyrites	t		0,00	36,80	92,30	0,00	0,00		69,00	
	Metalliferous ores and metal scrap	t	143,10	6870,50	37603,30	2194,60	235,80	6476,60	52745,60	326,50	591960,90
	Coal, coke and briquettes	t	20,40	455951,30	27792,50	4236,50	0,00	10696,50	10123,40	719,80	
	Petroleum and petroleum products and related materials	t	9353,70	1363,00	81471,90	6029,80	12020,20	362389,20	137769,60	22226,70	174,40
	Inorganic chemical elements, oxides and halogen salts	t	286,80	8260,10	300253,90	8543,20	5927,70	42152,10	15316,40	1914,80	690,60
	Medicinal and pharmaceutical products	t	278,90	404,00	170,90	3137,90	87,90	319,80	385,70	18,40	15,40
	Fertilizers(other than crude)	t	105425,30	4950,20	52046,10	1624,00	100583,70	82210,30	99941,80	1763,10	0,00
	Plastics in primary forms	t	14345,50	1429,10	14855,90	67566,70	11832,70	48749,50	28460,70	7948,20	91,60
	Plastics in non-primary forms	t	4051,40	2407,10	9857,10	21128,60	4570,00	5824,90	4595,20	898,10	836,20
	Rubber tyres, interchangeable tyre flaps and inner tubes	t	121,20	0,40	66,40	1621,20	57,70	871,30	487,10	485,00	5,40
	Articles of rubber n.e.s.	t	62,00	51,70	55,20	1299,60	42,90	50,80	390,00	30,70	7,60
	Articles of rubber n.e.s.	t	23735,70	133520,50	28155,20	12764,10	2586,30	33210,30	98345,80	16378,00	79778,10
	Articles, n.e.s., of plastics	t	1678,80	8439,40	5681,40	10566,30	1901,10	7442,20	3113,30	648,50	119,90

Table 49: Export and import flows of Serbia in 2020 – Black Sea, non-Danube, countries

Flows	Product	Country	Georgia	Russia	Turkey
		Data type	t	t	t
Export flows	Cereals and cereal preparations		61,60	4487,00	2082,60
	Fuel wood (excluding wood waste) and wood charcoal				0,00
	Fertilizers, crude			1,70	2,90
	Stone, sand and gravel			1,50	0,00
	Sulphur and unroasted iron pyrites				
	Metalliferous ores and metal scrap			44,00	20147,20
	Coal, coke and briquettes			0,00	0,00
	Petroleum and petroleum products and related materials			3362,20	1430,70
	Inorganic chemical elements, oxides and halogen salts	21,40	20,00		60,10
	Medicinal and pharmaceutical products	29,80	2023,20		6,20
	Fertilizers (other than crude)	727,00	216,70		206,90
	Plastics in primary forms			4643,30	20653,50
	Plastics in non-primary forms	0,00	2401,50		2189,20
	Rubber tyres, interchangeable tyre flaps and inner tubes	426,30	15316,80		13284,30
	Articles of rubber n.e.s.	0,10	280,20		595,00
	Iron and steel	2,40	4643,90		18566,00
	Articles, n.e.s., of plastics	1,40	4382,00		2857,50
Import flows	Cereals and cereal preparations		0,00	2166,70	1588,80
	Fuel wood (excluding wood waste) and wood charcoal				2,50
	Fertilizers, crude			23,00	0,00
	Stone, sand and gravel			0,40	654,20
	Sulphur and unroasted iron pyrites				
	Metalliferous ores and metal scrap			130820,10	43480,40
	Coal, coke and briquettes			242368,10	0,00
	Petroleum and petroleum products and related materials			757002,40	3073,10
	Inorganic chemical elements, oxides and halogen salts	4,50	50958,50		1405,50
	Medicinal and pharmaceutical products	0,00	50,60		418,10
	Fertilizers (other than crude)	0,00	642980,40		325,60
	Plastics in primary forms			36377,60	17865,00
	Plastics in non-primary forms	0,00	3784,30		13026,90
	Rubber tyres, interchangeable tyre flaps and inner tubes	0,00	3469,30		3272,90
	Articles of rubber n.e.s.	0,00	18,30		815,60
	Iron and steel	9,60	10239,30		98543,80
	Articles, n.e.s., of plastics	0,00	585,50		10407,80

5.2 Identification of transport costs on different corridors and combination of transport modes; (various transport chains) for the most promising types of cargo and transport relations

Bulgaria

The following tariffs have been identified for specific routes, in Euro/tonne:

The price information for both exports and imports of IWT, divided by types of goods and destinations is given in the next tables.

Approximate export freight levels:

Exports:

50. Table: Export prices with IWT by types of goods and routes, 2020

Steel IWT	
Route	Price (EUR/tonne)
Lom – Regensburg	27 – 28
Lom – Kelheim	28 – 29
Ruse – Regensburg	28 – 29
Ruse - Kelheim	30
Ruse – Lower Romanian ports	5-6
Ruse – Upper Romanian ports	6-7
Grain IWT	
Route	Price (EUR/tonne)
Vidin – Constanta	10
Lom – Constanta	9
Somovit – Constanta	8
Svishtov – Constanta	8
Ruse – Constanta	7 - 8

Silistra – Constanta	7
Meal IWT	
Route	Price (EUR/tonne)
Ruse – Constanta	8 - 9
Fertilizers IWT	
Route	Price (EUR/tonne)
Ruse – Serbia	10 – 11
Ruse – Vukovar	12 – 13
Ruse – Hungary	14 - 15
Biodiesel IWT	
Route	Price (EUR/MT)
Ruse - Constanta	12 - 15
Biodiesel Rail transport	
Route	Price (EUR/MT)
Ruse – Germany	46
Ruse - Austria	44
Ruse - Hungary	27
Ruse - Slovakia	32
Ruse - Slovenia	34
Biodiesel Road transport	
Route	Price (EUR/MT)
Ruse - Constanta	23
Ruse - Ljubljana	87

Imports:

51. Table: Import prices with IWT by types of goods and routes, 2020

Coal IWT	
Route	Price (EUR/tonne)
Ukraine – Bulgaria	6 - 7
Clay IWT	
Route	Price (EUR/tonne)
Ukraine – Ruse	5
Serbia – Ruse	7 - 8
Rapeseed IWT	
Route	Price (EUR/tonne)
Serbia – Bulgaria	9 – 10
Hungary – Bulgaria	10 – 11
Constanta – Bulgaria	8 - 9
Sunflower seed IWT	
Route	Price (EUR/tonne)
Romania – Ruse	8
Reni – Ruse	12
Fertilizers IWT	
Route	Price (EUR/tonne)
Constanta – Ruse	7
Constanta – Lom	8

Pre-carriage and on-carriage by road

General cargo: 0.07 – 0.09 EUR/tkm

Bulk cargo – 0.07 – 0.08 EUR/tkm

40ft dry container Varna – Ruse – EUR 370

40ft dry SOC Burgas – Ruse – EUR 330

Rail freight (block-train basis)

steel Ruse - Straldzha 13.30 – 14.70 EUR/tonne

Freight rates depend on cargo stowage factor and distance run.

All freight rates are for complete shipments only and do not apply to partial loads or groupage consignments.

All price information is based on the current freight market and cannot be used for actual transport budgeting.

VAT is not included and should be charged or exempted as per Bulgarian VAT Act.

The distances by road and by IWT for the main destinations are shown in the tables below.

52. Table: Distances by road

	Regensburg (Ge)	Kelheim (Ge)	Vukovar (Cr)	Constanta (Ro)
Vidin				559
Lom	1 366	1 388		587
Somovit				382
Svishtov				378
Ruse	1 526	1 549	730	272
Silistra				148

53. Table: Distances by IWT

	Regensburg (Ge)	Kelheim (Ge)	Vukovar (Cr)	Constanta (Ro)
Vidin				551
Lom	1 656	1 694		503
Somovit				368
Svishtov				314
Ruse	1 907	1 945	841	252
Silistra				135

54. Table: Travel time for the main destinations

	Regensburg (Ge)	Kelheim (Ge)	Vukovar (Cr)	Constanta (Ro)
Vidin				1 day, 8 hours
Lom	7 days, 13 hours	7 days, 19 hours		1 day, 6 hours
Somovit				23 hours
Svishtov				20 hours
Ruse	8 days, 10 hours	8 days, 16 hours	3 days, 5 hours	17 hours
Silistra				11 hours

Source: <https://www.danube-logistics.info/travel-time-calculator/#>

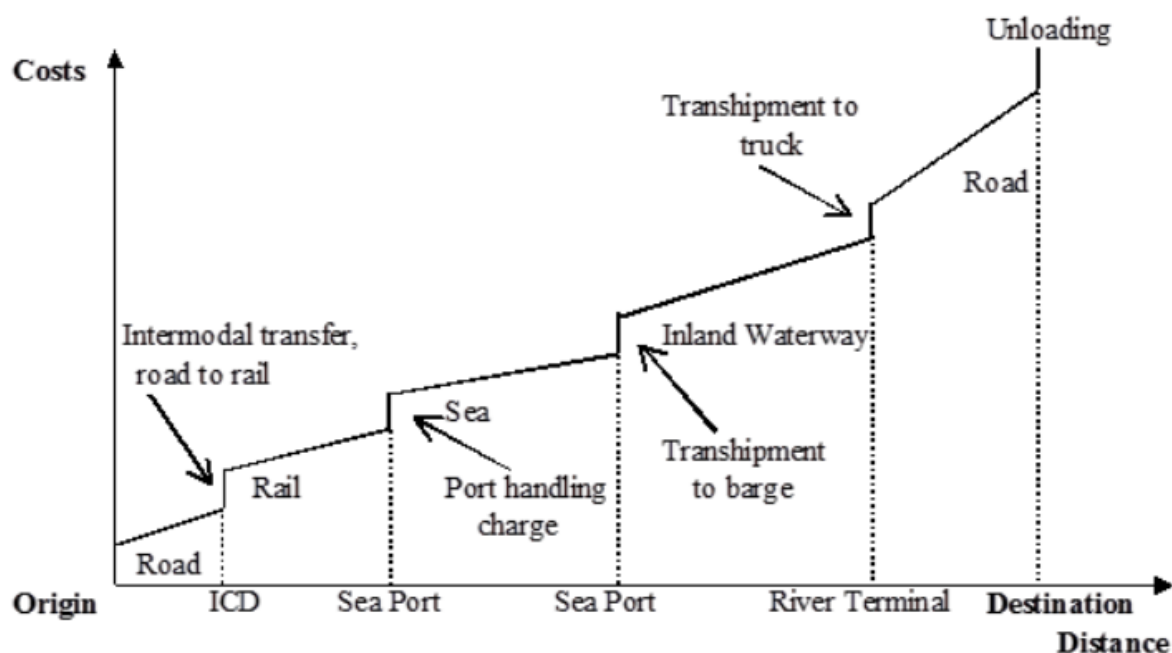
Considering the tariffs per tonne and the distance, the following tariffs per tonne-km have been estimated:

55. Table: Tariffs per tonne-km for transportation of steel, grain, meal and fertilizers

	Regensburg (Ge)	Kelheim (Ge)	Vukovar (Cr)	Constanta (Ro)
Vidin				0.01815
Lom	0.01690	0.01711		0.01789
Somovit				0.02174
Svishtov				0.02548
Ruse	0.01520	0.01542	0.01545	0.03175
Silistra				0.05185

Hungary

41. Figure: Combined transport costs model



Source: [Time/Cost-Distance Model: Exercise on its application \(unctad.org\)](http://unctad.org)

Numerous modes of transport may be involved for goods to be moved door-to-door. At each intermodal transfer point there will be a cost (or time) increase represented by a vertical step. Should a border crossing occur along the route, the border crossing charges (and time spent) can be represented by another vertical shift upwards in the cost curve at that point, which can then be cumulated with other costs.

42. Figure: Development of ILU (intermodal loading unit) types until 2030

ILU type		Development until 2030 ¹⁾
Containers	20' - 6.10m	+1.1%
	30' - 9.15m	-2.0 %
	40' - 12.20m	+3.7 %
	45' - 13.60m	+6.6%
	Other	+1.1%
Semi-trailers	Standard cranable	+3.4%
	Megatrailer cranable	+4.4%
	Standard non-cranable	+3.1%
	Megatrailer non-cranable	+2.6%
	Other	+0,4%
Swap bodies (or non-ISO containers)	Class A	+4.7%
	Class B	-0,7%
	Class C	+1.0%
	Other	+1.6%
Other	Other ILU-types	+1.0%

Source: BSL Transportation analysis; ILU-workshop, 2020.

The future market structure of ILUs in the Combined Transport (CT) market is assessed differently by the players in CT that took part in the survey (BSL Transportation analysis - Source: [2020 Report on Combined Transport in Europe \(uic.org\)](#))

- For containers, most players expect an increasing standardization along with a decreasing number of types,
- When focusing on semi-trailers, the picture looks very different. There is a very high percentage that expects a more specific differentiation of the existing types of semi-trailers, and
- For swap bodies, the participants expressed an indifferent opinion fluctuating between more specific differentiation and increasing standardization.

Overall, a strong positive development of almost all ILU types is expected withing the next decade, as expressed by key actors (manufacturers and users) at the ILU-workshop.

Especially the longest and volume-optimised ILUs of each category, such as 45' containers (+6,6%), craneable megatrailers (+4.4%) and class A swap bodies (+4,7%) are expected to develop very well. In comparison, medium-sized units such as the 30' containers (-2,0%) and class B swap bodies (-0,7%) are expected to decline by 2030. Short units have remained comparably constant with low growth rates of around 1,0%. The need for an improved standardisation environment for the use of ILUs is considered as an important topic in future.

Republic of Moldova

The study of the full list of transport costs for the full cycle of transportation of goods from the forwarder to the consumer, as well as the comparison of costs typical for alternative transportation options are of great interest both for consumers of transport services and for a transport company in order to optimize costs.

Comparison of transportation costs by mode of transport is based on the unit cost of transportation work (t * km).

It is known that the unit cost for sea transportation is the lowest in comparison with other types of transportation. Consequently, if sea transport is the main type in the supply chain, then their cost will be the lowest, and the goods will be the most competitive.

Almost all transportation via GIFP has no alternative options due to the large volumes and distances of transportation, as well as high competitiveness.

The main problem for the IWT is the organization of transportation with the maximum vessel load factor. The occupancy factor strongly affects the unit cost of transporting a unit of goods. As a result, the list of cargoes transported by IWT vessels is rather limited and has long been determined.

It is possible to increase the volume of IWT traffic only through the implementation of the most complete list of goods, an increase in trade volumes, as well as the search for innovative technologies for the transportation of goods

Romania

The following tariffs have been identified for specific routes, in Euro/tonn:

56. Table: Tariffs for specific routes, in Euro/tonn

Cereals/Fertilizers/Metal products	Regensburg (Ge)	Krems (At)	Bratislava (Sk)	Csepel (Hu)	NSad (Srb)
Tr Severin	17,00	13,00	11,25	9,00	7,00
Giurgiu	20,00	16,00	14,50	12,50	9,50
C-ta	22,25	18,00	16,50	14,50	12,50
Galati	22,50	18,25	16,75	14,75	12,75

Ore: Constanta - Smederevo: 16,20 Euro/tonn

Coal: Constanta - Dunaujvaros 17.00 Euro/tonn

The distances by road and by IWT is shown in the table below.

Distance road – direct transport

57. Table: Distance road – direct transport

	Regensburg (Ge)	Krems (At)	Bratislava (Sk)	Csepel (Hu)	NSad (Srb)
Tr Severin	1156	829	712	517	340
Giurgiu	1525	1199	1082	887	683
Constanta	1690	1364	1246	1052	906
Galati	1603	1277	1159	965	819

Constanta – Smederevo: 794 km

Constanta – Dunaujvaros: 1.045 km

58. Table: Distance IWT

	Regensburg (Ge)	Krems (At)	Bratislava (Sk)	Csepel (Hu)	NSad (Srb)
Tr Severin	1446	1071	941	713	326
Giurgiu	1881	1506	1376	1148	761
Constanta	2133	1758	1628	1400	1013
Galati	2223	1848	1718	1490	1103

Constanta – Smederevo: 873 km

Constanta – Dunaujvaros: 1340 km

59. Table: Transport time IWT

	Regensburg (Ge)	Krems (At)	Bratislava (Sk)	Csepel (Hu)	NSad (Srb)
Tr Severin	6 days 19 hours	4 days 16 hours	3 days 20 hours	2 days 20 hours	1 day 5 hours
Giurgiu	8 days 5 hours	6 days 2 hours	5 days 6 hours	4 days 6 hours	2 days 15 hours
Constanta	9 days 2 hours	6 days 23 hours	6 days 3 hours	5 days 3 hours	3 days 12 hours
Galati	9 days 7 hours	7 days 4 hours	6 days 8 hours	5 days 8 hours	3 days 17 hours

Constanta – Smederevo: 2 days 23 hours

Constanta – Dunaujvaros: 4 days 21 hours

Source: <https://www.danube-logistics.info/travel-time-calculator/#>

Considering the tariffs per tonn and the distance, the following tariffs per ton-km have been estimated:

Tariffs per ton-km:

60. Table: Tariffs per ton-km IWT

	Regensburg (Ge)	Krems (At)	Bratislava (Sk)	Csepel (Hu)	NSad (Srb)
Tr Severin	0,01176	0,01214	0,01196	0,01262	0,02147
Giurgiu	0,01063	0,01062	0,01054	0,01089	0,01248
Constanta	0,01043	0,01024	0,01014	0,01036	0,01234
Galati	0,01012	0,00988	0,00975	0,00990	0,01156

5.3 Identification of the potential for IWT based on transport cost comparison

Bulgaria

Considering a tariff of 1 Euro/Km for one truck, transport cost for the relations considered above is:

61. Table: Cost of road transport, 20 tonnes net

	Regensburg (Ge)	Kelheim (Ge)	Vukovar (Cr)	Constanta (Ro)
Vidin				559
Lom	1 366	1 388		587
Somovit				382
Svishtov				378
Ruse	1 526	1 549	730	272
Silistra				148

For the same routes, the IWT cost for 20 tonnes (in order to compare with road transport) is as follows:

62. Table: Cost of IWT transport, 20 tonnes net

	Regensburg (Ge)	Kelheim (Ge)	Vukovar (Cr)	Constanta (Ro)
Vidin				200
Lom	558	580		180
Somovit				160
Svishtov				160
Ruse	580	600	260	160
Silistra				140

63. Table: IWT transport cost versus road transport cost per relation

	Regensburg (Ge)	Kelheim (Ge)	Vukovar (Cr)	Constanta (Ro)
Vidin				0.36
Lom	0.41	0.42		0.31
Somovit				0.42
Svishtov				0.42
Ruse	0.38	0.39	0.36	0.59
Silistra				0.94

From the above it is observed that IWT transport cost is between 0,31 and 0,94 of the road transport cost. Based on this, it can be assumed that at least 30% of the current road transport flows can be transferred to the IWT.

Hungary

The external costs of river transport are much more advantageous than road transport, although rail is currently considered the best option, but in the absence of rail infrastructure, river freight may be the best choice.

The main development potential of IWT can be created by the pursuit of sustainability, as the internalization of external costs makes waterborne transport one of the most suitable for freight transport, as supported by the calculations provided by EcoTransIT.

Using EcoTransIT's calculator, the following energy and emissions calculations were obtained for the Cologne - Budapest route, taking into account three transport modes and a 1000 tonnes load.

43. Figure: Energy consumption calculation on Köln-Budapest distance, EcoTransIT

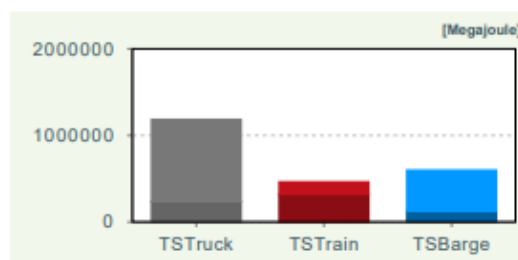
Energy consumption

WTW [Megajoule]

	TSTruck	TSTrain	TSBarge
Truck	1,183,850	0	14,333
Train	0	461,616	0
Barge	0	0	583,120
Sum	1,183,850	461,616	597,453

TTW [Megajoule]

	TSTruck	TSTrain	TSBarge
Truck	948,506	0	11,604
Train	0	143,121	0
Barge	0	0	471,389
Sum	948,506	143,121	482,994



Well-to-Wheel (WTW) = Well-to-Tank (WTT) + Tank-to-Wheel (TTW)

Source: [EcoTransIT World - Emission Calculator](#)

44. Figure: GHG emissions (calculated as CO2 equivalents) on Köln-Budapest distance, EcoTransIT

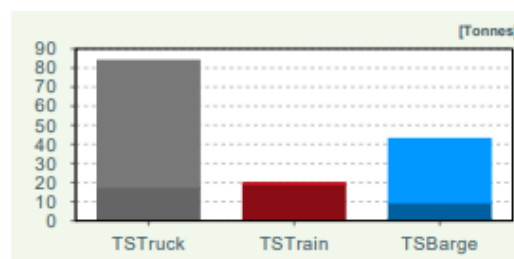
GHG emissions (calculated as CO2 equivalents)

WTW [Tonnes]

	TSTruck	TSTrain	TSBarge
Truck	84	0	1
Train	0	19	0
Barge	0	0	42
Sum	84	19	43

TTW [Tonnes]

	TSTruck	TSTrain	TSBarge
Truck	66.1	0	0.8
Train	0	0.2	0
Barge	0	0	33.3
Sum	66.1	0.2	34.1



Well-to-Wheel (WTW) = Well-to-Tank (WTT) + Tank-to-Wheel (TTW)

Source: [EcoTransIT World - Emission Calculator](#)

This calculation shows that if the environmental impact of freight transport is taken into account, IWT is the second-best option after rail. What is also important to highlight is that, compared to road freight transport, both rail and river freight transport have a significantly lower environmental impact, so increasing the share of these transport sectors will actively contribute to the EU's 2050 climate neutrality target.

Republic of Moldova

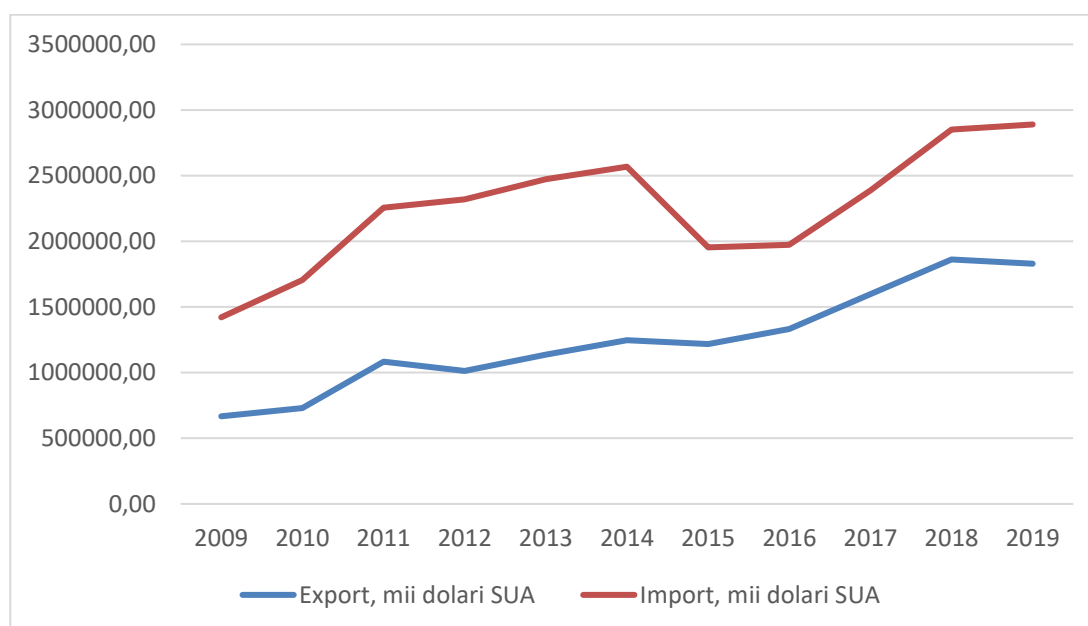
In the port of Giurgiulești, 72% of imported and 44% of exported cargo is carried out from / to the countries of the European Union.

From the above analysis of cargo transportation through GIFFP, it follows that the determining factor in the growth of IWT traffic is the sustainable development of trade relations, primarily with countries that have direct access to the sea or the Danube River.

Analysis of the foreign trade of the Republic of Moldova with the countries of the European Union indicates a stable growth in exports and imports.

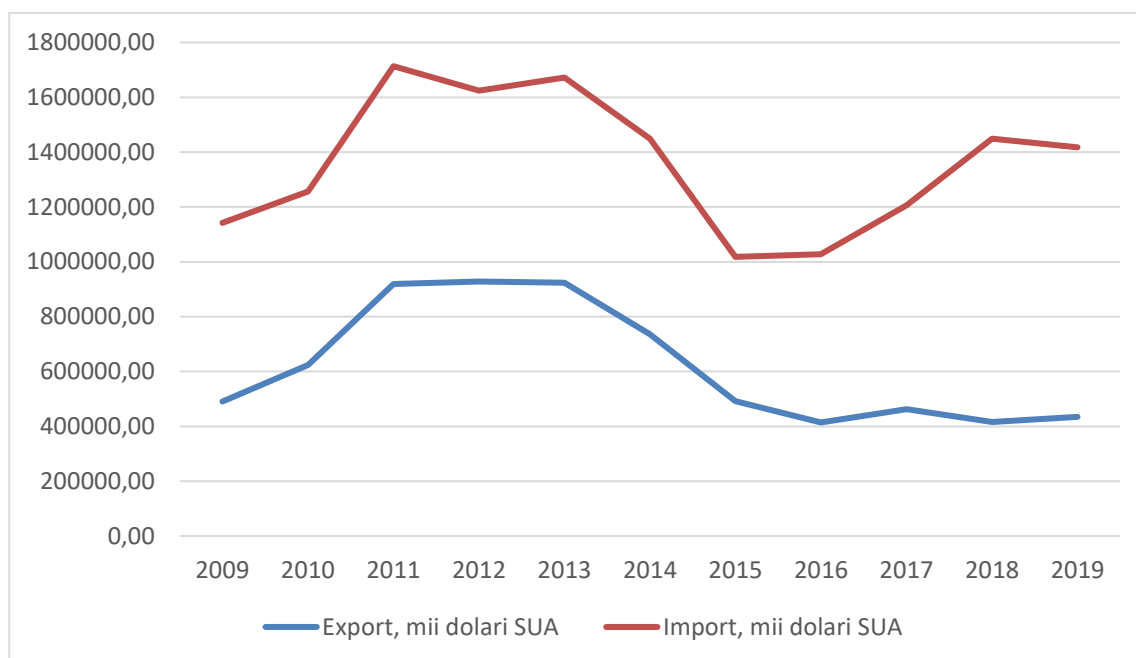
From the moment of signing the Association Agreement between the European Union and the Republic of Moldova in 2013 and until 2019, exports increased by 61%, but imports by 17% (Figure 44).

45. Figure: Foreign trade of the Republic of Moldova with European Union countries (EU-28)



During the same period 2013-2019, foreign trade with the countries of the Union of Independent States decreased in exports by 53%, and in imports by 15% (Figure 45).

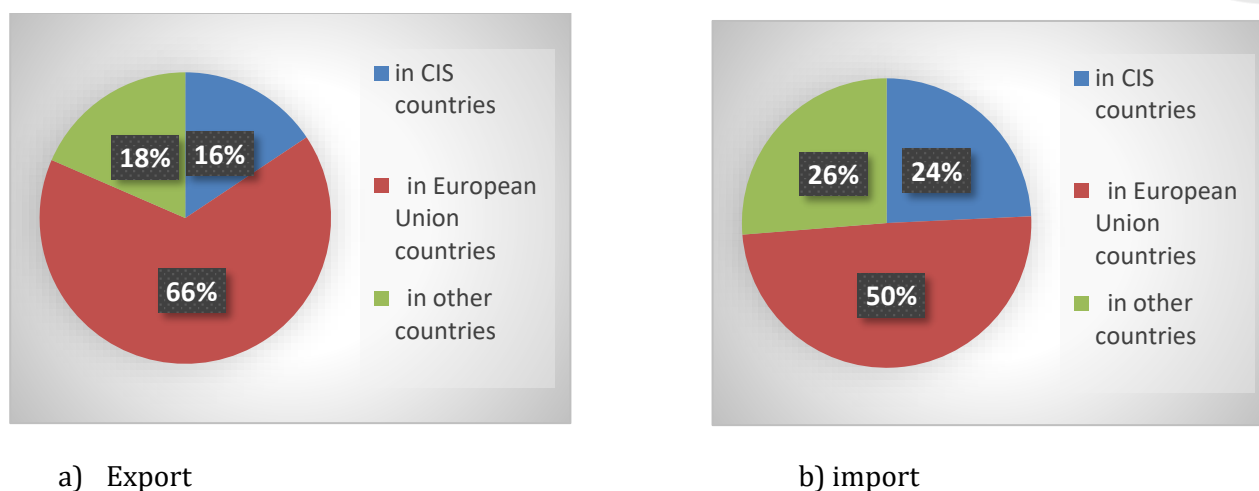
46. Figure: Foreign trade of the Republic of Moldova with the Countries of the Commonwealth of Independent States



The structure of the foreign trade of the Republic of Moldova by groups of countries in 2019 is presented in Figure 46. a, b.

These data only confirm the fact why 72% of imports and 44% of exports through the GIFP port are carried out from / to the EU countries.

47. Figure: The structure of the foreign trade of the Republic of Moldova by groups of countries in 2019



In order to assess the potential of the IWT and identify ways to increase the volume of traffic, an in-depth analysis of the foreign trade of the Republic of Moldova and the activities of GIFP in the

transshipment of exported and imported goods was carried out. From a methodological point of view, this analysis is specific in that GIFP is the only port through which foreign trade is carried out by the IWT.

Analysis of the export of goods from the Republic of Moldova to the countries of the European Union carried out in 2019 (Figure 47) shows that 42% of exports go to Romania and 13% to Germany. However, in the list of countries to which goods are exported through the GIFP port (Figure 3), these countries are not highlighted.

This can be explained by the fact that direct delivery of goods to Germany is more profitable (according to the criterion of the unit cost of transport costs per unit of goods, as well as the cost of time) to carry out by road or rail.

In the case of exporting goods to Romania, the determining factor when choosing a mode of transport is short distances for direct delivery to the consumer with small volumes of one-time deliveries of goods.

The types of cargo exported to Romania and Germany in terms of volume and characteristics do not correspond to the cargo transported by IWT.

The peculiarity of the economy of the Republic of Moldova is the small number of large industrial and agricultural enterprises. As a consequence, for the large volumes of traffic carried out by IWT, cargo consolidation is required. This, in turn, requires the creation of corporations or logistics firms with a developed infrastructure and terminals for storing goods.



The fact that exports to Italy through the GIFP port are in second place at 21% only confirms the fundamental conclusion that certain requirements must be met for sustainable action.

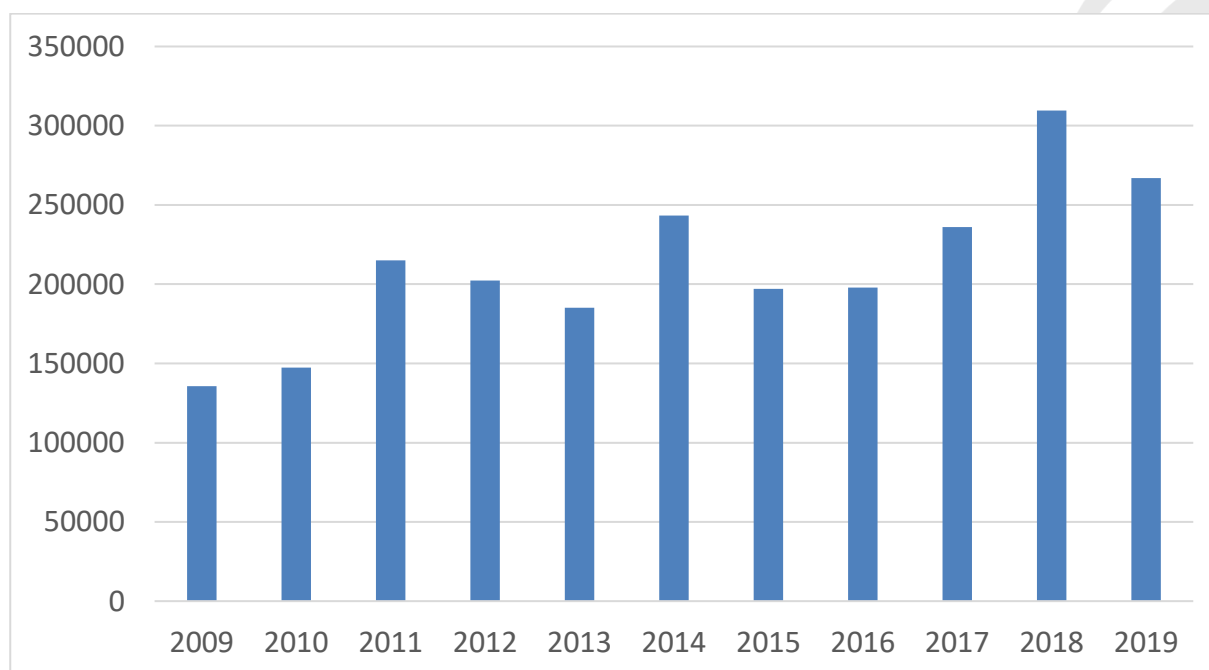
In this case, the main requirements are:

- the presence of stable trade relations (Figure 48) and large volumes of exports of grain crops (Figure 49) and vegetable oil (Figure 50);
- direct connection between the port of GIFP and the country of destination of the goods (importer);
- transportation carried out by IWT is more profitable in comparison with other modes of transport in terms of a set of criteria such as price and time.

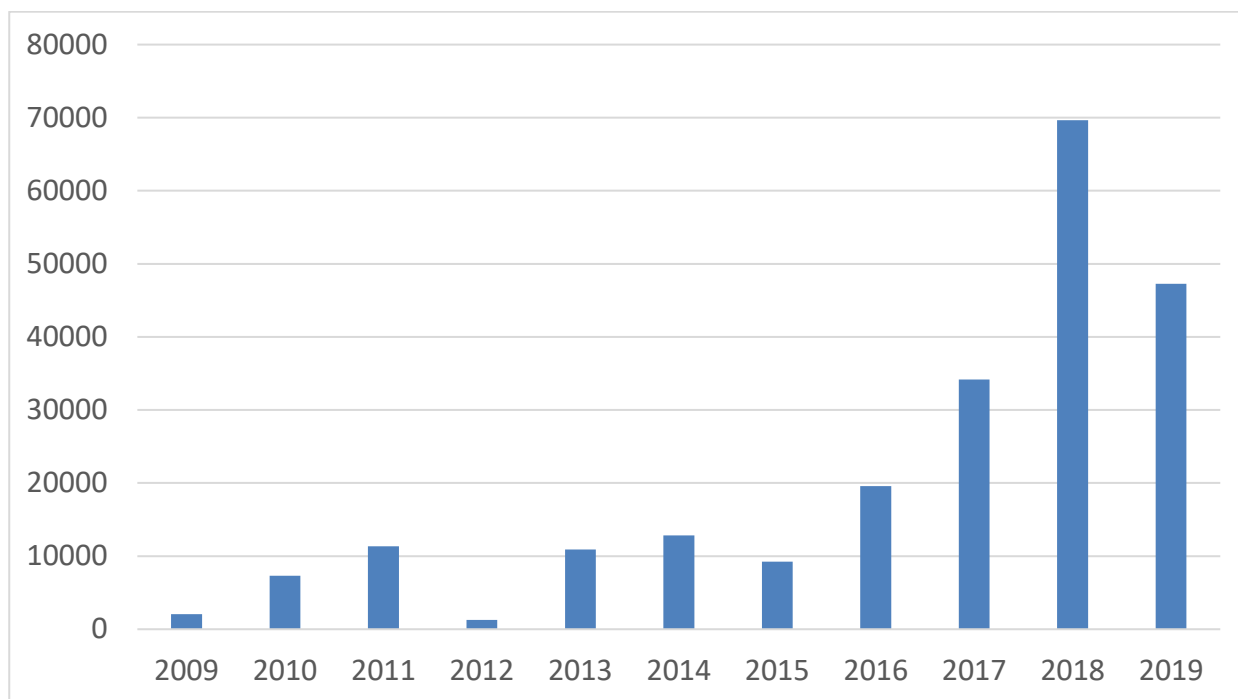
This is confirmed by the export of goods to Greece. With stable exports to Greece (Figure 51), but which is only 2% of exports to the EU (Figure 47), due to the large volumes of grain products transported (Figure 52), Greece ranks fourth, having 10% of the volume of goods exported via GIFP (Figure 44).

Another confirmation is the trade relations with Spain (Figure 53 and Figure 54). With 2% of exports (Figure 47) Spain ranks fifth (with 8%) in terms of exports through GIFP (Figure 44).

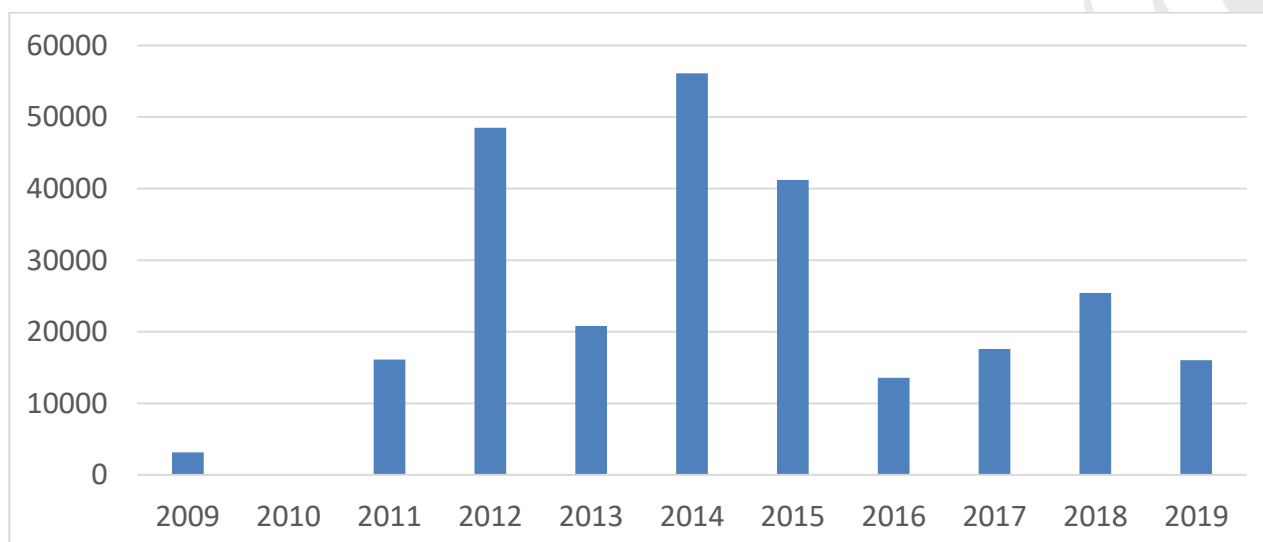
49. Figure: Export dynamics to Italy, thousands of US dollars



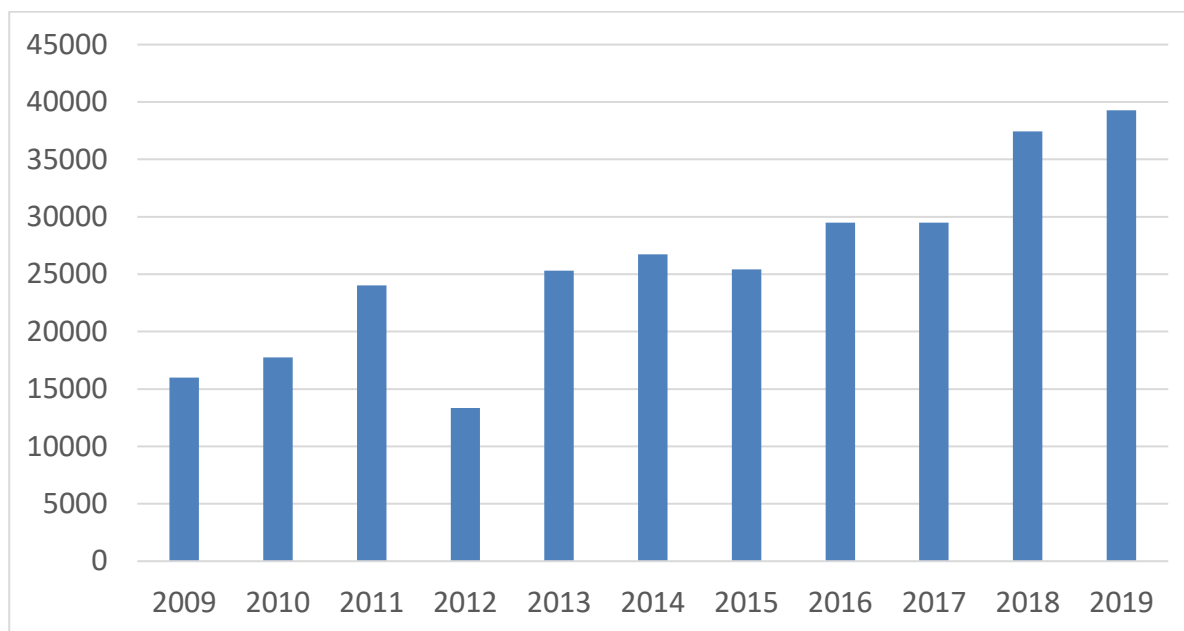
50. Figure: Dynamics of cereal exports to Italy, thousands of US dollars



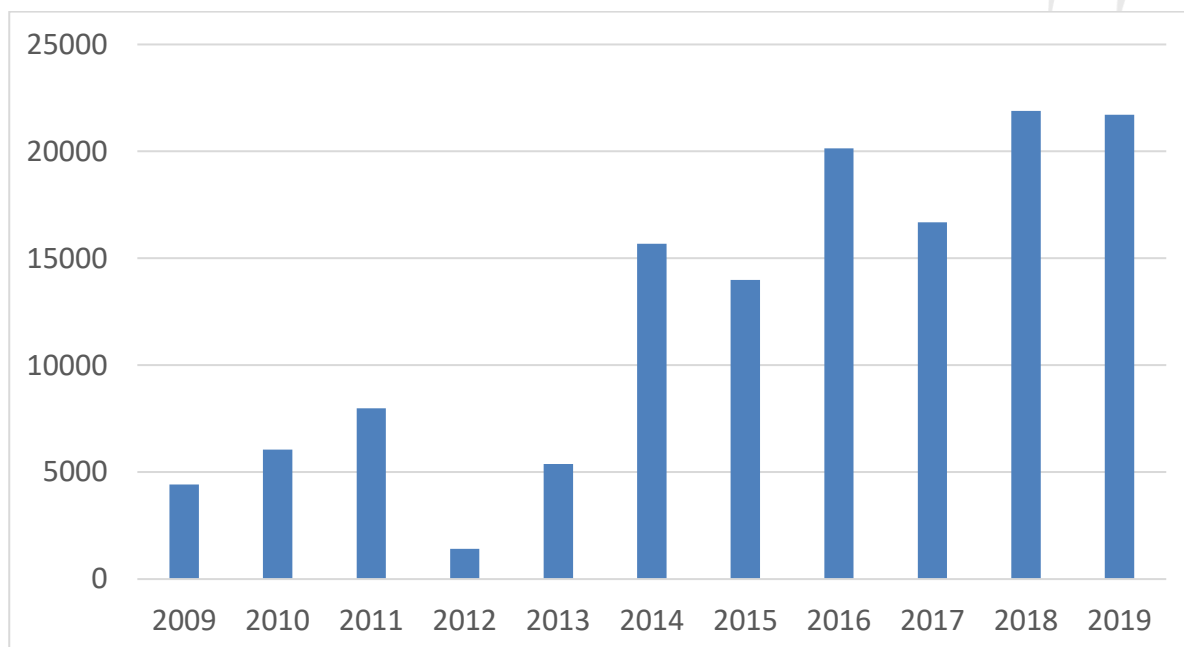
51. Figure: Dynamics of animal or vegetable fats and oils exports to Italy, thousands of US dollars



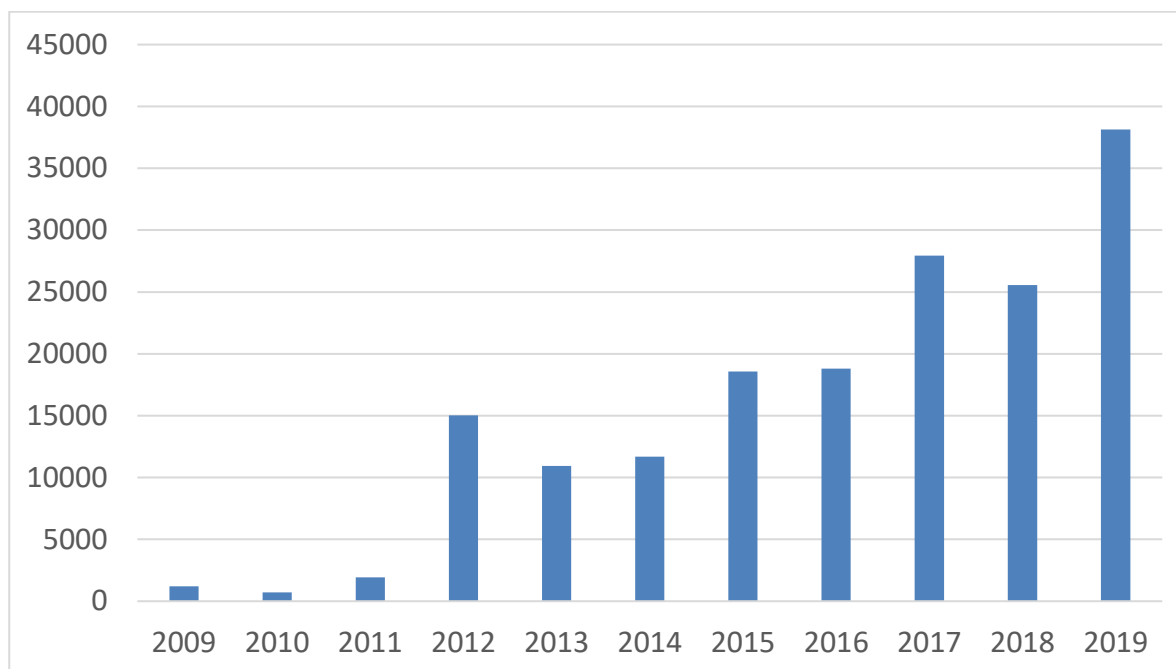
52. Figure: Export dynamics to Greece, thousands of US dollars



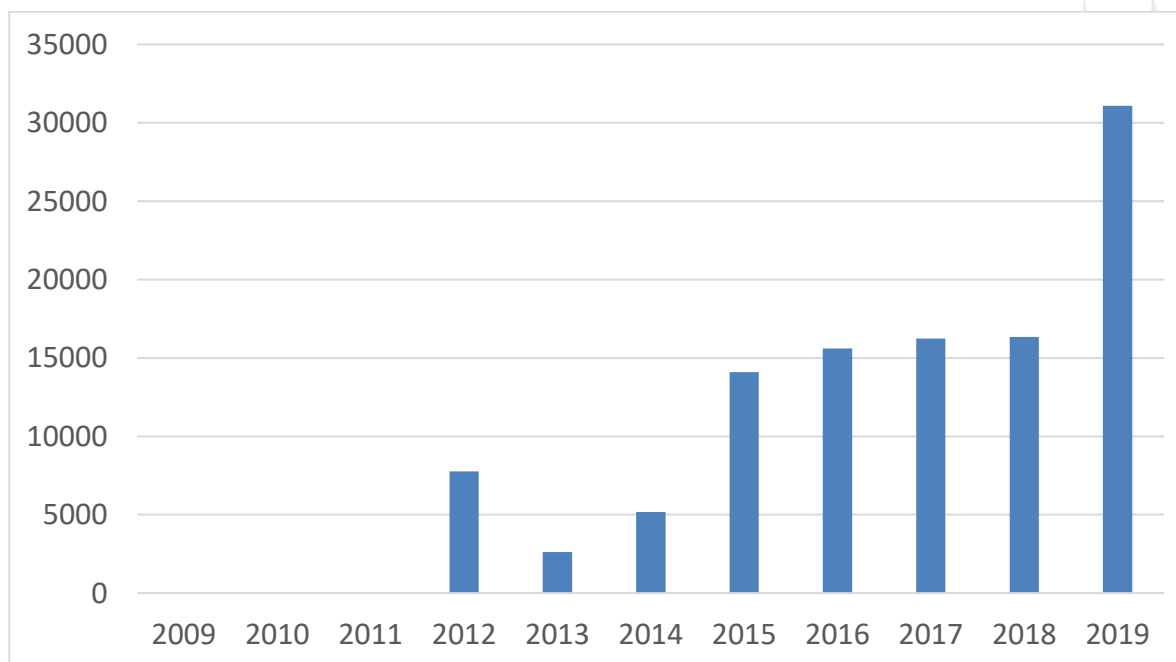
53. Figure: Dynamics of cereal exports to Greece, thousands of US dollars



54. Figure: Export dynamics to Spain, thousands of US dollars



55. Figure: Dynamics of animal or vegetable fats and oils exports to Spain, thousands of US dollars



Analysis of the structure of imports of goods by EU countries (Figure 55) realized in 2019 shows that Romania is in the lead with 29%, Germany is in second place - 17% and Italy is in third - 14%.

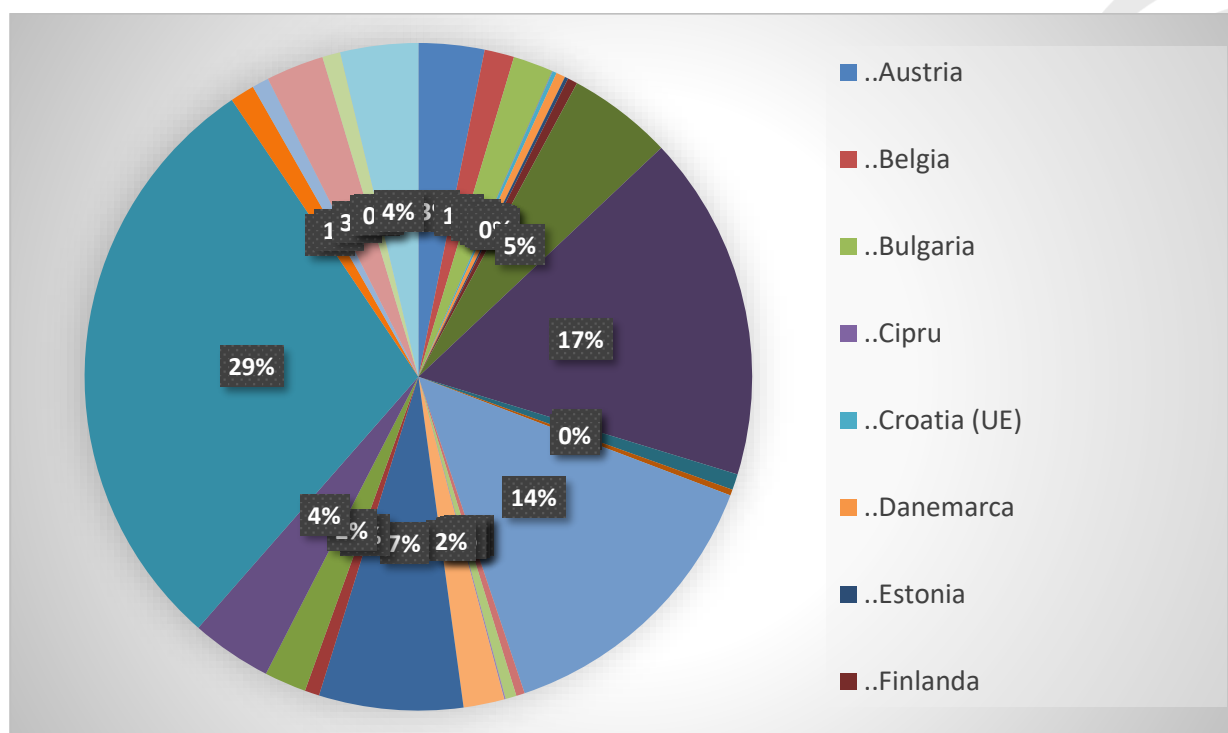
However, the analysis of the structure of imports by country, which was carried out through GIFP, shows that among the EU countries, only Romania is among the leaders. Moreover, of the total volume of goods imported through GIFP, Romania accounts for 72% (Figure 47).

Other European countries with access to the sea or the Danube River and with which there were minor (about 1%) imports through GIFP include Bulgaria and Serbia (Figure 43).

There is practically no organized import through GIFP from other EU maritime countries, with which the Republic of Moldova has significant imports, for example: Italy - 14% and France - 5% (Figure 55). This fact can only be explained by the specifics of the imported goods and their volumes in relation to the consignee. The existing potential of importing goods from these countries through GIFP can be realized if the consolidation of goods in these countries is organized with subsequent transportation to Moldova.

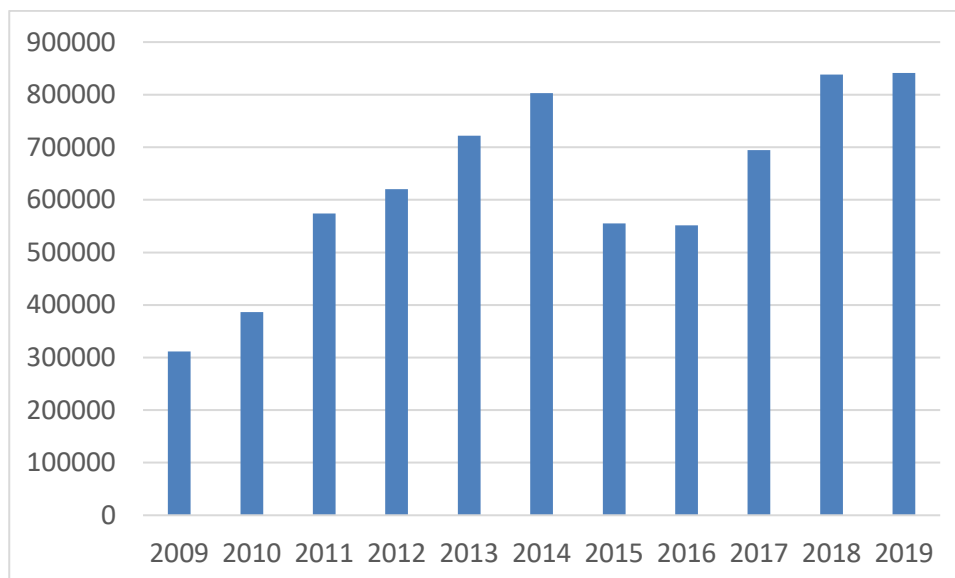
Imports of the Republic of Moldova from European Union countries (EU-28) in 2019

56. Figure: Structure of Imports of the Republic of Moldova from European Union countries (EU-28) in 2019



Significant volumes of imports through GIFP are due to the stable development of foreign trade with Romania (Figure 56).

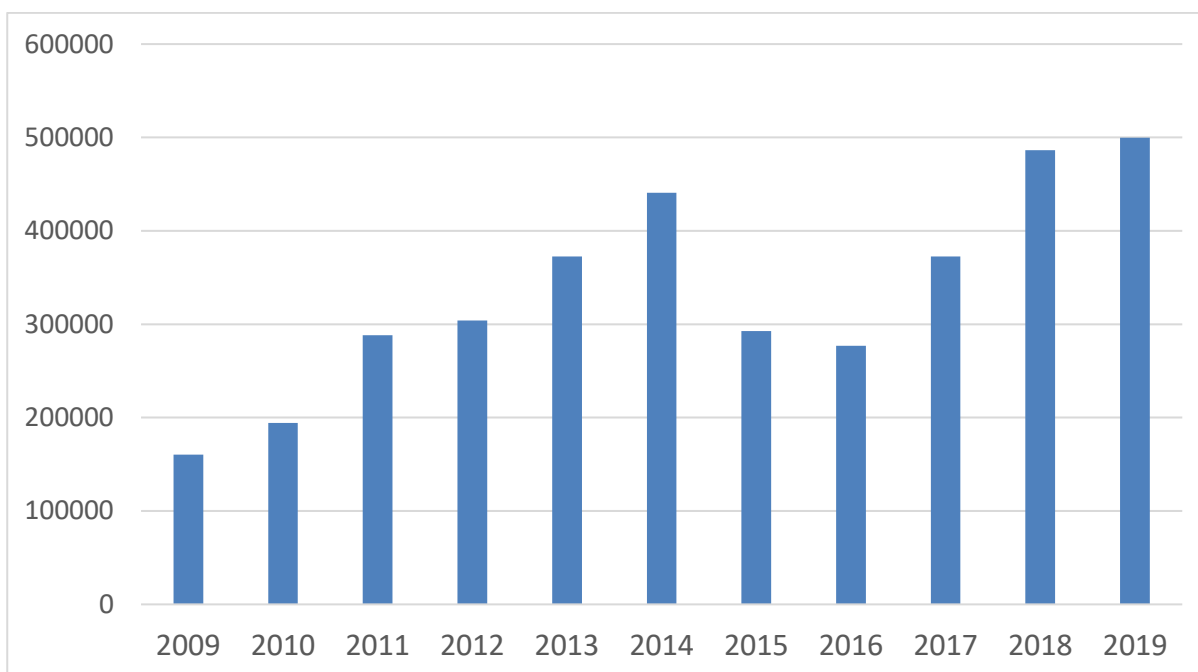
57. Figure: Dynamics of imports from Romania of mineral fuel, petroleum products and their distillation products; bituminous materials; mineral wax (in thousands of US dollars)



The main commodity supplied from Romania is fuel (Figure 57).

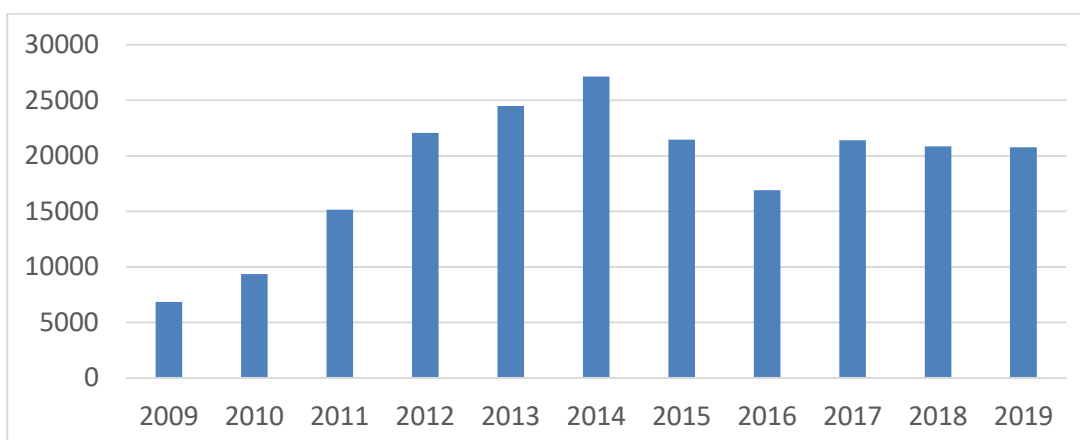
Fuel supplies through GIFP are carried out primarily due to large volumes of consumption, the presence of an oil loading terminal. At the moment, the transportation of fuel carried out by IWT successfully competes with the supply of fuel from Romania by road or rail.

58. Figure: Dynamics of imports from Romania of mineral fuel, petroleum products and their distillation products; bituminous materials; mineral wax (in thousands of US dollars)

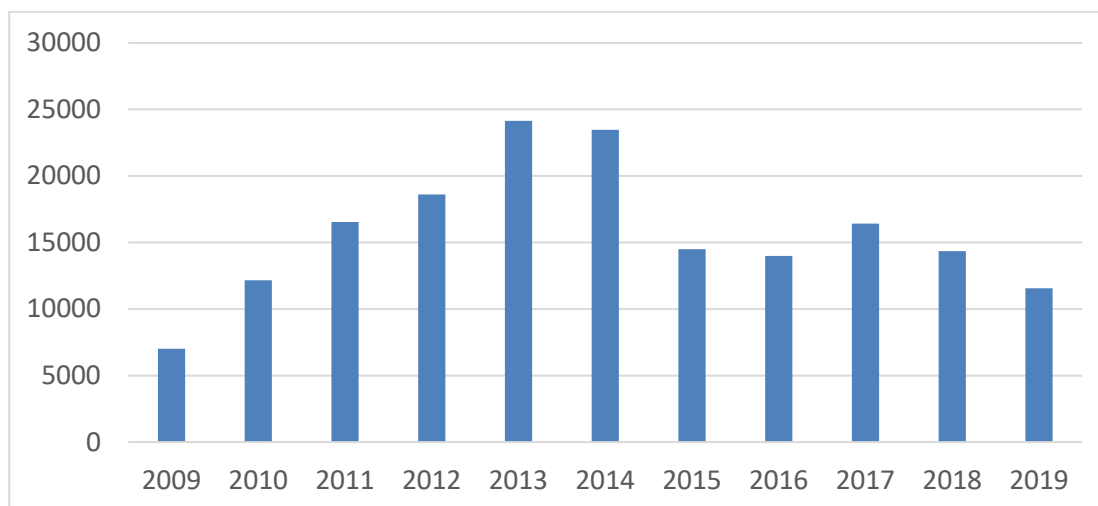


Other categories of goods successfully transported via GIFP from Romania include ferrous metals (Figure 58), coal and wood (Figure 59), and construction bulk materials.

59. Figure: Evolution of imports from Romania of cast iron, cast iron or steel products (in thousands of US dollars)



60. Figure: Evolution of Romanian imports of timber, charcoal and wood products (in thousands of US dollars)



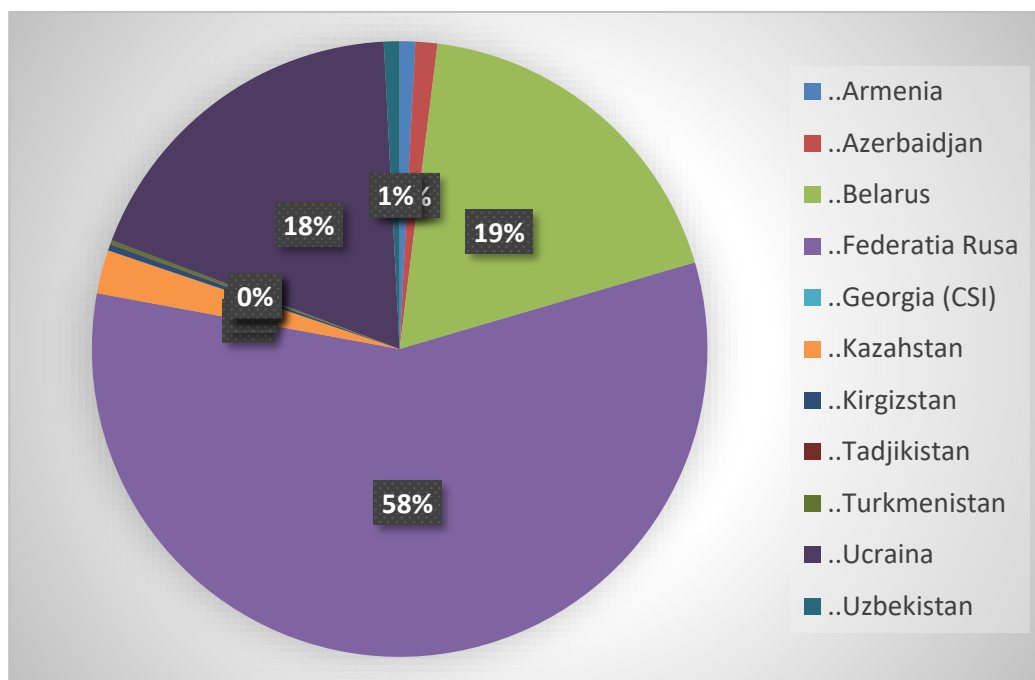
Analysis of foreign trade with CIS countries (Figure 60 and Figure 61) shows that the main trading partners of the Republic of Moldova are traditionally: Russia (export - 58%, import - 50%); Ukraine (export - 18%, import - 40%); Belarus (exports - 19%, imports - 9%).

However, from among the listed countries through the GIFP port, mainly imports from Russia (Figure 4) of such cargo as fuel and coal are carried out.

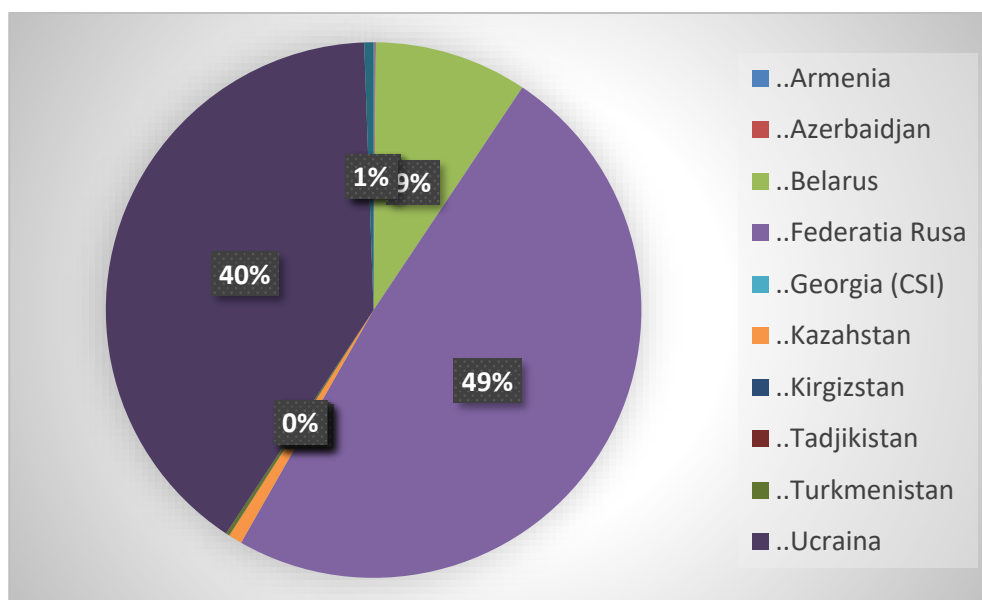
There are no direct water transport routes with Belarus.

From Ukraine, deliveries to Moldova are mainly carried out by road, and only one-time deliveries of large volumes are carried out through GIFP.

61. Figure: Export of Moldova to the countries of the Commonwealth of Independent States (year 2019)



62. Figure: Imports of the Republic of Moldova from the countries of the Commonwealth of Independent States in 2019

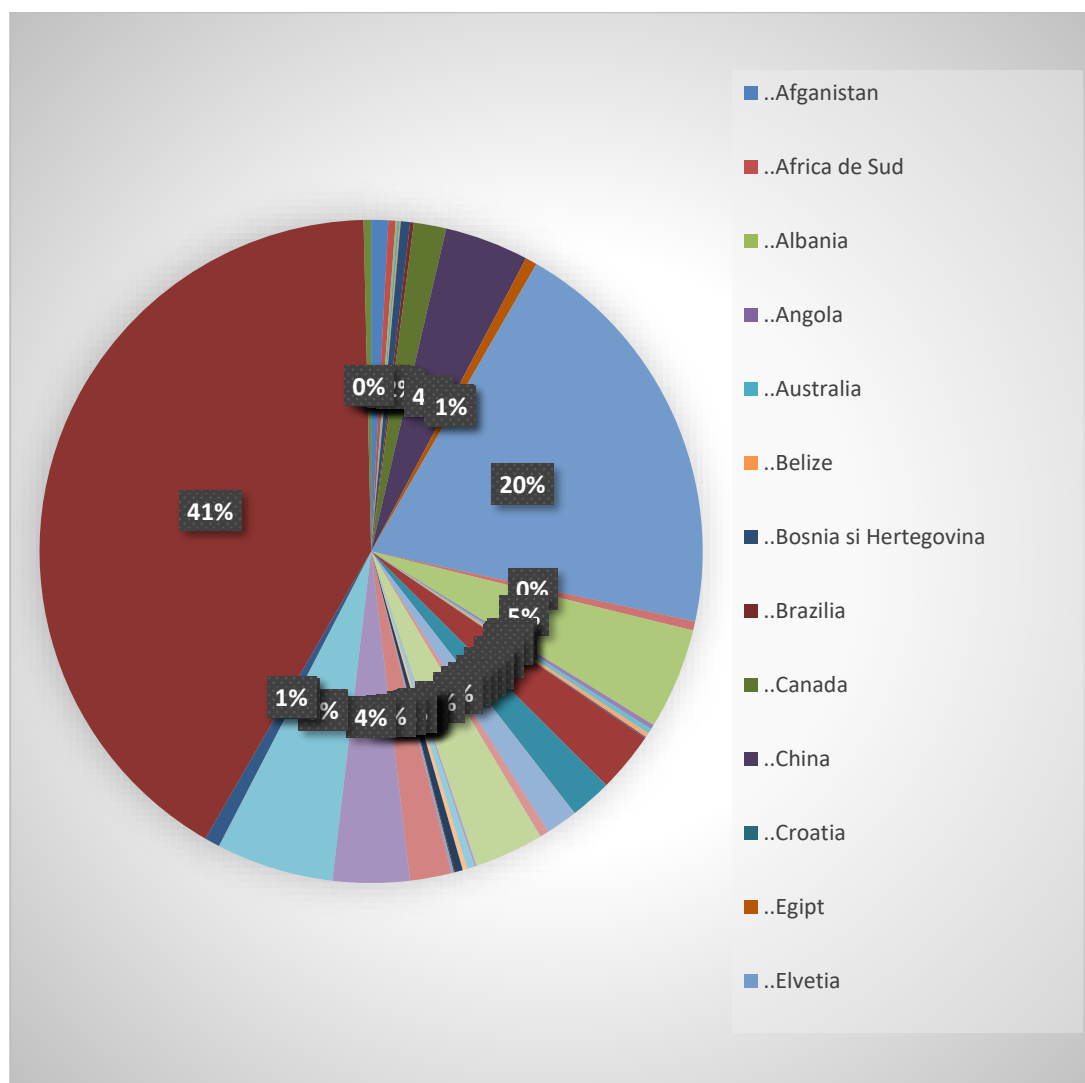


Exports of goods from the Republic of Moldova to other countries (excluding the EU and CIS countries) are mainly carried out to Turkey - 41%, Switzerland - 20%, the United States of America - 6%, Georgia - 5%, Syria - 4%, China - 4 % (Figure 62).

However, exports through GIFP (Figure 3) are mainly carried out to Turkey - 24%, Syria - 11%, China - 4%. Thus, the real potential for growth in freight exports through GIFP should be viewed with countries such as Turkey, Syria and China.

Exports from the Republic of Moldova to Georgia and the United States of America, which have access to the sea, are carried out mainly from the ports of Odessa and Constanta. The growth potential of cargo transshipment through GIFP to these countries can be increased by organizing stable container traffic through the seaport of Constanta.

63. Figure: Exports of the Republic of Moldova to other countries in 2019



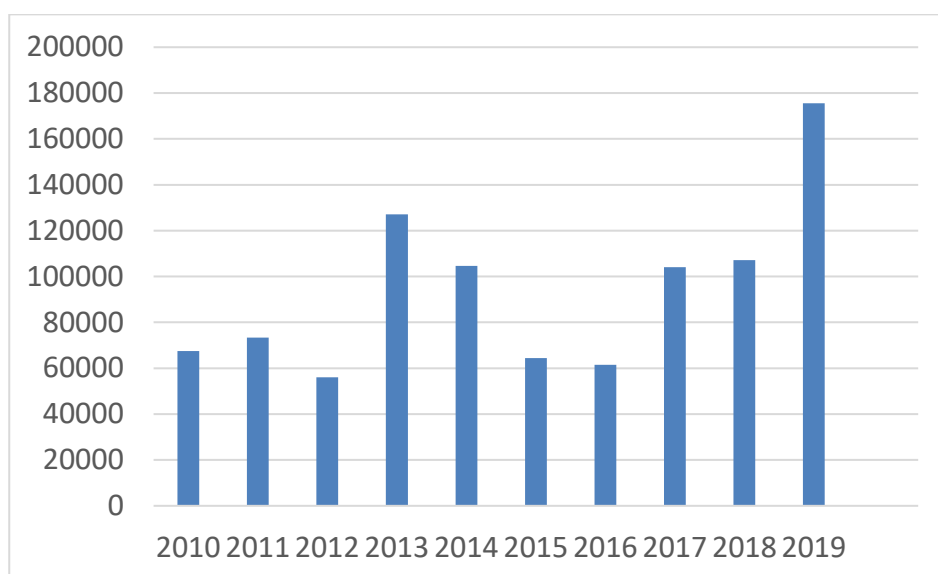
Among the considered other countries, Moldova has the closest trade relations with Turkey (export - 41%, import - 20%). Trade relations are characterized by high stability (Figure 63).

The main volumes of cargo transshipment in GTFP are associated with the export of grain crops to Turkey (Figure 64).

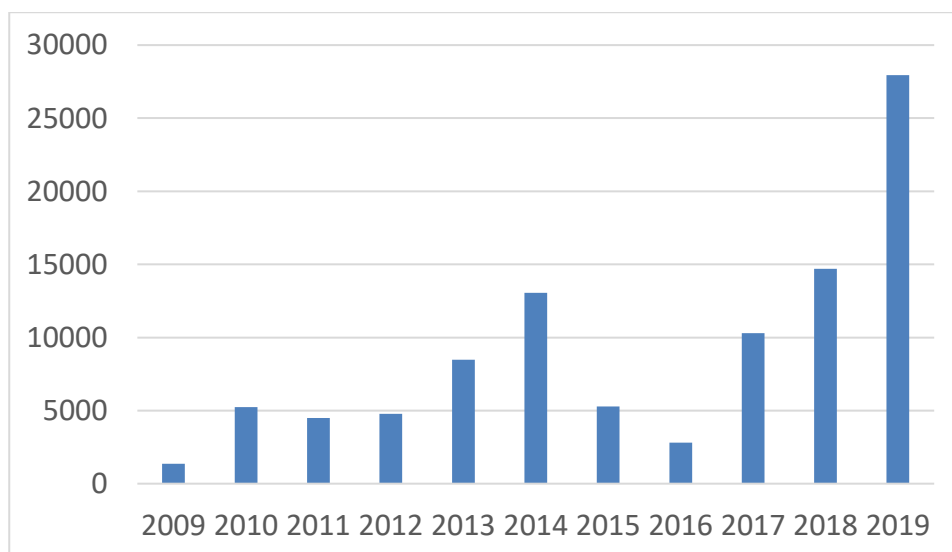
In recent years, there has been a stable demand for oilseed products (Figure 65).

The significant potential for growth in traffic through the port of Giurgiulești is associated with the growth in exports of the group of building materials (Figure 66).

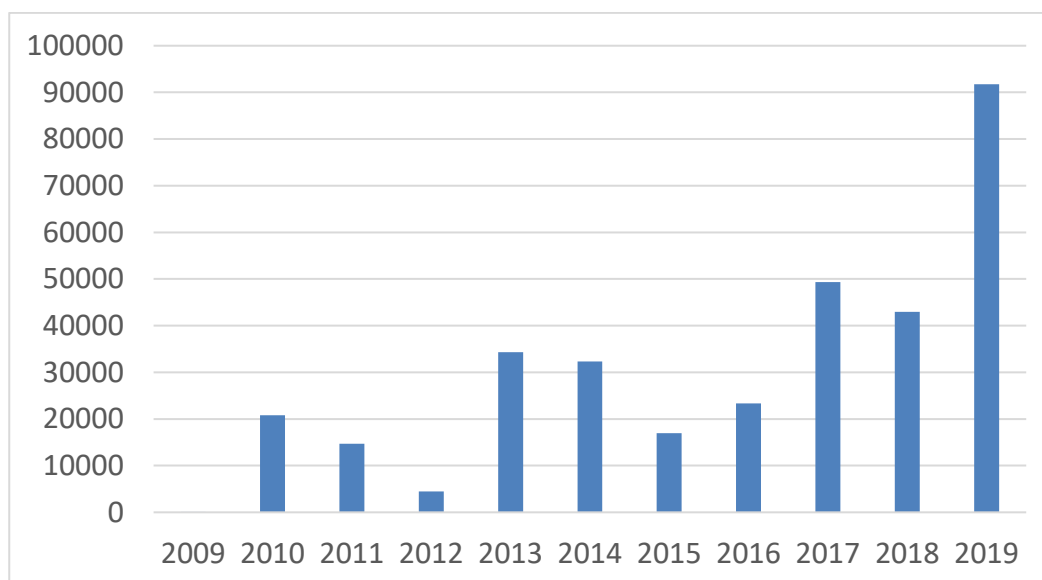
64. Figure: Export to Turkey, thousands of US dollars



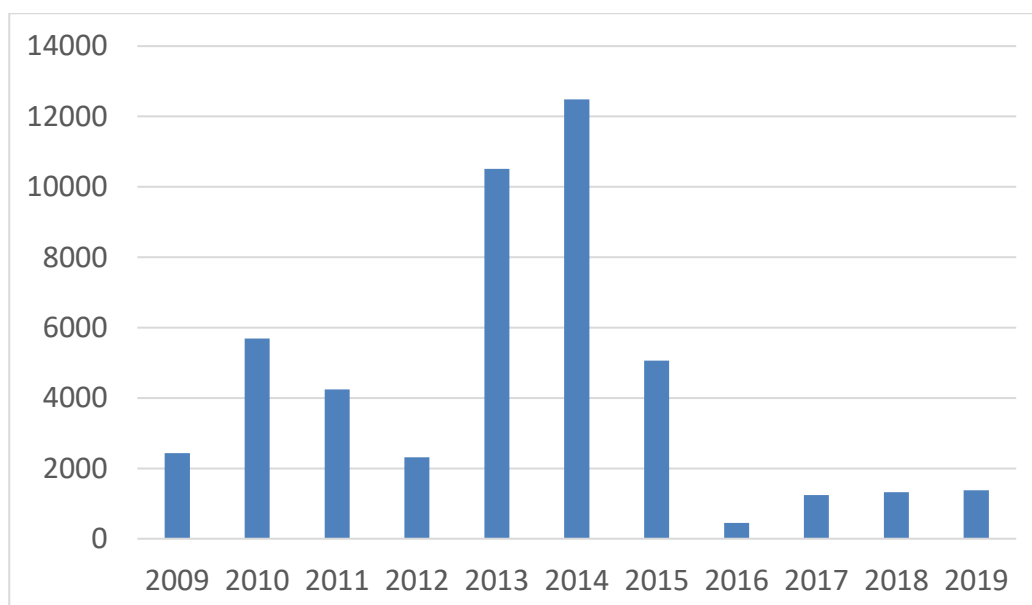
65. Figure: Cereals export to Turkey, thousands of US dollars



66. Figure: Export to oilseeds and fruits in Turkey; miscellaneous seeds and fruits; industrial and medicinal plants; straw and fodder (thousands of US dollars)



67. Figure: Export to Turkey of articles of stone, plaster, cement, asbestos, mica or similar materials; ceramic products; glass and glassware, (thousands of US dollars)

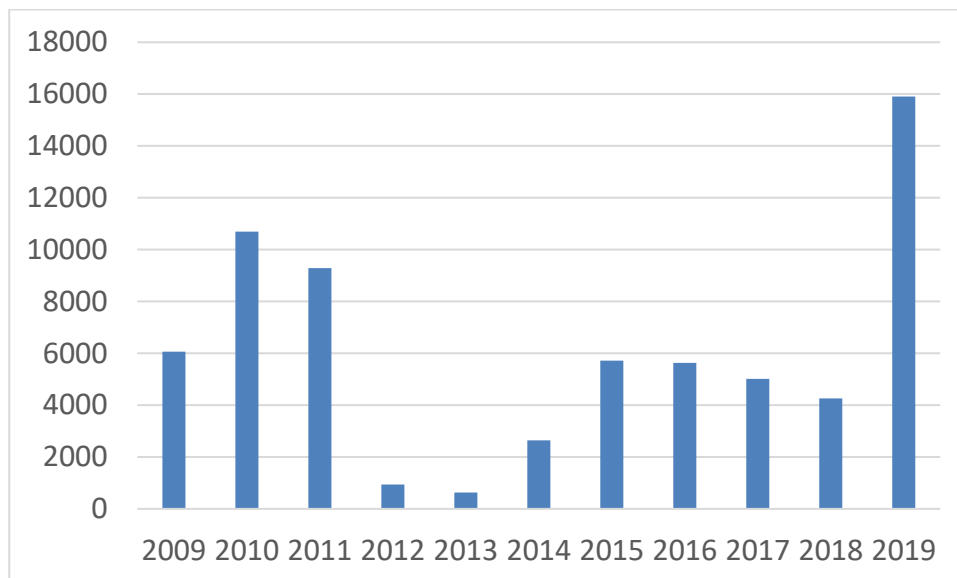


A special case is the export of goods to Syria. In the structure of countries to which goods are exported through the GTFP port (Figure 43), Syria ranks third (11%).

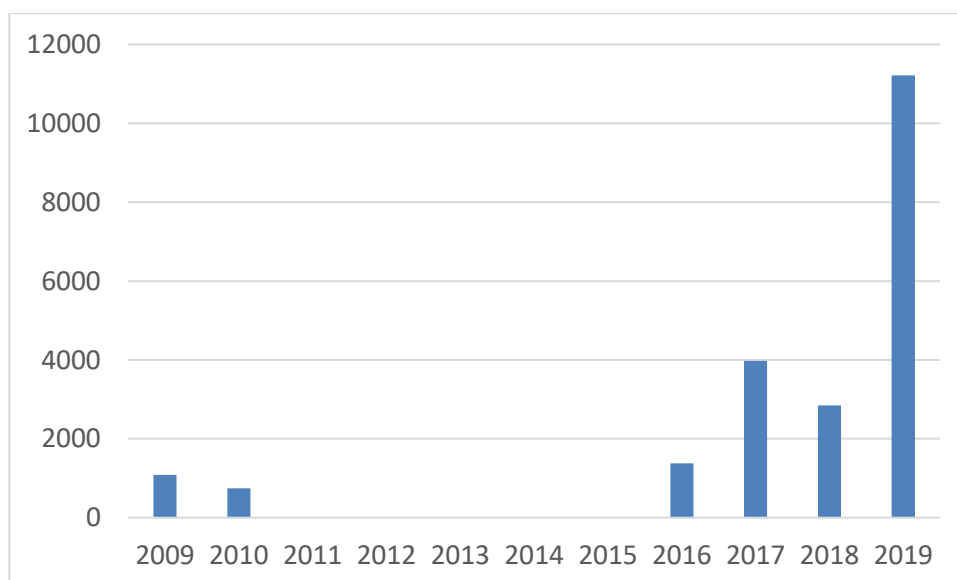
However, exports to Syria, the evolution of which is shown in Figure 67, is 4% in the structure of other countries (Figure 62).

This fact confirms the conclusions made earlier that the transportation of IWT cargo requires significant traffic volumes (Figure 29) and a direct sea route.

68. Figure: Export to Syria, thousands of US dollars



69. Figure: Cereals export to Syria, thousands of US dollars



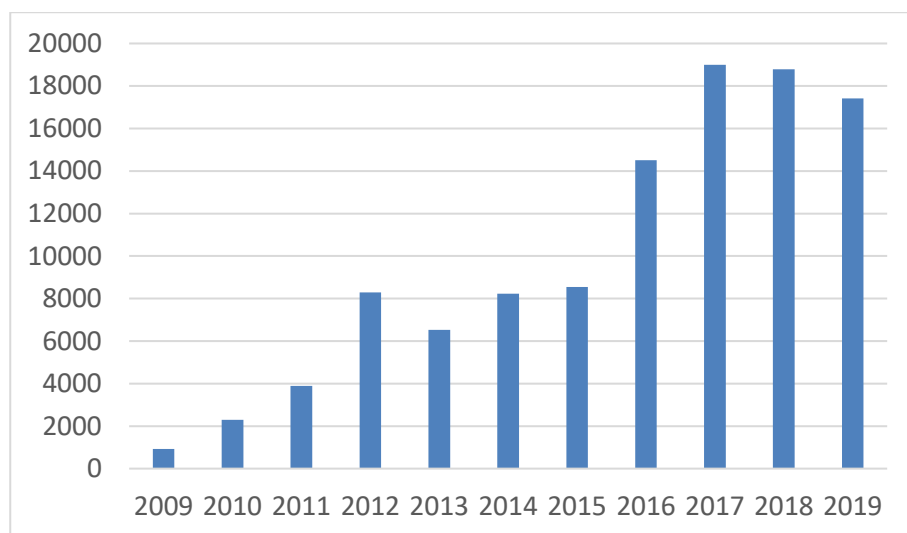
The dynamics of export of goods to China, presented in Figure 30, shows that after a stable growth, the volume of exports has stabilized at a high level. The main exported product is wine products. Thanks

to great marketing efforts, sales have doubled over the past 5 years (Figure 70). And in recent years, a stable export to China of furniture products for various purposes produced in Moldova has been formed (Figure 71).

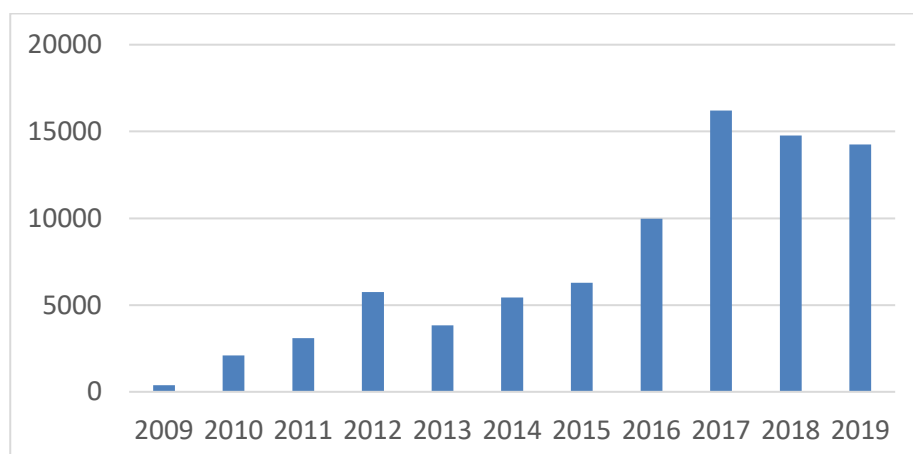
Analysis of imports from other countries to the Republic of Moldova (Figure 72) shows that China is the leader in supplies.

From the above, we can conclude that there is a significant potential for growth in container traffic from GIFP to China through the port of Constanta.

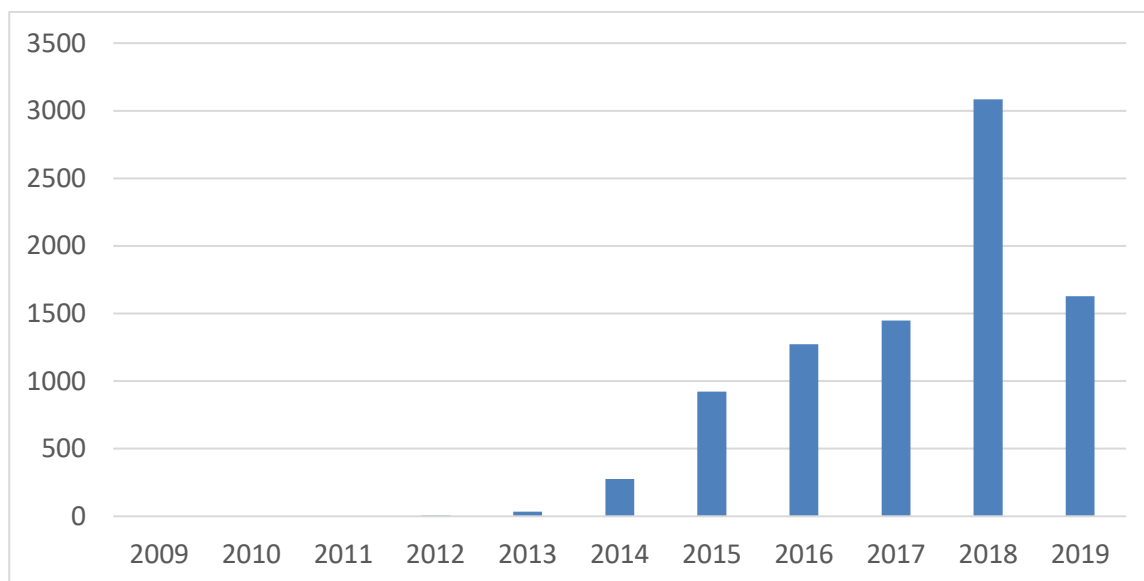
70. Figure: Export to China, thousands of US dollars



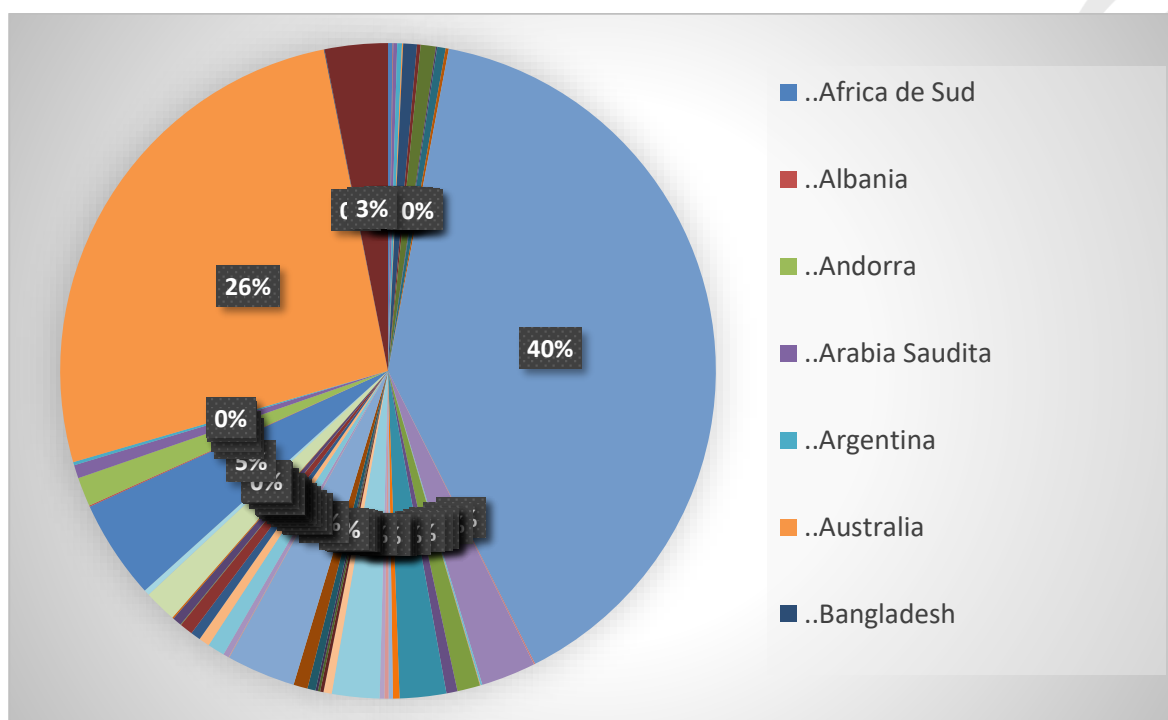
71. Figure: Export to China of alcoholic beverages, without alcohol and vinegars (thousands of US dollars)



72. Figure: Export of furniture to China; medical-surgical furniture; lighting apparatus, and similar articles; prefabricated constructions (thousands of US dollars)



73. Figure: Imports of the Republic of Moldova from other countries in 2019



Romania

Considering a tariff of 1 Euro/Km for one truck, transport cost for the relations considered above is:

64. Table: Cost of road transport, 20 tonnes netto

	Regensburg (Ge)	Krems (At)	Bratislava (Sk)	Csepel (Hu)	NSad (Srb)
Tr Severin	1156	829	712	517	340
Giurgiu	1525	1199	1082	887	683
Constanta	1690	1364	1246	1052	906
Galati	1603	1277	1159	965	819

Constanta – Smederevo: 794 Euro

Constanta – Dunaujvaros: 1045 Euro

For the same routes, the IWT cost for 20 tonnes (in order to compare with road transport) is as follows:

65. Table: Cost of IWT transport, 20 tonnes netto

	Regensburg (Ge)	Krems (At)	Bratislava (Sk)	Csepel (Hu)	NSad (Srb)
Tr Severin	340	260	225	180	140
Giurgiu	400	320	290	250	190
Constanta	445	360	330	290	250
Galati	450	365	335	295	255

Constanta – Smederevo: 324 Euro

Constanta – Dunaujvaros: 340 Euro

IWT transport cost versus road transport cost per relation is presented below:

66. Table: Cost of IWT transport, 20 tonnes netto:

	Regensburg (Ge)	Krems (At)	Bratislava (Sk)	Csepel (Hu)	NSad (Srb)
Tr Severin	0,29	0,31	0,32	0,35	0,41
Giurgiu	0,26	0,27	0,27	0,28	0,28
Constanta	0,26	0,26	0,26	0,28	0,28
Galati	0,28	0,29	0,29	0,31	0,31

Constanta – Smederevo: 0,41

Constanta – Dunaujvaros: 0,33

From the above it is observed that IWT transport cost is between 0,26 and 0,41 of the road transport cost. Based on this, it can be assumed that at least 40% of the current road transport flows can be transferred to the IWT.

Thus, the IWT potential is identified as follows.

I. Import and exports of the 4 Romanian regions in relation with the DR countries.

It is mentioned that the Constanta Port relations are already included in the flows of the South-East region of Romania. Thus, in relation with Bulgaria only the South-East region of Romania is considered for estimation of the IWT potential.

67. Table: Import and exports of the 4 Romanian regions in relation with the DR countries, tonnes/year

Region RO	Bulgaria	Hungary	Slovakia	Croatia	Austria	Germany	Total
Imports							
2 South East	155514	22348	4908	3008	11314	15390	197092
3 South Muntenia		61230	3616	309	6357	22723	71512
4 South West Oltenia		37048	2597	637	2530	8638	42811
8 Bucharest-Ilfov		85491	1801	766	9346	31917	97404
All regions	155514	206117	12922	4720	29546	78667	408820
Exports							
2 South East	140362	18794	1198	9197	27209	11119	196761
3 South Muntenia		60204	3353	160	5589	19945	69306
4 South West Oltenia		37598	2825	1976	8025	8766	50424
8 Bucharest-Ilfov		83682	1715	708	8916	29663	95021
All regions	140362	200278	9091	12040	49739	69493	411511
Total							
2 South East	295876	41143	6107	12205	38523	26508	393854
3 South Muntenia	0	121434	6969	468	11946	42668	140817
4 South West Oltenia	0	74646	5422	2612	10555	17404	93235
8 Bucharest-Ilfov	0	169173	3516	1474	18262	61580	192425
All regions	295876	406396	22014	16760	79286	148160	820331

From the above it is observed that the estimated potential, supplementary to the current IWT flows, is 820 thousand tonnes for exports and imports in relation with the DR countries. This is more than 50% of the current estimated IWT flows of 1.57 million tonnes per year.

II. Imports and exports of the DR countries in relation with the Black Sea countries

Based on the above considerations, it is considered that 30% of the current road transport flows could be shifted to IWT. Thus, the following potential is estimated.

68. Table: Estimated potential, th. tonnes/year

Austria, Hungary and Slovakia		
<i>Tonnes/year</i>		
	Total road	IWT potential
Imports from the Black Sea countries	1500	450
Exports to the Black Sea countries	1237	371,1
Total	2737	821,1

Thus, 821 thousand tonnes on IWT could be attracted from this segment of the market.

Serbia

Determination of the IWT cargo potentials is based on the IWT share obtained in the step 2 for the cargo types selected in the step 5. It takes into account potentials of using IWT for transport of cargoes to the DR and Black Sea countries, as well as to the overseas countries. Trade flows with overseas countries are obtained by subtracting import and export flows with EU and CEFTA countries from those of all worldwide countries. Average values of trade flows in the period 2017-2020 were used.

Total average trade flow of Serbia with the DR and Black Sea countries is almost 11,900,000 tonnes of the considered cargoes. Therefore, IWT cargo potential with these countries is obtained by applying average IWT share of 9,80 % in the modal split (Table 30) and it amounts to 1,165,812 t.

By applying the same percentage of the IWT share to the trade flows with the overseas countries, the total cargo potential is estimated to the level of 684,458 t. Therefore, the total IWT cargo potential of Serbia for the selected types of cargoes is 1,850,270 t.

5.4 Investigate necessary changes in the regulatory framework of Danube transportation and related administrative procedures

There are three key challenges identified in the 2017 study on the Digital Inland Waterway Area¹. These are: inefficient navigation and traffic management; inefficient integration of IWT in logistics processes and high administrative burden for complying with legislation.

The White Paper "Roadmap to a Single European Transport Area - Towards a competitive and efficient transport system resource use" from 2011 is the main European strategic document outlining the guidelines for the development of transport. It describes the European Commission plans for the coming decades, providing for the construction of the transport system by 2050, characterized by a single European transport area, open markets, greener infrastructure and innovative technologies with low carbon emissions.

In the COMMUNICATION FROM THE COMMISSION -The European Green Deal it is mentioned

„ 2.1.5 Accelerating the shift to sustainable and smart mobility

Transport accounts for a quarter of the EU's greenhouse gas emissions, and still growing. To achieve climate neutrality, a 90% reduction in transport emissions is needed by 2050. Road, rail, aviation, and waterborne transport will all have to contribute to the reduction. Achieving sustainable transport means putting users first and providing them with more affordable, accessible, healthier and cleaner alternatives to their current mobility habits. The Commission will adopt a strategy for sustainable and smart mobility in 2020 that will address this challenge and tackle all emission sources.

Multimodal transport needs a strong boost. This will increase the efficiency of the transport system. As a matter of priority, a substantial part of the 75% of inland freight carried today by road should shift onto rail and inland waterways. This will require measures to manage better, and to increase the capacity of railways and inland waterways, which the Commission will propose by 2021.”

In connection with those mentioned in the green deal strategy, it should be noted that the Danube River has a large unused transport capacity.

In order to achieve the modal shift provided for in the Green Deal, it is necessary for the public authorities to apply a series of measures and to provide the necessary funds to reduce transport emissions by shifting a substantial part of the freight carried by road today to inland waterway transport (IWT) and rail.

PEOPLE —create an attractive work place with high social, qualification, safety and security standards;

Given that port activity is considered a hazardous activity, it is of the utmost importance to take into account occupational safety, accident and damage prevention aspects in the development and

operation of ports. One way of preventing accidents and damage is to improve the external protection of ports (fencing, lighting, cameras, access control).

FLEET —enable the transition towards zero-emissions and decarbonization of the fleet while safeguarding competitiveness and safety; one main priority is providing sufficient funding to ensure Stage V engines and the availability of alternative fuels and an adequate alternative fuel infrastructure along the European inland waterways

INFRASTRUCTURE

FAIRWAY - Cargo is transported along the Danube over an average distance of about 2400 km. In order for these shipments to be transported in an economic way, a stable and reliable fairway is needed. Close international cooperation and coordination in this respect is required. Waterway administrations all over the Danube region seek to make the Danube fairway accessible during the whole year. Within the framework of the EU Strategy for the Danube Region, a Fairway Rehabilitation and Maintenance Master Plan for the Danube was developed in cooperation with the waterway administrations and representatives of private shipping companies. This document identified the most critical locations in the waterway network and, more importantly, draws up proposals for their elimination.

PORTS -Digitalization holds great potential for making maritime transport chains more efficient, flexible and agile. It thus opens up the possibility for ports to meet the challenges of globalization, demographic change and urbanization.

With the help of digital solutions, the efficiency of the operation of a single port and its specific transport chains can already be increased, complex processes simplified or energy consumption reduced. In the international environment of the maritime, digital networking of ports offers additional opportunities to improve efficiency and safety along the entire transport chain. Through the targeted exchange of information and data, ports can develop and use new business models.

ADMINISTRATIVE BOTTLENECKS -The European Strategy for the Danube Region addresses both the authorities involved in border controls and the shipping companies and vessel operators along the rivers. It is a declared objective of the European Union to increase the modal share of sustainable transport means and especially inland waterway transport. However, shipping companies operate with low profit margins and administrative obligations have a negative effect on transport costs and travel time. A time-efficient and transparent border control system is an effective means to increase the competitiveness of Danube navigation and to actively support modal shift.

5.5 Conclusions

Bulgaria

The Inland waterway transport (IWT) is an environmentally friendly alternative to other transport modes and the increase in its use is seen as favourable. The significant contribution that this efficient, safe and sustainable mode of transport can make towards mitigating the negative effects of the transport sector as a whole is indisputable.

Reliability is a crucial factor in logistics chain. As operators rely on just in time delivery for their operations and with the gradual improvement of the transport hubs they require, amongst others, accurate and up-to-date information on fairways, blockages and maintenance.

Further actions and support are needed to unlock the full potential of inland waterway transport as an efficient, safe and sustainable transport system. As stated in the Council conclusions “Inland waterway transport – exploiting its full potential” adopted on 3 December 2018: “With the EU goal to shift freight by 30% from road to rail and water by 2030 and by 50% by 2050 to ensure sustainable mobility, the long-term goal is to turn inland waterway transport into a synchromodal partner in the hinterland of seaports and in continental transports.”

Hungary

There are several identifiable opportunities for IWT in Hungary, which, with the right regulatory framework and optimisation of the support environment, could benefit the country's society in the long term, both economically and environmentally.

It is important to focus on those products that have been and are expected to continue to be increasingly important for river freight transport in recent years, namely:

Biomass, biofuels, Waste and dangerous goods, Motor vehicles, agricultural machinery, Combined transport unit load equipment (containers, semi-trailers, SWAP, WAB) Large, indivisible loads, transformers, wind turbines, Construction products

Preparing for the growth in the volume of transport of these products is essential, both in terms of infrastructure and the regulatory environment, while at the same time digitalization of the river systems, ensuring environmentally friendly transport and improving working conditions are also key aspects.

Republic of Moldova

GIFP is the only RM port through which goods are exported and imported.

The port is strategically important for providing the country with vital goods and developing the economy. The port does not carry out transshipment of goods delivered from other inland RM ports.

The increase in the volume of cargo transshipment in the port is directly related to the successful foreign trade of RM with other countries, and above all with the maritime powers and the countries of the Danube region.

Another factor important for the growth of the IWT potential is the consolidation of cargoes to the volumes of the corresponding vessel carrying capacity.

The analysis shows that the growth of IWT potential can be realized by increasing the volume of transportation of agricultural products. To achieve this goal, it is required to create a modern infrastructure for the storage of products for agricultural producers, to develop a transport infrastructure, as well as to create logistics firms providing high-level services.

Analysis of logistics supply chains (export / import) of goods in RM through GIFP allows us to conclude that at the moment, the main water transport corridors are:

- Danube, providing communication with the countries of the Danube region with which RM carries out foreign trade, and primarily with Romania, Bulgaria, Serbia;
- Danube and Sea (Black, Mediterranean and others) through which foreign trade is carried out primarily with countries such as Turkey, Italy, Greece, Spain, Syria, Russia and China.

To increase the transshipment of goods at the GIFP port, technological innovations should first of all be introduced for container transport. Container shipments in the direction of China, USA, Turkey, Georgia, which are carried out from Giurgiulești through the port of Constanta, are promising for the growth of volumes.

Analysis of the structure of cargo transported through GIFP allows us to conclude that the main and traditional for IWT are liquid and bulk cargo: oil products; vegetable oil; grain & seeds and others.

Analysis of RM's foreign trade made it possible to identify a number of promising directions and types of cargo that would increase the potential of IWT. For its implementation, it is necessary to develop new transportation technologies, as well as transport and logistics infrastructure.

The growth of the potential of the IWT due to the optimization of the costs of transportation and port services, as well as due to the correct tariff policy, has prospects. However, in our case, this prospect can be realized only through the redistribution of transportation volumes carried out primarily by road transport or through other ports (Odessa, Constanta).

At the moment, there are no problems with the imperfection of legislation, regulations and administrative procedures that would significantly affect the potential of IWT in RM. The status of a free economic zone allows GIFP to carry out its economic activities quite efficiently.

Romania

Potential for IWT for Romania is identified first in relation with imports and exports of 4 Romanian regions, that have a good accessibility to the Danube ports, from/to DR countries. Based on the current trade flows, the IWT potential to be attracted above the existing traffic is estimated to 1.57 mln tonnes per year.

Regarding the trade flows of the DR countries with the Black Sea countries, the IWT potential to be attracted above the current traffic is estimated to 821 thousand tonnes per year.

Thus, it can be concluded that the total potential to be attracted above the current flows is estimated to 2.4 mln tonnes per year.