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Item 8 of the provisional agenda
River-sea transport in Europe

Overview of river-sea goods transport in the European Union

Transmitted by the Central Commission for the Navigation of the Rhine*

Mandate

1. This document is submitted in line with the Proposed Programme Budget for 2020. part 5, Regional cooperation for development section 20, Economic Development in Europe. Programme 17, Economic Development in Europe (A/74/6 (Sect. 20) and Supplementary).

2. At its fifty-fifth session, the Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation decided to include the outcome of the workshop on river-sea transport held on 11 September 2019 in Duisburg (Germany) by the Central Commission for the Navigation of the Rhine (CCNR) and the overview of the CCNR thematic report on river-sea-transport in the agenda of its fifty-sixth session (ECE/TRANS/SC.3/WP.3/110, para. 17).

3. The annex to this document contains the overview of river-sea goods transport in the European Union transmitted by CCNR. The Working Party may wish to consider the overview by CCNR, complement with additional data as well as consider and provide recommendations for the Working Party on Inland Water Transport for the promotion and development of river-sea transport in Europe.

* This document was scheduled for publication after the standard publication date owing to circumstances beyond the submitter's control.

Annex

River-sea goods transport in main European Union countries

A. River-sea transport in the United Kingdom of Great Britain and Northern Ireland

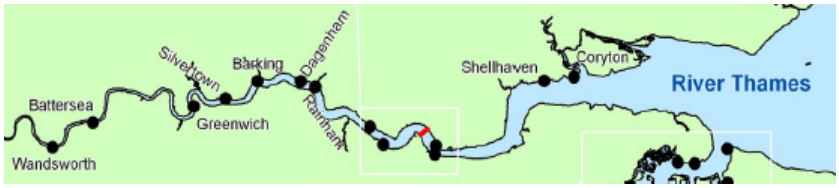
Definitions and waterway areas

According to the definition by the Department for Transport of the United Kingdom of Great Britain and Northern Ireland (the Department for Transport), river-sea transport means all seagoing traffic that crosses into inland waters, thereby passing the inland waterways boundary (IWB), which is a geographically defined boundary in the estuary region of rivers. The location of this boundary is defined via the average wave height. The boundary itself is a straight line between two points at shore. The Department of Transport defines IWB as "the most seaward point of any estuary which might reasonably be bridged or tunnelled [and] this is taken to be where the width of water surface area is both less than 3 km at low water and less than 5 km at high water on spring tides."[1]

The maps in figure 1 (a)–(d) cover the four estuary areas in the United Kingdom of Great Britain and Northern Ireland with the highest level of river-sea transport. They show the IWB (shown in red) and the most important ports and wharves along the rivers. The blue line shows the so-called Smooth Waterline, which should not be confounded with IWB. All transport that remains completely within this Smooth Waterline is counted as pure (internal) inland waterway traffic. However, for river-sea-traffic, IWB is relevant, and all traffic coming from or going to high sea, and crossing IWB, is counted as river-sea traffic.[2] For the river Thames, the Smooth Waterline lies outside the part of the Thames estuary shown in the map.

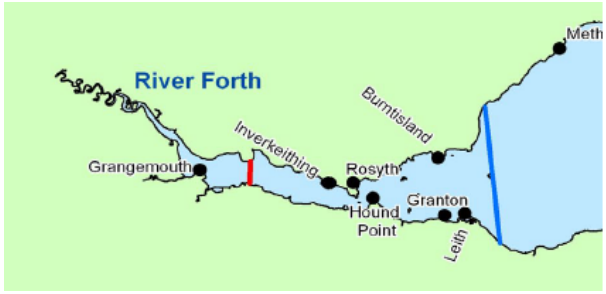
Figure 1:

(a) **Map of the river Thames with Inland Waterway Boundary* and ports and wharves for river-sea transport**



Source: Department for Transport/Citeasen/CCNR.
* in red.

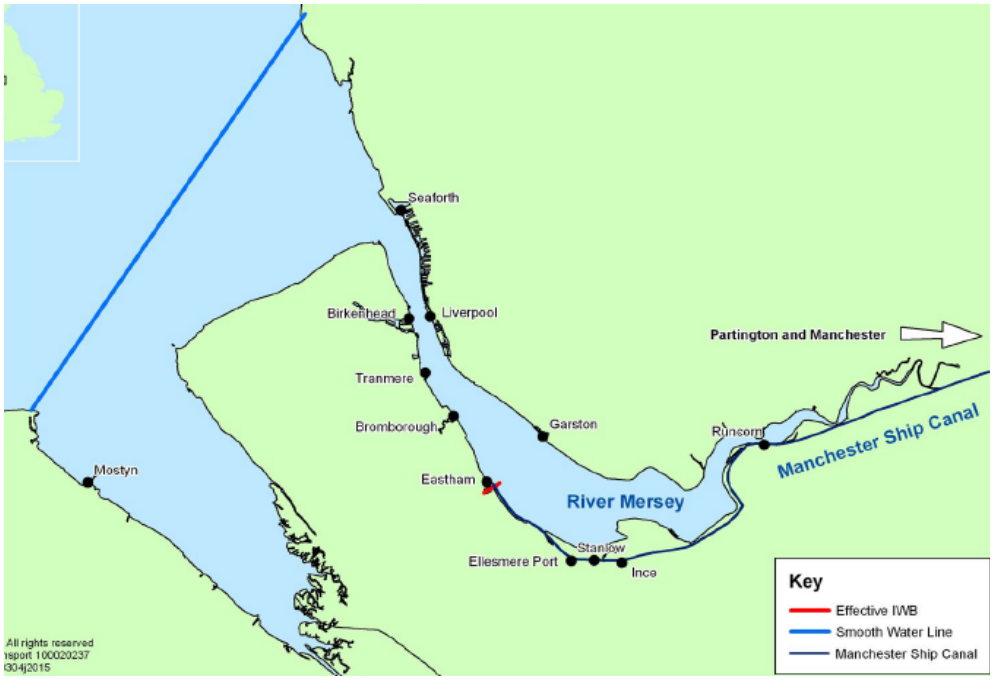
(b) **Map of the River Forth with Inland Waterway Boundary* and ports and wharves for river-sea-transport**



Source: Department of Transport/Citeasen/CCNR.
* in red.

[1] Source: Department for Transport (2017), Domestic waterborne freight 2017: notes and definitions.
[2] Idem.

(c) **Map of the Manchester Ship Canal/river Mersey with Inland Waterway Boundary* and ports and wharves for river-sea transport**



Source: Department for Transport/CCNR.
* in red.

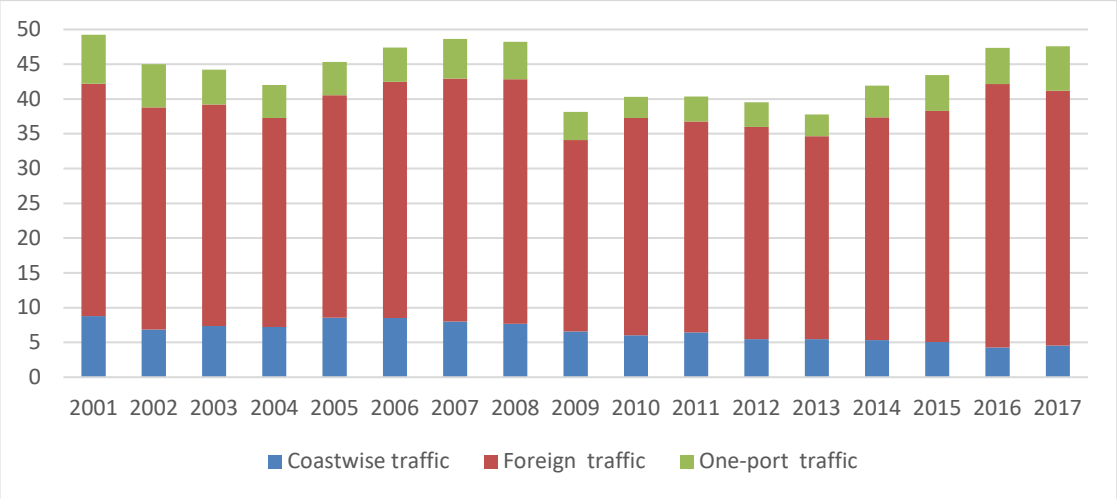
(d) **Map of the river Humber with Inland Waterway Boundary* and ports and wharves for river-sea-transport**

Source: Department of Transport/CCNR.
* in red.

Transport by origin and destination

In the United Kingdom of Great Britain and Northern Ireland, the amount of cargo transported by river-sea shipping is by far the largest compared to any other western European country. River-sea traffic can be split into three components: (a) foreign traffic (coming from foreign countries or going to foreign countries), (b) coastwise traffic (seagoing traffic between seaports and ports of the United Kingdom of Great Britain and Northern Ireland inside IWB) and (c) one-port traffic (seagoing traffic between national offshore installations and ports inside IWB). Foreign traffic has by far the largest share within river-sea-traffic in the country, which was between 76% and 80% between 2014 and 2017.

Figure 2: **Evolution of total river-sea-transport in the United Kingdom of Great Britain and Northern Ireland** (Million tons)*



Source: Department for Transport.

* represents all seagoing traffic on inland waters according to the definitions of the Department for Transport (foreign traffic, coastwise traffic, one-port traffic).

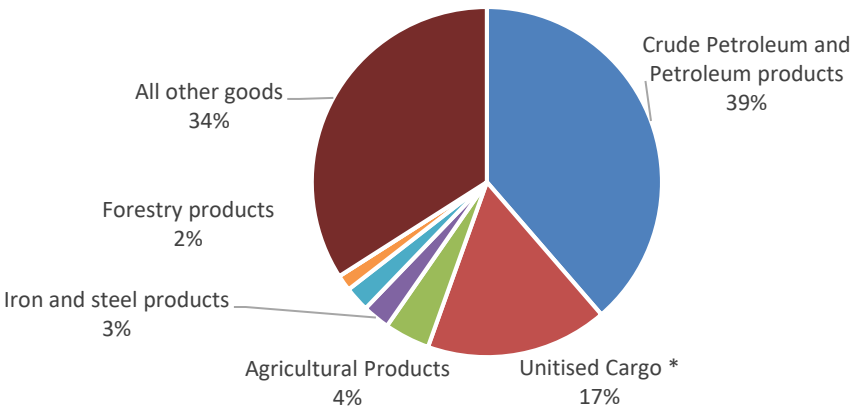
The overall amount of river-sea traffic shows a clear cyclical pattern. The curve reflects to a large extent the overall business cycle movements in Europe, in particular a falling economic activity after the financial crisis in 2000, followed by a rising tendency in world trade and production between 2003 and 2008, another financial crisis between 2009 and 2013, and another recovery since then.

Transport by type of cargo

The product segment with the largest share in river-sea transport is the liquid bulk segment of crude petroleum and petroleum products. In 2014-2017, its share fluctuated between 37% and 40%. All kinds of liquid bulk taken together had a share of 43% in 2017.

Dry bulk (agricultural products, iron ore, coal, etc.) represented 33% in 2017. Unitised cargo (containers, pallets, etc.) came next with a share of 17%, followed by general cargo (forestry products, iron and steel products and other products) with 7%.

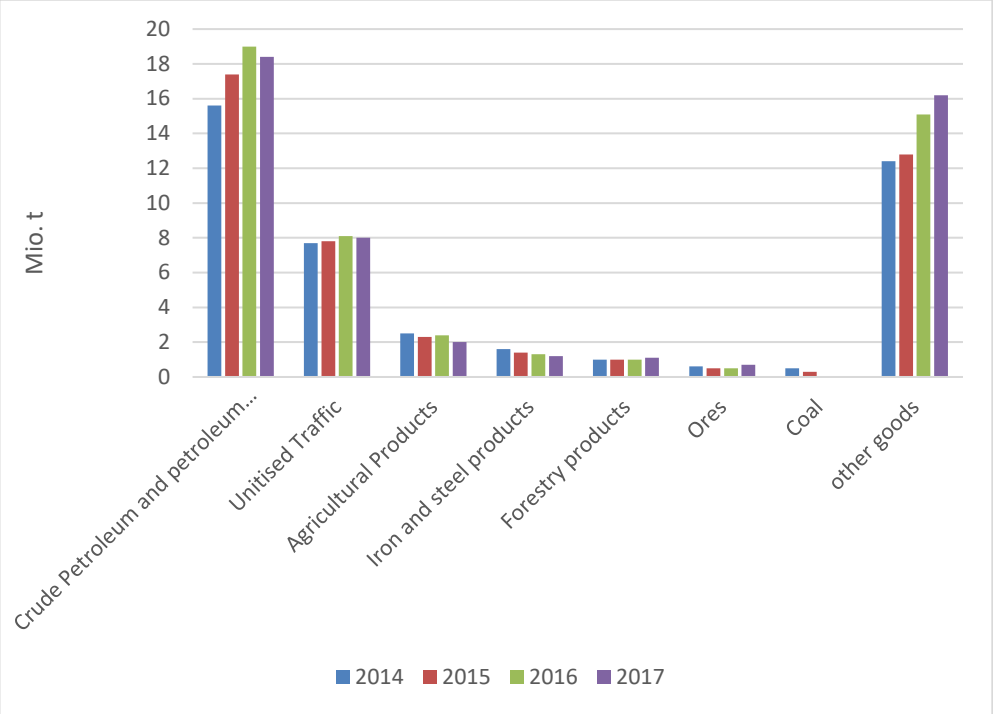
Figure 3: **River-sea transport in the United Kingdom of Great Britain and Northern Ireland by type of goods in 2017**



Cargo category	*Coastwise (million tons)*	*Foreign (million tons)*	*One-port (million tons)*	*Total (million tons)*
Liquid Bulk	1.7	18.9	0.0	**20.6**
of which crude petroleum and petroleum products	1.4	17.0	0.0	**18.4**
Dry bulk	2.5	6.8	6.4	**15.7**
of which				
ores	0.2	0.5	0.0	**0.7**
coal	0.0	~	0.0	~
agricultural products	0.2	1.7	0.0	**2.0**
Unitised Cargo	0.2	7.8	0.0	**8.0**
General Cargo	0.2	3.1	0.0	**3.3**
of which				
forestry products	0.0	1.1	0.0	**1.1**
iron and steel products	0.0	1.2	0.0	**1.2**
Total	**4.6**	**36.6**	**6.4**	**47.6**

Source: Department of Transport.
* unitised cargo = containers, pallets, etc.

Figure 4: **Evolution of river-sea transport in the United Kingdom of Great Britain and Northern Ireland by type of goods 2014-2017** (Million tons)

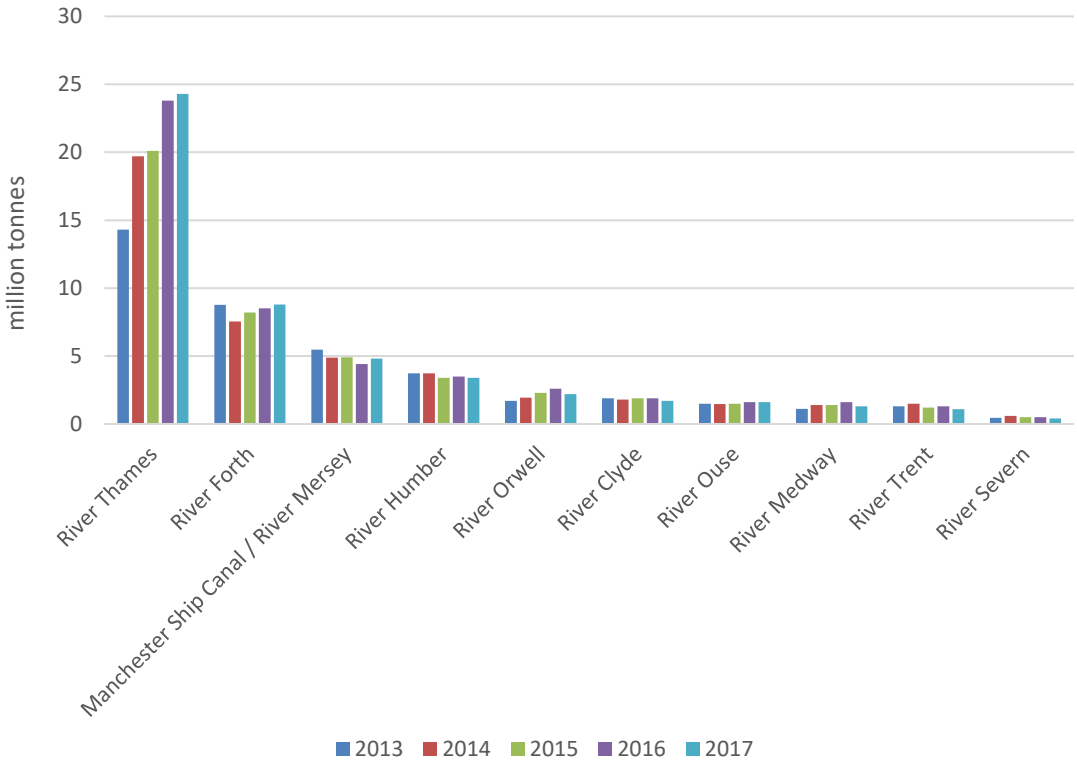


Source: Department for Transport.

Transport volume by inland waterway

The River Thames is in first place in regard to the amount of cargo transported by river-sea transport, with 24.3 million tons in 2017. Its river-sea traffic has grown substantially since 2013, and in general, largely determines the trend of the total river-sea traffic in the country, as described in the figure below. In second place comes the River Forth, a broad estuary in the eastern part of Scotland, and in third place the Manchester Ship Canal/River Mersey.

Figure 5**: River-sea transport in the United Kingdom of Great Britain and Northern Ireland by inland waterway**



Source: Department for Transport.

Along the Thames, in and around London, several wharves handle both pure inland waterway traffic and seagoing traffic that cross into the River Thames. According to the Department for Transport, these wharves are: Barking (London), Croydon (London), Dagenham (London), Erith (London), Greenwich (London), Northfleet (London), Purfleet (London), Silvertown (London), Tilbury (London).[3]

Outlook and specific developments

No specific infrastructure developments have been reported.

As the United Kingdom of Great Britain and Northern Ireland is often a key trading partner for countries which have river-sea transport, this method of transport may be affected if Brexit leads to a decrease in overall transport volumes (in particular the automotive industry for which steel products are traded). The possible impact of Brexit on customs procedures will also affect river-sea transport.

[3] Source: Department for Transport (2018), Domestic Waterborne Freight 2017: Notes and Definitions.

B. River-sea transport in Sweden

Definitions and waterway areas

Sweden currently has two classified inland waterways areas:

- The Port of Gothenburg, the Göta Alv river and Lake Värnen. The Göta Alv river, in conjunction with the Trollhättan Canal, connects the North Sea with Lake Värnen. Trollhättan Canal has six locks.
- The Södertälje Canal, Lake Mälaren and parts of the Stockholm area. The Södertalje Canal connects the Baltic Sea with Lake Mälaren. The canal is 3.3 nautical miles long and has one lock. The lock is 135 metres long (it was previously 110 meters long).

The Swedish Transport Agency has classified more waterways, such as the Göta Canal (connecting Lake Värnen to the Baltic sea) and inner coastal waterways, but these areas have not yet been ratified by the government.

Since the implementation of the European Directive 2016/1629 laying down technical requirements for inland waterway vessels, no inland waterway transport in Sweden has been recorded. However, as the above-mentioned waterways enable unproblematic river-sea connections between the North Sea, the Baltic Sea and the interior of the country, there is a successful integration of river-sea shipping in Sweden.

International transport from and to these waterway areas is operated by seagoing ships, which necessarily cross both maritime and inland waterway areas. All international transport operations to and from these waterway areas can therefore be considered as river-sea transport. Similarly, domestic transport operations between ports on the Swedish coast and inland ports located on the above-mentioned waterways can be considered as river-sea transport.

The infrastructure – lakes, rivers, canals and inner coastal areas - are regarded as being very good. They have accurate depth and no tide or currents, allowing river-sea transport to operate via seagoing ships with important tonnage capacity:

- between 3000 and 4000 tons for seagoing ships reaching Lake Vänern through the Tröllhatan Canal;
- up to 9000 tons for seagoing ships reaching Lake Mälaren through the Södertälje Canal.

Today, detailed data regarding inland, maritime and river-sea transport are collected by the Swedish government agency for transport policy analysis (TrafikAnalys). However, as data-collection related to inland waterway areas began after 2016 (i.e. after the implementation of Directive 2016/1629), accurate data for river-sea transport are only available for 2017 and 2018. In addition, and for reasons of confidentiality, no detailed data regarding river-sea transport can be published, in particular related to the type of goods, the main trading partners and the ports of loading and unloading.

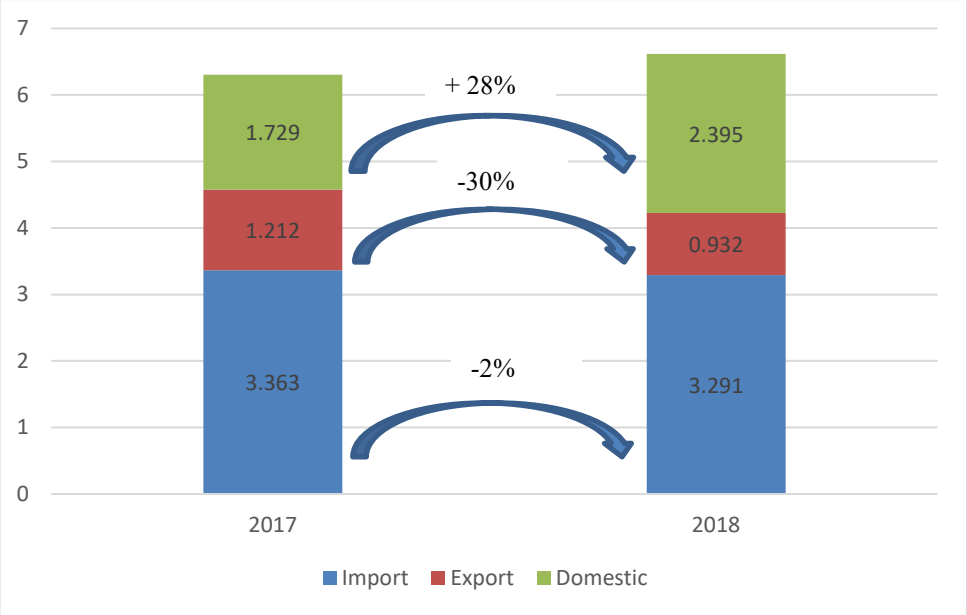
A mirror analysis and available literature however allows the identification of the main goods segment relevant for river-sea transport in Sweden, which are timber/wood products, oil products, crude iron and steel.

In the case of Sweden, it will therefore be important to analyse river-sea figures in a few years' time in order to identify a trend for its river-sea transport, but also to provide more in-depth data if confidentiality concerns are removed.

Transport by origin and destination

In 2018, 6.62 million tons of goods were transported via river-sea transport to, from and within Sweden, of which 3.3 million tons consist of imports and 0.93 million tons consist of exports. Domestic river-sea transport amounted to 2.4 million tons. Between 2017 and 2018, overall river-sea transport in Sweden increased by 5% (see figure 6).

Figure 6: **Evolution of river-sea transport in Sweden in 2017-2018**



Source: TrafikAnalys.

Outlook and specific developments

In Sweden, river-sea actors are calling for further alignment of the Swedish inland waterway regulation (implementing Directive 2006/87/EC laying down technical requirements for inland waterway vessels) with other inland water regulations in the European Union, in order to strengthen the competitivity of river-sea transport. Sweden is also one of the very few countries that applies fairway dues for calling ships (with fees dependent on the size of the ship and the weight of the cargo carried). Added to this, pilot fees are expensive.

C. River-sea transport in Finland

Definitions and waterway areas

Inland waterway traffic in Finland is concentrated in the Saimaa region. Saimaa inland waterways can be reached only by passing through the Saimaa Canal area as this is the only part of Finland with inland waterway goods transport. The Saimaa Canal is therefore **the only inland waterway connection to the sea**, which is vital for the area. This canal allows seagoing ships that operate in the Saimaa waterways to transport goods in the whole of Europe, including Russia, and sometimes quite far into the hinterland (France, Germany and the United Kingdom of Great Britain and Northern Ireland), without transhipment. This type of transport therefore qualifies as river-sea transport according to the Eurostat definition. All the traffic going through the Saimaa Canal can therefore be considered as river-sea transport. It should be noted that this type of transport is referred to as **lake-sea shipping** by Finnish stakeholders.

River-sea transport through the Saimaa Canal can be divided into three categories:

- **Cross-border traffic:** imports and exports
- **Domestic traffic**: traffic through the Saimaa Canal from an inland port in the Saimaa region to the Finnish coast or vice versa
- **Timber floating** (only until 1992).

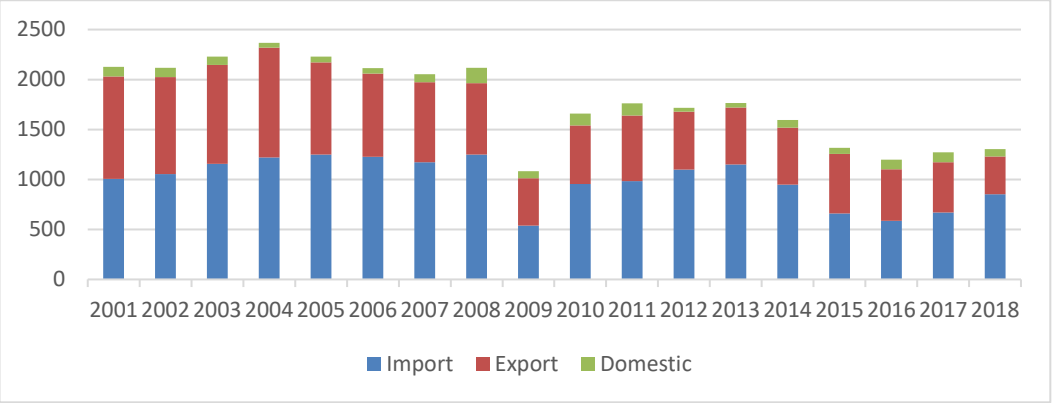
The travel time of river-sea ships from northern Saimaa to seaports in Central Europe is 4-5 days. The most important inland ports of arrival and/or departure of river-sea traffic going through the Saimaa Canal are the ports of Imatra, Lappeenranta and Joensuu.

Transport by origin and destination

River-sea traffic through the Saimaa Canal increased in 1971 to reach a peak in 2004 (approximately 2.4 million tons). It then followed a decreasing trend until 2016, the lowest volumes of river-sea traffic being reached in 2009 during the global financial crisis. Volumes of river-sea traffic increased between 2016 and 2017 (+ 6%) and again in 2018 (+ 2.5%; 1.3 million tons).

Ninety four percent of river-sea transport operations in Finland are international transport operations (1.23 million tons). Domestic traffic accounted for 0.07 million tons. While domestic and export river-sea transport have remained rather stable over the last 10 years, imports of goods transported via river-sea transport fluctuate more.

Figure 7: **River-sea goods traffic by type of transport in Finland, 2010-2018** (Thousand tons) *

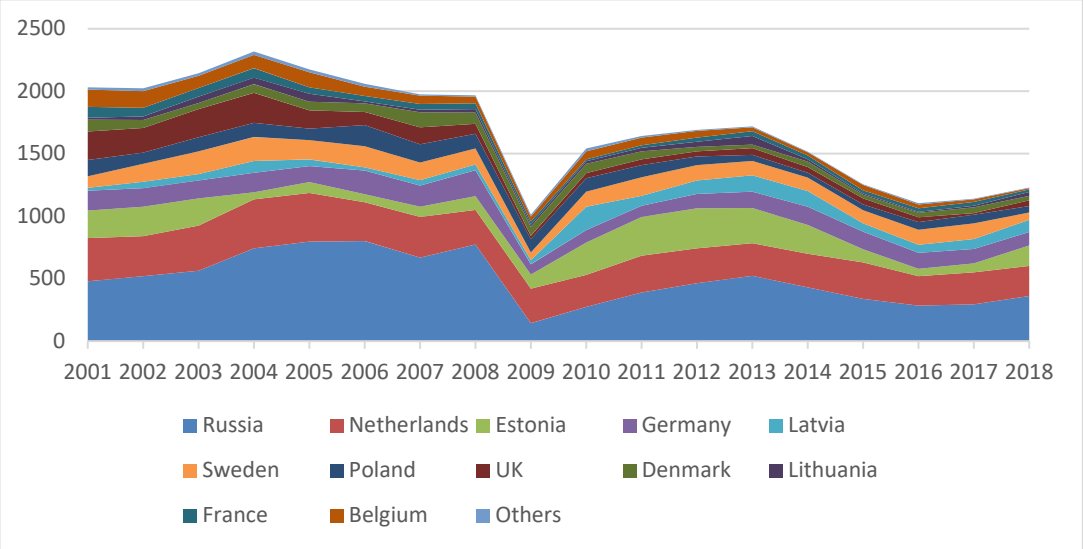


Source: CCNR analysis based on data from the Finnish Transport and Communications Agency (Traficom).

* total river-sea transport data in Finland through the Saimaa Canal include river-sea journeys performed by Russian inland vessels which do not have an IMO number but whose characteristics are similar to seagoing ships.

The most important trading partners of Finland in relation to river-sea goods transport are Russia, the Netherlands, Estonia and Germany.

Figure 8: **River-sea goods transport between Finland and foreign countries, 2001-2018** (Thousand tons) *



Source: CCNR analysis based on Traficom data.

* through the Saimaa Canal.

Transport by type of cargo

In 2018, the main goods segment transported via river-sea transport were timber (45%), raw minerals (28%) and forest industry products (13%).

Figure 9: **River-sea goods transport by type of goods in 2018** (Thousand tons)

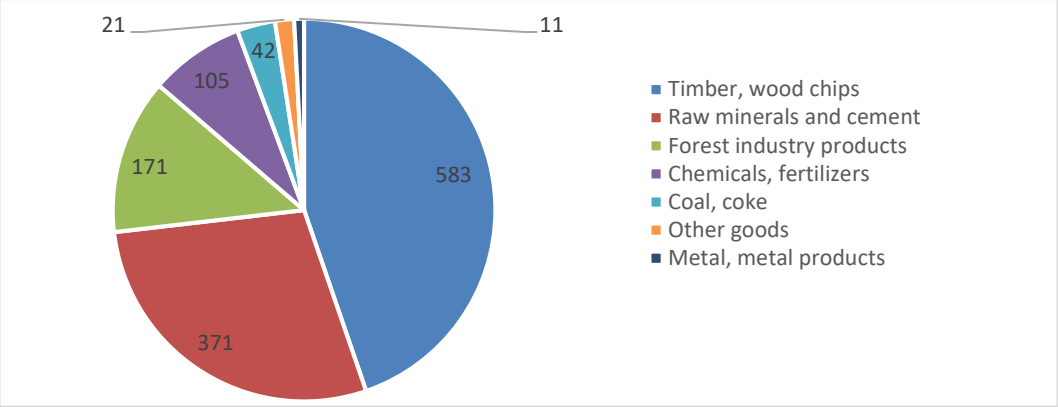
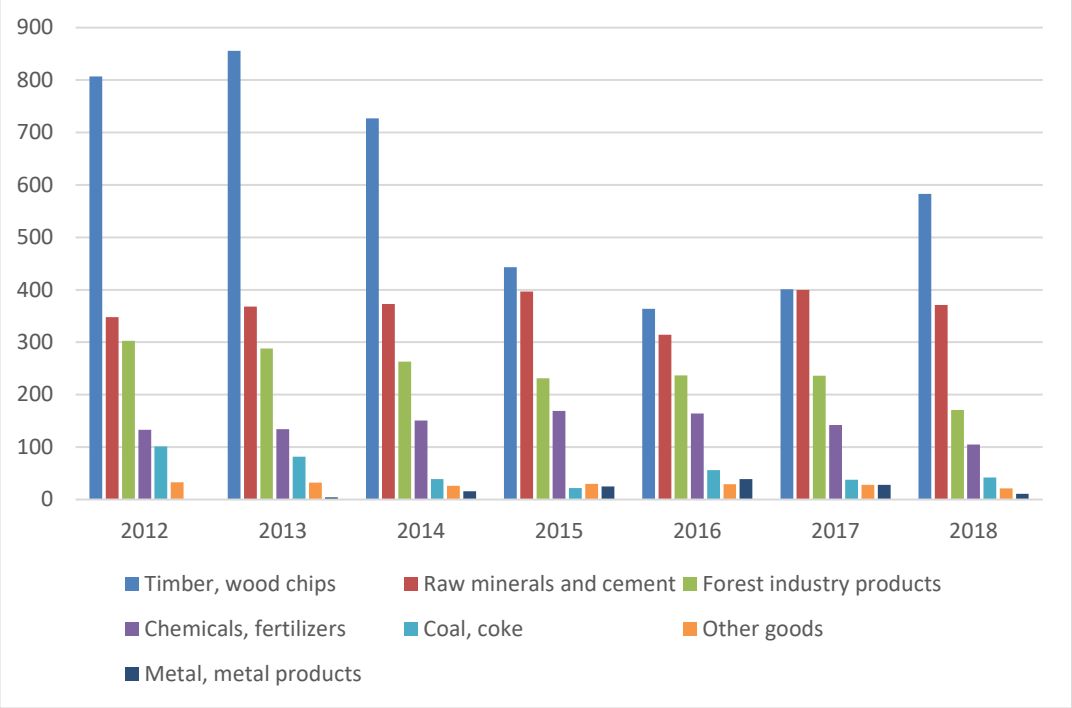


Figure 10: **Evolution of river-sea transport in Finland by type of goods, 2012-2018** (Million tons)



Source: CCNR analysis based on Traficom data.

* through the Saimaa Canal.

Timber (83%) and raw minerals (70%) are mostly imported goods while forest industry products are mostly exclusively exported (99%). Coal and coke, chemical products and other goods are exclusively imported while fertilizers and metals are exclusively exported. Domestic river-sea transport consists in the transport of coal and coke. Timber is mostly imported from Russia and Estonia. The main trading partners of Finland for both export and import of raw minerals and cement are the Netherlands. Most fertilizers are exported to Sweden, Germany and Denmark. The majority of the forest industry's shipments are exported to the Netherlands, Germany and Poland, as well as France and, to a lesser extent, the United Kingdom of Great Britain and Northern Ireland.

Additional information

Most of the river-sea ships that go through the Saimaa Canal sail under Dutch (31%), Russian (28%) or Antiguan and Barbudan (23%) flags. Other ships sail under Finnish (8%), Cypriot (4%) or other (6%) flags. In 2018, 1,161 river-sea ships went through the Saimaa Canal (+ 177 cargo ships compared to 2017). Until 2011, some river-sea ships also sailed under the German flag.

Not all passenger traffic in the Saimaa Canal can be considered as river-sea traffic. Indeed, some passenger ships only cruise along the Finnish side of the Saimaa Canal up to the Mustola lock and return. This is not river-sea transport as it does not involve navigating partly on inland waterways and at sea. Only traffic going through the canal, on passenger ships and pleasure boats, can be considered as river-sea passenger transport. Passenger transport on passenger ships constitutes the most part of river-sea passenger traffic in Finland (nearly 16,500 passengers in 2018). In 2018, about 2,290 passengers travelled through the Saimaa Canal on pleasure boats. Since 2009, river-sea passenger traffic has been fluctuating between 24,000 and 16,000 passengers per year.[4]

Outlook and specific developments

The Saimaa Canal is currently used at a rate of 25%. There is therefore further exploitation potential of this Canal.

The programme of Prime Minister Antti Rinne's Government 2019 states that a development programme for inland waterway transport will be drafted. More specifically, there are plans to promote inland navigation by lengthening the locks in the Saimaa Canal, although it is not yet certain whether such an extension will take place. However, given the plans from certain river-sea companies (especially in the Rhine area) to invest in a new fleet of river-sea vessels (as the existing river-sea vessels have reached a considerable age), it would be important for these river-sea companies to have more clarity regarding this planned extension as well as the related timetable. In particular, companies in the Rhine area need to know whether or not the locks will be extended. The plans of the Finnish government are crucial for the investment plans of the river-sea transport companies in the Rhine area, as new capital-intensive vessels need to be built soon. They would have to be adapted to the future size of the Saimaa Canal locks, and be active for several decades. Indeed, a possible extension will impact the investment decision of companies looking to renew their fleet, especially when making far-reaching decisions on the dimensions of the newly built river-sea ships. If it takes place, such an extension is expected to have a positive impact for companies active in the river-sea transport sector with a trading partner in Finland.

D. River-sea-transport in Germany

Definitions and waterway areas

In Germany, river-sea transport is not defined according to geographical indications, but according to the port of loading and unloading. If the combination of these two ports – that must be indicated by the ship operator to the German Federal Statistical Office (Destatis) - imply that parts of the journey were made on maritime waters, then a river-sea traffic is assumed.

The Rhine, and in particular the Lower Rhine (the region around Düsseldorf, Cologne and Duisburg), plays a central role for river-sea transport from and to Germany.

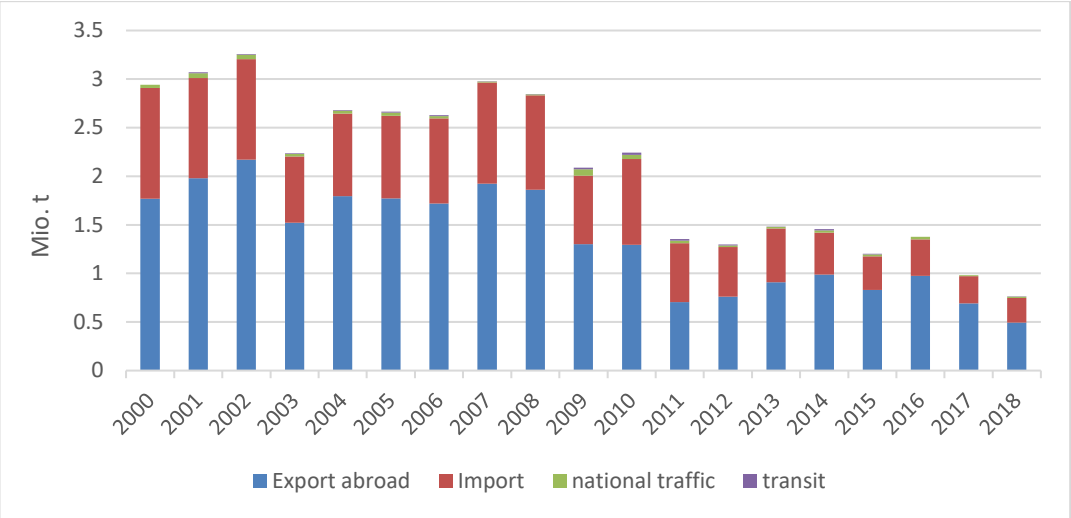
Of all goods loaded or unloaded in Germany and transported by river-sea traffic in 2018, 93% were loaded in the NUTS 2 region of Düsseldorf, which includes the port of Duisburg. In this NUTS 2 region, Duisburg is by far the most important port.

[4] Source: Traficom.

Transport by origin and destination

In total, 760 000 tons of goods were transported in 2018 via river-sea transport within, to and from Germany. However, a long-time series (2000-2018) shows that river-sea transport in Germany has been following a downward tendency since 2000.

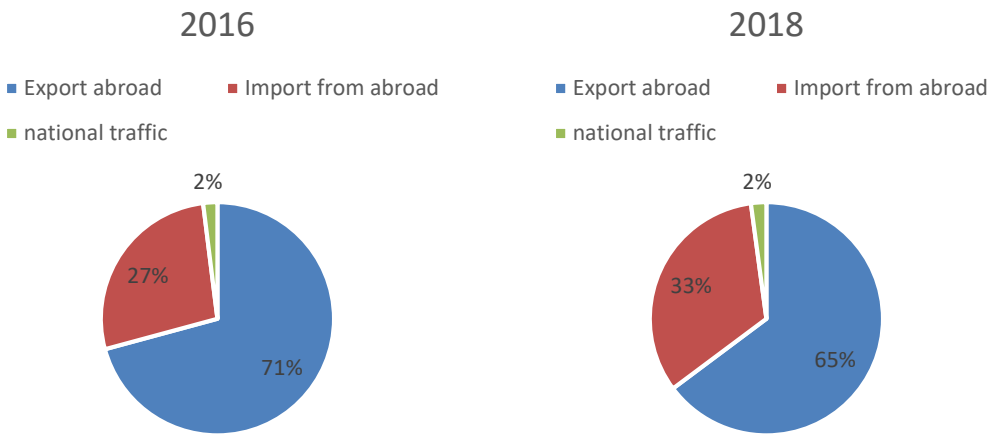
Figure 11: **Evolution of river-sea transport in Germany by type of transport, 2000-2018** (Million tons)



Source: CCNR analysis based on Destatis data.

Within the total German river-sea-transport, export traffic has the largest share, with 71% in 2016 and 65% in 2018. As will be seen below, this is related to the exports of iron, steel and metals, which accounts for the largest amount of river-sea traffic in Germany. The share of import traffic is around one-third, and national river-sea traffic (origin and destination within Germany) has a very minor share.

Figure 12: **River-sea transport in Germany by type of transport**

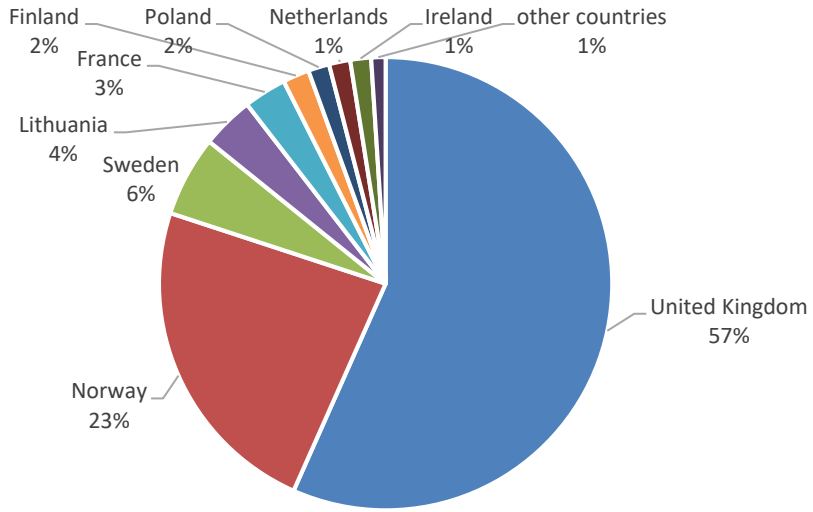


Source: CCNR analysis based on Destatis data.

The most important destination for exports of iron, steel and metals is the United Kingdom of Great Britain and Northern Ireland, and in particular the Humber estuary region on the north-eastern coast of England. This region offers good natural conditions for river-sea traffic, as the Humber river forms a wide estuary, allowing seagoing ships to sail inland. Around the Humber estuary in the NUTS 2 regions of Lincolnshire, East Yorkshire and Northern Lincolnshire are numerous ports and terminals (Kingston upon Hull, Grimsby, Immingham, and others). A smaller part of the iron and steel exports goes to Norway and Sweden, as the following tables show.

Other destinations within the United Kingdom of Great Britain and Northern Ireland are London and Scotland. The Scandinavian countries of Norway and Sweden play another major role as export destinations.

Figure 13: **River-sea transport of Germany – share of countries for loading and unloading in exports from Germany to abroad and imports to Germany from abroad (2018)**



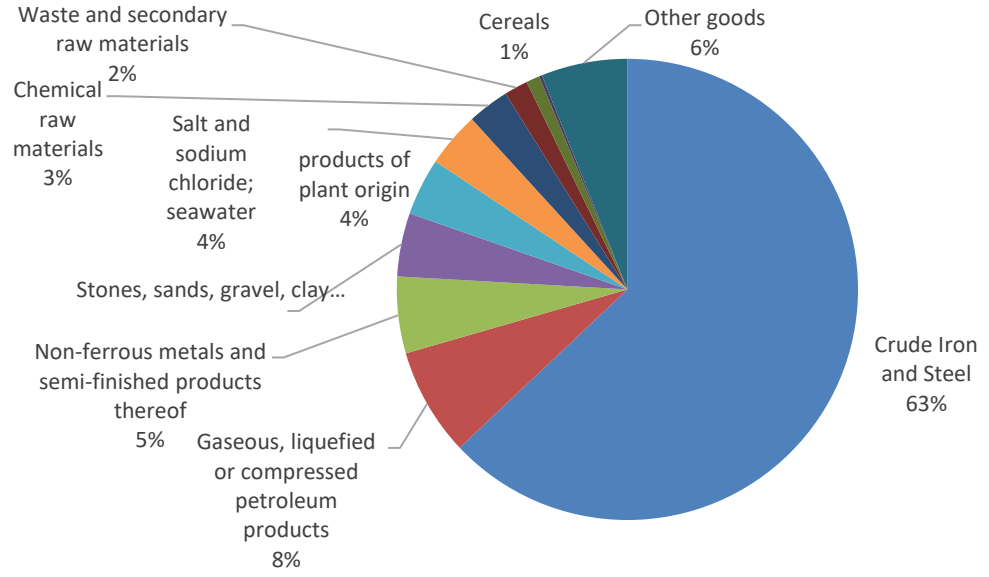
Source: CCNR analysis based on Destatis data.

The following three tables show the evolution for the four largest goods segments, as well as the most important trading routes both for export and import traffic.

Transport by type of cargo

Iron and steel as well as metals and metal products form by far the most important goods segment in German river-sea traffic. In 2018, pig iron and steel accounted for 63%. Non-ferrous metals and semi-finished products from these accounted for 5%, so that more than two-thirds of all German river-sea transport was linked to iron and steel or related final products.

Figure 14: **River-sea transport in Germany by type of goods (2018)**



Source: CCNR analysis based on Destatis data.

Within the goods segment of crude iron and steel, 77.5% of river-sea transport in 2018 were exports and only 22.5% imports. For the second largest segment (gaseous, liquefied or compressed petroleum products), imports dominated in 2018 with a share of 98.2%. For non-ferrous metals and related products, there was an export share of 100% in 2018. Finally, sands, stones gravel and clay were predominantly exported in 2018 (share of 78%).

Tables 1 to 3 show the evolution for the four largest goods segments, as well as the most important trading routes both for export and import traffic.

Table 1: **Volume of river-sea transport in Germany and four largest goods categories, 2016-2018** (Thousand tons)

	2016	*2017*	*2018*
Total river-sea traffic in Germany	1,378	980	765
• Crude iron, steel	958	656	482
• Gaseous, liquefied or compressed petroleum products	76	82	58
• Natural stones, sand, gravel, clay, earth	108	64	34
• Non-ferrous metals and their semi-finished products	50	40	41
Subtotal of four largest goods categories	1,191	842	615
% of Subtotal in total river-sea transport	86%	86%	80%

Source: CCNR analysis based on Destatis data.

Table 2: **River-sea traffic – Exports by Germany – most important trading routes in 2018**

Region of loading (NUTS 2)	*Region of unloading (NUTS 2)*	*Goods segment*	*Volume (in 1000 tons)*
Düsseldorf	UK (East Yorkshire and Northern Lincolnshire)	Crude iron, steel	174
Düsseldorf	UK (Lincolnshire)	Crude iron, steel	96
Düsseldorf	UK (London)	Non-ferrous metals and semi-finished products	38
Düsseldorf	Norway (Sør-Østlandet)	Crude iron, steel	33
Düsseldorf	Sweden (Sydsverige)	Crude iron, steel	31
Düsseldorf	Norway (Vestlandet)	Crude iron, steel	22
Sum of volumes above			**393**
Total exports by river-sea transport from Germany			**494**

Source: CCNR analysis based on Destatis data.

Imports by river-sea traffic to Germany contain iron and steel, but also gaseous, liquified or compressed mineral oil products. These last three materials are imported mainly from Norway and Scotland.

In contrast to export traffic, which fell relatively sharply between 2017 and 2018, import traffic remained almost stable between 2017 and 2018.

Table 3: **River-sea traffic – Imports by Germany – most important trading routes in 2018**

Region of loading (NUTS 2)	*Region of unloading (NUTS 2)*	*Goods segment*	*Volume (in 1000 tons)*
Norway (Agder og Rogaland)	Düsseldorf	Gaseous, liquefied or compressed petroleum products	32
Lithuania	Düsseldorf	Crude iron, steel	25
Norway (Vestlandet)	Düsseldorf	Crude iron, steel	19
Norway (Vestlandet)	Düsseldorf	Stones, sands, gravel, clay	18
France (Nord-Pas-de-Calais)	Düsseldorf	Crude iron, steel	18
UK (East Yorkshire and Northern Lincolnshire)	Düsseldorf	Crude iron, steel	16
UK (Eastern Scotland)	Cologne	Gaseous, liquefied or compressed petroleum products	16
Sum of volumes above			**144**
Total imports by river-sea transport to Germany			**252**

Source: CCNR analysis based on Destatis data.

Container traffic is of little relevance within German river-sea transport: in 2017 only 245 TEU were transported between the Lower Rhine region and the United Kingdom of Great Britain and Northern Ireland.

National river-sea traffic (loading region and unloading region areas in Germany) amounted to around 10,000 tons in 2017. The largest share of this was grain transport (around 3,000 tons) from the Baltic coastal region in Germany (Mecklenburg-Western Pomerania) by river-sea ships to the Lower Rhine (NUTS 2 Düsseldorf region). In 2018, the national river-sea traffic was higher than during the previous year, reaching 16,255 tons. The largest part of this was coal transported from Schleswig-Holstein to Berlin by river-sea vessels (just under 6,000 tons).

Some features about river-sea transport at Duisport

In 2018, 264 river-sea ships called at Duisport, but only eight did so between August and November 2018, due to low water levels. Indeed, the first business area of the port impacted by the 2018 low water period was river-sea transportation. To date, 227 river-sea ships called at the port during 2019. According to Duisport, securing river-sea activity in an inland port comes with challenges, particularly in terms of compliance with security requirements (International Ship and Port Facility Security Code and ensuring secured waiting areas for river-sea ships) and heavy bureaucracy (customs, immigration, IMO). Moreover, Duisport is often treated as a seaport due to the seagoing ships calling at the port. On the other hand, river-sea shipping also presents opportunities, in particular, it allows avoiding congestion and bottlenecks such as deep-sea ports (decentralised traffic), to bypass boarders of the European Union such as Dover-Calais and rural area connections, and consists in an ideal complementary route for players in the IWT sector.

E. River-sea transport in Belgium

Definitions and waterway areas

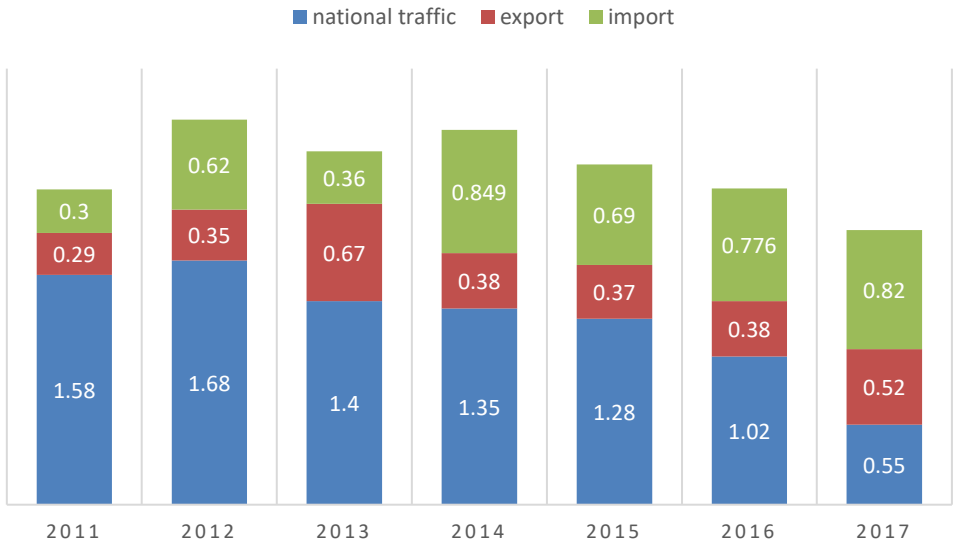
In the data for Belgium, river-sea transport is indicated via the vessel type that is used for the journey (if a seagoing ship is used, this points to river-sea traffic), and also by the country of loading and unloading of the cargo.

In Belgium, river-sea transport takes place mainly on the following waterways: the Albert Canal, Zeekanaal Brussels - Schelde (Escaut), and the Schelde river.

Transport by origin and destination

The river-sea transport of Belgium has a far higher share of national traffic than does Germany. This is attributed to container traffic, which, on a multi-annual basis, accounts for two-thirds of all national river-sea traffic in Belgium. This pattern can be explained by the different geography of Belgium compared to Germany, the broad estuary of the Schelde river downstream of Antwerp allowing seagoing ships to go inland and transport of different kinds of goods, including containers. However, national river-sea traffic performed by seagoing ships has followed a downward trend in recent years.

Figure 15: **River-sea transport in Belgium by type of transport** (Million tons)



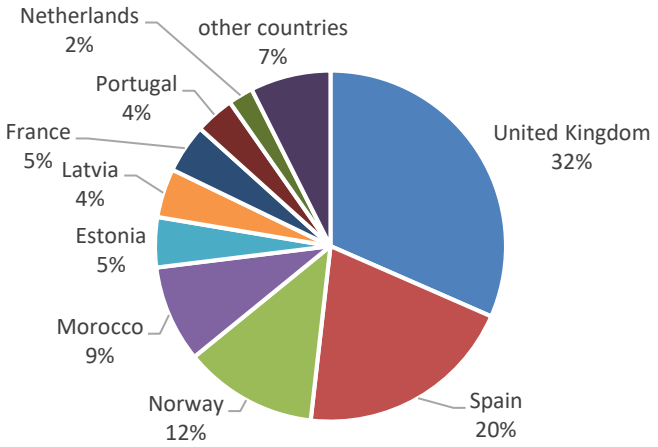
Source: CCNR analysis based on the Belgian statistical office (Statbel) data.

In the years 2011-2017, the cargo volume transported by river-sea traffic varied between 2 and 3 million tons per year. This number includes transport by seagoing ships that cross into inland waterways. This transport by seagoing ships can be identified within the Belgian IWW statistics.

In Belgium, there exist inland vessels which partly cross into maritime waters, known as estuary traffic. However, according to the Belgian statistical office (Stat.Bel), this type of river-sea traffic by estuary vessels is currently not identified within the IWW statistics.

In looking at the countries of loading and unloading, the United Kingdom of Great Britain and Northern Ireland is the most important trading partner for Belgium for river-sea transport (with a 32% share). This is followed by Spain (20%), Norway (12%) and Morocco (9%).

Figure 16: **Export and import river-sea transport in Belgium by trading partner (2017)**



Source: CCNR analysis based on Statbel data.

With regard to trade with the United Kingdom of Great Britain and Northern Ireland, the export side plays a larger role than the import side. In 2017, total exports from Belgium to the United Kingdom of Great Britain and Northern Ireland amounted to 0.34 million tons and total imports around 0.1 million tons. Export traffic consists mainly of iron and steel. Related volumes amounted to 0.24 million tons in 2017.

With regard to trade with Spain, iron and steel products represent also (by far) the majority of goods. Iron and steel are both imported by Belgium from Spain, and also exported to Spain. Belgium also imported wood and wood products from Spain in 2017.

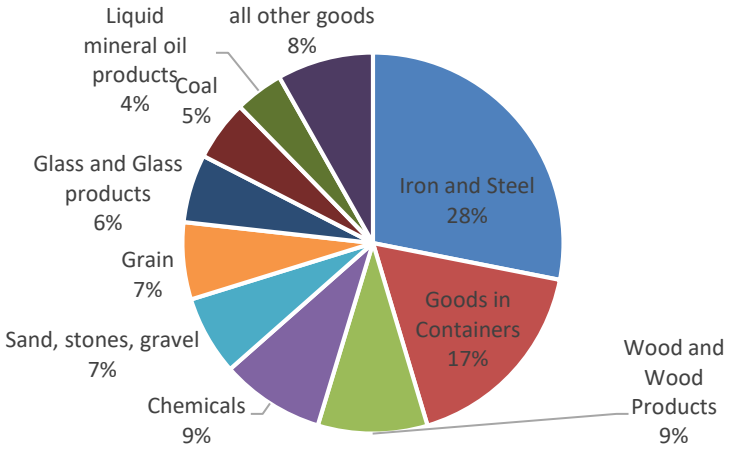
Trade with Norway is mainly import-related, and consists of sands, stones, gravel, as well as iron and steel. The transport relations with Morocco are purely import traffic and consist mainly of basic chemicals that are transported from Morocco to Belgium.

Transport by type of cargo

As is the case of Germany, iron and steel has the highest overall share of all goods segments in river-sea transport. Goods in containers, in second place, are mainly transported in the form of national river-sea traffic (where the country of loading and of unloading is in both cases Belgium).

In 2017, container traffic accounted for two-thirds of all national river-sea transport. Mineral oil products and chemicals made up another 19% of national river-sea transport.

Figure 17: **River-sea transport in Belgium by type of goods (2017)**



Source: CCNR analysis based on Statbel data.

Chemicals, which have a 9% share, are almost entirely imported from only one country, that is the north North-African state of Morocco. The associated volume of transport is indeed quite high, with more than 120,000 tons per year. In considering all the traded goods and the countries of loading, it is clear that this transport of chemicals from Morocco to Belgium by river-sea shipping was the most significant (in terms of volumes) river-sea transport activity with regard to Belgium's imported goods in 2017.

Some features about river-sea transport at the port of Liège

Around 100 river-sea ships arrive in Liège every year, mainly via Antwerp and the Albert Canal, representing about 1% of the port calls, and sailing mainly under Dutch or Antiguan and Barbudan flags. They have to deal with shallow draughts and air drafts on the Albert Canal. The tonnage of the units calling at the port of Liège is generally between 1,500 and 2,500 gross registered tonnage. The total river-sea goods traffic at the Port of Liège varies between 200-250 thousand tons on a yearly basis. This traffic consists mainly of Arcelor-Mittal steel exported towards the United Kingdom of Great Britain and Northern Ireland and Ireland. At the port of Liège, this type of traffic is highly dependent on the European automotive market. Tonnages have increased slightly in recent years. This traffic has become highly specialised over the years due to its complexity, as shipowners must have the ships that provide the ideal yield on the route to be covered with a crew that is familiar with the various navigation regulations.

F. River-sea transport in France

Definitions and waterway areas

In France, river-sea transport is understood to be a transport operation on a single seagoing ship, partly on inland waterways and partly on maritime waters, without transhipment (goods or passengers). A seagoing ship must comply with inland waterway regulations once it crosses onto a "line" defined by regulations and known as "1st obstacle to the navigation of ships".[5]

In France, river-sea shipping is concentrated in two main river basins:

- the Rhône (up to Lyon)-Saône (up to Pagny) basin.
- the Seine (up to Evry)-Oise (up to Nogent-sur-Oise).

Some river-sea transport is also recorded on the Gironde, with fluctuating volumes depending on the years. Occasionally, some river-sea transport can be observed on Rhine affluents (for instance in 2016 and 2018) or on the Escaut (for instance in 2017 and 2018).

In addition, on the Loire, the specific segment of marine aggregates was transported via river-sea transport up to 2013. However, no specific data are recorded for this type of traffic.

Transport by origin and destination

River-sea goods transport has been fluctuating since 1980. The amount of cargo transported by river-sea shipping increased from 1980 to 1997 and has been following a rather downward trend ever since. In 2018, river-sea cargo traffic amounted to 0.75 million tons, compared to 1.4 million tons in 2010. In 2018, export traffic represented 68% of total river-sea transport in France while import traffic represented 32%.[6]

[5] The first obstacle to the navigation of ships is : for the Rhône the « pont de Trinquetaille » ; for the Seine the "pont Jeanne-d'Arc" in Rouen (décret n° 59-951 du 31 juillet 1959 portant fixation des limites de l'inscription maritime dans les estuaires, fleuves, rivières et canaux fréquentés par les bâtiments de mer).

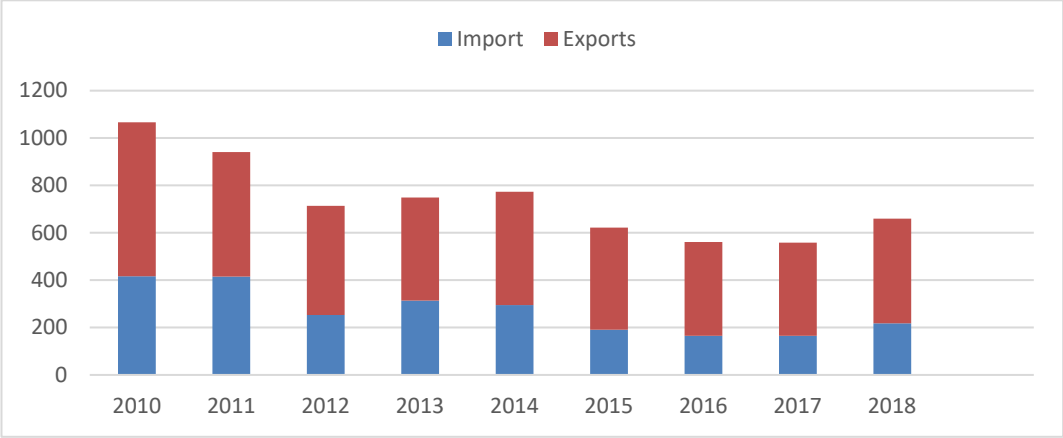
[6] Loading and unloading regions outside France are not collected by VNF, only the name of the first port of entry or the last port of exit is included in French statistics. For imports from and exports toward: (a) the Manche/North Sea basin, the first port of entry/last port of exit is the Port of Le Havre, and (b) the Mediterranean basin, the first port of entry/last port of exit is the Port-of-Saint-Louis-du-Rhône. More detailed data were made available for the Seine basin via Haropa - Statistiques port de Rouen.

Figure 18: **Evolution of total river-sea transport in France by origin and destination from 2010 to 2018** (Thousand tons)

Source: Haropa Statistiques port de Rouen (data on the Seine), Voies navigables de France (VNF) (data on other rivers).

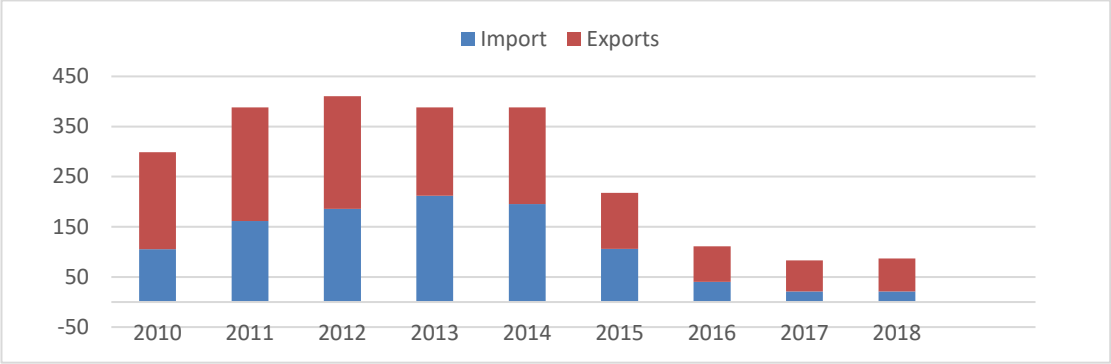
Figure 19: **Evolution of total river-sea transport on the Rhône and Seine basin (import and export) from 2010 to 2018** (Thousand tons)

(a) Rhône



Source: VNF.

(b) Seine



Source: Haropa - Statistiques port de Rouen.

On the Rhône basin, river-sea transport is positioned at the beginning of the value chain for the transport of raw materials (not yet transformed). It is therefore sensitive to changes of the economic climate of specific industries, such as the steel and agricultural industries, as well as to price fluctuations of raw materials and agricultural products. The low water levels

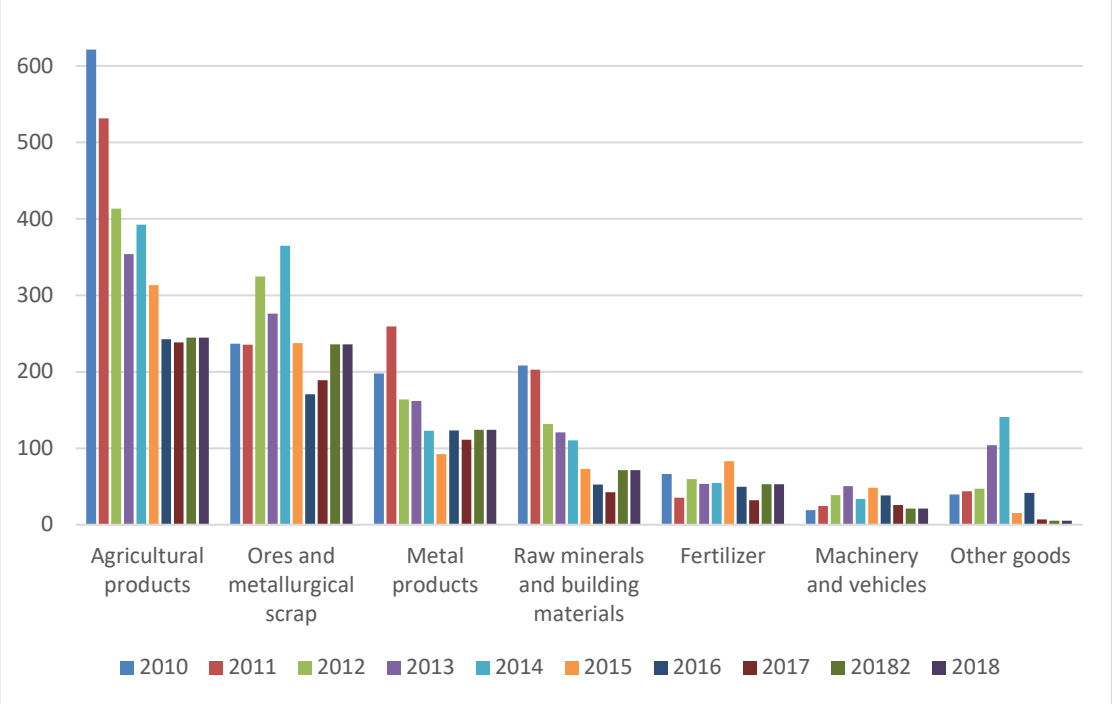
can here play an important role as they increase transport prices, which is of importance for mass cargo that needs low transport prices in order to be sold under competitive price conditions. An increase in waterway transport prices therefore increases the risk of modal shift to other modes of transport, especially rail.

Regarding exports, mainly ores and metallurgical scrap are exported to Turkey, as well as cereals and wood products mainly to Tunisia, Morocco, Algeria and Italy. For imports, mainly metal products are imported from the Mediterranean basin. Clay is also imported from Italy and fertilizers from Tunisia and Egypt.

On the Seine, the decrease in export traffic observed since 2012 can be attributed to a constant decrease in exports of agricultural products, both for animal and human consumption, and of steel products, mainly towards the United Kingdom of Great Britain and Northern Ireland. The decrease in import traffic observed since 2013 can be attributed to a strong and constant decrease in imports of steel products, from 128,000 tons in 2012 to 0 in 2018. In 2013 and 2014 important volumes of coal (respectively 102 and 51 thousand tons) were imported, which compensated for the decrease in steel products over the same period. Imports of coal via river-sea transport came to a halt in 2015. Today, only fertilizers (ammonium nitrate) from Antwerp is imported via river-sea transport on the Seine.

Transport by type of cargo

Figure 20: **Evolution of total river-sea transport in France and per main goods segments from 2010 to 2018** (Thousand tons)

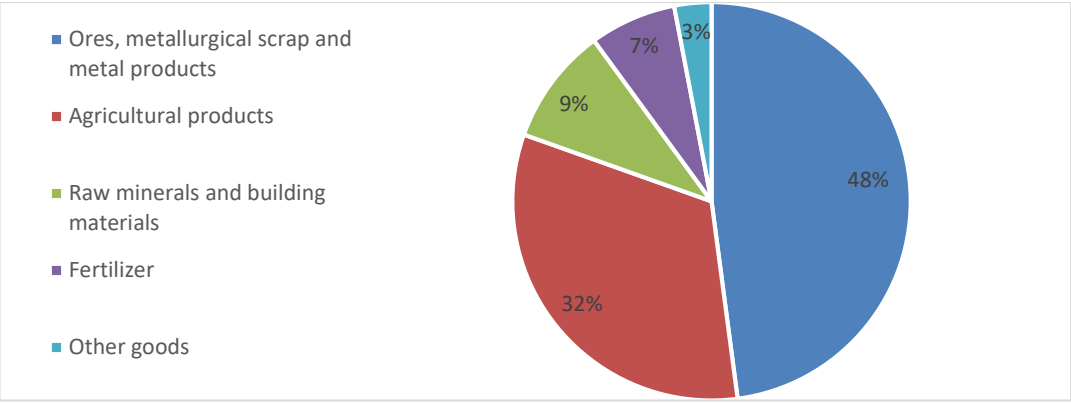


Source: CCNR analysis based on VNF data.

This decreasing trend can be explained by an important decline since 2010 in agricultural products by river-sea transport and, to a lesser extent, raw minerals, building material and metal products. Transport of ores and metallurgical scrap recorded strong fluctuations between 2010 and 2018.

Taken together ores and metallurgical scrap (31%) as well as agricultural products (32%) represent the most important goods segment in French river-sea traffic, followed by metal products (16%).

Figure 21: **River-sea transport in France in 2018 by type of goods** (%)



Source: CCNR analysis based on VNF data.

Approximately 85% of all goods exported via river-sea transport are unloaded in the Mediterranean basin, while 14% are exported to the Manche/North Sea Basin. Agricultural products, ores and metallurgical scrap are the most important segments for exports. Metal products are the third most important goods segment for exports, all exported through the Port of Le Havre. Less than one thousand tons of machinery and vehicles are exported via river-sea traffic towards the Atlantic region after being loaded in the Gironde/Garonne basin.

Table 4: **River-sea exports from France – most important trading routes in 2018** (Thousand tons)

Region of loading	*Country and region of unloading*	*Goods segment*	*Volume*
Rhône basin	Mediterranean basin – mainly Turkey	Ores and metallurgical scrap	213
Rhône basin	Mediterranean basin - mainly Italy, Morocco, Tunisia and Algeria	Agricultural products (particular cereals)	200
Seine basin	Mainly UK and Finland	Metal products	44
Seine basin	Mainly UK, the Netherlands and Belgium	Agricultural products	14
Sum of volumes above			471
Total exports by river-sea transport from France			**510**

Source: CCNR analysis based on VNF data.

Ninety percent of all goods imported via river-sea transport into France come from regions located in the Mediterranean basin (in particular Spain, Italy, Algeria and Turkey), most of which are unloaded in the Rhône basin. Other loading regions are located in the Manche/North Sea Basin (especially the United Kingdom of Great Britain and Northern Ireland, the Netherlands, Belgium and Germany) and the Atlantic basin, most of which is unloaded in the Seine basin. Thirty-three percent of all river-sea-shipping imports to France consist of metal products imports. The second most important goods segment for river-sea shipping imports to France is the raw and building materials segment (23%).

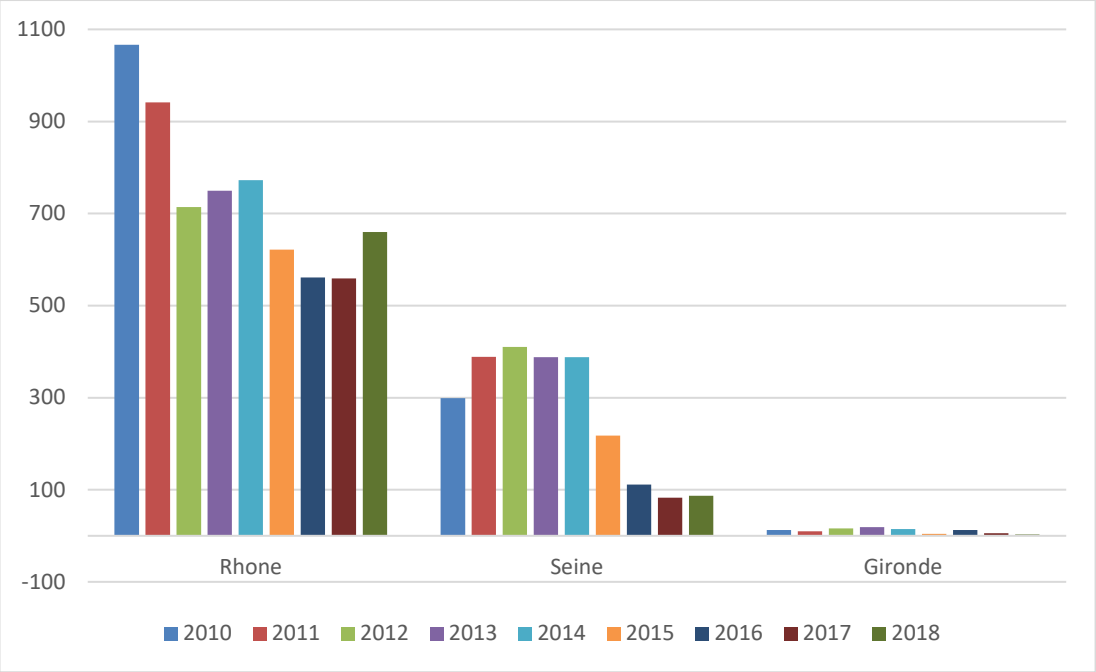
Table 5: **River-sea imports to France – most important trading routes in 2018** (Thousand tons)

Country and region of loading	*Region of unloading*	*Goods segment*	*Volume*
Mediterranean basin	Rhône basin	Metal products	78
Mediterranean basin - mainly Italy, Spain, Tunisia and Algeria	Rhône basin	Raw minerals and building materials	65
Antwerp	Seine basin	Fertilizers	21
Manche/Mer du Nord Basin	Moselle	Raw minerals and building materials	3
Atlantic region	Gironde/Garonne basin	Machinery and vehicles	2
Sum of volumes above			169
Total imports by river-sea transport to France			243

Source: CCNR analysis based on VNF data.

Transport volume by inland waterway

Figure 22: **River-sea transport in France by inland waterway** (Thousand tons)



Source: VNF.

Additional information regarding the fleet

The number of river-sea ships navigating on the Seine basin has halved since 2013, with 45 river-sea ships in 2013 compared to 20 in 2018. On the Rhône basin, the number of river-sea ships has remained identical with 21 ships. River-sea ships are registered under the following flags:

- on the Rhône basin: Antigua and Barbuda, Belize, Lithuania, Malta, the Netherlands and St. Vincent;
- on the Seine basin: the Netherlands (6), St. Vincent (5), Antigua and Barbuda (4), Lithuania (2) and the Bahamas (2).

G. River-sea transport in Romania

Definitions and waterway areas

The lower Danube region in Romania plays an important role for river-sea transport in Europe. Three categories of Danube ports can be identified in Romania: seaports (such as the port of Constanza), river-sea ports (Galati, Braila and Tulcea) and river ports.

The river-sea status of the ports of Galati, Braila and Tulcea enables seagoing ships coming from the Black Sea to sail upstream on the Danube to these ports where they can load or unload cargo. The statistical data concerning these three ports are therefore a major source for evaluating the level and the structure of river-sea transport on the lower Danube.

Braila is the boundary port between the "maritime" Danube and the "river" Danube. Downstream of Braila, the Danube is often also called the "maritime Danube", due to its river-sea character. Upstream of Braila, Danube traffic is classic river traffic.[7] Galati is the biggest river-sea port in Romania and the city of Galati hosts a large industrial area (steel industry).

Transport by origin and destination

Data from the Romanian National Institute of Statistics indicate a volume of almost 1.9 million tons of traffic loaded or unloaded by seagoing ships in 2018 in the three river sea ports mentioned above. The three ports of Galati, Braila and Tulcea represent the river-sea ports of Romania, while Constanza is a seaport.

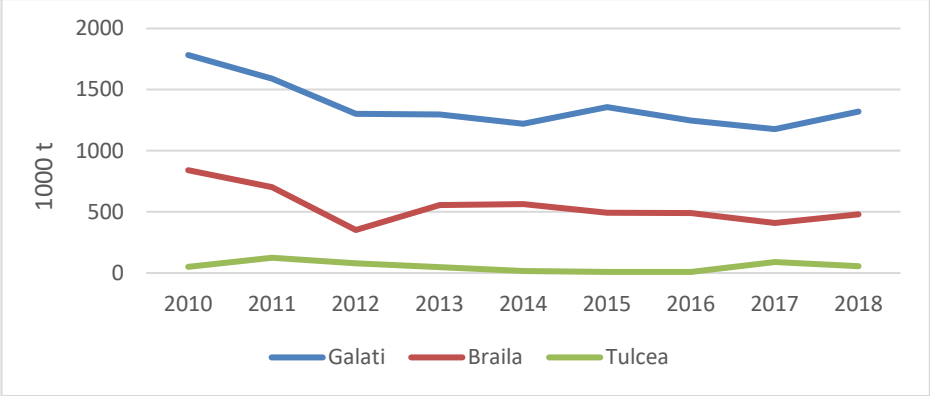
Table 6: **Cargo volume transhipped by seagoing vessels in the Romanian river-sea ports of Galati, Tulcea and Braila** (Thousand tons)

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Galati	1783	1590	1301	1297	1222	1357	1248	1177	1320
Braila	841	703	352	555	565	494	490	410	481
Tulcea	52	125	80	49	18	9	9	90	56
Total	2676	2418	1742	1901	1805	1860	1747	1677	1857

Source: Romanian National Institute of Statistics (several annual reports of the series "Harbour transport of goods and passengers").

The evolution of river-sea traffic in the three Romanian river-sea ports has shown a constant tendency since 2012, but a certain decrease between 2010 and 2012.

Figure 23: **Evolution of river-sea transport in Romanian river-sea ports** (Thousand tons)



Source: Romanian National Institute of Statistics (several annual reports of the series "Harbour transport of goods and passengers").

[7] See the article by Radu SAGEATA (2011), River and Sea transports in Romania in the European Union strategy for the Danube perspective.

There is no detailed statistical information about the countries of loading and unloading of cargo transhipped by river-sea transport for Romania. However, the following table shows that non-European Union countries play a quite important role in export traffic (loaded goods). From the Danube Commission Market Observation, it can be concluded that the countries of loading and unloading are located mainly in the Mediterranean Sea, and in particular in northern Africa, as agricultural products are exported from the Danube region to North Africa and to Spain.

Table 7: **Structure of cargo volume transhipped by seagoing ships in the river-sea ports of Galati, Tulcea, Braila, 2018** (Thousand tons)

	Loaded goods (exports)		*Unloaded goods (imports)*		*Total*
	Intra EU trade	**Extra EU trade**	**Intra EU trade**	**Extra EU trade**	**Total**
Galati	396	560	75	289	1320
Braila	258	152	35	36	481
Tulcea	6	0	50	0	56
Total	660	712	160	325	1857

Source: Romanian National Institute of Statistics.

Apart from the loading and unloading activities of seagoing ships in the three river-sea ports themselves, the Sulina Canal, which runs from Tulcea to the Black Sea, is mainly used by seagoing ships.

Regarding the volume of cargo traffic on the Sulina Canal, viadonau's annual report states: "Within maritime transport on the Danube, per river-sea ships or sea ships, 4.3 million tons of cargo were transported in 2017, on the **Sulina Canal**. This was an increase by 14.4% compared to 2016."[8]

In addition, the Danube Commission market observation reports mention the **Sulina Canal** as a waterway with river-sea traffic and indicate the same amount of traffic as viadonau.

Table 8: **River-sea transport on the Sulina Canal, linking the Black Sea with the Danube** (Million tons)

	2014	*2015*	*2016*	*2017*	*2018*
Total	3.66	3.85	3.76	4.31	4.44
Danube → Black Sea	3.24	3.26	3.25	3.61	3.67
Black Sea → Danube	0.42	0.58	0.51	0.70	0.77

Source: Danube Commission market observation.

A third waterway with river-sea traffic, although at a lower degree, is the Danube-Black Sea Canal, that runs between the seaport Constanza and the Danube. In 2017, according to viadonau, 57,000 tons of cargo were transported by river-sea ships or seagoing ships on this canal. The total amount of cargo on this canal was much higher in 2017 and represented 13.8 million tons.

Navigation on the Danube is endangered in winter, when the water freezes once every 2-3 years for a period of some 30-40 days, with floating ice blocks on the channel when the ice thaws.

[8] Source: viadonau (2019), Jahresbericht Donauschifffahrt in Österreich (Annual Report Danube Shipping in Austria), page 41.

The difference between the volumes documented for the Sulina Canal (4.4 million tons) and the volumes documented for the three Romanian river-sea ports (1.86 million tons) can be explained by the fact that the Sulina Canal not only relays the three Romanian river-sea ports to the Black Sea, but also the large Ukrainian ports of Izmail, Reni, and the Moldavian port of Giurgiulesti. These Ukrainian and Moldavian ports are located on the "maritime" stretch of the Danube. Their river-sea cargo volumes are of course not taken into account by the Romanian National Institute of Statistics.

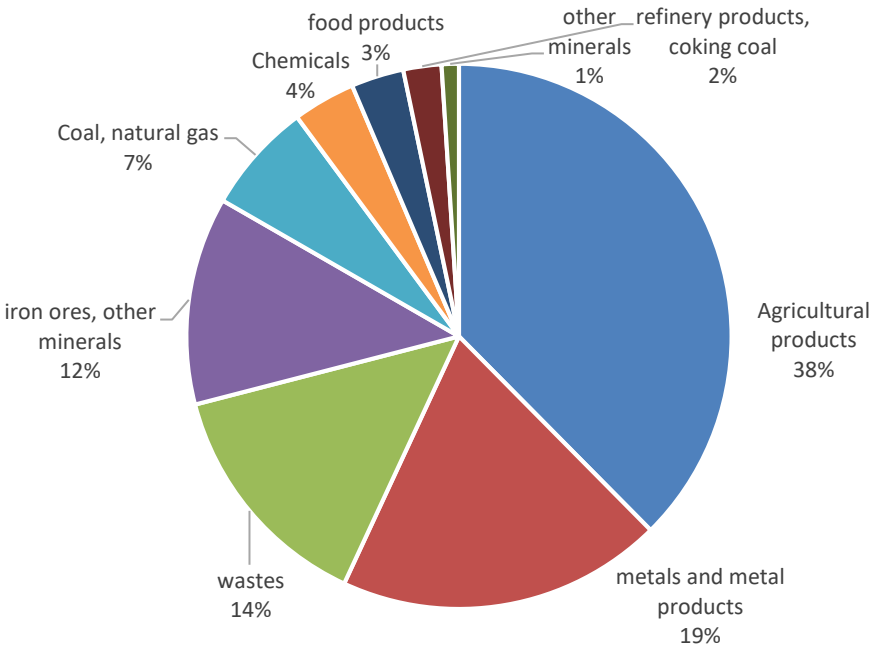
Transport by type of cargo

The goods transhipped by seagoing ships are mainly dry cargo and conventional cargo. The most important **goods categories** in the port of **Galati** are **metals and metal products** (27% of total river-sea traffic in 2018), **agricultural products** (22% of total river-sea traffic in 2018), **iron ores** (14% of river-sea traffic).

In **Braila**, 84% of the total river-sea traffic (481,000 tons in 2018) was represented by **agricultural products** in 2018. In Tulcea, 50,000 of the 56,000 tons transhipped were made up of **iron ores**.

The detailed structure of the maritime cargo traffic in these ports (taken together) is seen in figure 24.

Figure 24: **Structure of river-sea traffic in the Romanian ports of Galati, Braila and Tulcea**

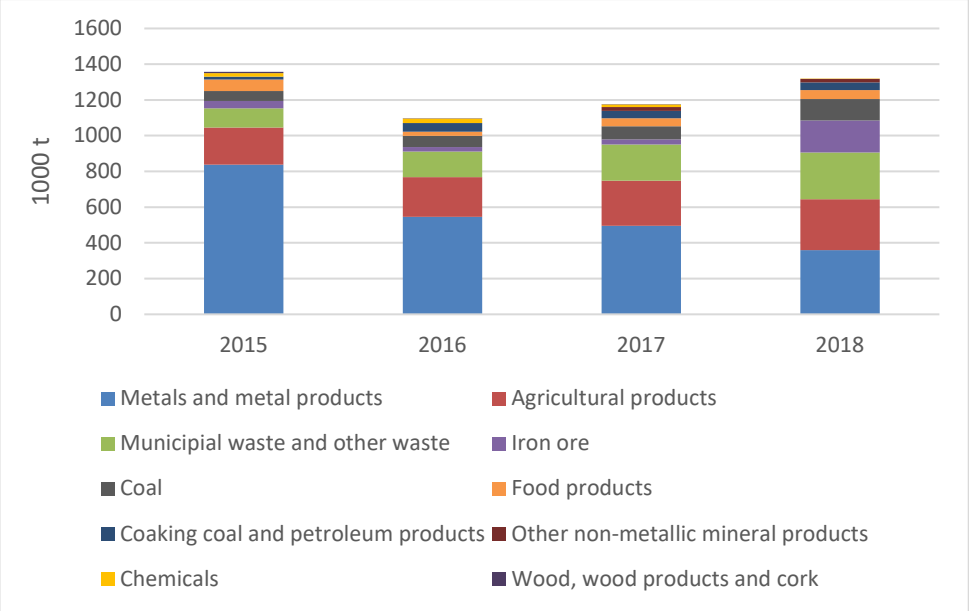


Source: CCNR analysis based on data from the Romanian National Institute of Statistics.[9]

With regard to the goods segments for individual ports, the river-sea port of Galati is dominated by metals and metal products, due to the local steel industry, but also offers transhipment of agribulk. The goods category of waste and municipal waste has increased in recent years.

[9] www.insse.ro/cms/sites/default/files/field/publicatii/transportul_portuar_de_marfuri_si_pasageri_anul_2018_0.pdf.

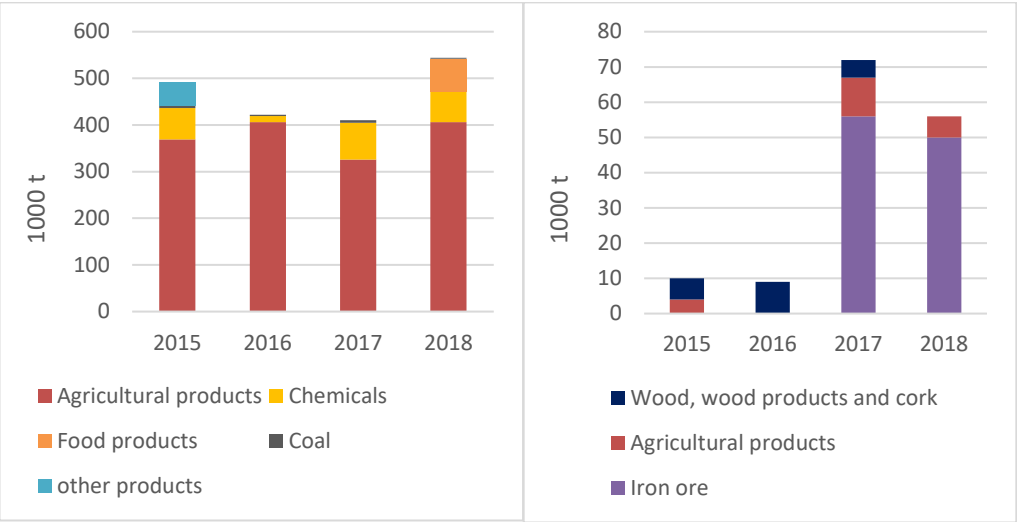
Figure 25: **River-sea traffic in the port of Galati by type of goods** (Thousand tons)



Source: Romanian National Institute of Statistics (several annual reports of the series "Harbour transport of goods and passengers").

Braila, the second largest Romanian river-sea port exhibits a majority of grain transport, having had relatively constant volumes between 2015 and 2018. Chemicals do play another, albeit smaller role. And the smallest of the three Romanian river-sea ports, the port of Tulcea, showed a pick-up of iron ore transport in 2017 and 2018, which was not the case in the two previous years.

Figure 26: **River-sea traffic in the port of Braila (left) and the port of Tulcea (right) by type of goods** (Thousand tons)



Source: Romanian National Institute of Statistics (several annual reports of the series "Harbour transport of goods and passengers").

H. River-sea transport in the Netherlands

The Netherlands has a number of rivers and canals such as the Rhine, Maas and IJssel rivers and the Amsterdam-Rijnkanaal, all of which are accessible to river-sea ships.

However, since the closure of the Short Sea Promotion Center in the Netherlands, virtually no information has been collected regarding river-sea transport in the Netherlands. It has therefore not been possible to collect relevant data for the Netherlands in this report.

However, as it can be observed from other chapters, the Netherlands is identified as a trading partner for several countries. In particular, the seaports of Rotterdam and Moerdijk are main export destinations for river-sea transport coming from inland ports in Sweden, Belgium, Finland, Germany and France.

The Netherlands has a number of rivers and canals which are accessible to river-sea ships, in particular the river Maas or the Juliana Canal. However, no data on river-sea transport is available for the Netherlands.

I. River-sea transport in Portugal

In Portugal, river-sea transport only takes place on the Douro. The large majority of river-sea transport on the Douro consists in 27,000 tons of sand and stones being exported to Germany (15,000 tons), the United Kingdom of Great Britain and Northern Ireland (2,000 tons), Sweden (9,000 tons) and Norway (1,000 tons).