

Summary

Introduction

The increasing demand of transportation in Europe is good from an economic point of view. However, too much growth could cause an overload of roads, rails, seaports and airports if the infrastructure does not grow in a proportional way. Transportation companies follow these developments and choose their different ways of transportation with the best opportunities.

shortsea shipping is one possible method of transportation. With the increasing traffic jam problems on the roads in Europe, this method seems to be a promising alternative. Besides, this transportation modality is cheap, has a almost unlimited capacity, safe and relatively environment friendly.

Short sea shipping is intermodal transport and focuses on the cargo moved between the countries in Europe and North Africa. The annual freight volumes between the Netherlands and the rest of Europe in 2005 are shown in Figure 0-1. This report analyses the developments in the short sea shipping network in detail.

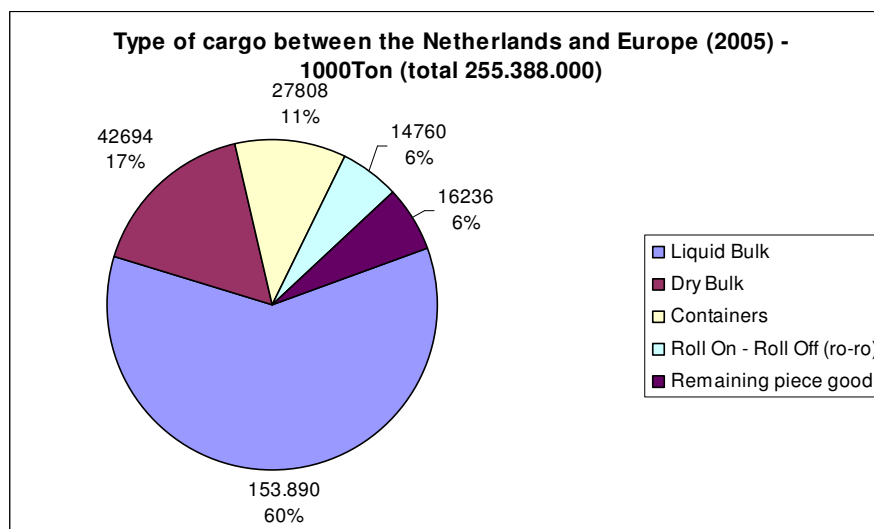


Figure 0-1, Split in type of cargo in shortsea shipping between NL and EU, in 2005 [10]

This research is part of the "Academic Center for TransPort" (ACTP) which is an organization that bundles, further develops, and makes knowledge better applicable by stimulating research, renewing education and by exchanging information between universities and the Harbour companies. The goal of this research is to get a better insight in the network of shortsea shipping in Europe in relation to the Netherlands. The study aims to inform the shortsea Industry as a whole and make it possible to better define specific future research projects of interest.

Approach

The report presents an overview of the freight flows between the Netherlands and other shortsea countries in Europe (including North Africa) and describes the 4 main type of operations: containers, dry bulk, liquid bulk and Ro-Ro. By evaluating the current freight flow and the developments in the last decades, trends are generated. These freight flows are further specified to various Dutch Harbours over the years 1997 to 2005 to get better insight in the growth of these harbours. Furthermore the position of the Dutch harbours as a whole in the Hamburg – Le Havre range is described for the years 2000 to 2005 for the 4 types of operations. Other used approaches to describe the developments in the shortsea network are the development in ship sizes and the types of networks or services like Line services ("A" to "B" and back) or roundtrip services where the ship visits more then two harbours.

Freight flow

Figure 0-2 presents the different freight flows from 1997 to 2005. Transport of containers on the shortsea market shows an increase over the years with a dip in 2000 and 2001. From 2000 the container grow is 7,1%. Also Ro-Ro shows a dip in 2000. An average increase of 2,1% is present per year over the years 2000 to 2005. The most plausible reason for these dips is a new used measure method, because similar figures from the Shortsea Shipping promotion Centre Holland do not show this big dip in 2000 (for containers and Ro-Ro). The flow of Dry Bulk shows oscillating decreases and increases over the years 1997 to 2005. The average grow in this period is 2,0% per year. Transport of Liquid bulk is relatively stable over the years 1997 to 2005. With two increases of 12% in 2000 and 2004. The average grow is about 3,4% per year. For each type of operation, future expectations are based on the average grow rate form the last years. The expected yearly grow, in shortsea shipping between the Netherlands and shortsea countries, for the 4 main types of operations are:

- Containers 7,1%
- Dry Bulk 2,0%
- Liquid Bulk 3,4%
- Ro-Ro 2,1%

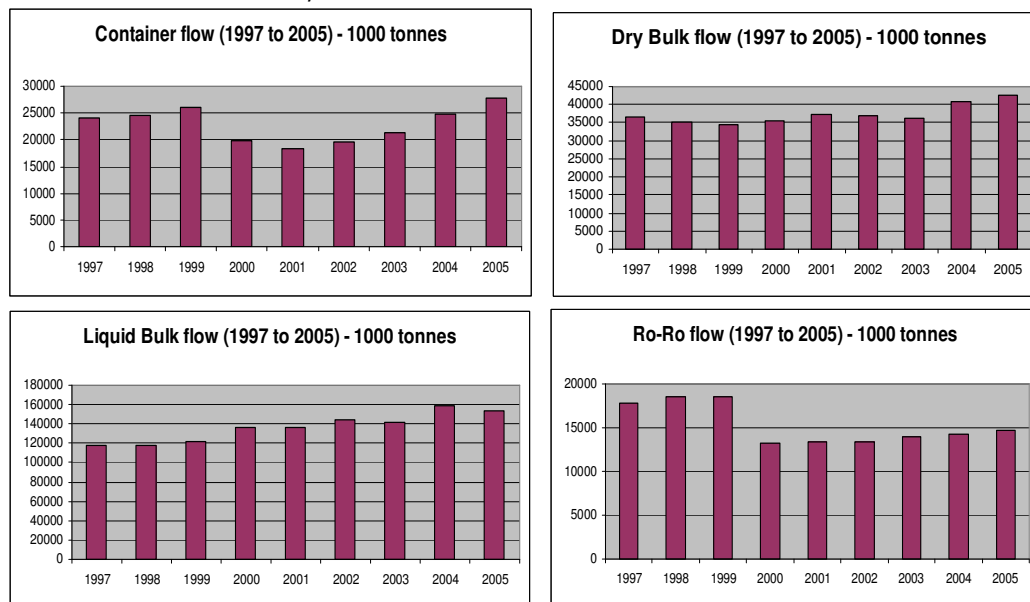


Figure 0-2, Developments in 4 types of operations from the Netherlands to shortsea counties

Dutch harbours

These freight flows are further specified to important Dutch Harbours over the years 1997 to 2005. For containers, no changes take place in the various Dutch harbours. The Rhine and Maas area is by far the most important area for the transport of containers in the Netherlands. For Dry Bulk the trend is a shift from the Rhine and Maas area (which decreases with 1,7% per year) to the Northsea channel area (which grows with 6,4% per year). Amsterdam transports more dry bulk by means of shortsea shipping than Rotterdam. This trend is expected to continue, The Liquid Bulk trend is a stable split in the different Dutch harbours over the years. This stable trend is expected to continue. The Ro-Ro market shows a little shift from the Rhine and Maas area (which decreases with 3,4% per year) to Sealand Seaports (which grows with 3,3% per year). Ro-Ro transport in the harbour of Scheveningen (remaining seaports) decreases with 2,1 per year.

Various Sea regions

The split in various sea regions (in 2005) for all types of cargo and the future expected grow rate, for transport between the Netherlands and these sea region countries, per year are:

- North sea 26% grow rate: -0,5%
- Atlantic sea 11% grow rate: 7,8%
- Baltic sea 46% grow rate: 4,1%
- Mediterranean sea 2% grow rate: -3,1%
- North Africa 14% grow rate: 2,5%
- Black sea 1% grow rate: -5,6%

Hamburg – Le Havre range

The results of the freight flows of the Netherlands compared with France, Germany and Belgium are specified over the years 2000 to 2005 in Figure 0-3. For Containers a shift from the Netherlands (especially Rotterdam) and France to Germany and Belgium is present. Despite Rotterdam being the biggest harbour the expectation is that Rotterdam loses part on the container market to Belgium and Germany. For Dry bulk a shift from Germany and France to the Netherlands and Belgium is present. The expectation is that the Netherlands increases more than the other countries on the shortsea dry bulk market after 2005. For Liquid Bulk the share of the countries oscillates over the years but stay relatively stable. The trend is that the Netherlands and France change market share over the years. The expectation is that France gives market share to the Netherlands after 2005. The shortsea Ro-Ro share of Belgium grows a lot in the last year. A big shift from the Netherlands and France to Belgium is present in this year.

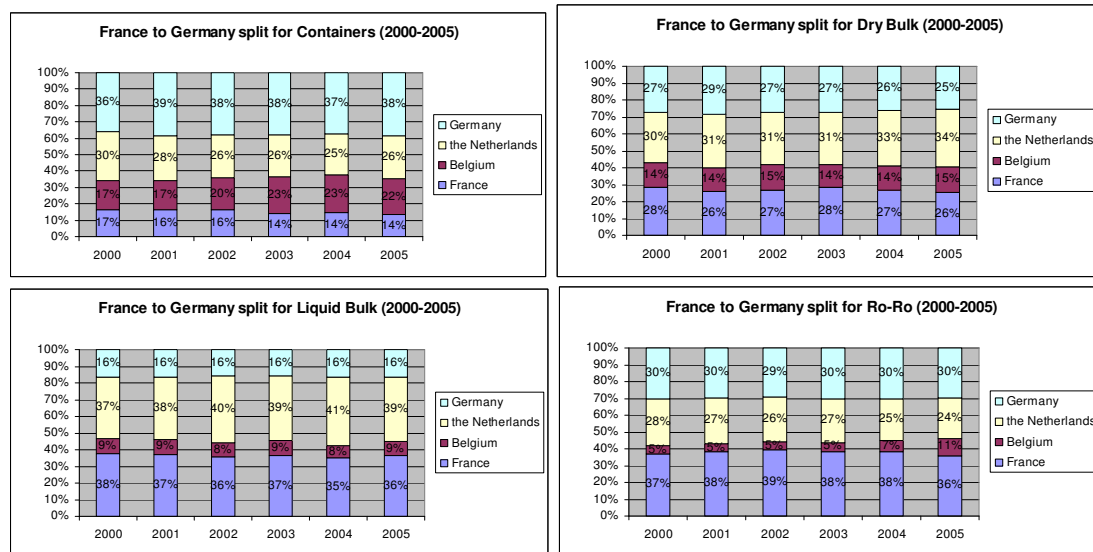


Figure 0-3, Split in the Hamburg – Le Havre range in percentages (2000 - 2005)

Ship sizes

Shipping companies want to earn money, so they want their ships to sail as much as possible. The largest shortsea ship dimensions nowadays for:

- Containers 800 TEU (Samskip)
- Ro-Ro 3100 lane metres (Stena Line)
- Dry Bulk 6500 DWT (Wilson Eurocarriers)
- Liquid Bulk 5700 DWT (Broere Shipping)

All types of ships will grow further in the near future. Bigger shortsea ships result in a lower cost per transported unit like containers, Ro-Ro-units or bulk materials. In general the trend is that all types of shortsea ships will increase in size. Policy of companies, based on the market situations like geographic position of harbours, capacity of harbours, volumes and frequencies of transport, customer demands, prizes of new ships and regulations will determine if a

company will invest in bigger ships. The future expected grow based on the trend in the last 2 decades shows:

- 19% for containers (Samskip)
- 6% for Ro-Ro (Stena Line)
- 3,5% for Liquid bulk (Broere Shipping)
- 0,2% for Dry bulk (Wilson Eurocarriers)

Network types

Shortsea companies use two different types of networks or services. Services where the ship is moving the cargo from harbour "A" to "B" and back or services where the ship visits more harbours, also called a roundtrip. Shipping companies use both services. Policy of companies, based on the market situation, like

- the number of transported containers
- the weight of transported bulk
- frequency of transport
- capacity of ships
- cost in various harbours
- season
- contracts and demands of customers
- transit time

will determine if a company will choose for a "A" to "B" and back or services or a roundtrip. [Appendix II, III and IV, Interviews]

Conclusion

The overview of the current shortsea shipping network between the Netherlands and Europe gives a better insight for the involved parties in the shortsea industry. By presenting the changes in different types of operations, specified to various sea regions, various Dutch harbours and the position of the Netherlands in the Hamburg – Le Havre range a better insight is created in the shortsea shipping market. Also changes in shipsizes and general expectations for the future will contribute to the knowledge in the market. Changes in used types of networks are based on different company policy. This report informs the shortsea industry as a whole and makes it possible to better define specific future research projects of interest, for example:

- Making a model whit all shortsea transportation figures of European countries
- Research taking political aspects into account.
- Further research to the cause of shifts in types of cargo, sea regions, various Dutch harbour

The freight flows for the four main types of operation (containers, dry bulk, liquid bulk and Ro-Ro) all grow result in the following grow rate per operation each year:

- | | | |
|---------------|------|--------------------------------|
| • Containers | 7,1% | (over the years 2000 to 2005) |
| • Dry Bulk | 2,0% | (over the years 1997 to 2005) |
| • Liquid Bulk | 3,4% | (over the years 1997 to 2005) |
| • Ro-Ro | 2,1% | (over the years 2000 to 2005). |

Assuming that the container and Ro-Ro figures before 2000 where created with other measure methods, the trend for each type of operation is expected to continue like the average years before. No plausible influences indicate other expectations.

The freight flows are further specified to various Dutch Harbours over the years 1997 to 2005.

The expectation for the year 2015 is made, concluding for:

- Containers that Rhine- and Maas stays very big (93%)
- Dry Bulk that Rhine- and Maas area shifts to the Northsea channel area
- Liquid bulk that the part of all harbours stays stable
- Ro-Ro that Rhine- and Maas area shifts to Sealand Seaports

These expectations are based on the trends of the shifts in de various Dutch harbours.

In the Hamburg - Le Havre range the movements are specified to over the years 2000 to 2005. The trend from these years is expected to continue. The movements are presented in Figure 0-4.

	Containers	Dry Bulk	Liquid Bulk	Ro-Ro
France	5,3%	-1,1%	0,5%	4,1%
Belgium	14,9%	1,5%	0,4%	23,7%
The Netherlands	6,8%	3,4%	2,3%	2,1%
Germany	11,2%	-0,3%	1,2%	4,5%

Figure 0-4, Expected yearly grow in Hamburg-Le Havre per country and type of operation
 Within these figures and the in volumes in 2005, an expectation for the first 10 future years is made, concluding a stable market for the Netherlands. While France gives market to Belgium and Germany. Specifying this to the different types of operation, resulting for:

- Containers a shift from the Netherlands and France to Germany and Belgium
- Dry bulk a shift from Germany and France to the Netherlands and Belgium
- Liquid Bulk oscillates but relatively stable
- Ro-Ro a shift from the Netherlands and France to Belgium

In the Netherlands the maximum shortsea ships sizes and expected grow on yearly base are:

- Containers 800 TEU (Samskip) 19% ship size grow
- Ro-Ro 3100 lane metres (Stena Line) 6% ship size grow
- Dry Bulk 6500 DWT (Wilson Eurocarriers) 0,2% ship size grow
- Liquid Bulk 5700 DWT (Broere Shipping) 3,5% ship size grow

These figures are examples of big companies. Company policy based on important market factors, (like: geographic position of harbours, capacity of harbours, volumes and frequencies of transport, customer demands, prizes of new ships and regulations) will determine if a company will invest in bigger ships

Shortsea companies used two different types of networks or services. Services where the ship is moving the cargo from harbour "A" to "B" and back or services where the ship visits more harbours, also called a roundtrip. Shipping companies use both services. Policy of companies, based on the market situation (like: the number of transported containers, the weight of transported bulk, frequency of transport, capacity of ships, cost in various harbours, season, contracts and demands of customers and transit time) will determine if a company will choose for a "A" to "B" and back or services or a roundtrip. There is no specific trend and future expectation could not be made.

The overall conclusions for the Netherlands, combining the trends and expectations:

- The expected yearly grow for transportation shortsea in the Netherlands (3,1%) is almost similar compared with the grow of the modality in Europe (3,0%).
- Extrapolating for the years:
 - 2016 The Northsea countries represent a similar percentage as the Atlantic countries (both 17,5%).
 - 2029 The Northsea channel area represents 75% of the dry bulk market in the Netherlands.
 - 2039 France and Belgium represent 20% both of the market. For the Netherlands no change is present in this year.
 - 2044 The market of containers and liquid bulk will be similar (both 37,5%)
 - 2047 The Northsea countries represent a similar percentage as the Baltic countries (both 44,5%).

- Shortsea, increases (long term)
 - Containermarket
 - Transport between Atlantic countries and the Netherlands
 - Harbours in the Northsea channel area (containers, dry bulk and Ro-Ro)
 - Harbours in the seaports of sealand (Ro-Ro)

The harbours in the Northsea channel area should be prepared on an increase in Shortsea transport. This counts for containers, dry bulk and Ro-Ro transport. Also the harbours in sealand should be prepared on an increase in Ro-Ro transport.

- Shortsea, relatively small grow rates or decreases (long term)
 - Liquid bulk market
 - Transport between Northsea countries and the Netherlands
 - Harbours in the Rhine- and Maas area (containers, dry bulk and Ro-Ro)
 - The remaining seaport, Scheveningen (Ro-Ro)

The harbours in the Rhine- Maas area do not need preparation for the relatively small increase in Shortsea transport.

- All types of shortsea ships are expected to grow further in the near future. Policy of companies, based on the market situation will determine if a company will invest in bigger ships.
- Shortsea companies used two different types of networks or services. Services where the ship is moving the cargo from harbour "A" to "B" and back or services where the ship visits more harbours, also called a roundtrip. Company policy of shipping companies, based on the market situation, will determine the used type of network.