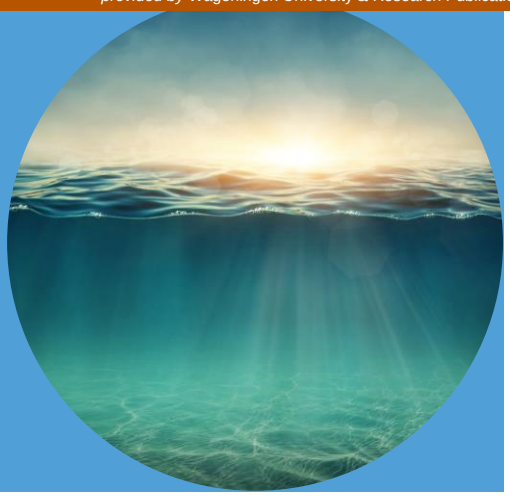
Fishing activities on the Frisian Front and the Cleaver Bank

Supplement to LEI Memorandum 13-050

J.A.E. van Oostenbrugge and K. Hamon



Introduction

In response to a request from the Ministry of Economic Affairs, an update of the data and analyses on the fishing activities of the Dutch fishing fleet on Frisian Front and the Cleaver Bank for the years 2012 and 2013 has been made. In this update the same data sources and methods have been used as in the memorandum that was published previously (Hamon et al., 2013).

Results

Table 1 shows the developments in the total landings, landings value and contribution to the Gross Value Added (GVA)[1] of the Dutch fishing fleet on the Frisian Front and the Cleaver Bank.

Table 1 **Overview of landings and values of the Dutch fishing sector in the Frisian Front and the Cleaver Bank**

	2006	2007	2008	2009	2010	2011	2012	2013
Landings (tons)								
Frisian Front	1,326	1,231	1,001	1,228	1,273	1,091	1,717	977
Cleaver Bank	335	589	434	849	943	1,157	1,675	586
Value (1000 euros)								
Frisian Front	4,993	5,199	4,036	4,305	4,183	3,204	3,465	3,413
Cleaver Bank	1,098	1,944	1,477	2,325	2,642	3,002	3,083	1,534
Gross Value Added (1000 euros)								
Frisian Front	1,375	1,656	1,227	1,661	1,142	520	1,294	1,262a)
Cleaver Bank	310	755	545	899	982	927	1,048	591a)

a) preliminary estimates;
Source: Logbook data and VMS data, processed by LEI.

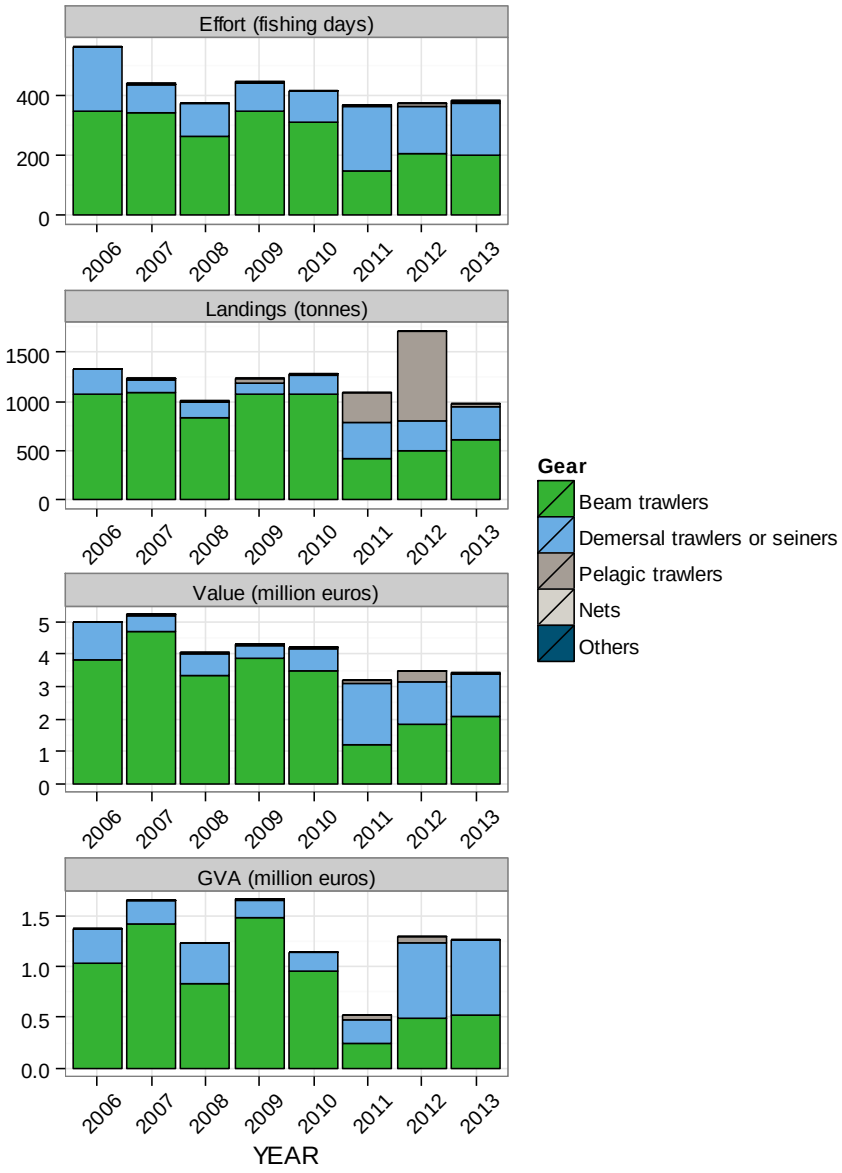
The fishing intensity in the Frisian Front has been more or less stable from 2008 onwards, whereas the fishing intensity on the Cleaver Bank increased until 2012 and decreased substantially in 2013. These trends are further elaborated for each of the separate areas in the following sections.

[1] The results up to 2010 are comparable to those of the previous memorandum. For 2011, the contribution to the GVA was updated using the actual economic data, whereas the results for 2013 are preliminary estimates, based on the proportion of GVA and landings value in 2012.

Frisian Front

Fishing intensity has remained relatively stable on the Frisian Front during the last six years (Figure 1). Landings decreased slightly from around 1,200 tonnes in 2006 and 2007 to less than 1,000 tonnes in the last years. In 2011 and 2012 considerable landings of pelagic fish were estimated, but these landings are based on a small number of observations and therefore highly uncertain. The resulting value of landings also decreased, from €5m to around €3.5m and the GVA varied between €1m and €1.5m, with the exception of 2011, when the GVA was very low because of relative high costs. The main change in the exploitation pattern has been a shift from a fishery dominated by beam trawling to more demersal trawling, especially from 2010 to 2011. After 2011, both the landings, landings value and GVA of beam trawls increased again whereas those from the demersal trawl fishery remained stable or decreased.

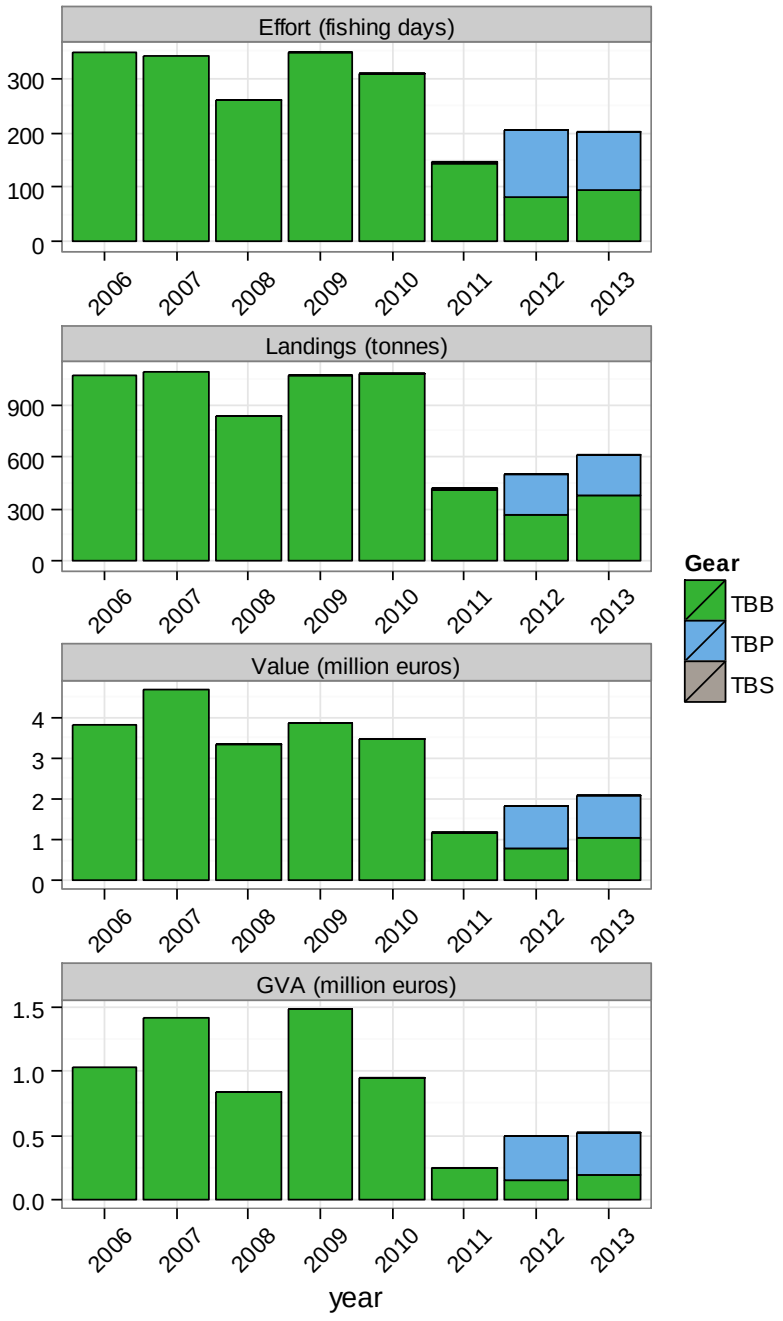
Figure 1 Historical trends of the fishing activities in the Frisian Front by the Dutch fleet. Effort, landings, value of landings and GVA are given by gears aggregated at the level of European codes (see Appendix 4 of Memorandum 13-050)



Source: Logbook data and VMS data, processed by LEI.

Within the beam-trawl fishery, the pulse fishing (TBP) increased substantially in 2012 from 0 to more than 100 fishing days (Figure 2). Although the landings were lower than those from the traditional beam trawlers (TBB), both the landings value and the GVA of the pulse fishery were higher. This is because the pulse-trawl fishery targets the more expensive sole, whereas the traditional beam trawl catches more plaice. After 2011 total landings from the beam-trawl fleet (including pulse) increased with around 30% and the total value of fish landed by all beam trawlers was around €2m in 2013. GVA was stable for the last two years at around €0.5m.

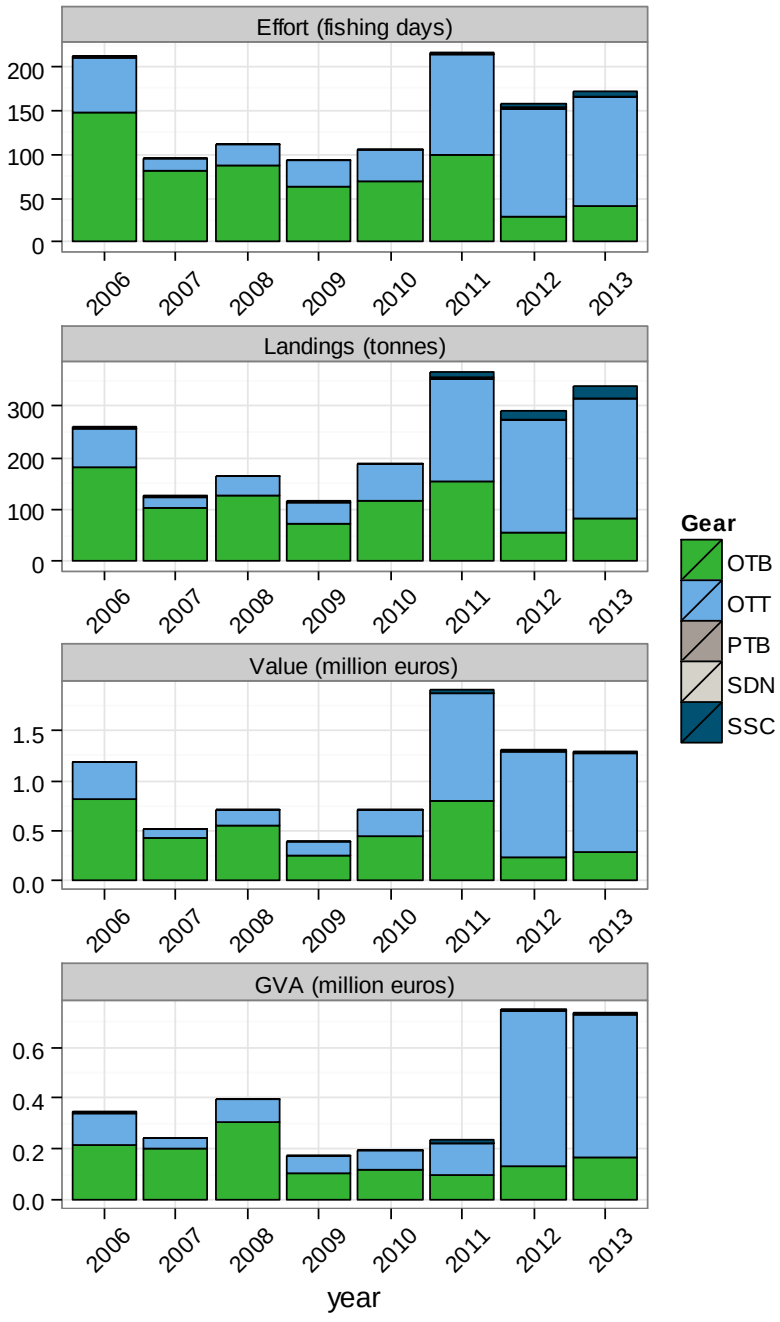
Figure 2 Historical trends of the fishing activities in the Frisian Front by the Dutch beam trawlers. Effort, landings, value of landings and GVA are given by gears aggregated at the level of European codes (see Appendix 4 of Memorandum 13-050)



Source: Logbook data and VMS data, processed by LEI.

Within the demersal trawl fleet the twin trawl fishery (OTT) dominated the fishery on the Frisian Front from 2011 onwards, and the fishing intensity of the otter trawl (OTB) fishery decreased. This decrease might be even larger than shown here as there are indications that some of the effort reported as otter trawl was in fact carried out by twin trawl. The total value of the landings was around €1.3m for 2012 and 2013 and the GVA was about €0.7m.

Figure 3 Historical trends of the fishing activities in the Frisian Front by the Dutch demersal trawlers. Effort, landings, value of landings and GVA are given by gears aggregated at the level of European codes (see Appendix 4 of Memorandum 13-050)



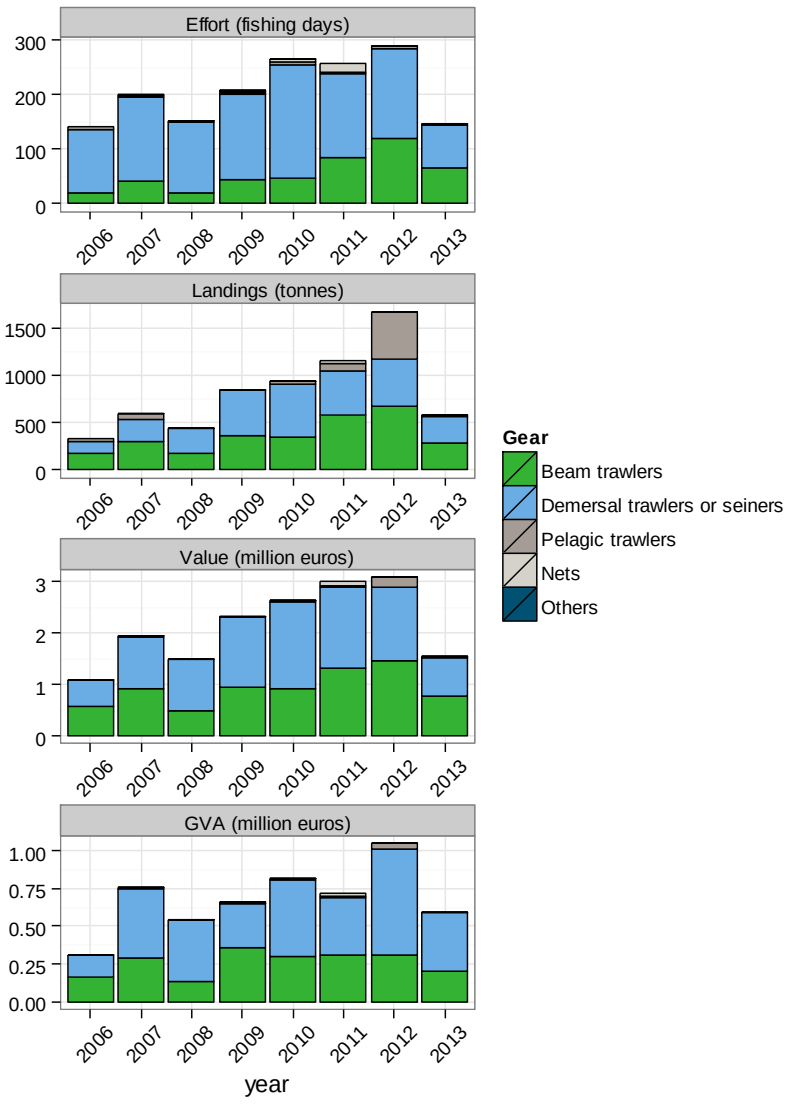
Source: Logbook data and VMS data, processed by LEI.

Cleaver Bank

The fishing intensity on the Cleaver Bank increased in the years until 2012 (Figure 4), resulting in total landings of more than 1,200 tonnes and a landings value of around €3m, for the demersal fishing gears. However, in 2013 the level of fishing activities dropped by around 50%; landings were 600 tonnes and represented a value of €1.5m. The landings of the pelagic fishery (in 2012) are highly uncertain since the number of observations on which the estimate is based is low. The sharp decline in 2013 is comparable for all gear types and the reason is not obvious as the landings per fishing day were comparable with 2012.

The importance of the beam-trawl fisheries on the Cleaver Bank has increased, but the fishing effort was still dominated by the demersal trawl fishing.

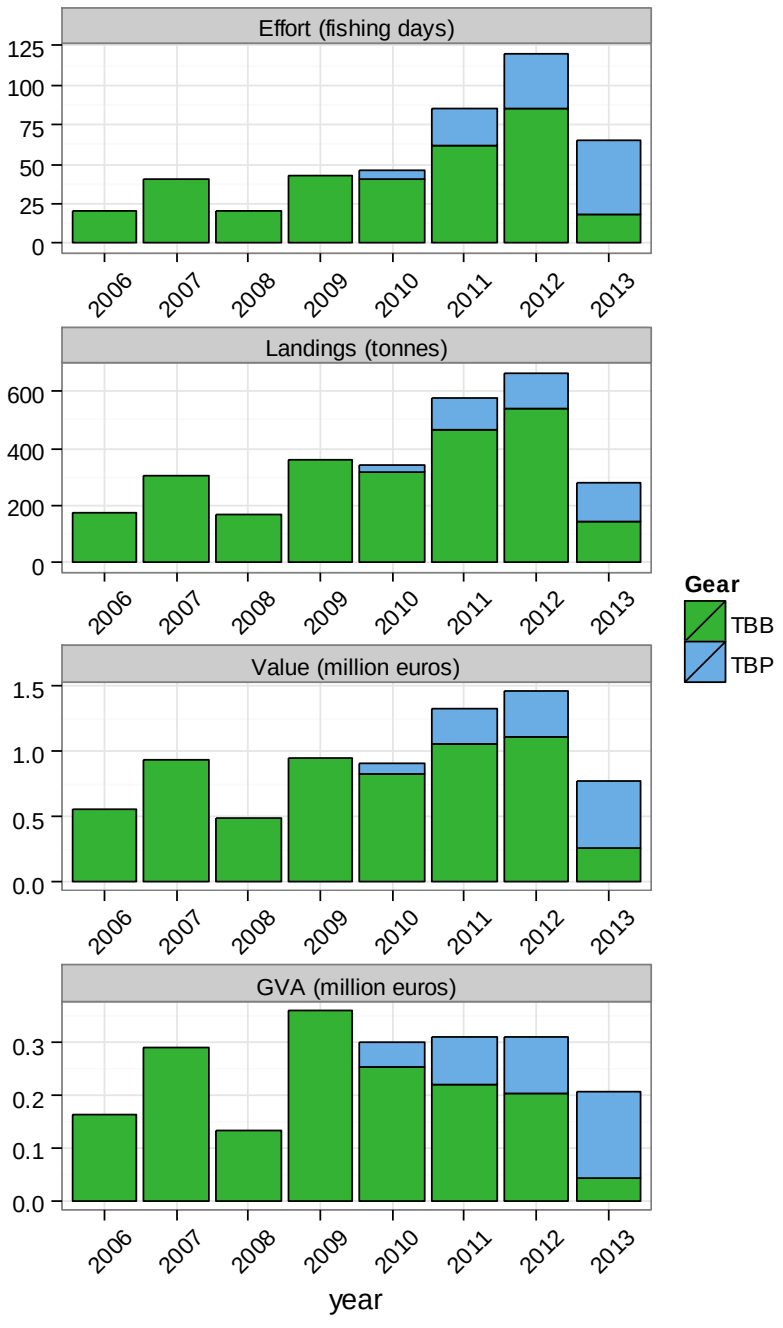
Figure 4 Historical trends of the fishing activities in the Cleaver Bank by the Dutch fleet. Effort, landings, value of landings and GVA are given by gears aggregated at the level of European codes (see Appendix 4 of Memorandum 13-050)



Source: Logbook data and VMS data, processed by LEI.

Over the last years the traditional beam trawl (TBB) on the Cleaver Bank has almost completely been replaced by pulse fishing (TBP) (Figure 5). In 4 years' time after its introduction in this area (2010), more than two thirds of the value of landings originated from pulse trawling and the contribution to the GVA was even higher.

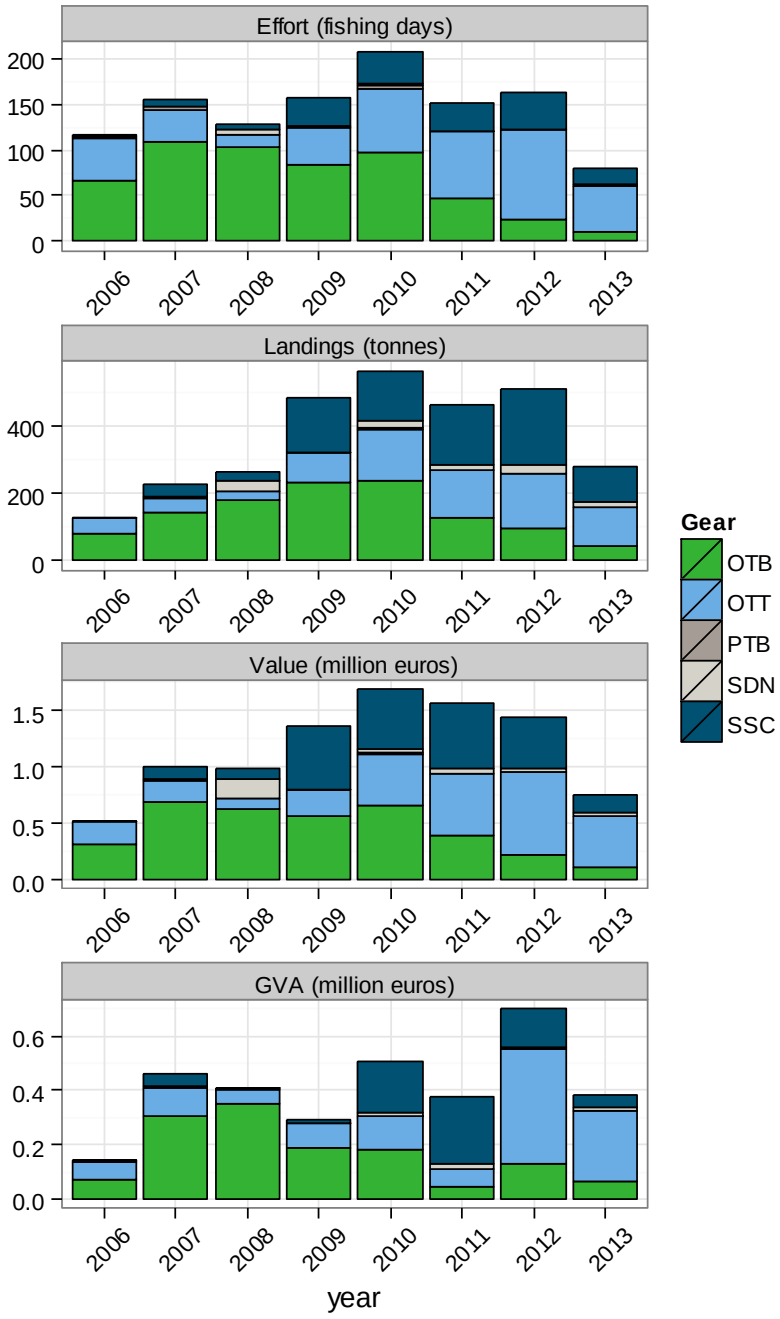
Figure 5 Historical trends of the fishing activities in the Cleaver Bank by the Dutch beam trawlers. Effort, landings, value of landings and GVA are given by gears aggregated at the level of European codes (see Appendix 4 of Memorandum 13-050)



Source: Logbook data and VMS data, processed by LEI.

Fishing activities with demersal trawls decreasing since 2010 (Figure 6); effort dropped by more than 60% and landings almost halved. GVA fluctuated considerably (between €0.2m and €0.7m), but does not show a clear trend. Within the demersal trawls, the twin trawl (OTT) dominated the fisheries in the latest years. In 2012 more than 50% of the effort was carried out by these gears. Besides otter board trawls (OTB), also Scottish seines (SSC) were used regularly in this area. Especially from 2010 to 2012, the landings of these seines were considerable, representing a total value of around €0.5m. In 2013 these landings also decreased substantially.

Figure 6 Historical trends of the fishing activities in the Cleaver Bank by the Dutch demersal trawlers. Effort, landings, value of landings and GVA are given by gears aggregated at the level of European codes (see Appendix 4 of Memorandum 13-050)

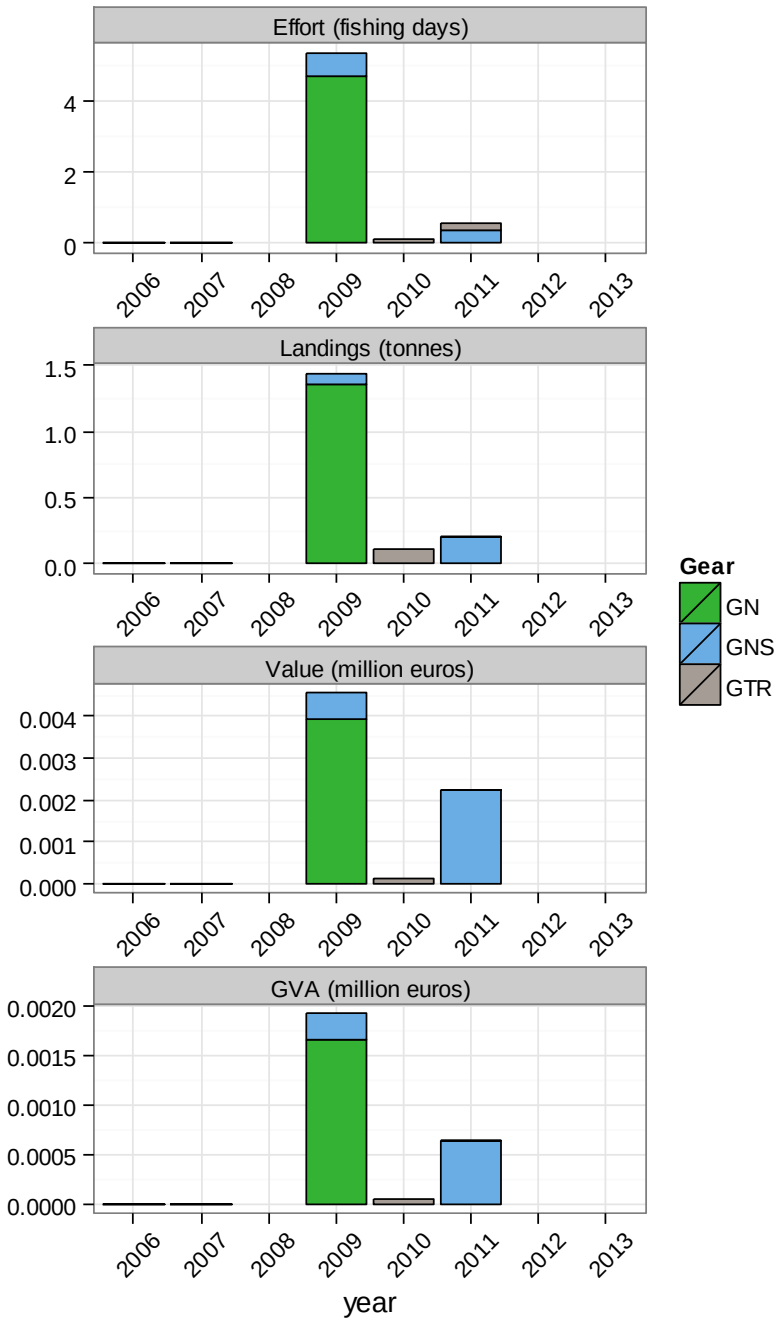


Source: Logbook data and VMS data, processed by LEI.

Effects of management

An analysis of the effects of the management measures such as carried out in Hamon et al. (2013) has not been fully conducted. However, a partial analysis has been made and the results and conclusions are presented.

Figure 7 Historical trends of the fishing activities in the Frisian Front by the Dutch gillnet fishers. Effort, landings, value of landings and GVA are given by gears aggregated at the level of European codes (see Appendix 4 of Memorandum 13-050)

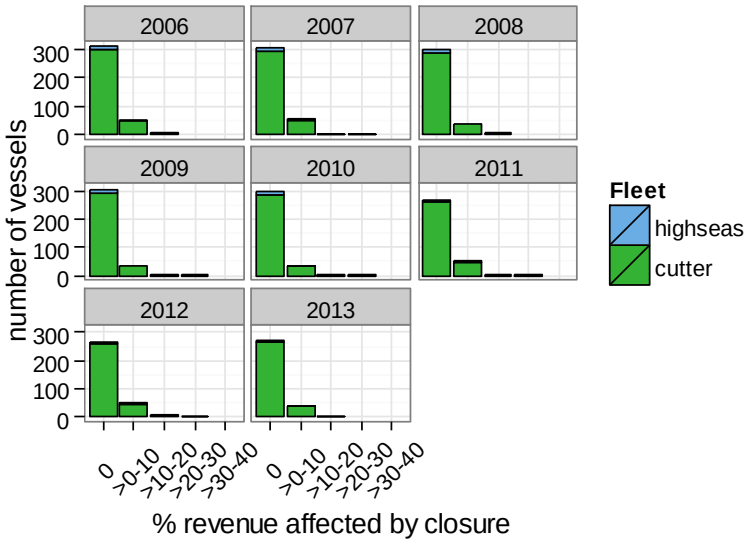


Source: Logbook data and VMS data, processed by LEI.

For the proposed temporal closure of the Frisian Front for gill netters no additional stress analysis was done. Based on previous analysis and the overall trends, it can be concluded that the proposed closure would not have an impact on the Dutch gill net fishery, because over the period from 2006 to 2013 fishing very few activities with gill nets have been registered at the Frisian Front (Figure 7).

For the Cleaver Bank, the stress profiles as shown in Hamon et al. (2013) have been updated with information from 2012 and 2013. The level of stress that a possible partial closures of the area for the demersal gears (as defined in Hamon et al., 2013) would cause, was measured by the value of landings from the impacted area relative to the total value of landings per vessel. The individual stress levels were then aggregated in the profile shown in Figure 8. More details about the background of the method can be found in Hamon et al. (2013). The analysis suggests that around 40 vessels have been active in the selected area per year and that this number has decreased in 2013 to around 25. For most of the impacted vessels, less than 10% of the revenue came from the selected area. A very small number of vessels obtained more than 10% of their revenue from the area and in 2013 this was only the case for one vessel.

Figure 8 Stress profile of the Cleaver Bank closure on bottom contact gears[a] by fleet[b]



a) Bottom contact gears include beam trawl, shrimp trawl, pulse trawl, otter board trawl bottom and pair trawl bottom; b) vessels using bottom contact gears at least for one trip during the year and for which Viris and VMS data was available;
Source: Logbook data and VMS data, processed by LEI.

Conclusions

The update of the analyses shows some new developments in the fishing patterns in both the Frisian Front and the Cleaver Bank.

For the Frisian Front, the total fishing intensity, the landings volume and landing value remained more or less constant from 2010 onwards. Also, the GVA remained more or less stable around €1.2m , with the exception of the year 2011. With these landings, the contribution of the fishery in this area to the total value of landings and the GVA of the total Dutch demersal fisheries is still relatively high compared to other areas; 1.3% and 1.0% respectively (STECF, 2014). During the last years, the fishery has shifted from the traditional beam trawl and otter board trawl to pulse trawl and twin trawl.

For the Cleaver Bank, the addition of recent years' data resulted in a mixed picture as the fishing intensity suddenly decreased in 2013 after a stable increase in the years up to 2012. As such, it is not possible to draw clear conclusions on the value of the area for the Dutch fishing sector over the last years. Based on the landings in 2011 and 2012 the area would contribute approximately 1.1% to the total Dutch landings value, but based on the 2013 figures, the contribution would only be half of that. It is not clear what the reason for the sudden decrease could be. The same

holds for the effect of the closure: Based on 2013 data the effect would be lower than presented before, but it is not clear whether this is a one-year event or represents a structural change.
It should be noted that the results presented here are no exact numbers but rather estimates based on a complex estimation procedure with multiple assumptions. More about the assumptions and the resulting uncertainty in the estimates can be found in Oostenbrugge et al. (2010).

Literature

Hamon, K., J.A.E. van Oostenbrugge and H. Bartelings, 2013, Fishing activities on the Frisian Front and the Cleaver Bank Historic developments and effects of management. LEI Memorandum 13-050. LEI Wageningen UR, The Hague. May 2013.
Oostenbrugge, J.A.E. van, H. Bartelings and F.C. Buisman, 2010. Verspreidingskaarten voor de Noordzeevisserij; Methodiek en toepassing Natura 2000-gebieden (in Dutch). LEI-rapport 2010-066 ISBN/EAN: 978-90-8615-455-5. LEI Wageningen UR, The Hague. 2010.
Scientific, Technical and Economic Committee for Fisheries (STECF), 2014. The 2014 Annual Economic Report on the EU Fishing Fleet (STECF-14-05). Publications Office of the European Union, Luxembourg. Printed in Italy.

Contact
LEI Wageningen UR
Postbus 29703
2502 LS Den Haag
www.wageningenUR.nl/lei

Naam
Functie
T (070) 000 00 00
E naam@wur.nl

Naam
Functie
T (070) 000 00 00
E naam@wur.nl