

# Report

March 2006

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## Status report for 2005 – “Russian cod and haddock fishing / transshipment at sea”



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## 1 Introduction

This report has been prepared by the Control Section of the Directorate of Fisheries and is intended to give an estimate of the total catch of Russian cod and haddock in 2005. In addition to sailing analyses, it is principally based on analysis of documentation collected from inspections performed by the Coast Guard and Directorate of Fisheries, plus landing data collected in Norway, Holland and Germany.

Cooperation at operational level between the Coast Guard and Directorate of Fisheries has worked extremely well, resulting in collection of much more basic data than in previous years.

### 1.1 Background of analysis

Since 2002, analyses have been carried out on an annual basis of estimated Russian cod fishing. For the first time this year, the possible catch of haddock has been included, as these two species are closely related, making it natural to consider them together.

### 1.2 Subject of analysis

Sailing analysis details transport of fish to the Continent by known transport and fishing vessels. For unregistered vessels (flag-of-convenience vessels) AIS<sup>1</sup> and other means have been deployed to record harbour calls in Europe. Documentation for transshipment and deliveries has been investigated, in order to quantify actual catches. Data from Russian catch logs have been checked to be able to identify where fishing for cod and haddock has taken place.

### 1.3 Quotas

Norway and Russia have agreed a Total Allowable Catch (TAC) for cod and haddock in the Barents Sea of 450,000 tons cod and 117,000 tons haddock respectively. Russia has a commercial quota of 192,700 (including research quota). Russia can also fish 21,000 tons of Murmansk cod. The total Russian quota is therefore **213,700 tons cod** for 2005 plus **51,300 tons haddock**.

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<sup>1</sup> AIS – Automatic Identification System

## **2 Analysis**

### **2.1 Analysis framework**

The Directorate of Fisheries and Coast Guard used analysis of available sources to primarily quantify the total Russian catch of cod and haddock in 2005. Behaviour patterns for the Russian fishing fleet (transshipment and fishing vessels) will be described to the extent possible.

### **2.2 Objective for analysis**

The purpose of this analysis has been to quantify the actual scope of Russian cod fishing in 2005 via supplies to Norway, transshipment and direct supply to Russia and other countries by fishing vessels, compared with the Russian quota of 213,700 tons of cod and 51,300 tons of haddock.

### **2.3 Description of fishing and transshipment activities in 2005**

Vessels covered by this analysis comprise between 190 and 200 fishing vessels. These are a type for which data on catches landed and reloaded are available. Some of them have registered a relatively small quantity; 8 have registered less than 100 tons. There have also been occasions where catches made by vessels not in commission have been identified from bills of lading and other landing data; i.e. false bills of lading. Quantities landed have been included in the overall analysis because they have been landed in reality.

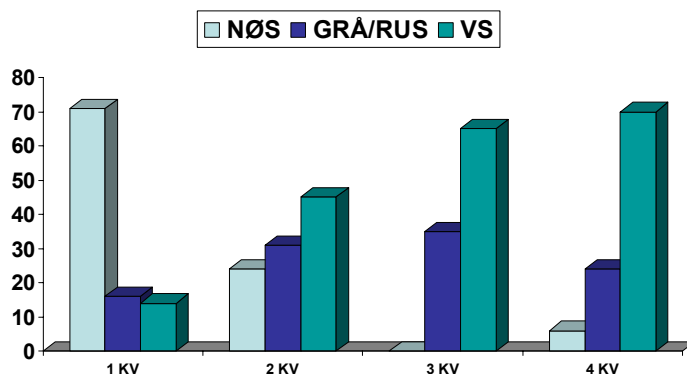
Eight non-Russian transport vessels have been registered transporting cod and haddock to the Continent in 2005, six of which are flag-of-convenience vessels which as from 1 January 2005 have been banned for transshipment fish. Two of them are from Lithuania. Several incidents of Russian transport ships changing flag from the Russian flag to Georgia (and others) have been recorded so far in 2006.

#### **2.3.1 Period and area, fishing and transshipment**

One of the tasks of the Coast Guard and Directorate of Fisheries in 2005 has been to collect data from the catch logs of Russian fishing vessels. The data has been recorded and structured as an overview containing all the data on the period for fish, size of catches and where fishing took place. A total of 149 fishing vessels were inspected in the course of the year. On average, these were checked around 3 times throughout 2005. The total quantity registered from their catch logs was 123,000 tons cod and 28,000 tons haddock. The remaining 50 vessels were not inspected for various reasons, but their activities have been recorded via inspections of transport vessels and landing data.

For the purposes of this analysis, the following breakdown has been used: Norway's Economic Zone (NEZ), Fishery Protection Zone Svalbard (FPZS) and Grey Zone/Russian Zone (RUS/GRY).

Analysis of data from catch logs shows that fishing for cod in the NEZ took place early in the year which concurs with migration patterns. Fishing in this zone was particularly concentrated in the first quarter of the year (71% of quota). The breakdown between FPZS and RUS/GRY is 14 and 16%. This changes significantly in the second quarter, when most fishing takes place in FPZS (45%), but with a high catch level in RUS/GRY (31%). No fishing took place in NEZ in the third quarter. The breakdown between FPZS and RUS/GRY is 65 and 35%. This pattern continues throughout the year.



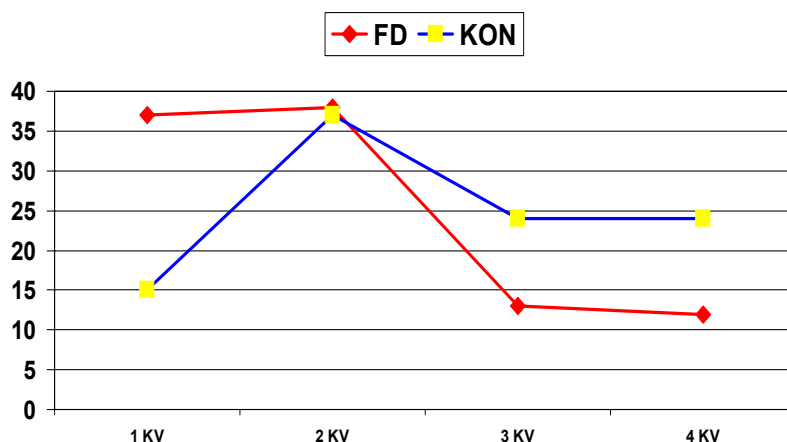
Figur 1: Viser i prosent den kvartalsvise fordeling på hvor fisket har pågått gjennom året.

#### NEZ RUS/GRY FPZS

Figure 1: Breakdown of fishing location by quarter

There are two alternative theories for this pattern. One is based on the natural migration patterns of the fish in the sea. The other (which does not preclude the first) is that the proactive inspection regime imposed by the Norwegian authorities in the Barents Sea has helped identify illegal catches, resulting in fishing vessels working areas where the Norwegian Coast Guard cannot inspect them. Experience backed by conversations with skippers on board transport ships indicates that transshipment is preferably performed at Bjørnøya; especially because of weather conditions. However, it has increasingly taken place in the Russian and Grey zones. According to the Coast Guard, there has been a clear change in transshipment patterns in recent years, particularly in 2005.

This is supported by analysis of bills of lading/delivery notes. This shows higher activity in percentage terms at the end of the year compared with catch log records. According to analysis of the logs, there is significantly less fishing in the third and fourth quarters which can indicate that a large portion of catches reloaded are caught in the Russian Zone, outside the control of the Norwegian authorities. Both analyses, on the other hand, show most fishing in the second quarter.



Figur 2: Viser i prosent den kvartalsvise fordeling på når fisket har pågått gjennom året.

Figure 2: Breakdown of when fishing has taken place by quarter based on two different data sources, i.e., the official logbooks (FD) and the transshipment documents (KON) onboard the inspected vessels.

### 2.3.2 Total deliveries in Norway

There has been an increase in the number of landings of cod in Norway, compared to 2004; from approx. 66,000 tons to approx. 72,000 tons in 2005. Similarly, there has been a relatively large decrease from 2002, when approx. 122,000 tons were landed in Norway. 26,600 tons of haddock were landed in Norway in 2005, most of which in the early part of the year.

#### 2.3.2.1 Transport vessel deliveries in Norway

The analysis has allowed for the fact that some of the reloaded quantity is supplied to Norway and is therefore included in the Norwegian landing statistics. The quantity reloaded is checked against supplies to Norway. The region of Møre og Romsdal in particular landed Russian fish which had been reloaded at sea, but some was also landed at Kirkenes. This is a relatively small quantity which has been taken into account in the analysis to avoid double registration.

### 2.3.3 Total deliveries in Russia

No landing data has been received for Russia in 2005, but via documentation, approx. 9,000 tons of cod and haddock have been recorded at Murmansk/Archangel. Data from 2002 and 2003 indicates that between 20,000 and 30,000 tons of cod were landed in Murmansk/Archangel. It is probable that the figures are declining, especially for cod. Similarly, the analysis shows that approx. 12,000 tons of cod and 12,000 tons of haddock may have been landed there in 2005. There is still a lot of uncertainty as to what quantity was landed at St Petersburg and Kaliningrad.

### 2.3.4 Fishing vessel deliveries in other countries

Russian fishing vessels primarily deliver their catch to the Continent via transport vessels, but an increasing number of fishing vessels also deliver their catch direct to other countries; particularly the UK and Holland. In one instance, a fishing vessel transported its catch as far as Klaipeda (326 tons cod and 109 tons haddock). Landing documents indicate that Russian fishing vessels have delivered at least **11,600 tons** cod and **2,600 tons** haddock directly to other countries.

### 2.3.5 Transport vessel deliveries in other countries

At least **123,500 tons** cod and **29,000 tons** haddock have been reloaded and transported to the Continent. The bulk of this was landed in Holland, Germany and the UK, but data also exists of landings in Poland, Lithuania, Denmark, Spain, Portugal, the Faeroe Islands and Iceland. Only a relatively small quantity can however be documented for Spain and Portugal. This can probably be explained by vessels checked in the Barents Sea not necessarily knowing where the final destination for the fish will be at the time of inspection.

## 2.4 Quantifying Russian catches of cod and haddock in 2005

### 2.4.1 Transport activities

Based on sailing data and the Coast Guard's own experience, it can be concluded that transport activity from the Barents Sea to other countries has not changed in relation to previous years.

### 2.4.2 Method

For this analysis, it was decided to continue with the same method as last year for quantifying potential Russian cod and haddock catches by analysing the following information.

- Landing figures in Norway gathered through SLULES<sup>2</sup>.
- Documentation of transshipment and supply to foreign countries via control of Russian fishing and transport vessels both in harbour and at sea.
- Coast Guard air and sea observations in the Barents- and North Seas.
- Sailing information which illustrates activities of Russian fishing and transport vessels. Activity is defined as the transport of cod to the EU, Russia (Murmansk and Archangel) and other areas.
- AIS data on activities of non-Russian transport vessels.
- Information on vessels docking at harbours in Europe.
- Overview of vessels with quotas and licences in the NEAFC<sup>3</sup> area.

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<sup>2</sup> The Directorate of Fisheries' contract note register of landed catches

The information has been processed and systematised in an Excel spreadsheet.

The sailing log includes date and time, whether the vessel is sailing in or out and its direction. Destinations have been broken down into four directions:

- From Norway's Economic Zone towards Murmansk/Archangel
- Heading south west in Norway's Economic Zone (between 60 and 70 degrees north)
- From Norway's Economic Zone towards the English Channel (Dover Straits)
- From Norway's Economic Zone towards Denmark/the Baltic

One decisive factor has been to avoid the registration of cod and haddock for vessels which may be carrying pelagic species. During the herring season in particular, vessels transport pelagic fish to the continent. The analysis only includes vessels believed to be transporting demersal species.

Furthermore, several vessels have their own NEAFC quota which they fish in the Irminger Sea and west of Scotland. For the purpose of presenting data on such quotas, vessels are not attributed quotas when they leave the NEZ because they probably leave the zone to fish for their NEAFC quota.

### 2.4.3 Calculation of quantity

In those instances where there is no documented information on how much fish a vessel has onboard, an estimated quantity<sup>4</sup> has been allocated for each fishing and transport vessel, as in the previous year. An overview of load capacity for flag-of-convenience vessels has also been included for 2005.

Given that the vessels transport headed/gutted fish, a factor of 1.5 has been added for cod when calculating approximate load capacity, to compare with previous years. A factor of 1.4 has been used for haddock.

The table below provides an overview of factors and computations which form the basis for calculations of a vessel's maximum capacity converted into the round weight in tons of cod.

The following computations were applied:

| Gross tonnage | Net tonnage  | Net load capacity fish                                  | Round weight fish    |
|---------------|--|---|----------------------|
| 983 tons      | 983 tons x 0.6 =<br>590 tons<br><br>(factor = 0.6) | 590 tons x 0.6 = 354 tons<br><br>(stowage factor = 0.6) | 354 x 1.5 = 531 tons |

Table 1 – shows an example of the calculation of max. capacity, round weight.

<sup>3</sup> North East Atlantic Fisheries Commission

<sup>4</sup> Refers to previous reports ref. quantity calculations



Should the vessel in the table transport cod fillets instead of headless gutted cod, the calculation above would be too low, as the vessel can transport much more round weight when carrying fillets. For vessels carrying cod fillets, the net load capacity (net tonnage) can be multiplied by 3.25 for example, thereby allocating the vessel a (max.) load capacity in round weight of 1,151 tons compared to 531 tons with a factor of 1.5. This indicates that the method of calculation is conservative.

#### **2.4.3.1 Transport vessel**

A total of 242<sup>5</sup> transshipments were registered in 2005, an increase of 34% compared to 2004. Of these, 144 have documentation which indicates all loads on the vessel for the voyage based on loading documents and sailing information compared to the last time of transshipment. This means that we have been able to ascertain the full load for 60% of all recorded transshipments. A further 58 instances of transshipment cannot be quantified and there are 40 for which we are sure that we do not have the correct quantity, for example where we have registered a transshipment via inspection of just one fishing vessel.

Sailing shows a further 156 voyages where no quantity was registered before the transport vessel had sailed out of the Norwegian zone on the way to the Continent or Murmansk/Archangel.

We performed a calculation based on all documented data where a quantity can be attributed to a transport vessel, including transshipments for which we believe we do not have complete data. These indicate that a larger quantity of cod/haddock is transported to the Continent than towards Murmansk/Archangel.

##### Calculation: transport vessels to the Continent

A total of 209 (of 242) transshipments have been recorded where the vessel transported cod and haddock to the Continent. Of these, 144 are those for which we believe we know all the quantities, 40 where we are unsure and 25 where we are sure that a quantity is missing. Calculation based on the 209 shows that the vessels are **93%** loaded with cod and haddock to a ratio of 82% and 18% respectively.

##### Calculation; transport vessels to Murmansk/Archangel

A total of 33 (of 242) transshipments were recorded for which the fish were transported to Murmansk. Of these, we are sure of 4, unsure of 20 and there are 9 instances where we are sure there is a quantity missing. Calculation based on the 33 shows that the vessels are **26%** loaded with cod and haddock to a ratio of 54% and 56% respectively. We have learned from experience that cod transported to Murmansk is frozen and headless/gutted and that a large share of the quantity is bi-products.

In total, the calculations indicate that transport vessels may have landed over 210,000 tons cod and 53,000 tons haddock round weight directly in Russia or other countries. The breakdown between the Continent and Murmansk/Archangel is:

- 201,000 tons cod and 43,000 tons haddock to the Continent
- 8,700 tons cod and 9,900 tons haddock to Murmansk/Archangel

<sup>5</sup> i.e.: where there is data stating that the transport vessel has received a quantity cod/haddock of some size or other.

### 2.4.3.2 Fishing vessel

A total of 58 instances have been recorded where fishing vessels transport and land fish elsewhere than in Norway. Of these, 29 are fully documented where we are sure of all quantities. An estimate has been made when there is uncertainty as to whether all quantities are stated. This is mainly based on quantity data compared to the long transport route for the vessel.

A further 125 voyages where fishing vessels sail out of Norway's Economic Zone en route to the Continent or Murmansk/Archangel can be added. In several cases, these vessels will also be transporting cod and haddock for other fishing vessels, particularly those bound for the Continent.

Where a fishing vessel can be attributed a quantity, we chose to use a calculation based on all documented data, as in the case of the transport vessels. We have also tried to establish what the vessels did before sailing out, an investigation which is important as it helps us prevent the allocation of excessively high quantities. This identified whether the vessels had reloaded or supplied cod to Norway during the period before they sailed out of the zone. If the vessels had reloaded or made deliveries before leaving the zone, this quantity was deducted from the calculated quantity. Fishing vessels also accounted for a lower volume of cod and haddock transported to the Murmansk/Archangel area.

#### Calculation: fishing vessels to the Continent

A total of 28 transshipments have been recorded where the vessel transported cod and haddock to the Continent. Of these, we could conclude that we had documentation for all loads in 15 instances. Calculation based on the 28 shows that the vessels were **55%** loaded with cod and haddock to a ratio of 86% and 14% respectively.

#### Calculation; fishing vessels to Murmansk/Archangel

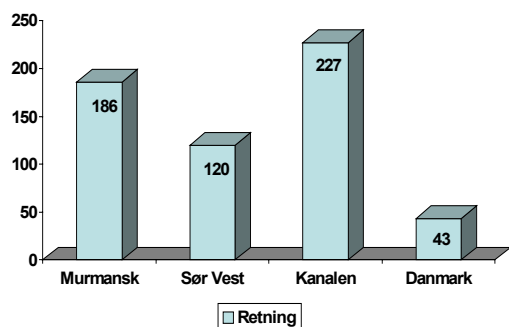
A total of 30 transshipments have been recorded where the vessel transports cod and haddock to Murmansk/Archangel, of which we are sure of 14. Calculation based on the 30 shows that the vessels were **12%** loaded with cod and haddock to a ratio of 50% and 50% respectively.

In total, the calculations indicate that fishing vessels may have landed over 32,509 tons cod and 53,000 tons haddock round weight directly in Russia or other countries. The breakdown between the Continent and Murmansk/Archangel is:

- 28,700 tons cod and 4,600 tons haddock to the Continent
- 4,700 tons cod and 3,600 tons haddock to Murmansk/Archangel

### 2.4.3.3 Transport areas

In total, this analysis operates with 580 instances where vessels, including fishing vessels, transported fish to other countries - an increase on 2004. As stated, 302 transports of fish were recorded with documented quantities of cod and haddock, where in 177 instances we believe we have the correct quantity.



Figur 3: Viser hvor torsk og hyse transporteres

Murmansk South west English Channel Denmark

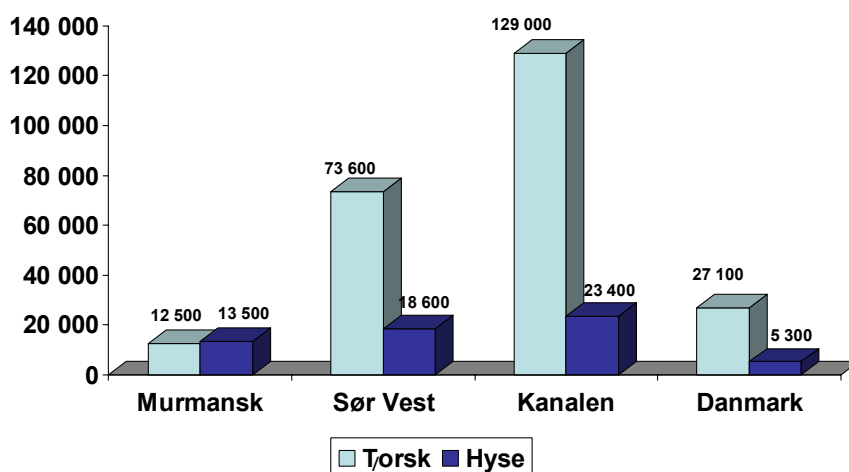
Direction

Figure 3: Transportation of cod and haddock

There is a clear predominance of vessels sailing in the direction of the Channel. From here, vessels can sail to the UK, Holland, Germany, Spain and Portugal. If the vessels sail south west, they can also sail to the UK or Iceland, the Faeroe Islands and, in some instances, to Canada. There are also grounds to believe that vessels bound for Spain and Portugal may opt to go west of Ireland. The high proportion of vessels bound for Murmansk is predominantly fishing vessels.

#### 2.4.3.4 Distribution of transported quantity

A total of approx. 242,000 tons cod and 61,000 tons haddock round weight may have been transported to Russia and other countries. The largest volume goes towards the English Channel and south west.



Figur 4: Viser sannsynlig kvantum torsk/hyse til Russland/ tredjeland

Murmansk South west English Channel Denmark

Figure 4: Probable quantity cod/haddock landed in Russia/other country

*Cod Haddock*

Comparison of figures 3 and 4 show relatively high traffic to Murmansk, but that we have calculated a relatively low quantity in the analysis, and that the proportion of haddock is greater than cod. Comparing the fishing vessels transport route with that of the transport vessels shows that the fishing vessels account for a relatively large share to the south west, whilst the transport vessels account for the bulk bound for the English Channel. This could be due to the fishing vessels delivering more to the Faeroe Islands, Iceland and the UK, than to Holland and Germany.

#### **2.4.3.5 Quantity calculation**

Based on the above, we estimate Russian fish to minimum **315,000 tons cod** and **87,000 tons haddock** (including landings in Norway). This represents overfishing of **101,000 tons cod** and **36,300 tons haddock**.

##### **2.4.3.5.1 Catch capacity**

As described above, this analysis is based on approx. 200 Russian fishing vessels catching cod in 2005. A relatively small quantity has been registered for 10 of these. If we base our calculations on a total of 180 fishing vessels and apply the above estimates, we arrive at a possible catch per day in 2005 for these vessels.

Analysis of catch logs for 74 fishing vessels (of 149 inspected) which were either inspected at the end of the year, or regularly inspected throughout 2005 shows that Russian fishing vessels on average fished for 211 days.

If we base our estimate on an average 211 fishing days, we can arrive at the following:

$315,000 \text{ tons} / 180 = 1750 / 211 = 8.3 \text{ tons per day}$ .

This calculation indicates that Russian fishing vessels may have caught a little over 8 tons per day in 2005. This is regarded as a realistic quantity given the average capacity of a Russian vessel for fishing and production in the space of one day. The calculation is considered to be conservative as we know that certain vessels have the capacity to fish up to 40-50 tons a day.

## **2.5 Grey figures and sources of error**

There is still a great deal of uncertainty regarding flag-of-convenience vessels which transport fish from the Barents Sea to the Continent. We know that new vessels are added and that others switch country of registration more often. This means that they cannot be inspected by the Coast Guard and that they do not sail in the Norwegian Economic Zone. There continues to be uncertainty concerning the quantity landed in Russia, as there is an increasing trend for transshipment in the Grey Zone/*Smutthullet*, we may also lose a quantity of fish here as it is not possible to track Russian vessels in these areas.

Those vessels believed to be transporting pelagic species are not included in the analysis calculation although pelagic transport vessels may also carry cod and other white fish.<sup>6</sup>

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<sup>6</sup> See Analysis Report for 2004.

On the other hand, we may have attributed transport- and fishing vessels an incorrect quantity of cod and haddock in the analysis, as they may have transported other species or lesser quantities of cod and haddock.

### **3. Conclusion**

**Based on estimated quantity compared with documented quantity, we estimate Russian cod fishing in 2005 to be 315,000 tons cod and 87,600 tons haddock round weight. This constitutes an estimated excess of roughly 101,000 tons cod and 36,300 tons haddock in 2005.**

**Based on the same methods used for the last three years, the analysis indicates that transshipment and transport activities are the same as the previous year.**

**The quantity could be higher, as this analysis has not taken sufficient account for transporting filleted fish.**