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NORD STREAM 2 REPORT OF THE FISHERMEN SURVEY



NORD STREAM 2

Report of the fishermen survey

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NORD STREAM 2

Report of the fishermen survey

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1. INTRODUCTION

Nord Stream 2 AG is planning to construct two underwater natural gas pipelines in the Baltic Sea. The approximately 1,200 km long pipelines are planned to be routed from the southern coast of the Gulf of Finland in Russia through Finnish, Swedish and Danish waters to the German coast in Lubmin.

The Nord Stream 2 Pipeline Project builds on the existing Nord Stream pipeline system, which was constructed in 2010–2012. During the implementation of the earlier project, negotiations with fishermen organisations were carried out. The construction methods, timeline and pipeline installation system were explained, and offshore trawl fishermen's point of view was assessed. Monitoring of the impacts of the Nord Stream project on Finnish fishermen was carried out with a survey to fishermen in 2014.

In the Finnish section, a national environmental impact assessment procedure is applied to the Nord Stream 2 project as required by law. Ramboll Finland Oy, as the environmental consultant for Nord Stream 2, has carried out the assessments during the EIA procedure. Part of the assessment includes consideration of impacts on offshore fishery. A fishermen survey for the commercial Finnish fishermen operating in the Gulf of Finland and Northern Baltic Proper was among the methods to collect information and opinions for assessing the impacts of the project.

Methodology of the survey implementation and data analysis is explained in Chapter 2, results in Chapter 3 and conclusions of the results in Chapter 4. More detailed information on the planned project can be found in the project description in Appendix 1.

2. METHODOLOGY

2.1 Survey design and implementation

Ramboll Finland Oy conducted a survey targeting commercial trawl fishermen in order to gain information on commercial fishing practices, and possible impacts of the Nord Stream 2 on fishing in the Gulf of Finland and in the Northern Baltic Proper. Questionnaire of the fishermen survey is presented in Appendix 1.

Specifically, the survey was sent to Finnish commercial fishermen, who have been practicing trawl fishing in the Gulf of Finland or in the Northern Baltic Proper in 2014 or in 2015. The survey was conducted as a postal survey. On 20 April 2016, questionnaires were delivered to 26 commercial fishermen. The first delivery included a cover letter, a questionnaire, a Nord Stream 2 project description and a response envelope, on which postage was paid. Due to the small number of responses received by the original deadline of 29 April 2016, a reminder letter was sent on 2 May 2016 to all recipients including information on the extended response time until 11 May 2016. By 19 May 2016, 9 responses were received (35% response rate).

The addresses of the recipients were obtained from the registry of commercial fishermen maintained by the ELY Centre for Southwest Finland. Recipients consisted of all Finnish trawl fishermen who practiced trawling in the Finnish project area during 2014 and 2015. There are trawlers from other EU member states regularly visiting the Finnish Exclusive Economic Zone (EEZ), but they were not covered by the survey, since they are not registered with the Finnish authorities. Printing, delivery and manual coding of the returned questionnaires was done by Ramboll Finland Oy. The address details of the recipients were used only to deliver the questionnaire together with an accompanying letter, and could not be connected to the returned questionnaires. The questionnaires were processed anonymously and in a highly confidential manner. It was at no time possible to identify individual respondents (anonymous survey). Ramboll analysed the results. The data was processed using a statistical program (Excel-based Tixel).

The results of the statistical analysis of the fishermen survey data are presented in Chapter 3.

2.2 Sources of uncertainty

Respondents were asked to respond to the following questions only if they had practiced trawl fishing in the Gulf of Finland or in the Northern Baltic Proper during 2015 (Question 1). Despite the instructions within the first question, two respondents, who had not practiced trawl fishing in 2015, responded some of the following questions in the survey. It is possible that those respondents understood the instruction

differently than it was intended, as some of the questions inquired about general information about the type of vessels and fishing harbours used, disruptions to trawling encountered, and opinions of possible impacts of the Nord Stream 2 project. A decision was made to include the responses of those two respondents in the survey results, as they did not skew the results.

In total nine fishermen out of 26 responded to the survey. As the survey was delivered to all Finnish fishermen who had conducted trawling in the Finnish project area during 2014 and 2015, respondents represent the fishermen practicing pelagic trawling in the Gulf of Finland and in the Northern Baltic Proper. Due to a small number of responses, the results are presented as frequencies showing the number of responses, not in percentages. Because of the low response rate, the conclusions drawn out of the responses should only be considered as referential.

3. RESULTS

3.1 Fishing areas

Seven out of nine respondents practised commercial trawl fishing in the Gulf of Finland or in the Northern Baltic Proper during 2015 (Figure 1). The number of days used for trawling varied between 8 and 48, 30 days being the most common answer (3 responses).

The area of the Gulf of Finland and the Northern Baltic Proper was divided into six maps attached to the questionnaire. The respondents were asked to mark on the maps the areas where they practiced commercial trawl fishing (Figure 2). Even though the question was answered only by six respondents, the responses indicated that commercial trawl fishing is practiced throughout the Gulf of Finland and the Northern Baltic proper.

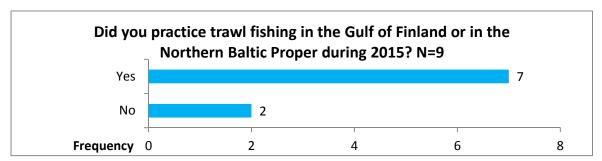


Figure 1. Commercial trawl fishing in the Gulf of Finland or in the Northern Baltic Proper in 2015.

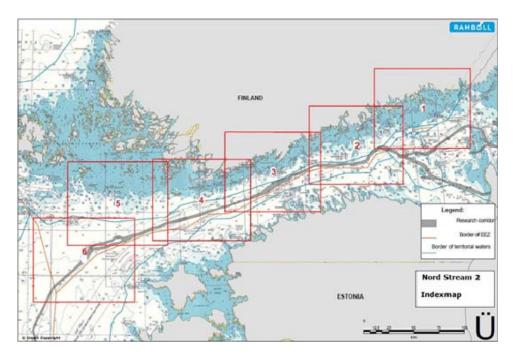


Figure 2. Index map presented in the survey covering the Gulf of Finland and the Northern Baltic Proper.

3.2 Fishing gears and methods

The length of the trawl vessels owned by the respondents varied from 10–12 m to 36–45 m (Figure 3). None of the respondents owned several trawl vessels.

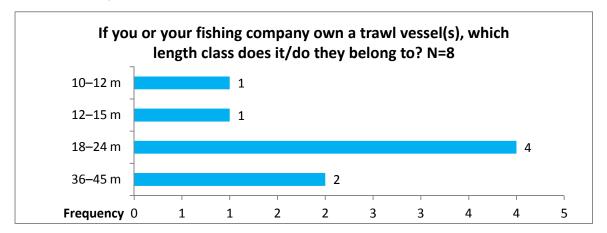


Figure 3. The length classes of the trawl vessels of respondents.

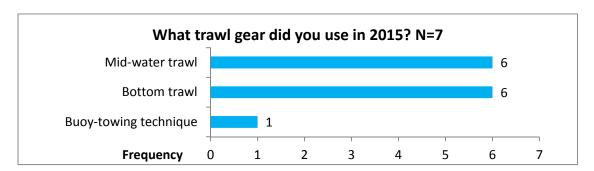


Figure 4. Trawl gear used by respondents in 2015. Respondents could select more than one option.

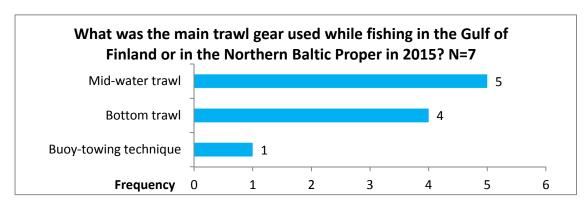


Figure 5. The main trawl gear used by respondents in the Gulf of Finland or in the Northern Baltic Proper in 2015.

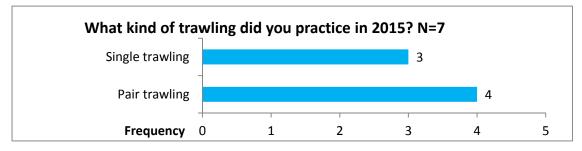


Figure 6. The method of trawling used by respondents in 2015.

Most of the respondents had used mid-water trawl and bottom trawl gear in 2015 when fishing in the Gulf of Finland, while only one of the respondents had used the buoy-towing technique (Figure 4). Two respondents used equally mid-water and bottom trawls, and one respondent both bottom trawl and buoy-towing technique as the main trawl gear, while for the rest the main gear was either mid-water or bottom trawl (Figure 5).

Both single and pair trawling were practiced by the respondents in 2015 (Figure 6). In single trawling, trawl boards are used, whereas in pair trawling only clump weights are used. Five respondents used trawl boards and six respondents used clump weights for trawling. The weight of the trawl boards varied from 100 kg to 2,300 kg while the weight of the clump weights varied from 15 kg to 2,400 kg. The area of the trawl boards varied from 1.8 m^2 to 13 m^2 .

The proportion of the total catch from the whole Baltic Sea that came from the Gulf of Finland or the Northern Baltic Proper in 2015 varied between 23–100%. The catch divided between Baltic herring and Sprat in the area as follows: Baltic herring 50–70% and Sprat 30–50%.

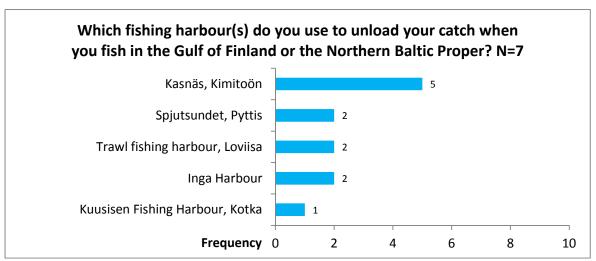


Figure 7. The fishing harbours used by respondents to unload catch when fishing in the Gulf of Finland and the Northern Baltic Proper.

In addition to the fishing harbours listed in the questionnaire (Figure 7), harbours in Sweden; Västervik and Norrsundet were also used by some of the respondents. Västervik harbour is situated on the main land coast opposite to Visby, a town on Gotland. The location is near fishing grounds in the Northern Baltic proper. Norrsundet harbour lies on the Swedish coast of the Bothnian Sea.

3.3 Opinions on the potential impacts of the Nord Stream 2 project on fishing

Seven out of nine respondents were familiar with the Nord Stream 2 project (Figure 8), while six respondents felt that they were sufficiently informed about the project (Figure 9).

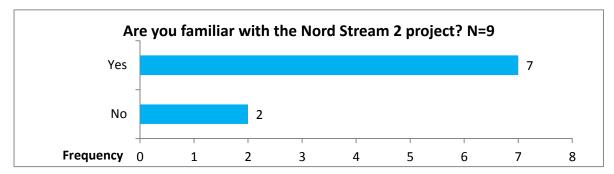


Figure 8. Familiarity with the Nord Stream 2 project.

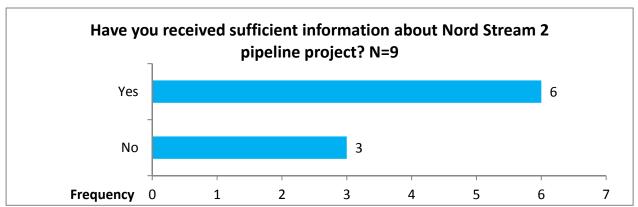


Figure 9. Opinions of respondents on the sufficiency of information received on the Nord Stream 2 project.

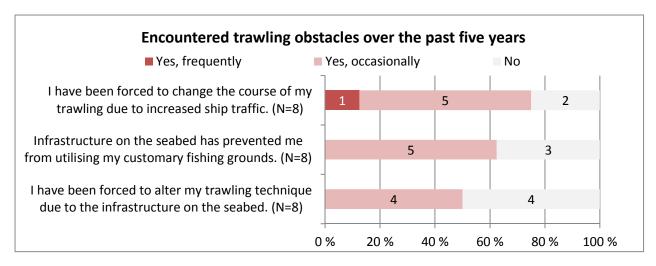


Figure 10. Obstacles to commercial fishing related to infrastructure and ship traffic encountered by the respondents.

Eight respondents answered the question on possible trawling obstacles encountered over the past five years caused by other users in the area of the Gulf of Finland and the Northern Baltic Proper, including ship traffic and existing infrastructure (cables and pipelines) (Figure 10). The first two Nord Stream pipelines were constructed between 2010 and 2012 and, thus, are included in the time scale covered by the question. Increased ship traffic and infrastructure on the seabed had caused occasional changes to the used routes, utilization of customary fishing grounds, and trawling technique, among some of the respondents.

Respondents had an opportunity to describe in a free comment field whether they expected any further impacts to fishing in the Gulf of Finland on account of the pipelines being planned by Nord Stream 2.

Two respondents expressed their concerns about pollutants from the seabed, potential leakage of gas and the impact on fish and the pipeline crossing the best fishing areas (for bottom trawling) south from Hanko.

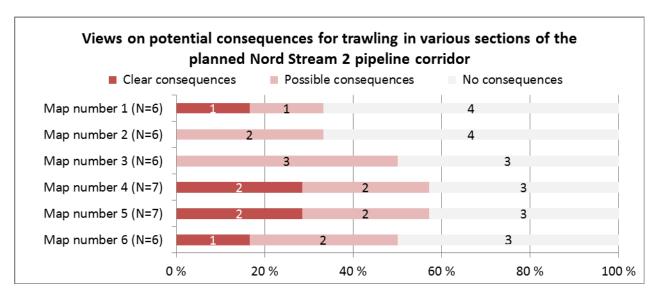


Figure 11. Views of respondents on potential consequences for trawling in various sections of the planned Nord Stream 2 pipeline corridor.

The respondents were asked to describe their views on potential consequences for trawling in the Gulf of Finland and in the Northern Baltic Proper along the planned Nord Stream 2 pipeline corridor as a result of the pipeline construction (Figure 11). There was variation in the responses. While some of the respondents expected no consequences, some expected either clear or possible consequences for trawling in all sections.

Two respondents included a description of the potential consequences. The following comment was added to maps 3-6: "All the areas with over 35 meters of water". The following comment was added to maps 4–6: "Bottom trawling is practiced in the area".

4. CONCLUSIONS

According to the registry of commercial fishermen maintained by the ELY Centre for Southwest Finland, 26 fishermen practiced trawl fishing in the Gulf of Finland or in the Northern Baltic Proper during 2014 and 2015. Offshore fishermen usually operate through a company situated on land, but as they spend most of their time at the sea, reaching them can be difficult. Contact person of the fishing company is often the main owner, who is most likely the skipper of the vessel as well. Employees in the vessel are also fishermen, but the number of them is not seen from the registry. Hence the official number of fishermen (26) in the registry refers to the number of operating fishing companies, which may operate more than one vessel.

To ensure as many responses as possible, the original response time for the survey was extended with two weeks, and a reminder letter was sent to all recipients. Yet, only nine out of twenty-six targeted fishermen (35%) returned the questionnaire. It is difficult to estimate, what were the specific reasons for the lack of response from the 17 fishermen (65%).

Baltic herring and Sprat are fish species mostly caught using pelagic trawling by Finnish fishermen. According to the official statistics^{1,2} the most significant sea area in Finland for commercial pelagic trawling of Baltic herring is in the Bothnian Sea, in the southern part of the Gulf of Bothnia. An estimated 90% of the overall catch of Baltic herring is from the Bothnian Sea, while only 10% the catch is from the Gulf of Finland. Regarding Sprat, the Gulf of Finland and the Northern Baltic Proper are more significant fishing areas as 80% of the overall catch comes from those areas. However, the overall size of the catch of Sprat is only 10% of that of Baltic herring. It is possible that some of the contacted fishermen may have concentrated their fishing operations in the Bothnian Sea, or other areas in the Baltic Sea, with minor focus on the Gulf of Finland or in the Northern Baltic Proper. Thus some of the fishermen may have neglected the survey due to a lack of interest, if they feel that the Nord Stream 2 project does not have an impact on their operations.

Seven out of nine respondents were familiar with the Nord Stream 2. Most of the respondents had occasionally experienced obstacles to commercial fishing related to infrastructure and ship traffic within the past five years. While some of the respondents expected no consequences along the planned Nord Stream 2 pipeline corridor as a result of the pipeline construction, some expected either clear or possible consequences for trawling in all sections. Due to the small number of respondents the results can only be considered as referential. Yet, the results indicate that, in the mouth of the Gulf of Finland the Nord Stream 2 pipelines would cross commonly used trawling areas. Although the overall number of commercial fishermen practicing trawl fishing in the area is relatively small, possible negative consequences of the Nord Stream 2 on trawling can have an impact on their livelihoods. Thus it is important to have a dialogue with the fishermen to mitigate possible negative impacts of the pipeline throughout its implementation.

¹ LUKE 2016. Kaupallinen kalastus merellä. http://statdb.luke.fi. Natural Resources Institute Finland. Commercial marine fishery. Statistics database.

² Raitaniemi, J. & Manninen, K. 2014. Kalakantojen tila vuonna 2013 sekä ennusta vuosille 2014 ja 2015. Silakka, kilohaili, turska, lohi, siika, kuha ja ahven. [The state of fish stocks in 2013 and prognosis for the years 2014 and 2015. Baltic herring, sprat, cod, salmon, whitefish, pikeperch and perch]. Riista- ja kalatalouden tutkimuslaitos, Helsinki. [Finnish Game and Fisheries Research Institute].

APPENDIX 1 COVER LETTER, PROJECT DESCRIPTION AND QUESTIONNAIRE FORM

Intended for Nord Stream 2

Date

June 2016

Document number

W-PE-EIA-PFI-QST-805-030100EN-06

NORD STREAM PROJECT 2 FISHERMEN SURVEY – QUESTIONNAIRE



Revision **06**Date **20/07/2016**

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NORD STREAM 2

FISHERMEN SURVEY RELATED TO IMPACTS OF THE NATURAL GAS PIPELINE PROJECT IN THE BALTIC SEA

Dear Commercial Trawl Fisherman,

Nord Stream 2 AG has requested Ramboll Finland Oy to prepare an environmental impact assessment (EIA) for the Nord Stream 2 Project. Commercial trawl fishing within the Finnish Exclusive Economic Zone (EEZ) is one of the trades included in the assessment work for the project. We will be using the form below to gather information on the extent of trawl fishing, what trawl gear is used and the amount of catch, and also on any disruptions that you feel may be caused by the system and operation of the new pipelines.

To gain an accurate understanding of the state of Finnish trawl fishing in the project area, it is essential that all recipients of the questionnaire fill and return it, even if they have not conducted trawl fishing in the Finnish project area.

We kindly request you to complete the questionnaire and return the completed form in the enclosed reply envelope (freepost) by 29 April 2016.

Your contact information was obtained from the registry of commercial fishermen maintained by the ELY Centre for Southwest Finland. All answers will remain anonymous, and no information on individual respondents will be issued to third parties. If you would like more information, please contact fishery biologist Otso Lintinen (+358408654363).

Thank you for your co-operation!

Ramboll Finland Oy



Background information on the Nord Stream 2 Project

Nord Stream 2 will consist of two natural gas pipelines running parallel on the seabed across the Baltic Sea. The Nord Stream 2 natural gas pipelines will have an annual capacity to transport 55 billion cubic metres (BCM) of Russian natural gas to the EU for at least 50 years.

The approximately 1200 km long pipelines are planned to be routed from from the southern coast of the Gulf of Finland in Russia through Finnish, Swedish and Danish waters to the Bay



of Greifswald in Germany. The length of the route section in Finland will be approximately 370 km and it will run within the Finnish Exclusive Economic Zone (EEZ) in international waters. In order to implement the project, Nord Stream 2 requires an authorisation from all the countries whose economic zones or territorial waters the pipelines will traverse.

Nord Stream 2 AG is the company that has been established for the purposes of designing, constructing and operating the pipelines. Signed partners include PJSC Gazprom from Russia, E.ON SE and BASF SE/Wintershall Holding GmbH from Germany, Royal Dutch Shell plc from the UK/The Netherlands, OMV AG from Austria and Engie S.A. from France. Nord Stream 2 is based in Zug, Switzerland. The estimated budget for the project stands at approximately EUR 8 billion and it is entirely privately funded.

Coupled with the fact that gas demand in the EU is increasing while production is decreasing and that Norway's gas reserves are expected to dwindle significantly in the coming years, the EU will need to rely on approximately 140 BCM of additional imported gas by 2035¹⁾. Transport of natural gas across the Baltic Sea is an environmentally sustainable and economical alternative to meet the increasing demand of natural gas within the EU. Nord Stream 2 is a direct link between the largest gas fields in the world and the gas markets of the EU. The project also constitutes a complementary, reliable and competitive addition to existing gas transport routes.

The Nord Stream 2 project builds on the successfully implemented, initial Nord Stream pipeline project which was constructed between 2010 – 2012. During the implementation of the earlier project, the logistics contractor for Nord Stream stored pipes at a temporary storage facility located in Hanko harbour and stored and applied concrete coating to pipes at a facility located in Mussalo harbour in Kotka. The Nord Stream pipelines were commissioned in 2011 and 2012.

The results of the environmental and social monitoring of the impacts of the Nord Stream pipelines have demonstrated that the construction of the Nord Stream pipeline had no significant environmental impact on the Baltic Sea. The monitoring results over the past six years have confirmed that the impact of the construction work has been minor, local and short-term. The construction and operation of the Nord Stream 2 pipelines are intended to follow the same technical, ethical, environmental, and health and safety standards as applied to initial Nord Stream project.

¹⁾ IHS CERA Long-Term Supply and Demand Outlooks to 2040, july 2015.

TRAWL FISHING IN THE GULF OF FINLAND AND IN THE NORTHERN BALTIC PROPER

FISHING AREA

1	Did you practice trawl fishing in the Gulf of Finland or in the Northern Baltic Proper during 2015? If you tick the "Yes" box, please answer also the following questions. Yes No						
2	On how many days did you trawl in the Gulf of Finland or in the Northern Baltic Proper in 20)15?					
3	In which area(s) did you practice trawl fishing in 2015? Please, mark the squares in the attach maps in which you practiced trawl fishing in 2015.	ned					
FIS	SHING VESSEL						
4	If you or your fishing company own a trawl vessel(s), which length class does it/do they beld to?	ong					
	<6m 6-10m 10-12m 12-15m 15-18m 18-24m 24-30m 30-36m 36-45m >4	15 m					
5	Do you or does your fishing company own several trawl vessels? Yes: trawlers No						
	If you own several trawling vessels, please answer the following questions on behalf of all you vessels.	лr					
FIS	SISHING GEAR AND METHOD						
6	What trawl gear did you use in 2015? You can choose multiple options, if needed. Mid-water trawl Bottom trawl Buoy-towing technique						
7	What kind of trawling did you practice in 2015? Single trawling Pair trawling Both single trawling trawling	air					

Mid-water trawl	Bottom trawl		Buoy-towing technique
If you use <u>trawl boards</u> for travare their dimensions?	wiing, which type do yo	u use, now m	uch do they weigh and v
If you use <u>clump weights</u> whei	n trawling, which type o	lo you use an	d how much do they we
H CATCH			
What proportion (%) of your t of Finland or the Northern Bal		ole Baltic Sea	in 2015 comes from the
%			
How was your catch divided (%) between Baltic herri	ng and Sprat	in the Gulf of Finland ar
the Northern Baltic Proper in 2			
Baltic herring			%
·	_ % Sprat		
Baltic herring Which fishing harbour(s) do y	_ % Sprat ou use to unload your o		
Baltic herring Which fishing harbour(s) do yethe Northern Baltic Proper?	_ % Sprat ou use to unload your o	atch when yo	u fish in the Gulf of Finl
Baltic herring Which fishing harbour(s) do yethe Northern Baltic Proper? In Finland	_ % Sprat ou use to unload your o	atch when yo n Estonia Derhamn Ha	u fish in the Gulf of Finl
Which fishing harbour(s) do you the Northern Baltic Proper ? In Finland Klamila, Virolahti	_ % Sprat ou use to unload your o	atch when yo n Estonia Derhamn Ha	arbour Bur, Kihelkonna
Which fishing harbour(s) do you the Northern Baltic Proper? In Finland Klamila, Virolahti Kuusinen Fishing Harbour, Ko	_ % Sprat ou use to unload your o	n Estonia Derhamn Ha	arbour Harbour
Which fishing harbour(s) do yethe Northern Baltic Proper? In Finland Klamila, Virolahti Kuusinen Fishing Harbour, Ko Spjutsundet, Pyttis	_ % Sprat ou use to unload your o	n Estonia Derhamn Ha Veere Harbo	arbour Harbour
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Which fishing harbour(s) do yethe Northern Baltic Proper? In Finland Klamila, Virolahti Kuusinen Fishing Harbour, Ko Spjutsundet, Pyttis Trawl fishing harbour, Loviisa Ingå Harbour	_ % Sprat ou use to unload your o	n Estonia Derhamn Ha Veere Harbo Miiduranna H Lehtma Hari Meeruse Ha	arbour Harbour Dour
Which fishing harbour(s) do yethe Northern Baltic Proper? In Finland Klamila, Virolahti Kuusinen Fishing Harbour, Ko Spjutsundet, Pyttis Trawl fishing harbour, Loviisa Ingå Harbour Hangöby Harbour	_ % Sprat ou use to unload your o	n Estonia Derhamn Ha Veere Harbo Miiduranna H Lehtma Hari Meeruse Ha	arbour Harbour Harbour Harbour Harbour Harbour

IMPACTS ON FISHING

a) Yes No b) Yes No			
There are other users of the Finnish Exclusive Economical land and the Northern Baltic Proper, including ship trained and pipelines). What disruptions to trawling have you during past five years?	ffic and exi	sting infrastruct	ure (cable:
	No	Yes, occasionally	Yes, frequent
I have been forced to change the course of my trawling due to increased ship traffic.			
Infrastructure on the seabed has prevented me from utilising my customary fishing grounds.			
I have been forced to alter my trawling technique due to the infrastructure on the seabed.			
Other (please describe):			
Do you expect that the planned additional pipelines by impacts on fishing in the Gulf of Finland? If yes, descri			ny further

17

Attached are six detailed maps of different sections of the planned Nord Stream 2 pipeline corridor. What is your view on the potential consequences for trawling as a result of the planned pipelines in the various sections of the pipeline corridor? Please review the maps, then for every number on the map indicate your views on potential consequences in the table by putting a cross in the box that best matches your opinion. Additional information on the Nord Stream 2 project can be found in the project description enclosed with this questionnaire.

Map identification (number)	Possible consequences	Describe possible or specific consequen- ces
1		
2		
3		
4		
5		
6		

