

Northern Fisheries

Newsletter from the Nordic Working Group for Fishery Research – NAF

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The Seas Need a Good Clean

Solid waste in the sea is not just a problem of aesthetics – the problem is both local and global, and it is also about economics.

The sea is awash with slowly degradable materials, a nuisance for the population along the coast, tourists, fishermen, and last but not least the sea's own animals. It will take determined and targeted efforts to clean up the sea. For example, it may be advantageous for fishermen who pick up garbage from the water to transport their unwelcome finds to land, as suggested in a study financed by the Nordic Council of Ministers.



Human beings throw things into the sea all the time. Some do it on purpose, others by mistake or accident. Metals, plastics, glass, drift nets and other fishing tackle are discarded or dropped. Often these objects degrade slowly and with the ocean streams they will be distributed along the coasts and carried out into the open sea. Rivers are also used as a means of waste disposal, leaving the problems to others. There is also windborne waste, often light plastic that ends up in the sea and may cause huge damage. The offenders are many, from private persons to the offshore industry. Analyses have shown, however, that a very large portion of the waste found along the beaches stems from fishing.

It can be anything from gum boots to trawl, fish crates, plastic tape, oil canisters and long liners. FAO (The UN Food and Agriculture Organisation) has calculated that annually about 160,000 tons of fishing gear are dum-

ped from fishing vessels in the world. At the same time, the fishermen are well aware that solid waste may present a huge financial problem to them. The waste destroys tackle, I may make the catch inedible or unattractive, plastic may block the water intake of the boat and get stuck in nets and trawl, rope may get entangled in ships propellers – there is no end to the problems. But there is not much encouragement for fishermen to bring the waste back to land and thus reduce the quantity. For the fisherman faces further outlay, and his finances may be tight already. Therefore the waste is dropped straight back into the sea, sometimes accompanied by fresh waste.

A joint Nordic project group has scrutinized waste handling in the Nordic countries. The group has described the situation at present and has produced a lot of proposals for big and small improvements.

– Our focus has been finally to stop adding to the amount of solid waste dumped in the sea, and to lift existing waste on to the shore, says project coordinator *Jan Brataas* from the FEE foundation (Foundation for Environmental Education in Norway).

– We also wanted to investigate the technical, financial and legal conditions that prevent or promote environmentally adapted handling of solid waste from fishing vessels.

The analysis from the working group consists of four parts: legislation, technical initiatives, management systems (waste management) and information, tuition/learning and attitude shifts.

Legislation

The Nordic counties are parties to several international agreements and conventions aiming to reduce waste at sea. All these, including

the central MARPOL Convention, do however allow for a certain amount of waste dumping 'provided that it does not constitute a major threat to the environment'. In MARPOL, however, sensitive areas are defined where stricter rules apply to waste dumping than elsewhere. In the Nordic countries the Baltic Sea and the North Sea are defined as such.

According to Jan Brataas, all garbage disposal should be banned – apart from organic kitchen waste – in all Nordic seas. What this means is, of course, that garbage, both produced on board and picked up, must be brought to shore. The inherent challenge is that today many fishing vessels lack facilities for waste storage, many ports cannot handle it, and in some countries it will lead to a financial outlay for the fisherman. The working group is suggesting that fishermen be obliged to report on garbage that they cannot carry on board and that they do not need to pay waste charges for quantities beyond the normal (*no special fee* principle). The fishermen will also be obliged to note and report the precise position of tackle lost and bulky waste that they cannot carry on board.

Technical requirements

Specifications must be prepared for on board environmental equipment – space require-

ments, equipment required, so-called Big Bags. There must be campaigns similar to the *Fishing for litter* campaigns.

The smallest vessels of course have limited possibilities for picking up large quantities of waste, but they can always report what they have seen and where. It should also be mapped where dumped tackle and garbage is located, and the sins of the past need to be cleaned up.

– We are particularly conscious of the problem of ghost fishing. Old tackle that has been lost can fish for years, and it is of extreme importance that it be cleaned up, says Jan Brataas.

Management system

The working group also suggests a joint Nordic system for registering waste deposited in the seas. This system must be coordinated with the existing systems for registration of waste on land. This will produce a more complete picture of the quantities and types of garbage, and how it is distributed along the Nordic coastal areas. A lot of garbage drifts with ocean streams, and it is to be assumed that certain areas are more exposed than others.

Information

– All ports must set up a home page with information about reception facilities and the new requirements. Information about garbage must be prepared for the fishermen. This should preferably be done in a coordinated campaign in all the Nordic countries.

– The information and the training of the fishermen should emphasize the need for a change of attitude. Environmental awareness should be a core subject in fisheries schools and courses. It is also important to develop various methods of changing the attitude of fishermen, port staff and everybody else who contribute to solid waste in the seas, Jan Brataas emphasizes. People should change their behaviour, and it must be made clear to everyone that it is very much in their own interest.

The report

'Fast avfall från fiskefartyg' (Solid waste from fishing vessels) TemaNord 2005:597) with detailed description of the problem and the various proposals can be ordered and/or downloaded from the website of the Nordic Council of Ministers:

www.norden.org/fisk

under the heading 'Recent publications'. ■

Waste handling on fishing vessels and other small vessels

The North Sea is a waste dump. Every year about 20.000 tons of waste is dumped in the sea, causing harm to fish, the ocean and birds. 70% of the waste sinks to the bottom and damages the fish caught in nets and trawl. The remainder floats about on the surface or is washed ashore. 90% of the floating waste is plastic which seriously damages certain sea bird stocks. Globally about 1m birds and about 100.000 sea mammals die annually because they have ingested plastic!

A trawler may "catch" as much as 12,000 kilos of waste per annum. Their catch is wedged between old wire, metal containers and other scrap. They suffer huge financial losses, partly because the catch is damaged and partly because the fishermen spend about two hours every week cleaning the tackle. The vessels also run the risk of getting garbage caught in the propeller, leading to down time and – again - heavy financial losses.

Denmark, Norway and Iceland are among the 10 biggest fishing nations in the world. The Nordic countries supply half of all the fish eaten in the EU member states. In the light of this fact it is clear that the growing amount of waste in the ocean has serious consequences for the Nordic countries. Large sections of the oceans in the North are defined as highly sensitive areas in the waste rules. (See map).

There are rules about as well as guidance for the way waste should be handled at sea, but they may be difficult to follow. Consequently, the Nordic Council of Ministers has now published a folder for shipyards, ship-owners and fishermen. The folder is intended to motivate and inspire to efficient and environmentally friendly waste management at sea. It describes technologies, systems, routines and reporting with respect to waste handling on board. The



brochure will be published in five different languages. The folder is based on a technical report "Waste handling on fishing boats and small vessels (TemaNord 2006:502)". The report and the information folder have been prepared by Det Norske Veritas (DNV) headed up by the BAT-group who come under the Nordic Council of Ministers' working group for product and waste, the PA-group. ■

The Nordic fisheries cooperation has project activities as part of the implementation of the action programme for the fisheries cooperation. The projects cover mainly research needs in specified research areas and the area where the Environmental Cooperation and the Fisheries Cooperation have shared interest. In 2006 the project activities included 23 projects, 13 of which will be starting in 2006. A short presentation of the projects follows:

NAF Projects

Project title: Fisheries management and development in fisheries: Comparative studies of Denmark, Faeroe Islands, Greenland, Iceland, Norway and Sweden

Participants: DK, IS, NO, SE, FO and GR

Purpose: The project will look at national management strategies by means of different criteria such as stock assessment, economic yield and productivity development. To give decision makers a better basis for choosing management tools.

Contact person: Professor Ragnar Tveterås
- ragnar.tveteras@uis.no

Project title: Emergency network to ensure food safety.

Participants: NO, DK, IS and FO

Purpose: To establish a network concerning traceability and food safety within the development of emergency services. In this context there will be workshops and practical demonstrations.

Contact person: Jostein Storøy
- jostein.storoy@sintef.no

Project title: Baltic Sea Trout workshop

Participants: ÅL, SE, DK, EE, LV, LT, PL, RU

Purpose: To arrange a Baltic Sea Trout workshop. Here researchers and managers can update their knowledge, discuss new projects and strengthen the cooperation between stakeholders.

Contact person: Petri Heinimaa
- Petri.heinimaa@rktl.fi

Project title: Mid-Atlantic Ridge ecosystem characteristics, fisheries impact and evaluation of NEAFC area closures

Participants: NO, RU

Purpose: The project will collate a range of data available in Russia and publish them, to make them accessible.

Contact person: Odd Aksel Bergstad
- oddaksel@imr.no

Project title: Workshop focusing on the value creation of fisheries and aquaculture in the Nordic Countries

Participants: DK, NO and SV

Purpose: Give status to knowledge and discuss approaches and methodology in analysis of value creation and the 'ring-in-the-water-effect' in the fisheries and aquaculture business. The work is

Fowling the nest...

In the past everybody believed that the ocean was so large that it was impossible to ruin it. Now we know better, but regardless we continue to pollute it. There is a lot to be done before we can say that we are reasonably satisfied. We have got rules against dumping oil in the ocean, and ships must take their waste ashore. Why then is the situation still worrying?

Everybody knows that lost fishing tackle continues to fish "for ever" when it is lying on the bottom of the sea, and that fishing tackle may be destroyed when it is caught up in garbage of different kinds on the bottom. The amount of garbage on the bottom today is actually so great that it has a noticeable effect on the volumes caught. And it can get worse if we do not overcome the problem. The fishermen themselves are responsible for some of the pollution, while it is actually in their own interest to keep the ocean and the bottom clean. It is a question of fowling one's own nest, as the saying goes.

Throwing waste overboard is a voluntary act, and despicable. It is something that can be stopped if the will is there, and it does not take much to handle the waste on board. The loss of tackle is most often accidental. Accidents

will happen. Lost fishing tackle causes serious damage in the short and the long term if it is not removed. Its location must therefore be recorded. But many will be afraid of having to pay the cost of lifting it and are therefore reluctant to tell, which is understandable. Thus there appears to be a need for a scheme that enables reporting without the risk of financial ruin or sanctions.

When accidents occur, it is the done thing to help each other. Even more so at sea. The fishermen would benefit greatly from discussing this problem with the authorities in an effort to find a scheme that is acceptable to everyone as a safeguard for future fisheries. Both parties must show willing. It is not going to be free for anybody, but we are, after all, accustomed to paying for refuse collection where we live. Everyone in society must be prepared to do their own tidying up.

It is really just a question of recognizing that we need a change of attitude; fishermen, other seafarers and users of the ocean as well as the authorities must join forces to do something to get rid of the problem.

It is possible to do something about everything in this world. But some things take longer than others. Let us hope that in this case we will be able to find a speedy solution. ■

also intended to promote networking in the Nordic Countries.

Contact person: Inge-Anne Sætermo
- inger.a.setermo@sintef.no

Project title: The chain from salmon farming to product – quality, health and yield.

Participants: DK, NO, IS, SE and FO

Purpose: To hold a conference where the most recent knowledge on salmon farming via slaughter and processing to the final product is presented; in order to promote the coordination of research and development in the sector in the Nordic Countries. Furthermore, to strengthen networking in the sector.

Contact person: Jette Nielsen – jn@dfu.min.dk

Project title: Workshop on age-determination of seals

Participants: NO, DK, SE, FI, FO, IS, GL and AX

Purpose: To estimate uncertainty and sources of error in age-determination of Greenland seal and grey seal and to prepare joint Nordic/international guidelines for age-determination of these species.

Contact person: Professor Tore Haug – toreha@imr.no

Project title: GLOBALMODEL – Global market models for fish and fish products

Participants: 2 persons from each Nordic country

Purpose: To exchange information and promote the development of models that are suitable for identification and analysis of the framework conditions which the global markets create for the Nordic fisheries sector's activity, both for the primary sector and the fish processing industry.

Contact person: Max Nielsen – max@foi.dk

Project title: Setting the optimal global policies for sustainable fisheries

Participants: NO, IS and DK

Purpose: To establish a stochastic feedback model to generate better indexes when comparing catch strategies in Denmark, Norway and Iceland and to develop a model including multi stock considerations in a stochastic setting.

Contact person: Stein Ivar Steinshamn
- stein.steinshamn@snf.no

Project title: Pricing of fresh water fish

Participants: FI, SE, AX, DK

Purpose: To promote professional archipelagic and

coastal fisheries in Finland, Åland and Sweden through new knowledge about the price development for fresh water fish and the Baltic salmon
Contact person: Jari Setälä – jari.setala@rktl.fi

Project title: BIØKOMODA

Purpose: Joint Nordic development of models suitable for laying the basis for a comprehensive view of the long-term development of fisheries, factoring in biological, economic and social conditions.
Contact person: Erik Lindebo – erik@foi.dk

Project title: Impact of seafood consumption in pregnancy on offspring health

Participants: DK, NO, IS and FO

Purpose: To investigate the pros and cons of eating fish and shellfish during pregnancy. Food based on

fish and shellfish contains a number of substances that are important for humans, but it also contains substances extraneous to the environment, which in certain doses may harm the foetus.

Contact person: Prof. Sjúður Fródi Olsen
- sfo@ssi.dk

Project title: Looking fish in the eye
- cataract as a problem in fish farming

Participants: FI, NO, SE

Purpose: To investigate the occurrence of cataract in aquaculture in the Nordic countries, establish the role of a range of factors in the formation of cataract and look at the consequences of an attack.

Contact person: Nina Peuhkuri
- nina.peuhkuri@rktl.fi

Project title: Project NISE 2004 – 2008

Participants: FO, IS and NO

Purpose: To describe the physical conditions in the Norwegian Sea and the Icelandic Sea and their changes from 1948 until today. To promote the understanding of the key processes causing changes in the water masses and circulation in the area. Determine the NISE model's capacity to reproduce observed conditions and changes.

Contact person: Bogi Hansen - bogihan@frs.fo

Project title: Development of a new voyage data recorder

Participants: NO, IS

Purpose: To develop a registration mark that permits the localisation of fish and to investigate their migration by means of the earth's magnetic field.

Contact person: Hans Hagen Stockhausen
- hans.hagen.stockhausen@imr.no ■

MiFi Projects

Project title: Environmental risk evaluation of chemicals from aquaculture in the Nordic seas – medicine, biocides and environmental toxins from feed

Participants: DK, NO, FO and IS

Purpose: To produce a well-documented basis for the development and implementation of production methods which ensure that fish production in Nordic aquacultures is acceptable environmentally and in health terms

Contact person: Kim Gustavson/Gitte I Petersen
- kig@dhj.dk and gip@dhj.dk

Project title: Use of geographical analyses for identification of Nordic sea and coastal habitats (NorGis)

Participants: DK, SE, FI, NO and IS

Purpose: To harmonize the use of geographical analyses and georelated data (GIS) as a tool for identification, dissemination and classification of Nordic sea and coastal habitats among the relevant nature management authorities in the Nordic Countries.

Contact person: Grethe Elisabeth Dinesen
- grd@sns.dk

Project title: Interactions between seals, coastal fishery and fishermen in the Baltic Sea. Who is killing who in the system

Participants: FI

Purpose: Preparing an in-depth analysis of the present seal/fisheries conflict in the Baltic. Main problems and possible solutions presented in a DVD format.

Contact person: Petri Suuronen
- Petri.suuronen@rktl.fi

Project title: Genetic consequences of fisheries and fisheries management

Participants: SE, NO, DK, FI, IS

Purpose: To arrange a multi-disciplinary workshop on genetic consequences of fisheries and fisheries management.

Contact person: Johan Dannewitz
- johan.dannewitz@fiskeriverket.se

Project title: International Symposium on Research and Management of Eutrophication in Coastal Ecosystems (Euro2006)

Participants: From all the Nordic Countries

Purpose: To organize a conference with 500 scientists and managers. To discuss a range of subjects; existing knowledge about coastal eutrophication, nutritional circuits, reference conditions as well as primary and secondary effects.

Contact person: Jesper H. Andersen – jha@dhi.dk

Project title: Deep-water communities in the West-Nordic area – biodiversity, status and evaluation for MPAs – DEEP-WEST

Participants: IS, NO and DK

Purpose: To collect information about deep-water communities with a large epifauna in subarctic and boreal seas in the West-Nordic area. To be done mainly by "AUV".

Contact person: Jörundur Svavarsson

Project title: To prepare a 100-year growth chronology of Northatlantic cod otoliths – an improved basis for evaluating climatic effects on fish growth, productivity and management

Participants: DK, GL, IS, FO, NO, ICES

Purpose: To construct a 100-year biochronology of cod growth from the major cod populations in the North Atlantic on the basis of historic collections of otoliths. By means of which the effect of climate changes on growth and productivity will be demonstrated.

Contact persons: Peter Grønkjær
- peter.groenkjaer@biology.au.dk

Project title: Nordic Working group on Marine Protected Areas as a tool for fisheries management.

Participants: DK, NO, Se, FI, IS

Purpose: To address a number of key questions in relation to the use of special planning and marine protected areas (MPA) in fisheries management in the Nordic Countries. The group will synthesize knowledge from completed and ongoing projects.

Contact person: Ole Vestergaard
- osv@dfu.min.dk ■



norden

Nordic Council of Ministers

Store Strandstræde 18
DK-1255 København K

www.norden.org

Information on NAF and Nordic fishery cooperation:
Fishery consultant Ásmundur Guðjónsson

www.norden.org/fisk/

Tlf: +45 - 33960255
Fax: +45 - 33932047
E-mail: ag@norden.org

Nordic cooperation on fishery research

The Nordic Working Group for Fishery Research (NAF) co-ordinates joint research projects, takes the initiative to improve Nordic research cooperation, finds

suitable areas for Nordic cooperation, and evaluates the technical content of applications for support for research projects.

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