

The North Sea Advisory Council



**Pulse Fishing Focus Group
World Trade Centre, Amsterdam
5th March, 2015**

Rapporteur: Lorna Duguid

Draft (1)

The meeting was preceded by a demonstration of pulse fishing technology by Harmen Klein Wolthuis of HKL Engineering.

1.0 Welcome and Introductions

- 1.1 The chair thanked our Dutch colleagues for arranging the demonstration and thanked all other participants who had provided information for the discussion.
- 1.2 There were apologies from;
Marc Ghiglia, UAPF
Caroline Gamblin, CPNMEM
Sam Stone, MCS
Ned Clark, NFFO

2.0 Agreement of Agenda

- 2.1 The agenda was adopted.

3.0 Report of the Previous Meeting

- 3.1 The report of the WebEx meeting held on 23rd January 2015 was approved. All actions from the last meeting had been completed.

4.0 The introduction of the pulse trawl technique in the Dutch flatfish fishery.

- 4.1 Dr Marloes Kraan, presented findings from research on the transitions pathway of pulse fishing in the Netherlands. The research has some limitations; it focuses on use of gear for flatfish and presents a Dutch perspective only.
- 4.2 Dr Kraan explained the history of pulse trawling. There was extensive research in the 1980's, a development phase commenced in 1992 and by 2004 pulse was being used commercially. In 2010 there was expansion of vessels using pulse from 21-42.



- 4.3 The key factors that influenced this transition were considered to be;
- 2004/5 - The commercial sector linked to the EC and ICES was asked to provide research.
- 2006 – Research was established at European level.
- 2007 – The Dutch fishing sector withdrew its support from the pilot, due to technical problems. People did not believe in the technique due to risk and cost. A debate about pulse v's beam trawl followed.
- 2007-2010 - A fisher's innovation platform was established. A report, "fishing with headwind" was published which was influential in technology development. It recommended establishing an innovation platform providing study groups and finance to improve fishing practices. During this period the oil price increase promoted pulse as alternative due to reduced fuel consumption.
- 2010 – Two pulse manufacturing companies were developing the technology. One leading fishing company ordered 4 pulse vessels and expansion followed.
- 4.4 The lessons learned from this history include;
- The transition process was influenced at many levels; gear development, government subsidies, oil price and the sustainable fisheries debate.
 - Competition heavily influenced the transition pathway i.e. 2 commercial companies developing the technology.
 - There were 2 transition trajectories; one within the Netherlands and a second at European level.
 - The transition pathway had a strong technological character.
- 4.5 Dr Kraan explained that there are two ways to view technology and society interlinkages. The first is that pulse solves a problem, the other viewpoint is that pulse fishing is a problem. She explained that a third way is that technology development should always relate to society. We should aim to avoid technological push but understand social practices and influence them. In the case of pulse, people are scared of electricity and this influences their behaviour and opinion. She advised that the best way to progress is to agree a long term vision for use of a specific technology.
- 4.6 Following the presentation a number of questions were asked. Peter Breckling asked why a ban in electrical fishing was introduced in 1988, was it based on good reasoning and what had changed since then? Dr Kraan thought the ban had been based on insecurity about efficiency of new gear, to catch sole. In addition the use of electricity to catch tuna in the Mediterranean had influenced banning this type of fishing.
- 4.7 Dr Breckling asked if there were any ecological reasons for ban. It was considered not. The main driver for the ban had been problems with respecting TAC's, catch capacity was a problem. Fishing with pulse was thought to increase the catch so the ban was introduced.
- 4.8 Dr Kraan was asked to comment on basic impact assessments and environmental assessments. The group were informed that this had not been part of the research agenda until ICES involvement. Environmental assessments had followed along with ICES advice in 2009.



- 4.9 Pim Visser thought that lessons could be learned from the process. How was it possible to steer away from polarisation? Dr Kraan informed the group that the current situation was the result of technological push by those people who needed it with not enough transparency. She recommended that in developing new technology or techniques to be open and discuss it as much as possible, have a broad platform of debate across a number of countries.
- 4.10 Jerry Percy thought that effective baseline assessments were missing. He asked how all the research has been undertaken without a baseline assessment. Peter Breckling thought that it was a problem for society, what level of impact do we accept and identify reference points he thought that there was no clear view of this in a formalised way. Experts are doing research but it was not so clear and transparent to make sense to all. Pim Visser commented that impact assessments were a recent development. We do not have full impact assessments on beam at the moment.
- 4.11 Peter Breckling noted that there was a long history to this type of fishing and only now some interest groups have organised criticism against the method. He wondered why they done this now and asked why they were not aware of developments over a number of years.

5.0 Legal Framework.

- 5.1 At our previous meeting were given a presentation from the Dutch government regarding the legal aspects. We were informed that we had been given an English version of paper which was available on the NSAC website along with a list of questions and answers from the last meeting.
- 5.2 Kees Voght of the Dutch Government provided an update. He reported that all fishermen had received a document outlining their legal requirements; they must keep a technical file with details of the gear they are using combined with reading of a black box containing information of their last 100 hauls. This would be the basis for a control and enforcement framework.
- 5.3 Following the last meeting he had provided information about licences given in response to questions raised about the legal basis for the pilot. The need for giving more licences had been based on sufficient scientific basis, in addition there was a political need, and it had been a combination of factors.
- 5.4 Antony Viera thought that this did not address the fact that the project had been started without taking into account advice of the NSAC as required in Article 14. He asked why it the issue had not been taken to ICES. Kees Voght said the Dutch government was keen to take into account NSAC views and there was now an opportunity for stakeholders to list questions to build into the research agenda. He confirmed that the research agenda would cover the whole of the North Sea.
- 5.5 Heather Hamilton asked for clarification regarding the timescale of the current pilot. She was informed that the pilot commenced in Feb 2014 and would run over five years until 2019.



- 5.6 Heather asked if an aim was to lift the ban on electric fishing. Kees said that they did not want an entire ban. Regarding control enforcement Heather asked if Pulse fishing had been tested at sea at electricity levels beyond legal limits. It was confirmed that such levels had been tested only in lab conditions and not at sea. Further assurance was sought that the 22 vessels granted derogation in 2007 represented no more than 15% of the fleet. Kees confirmed that this was within the limit as there were 420 registered vessels at that time. Kees was also able to confirm that the research complied with Article 31A of the technical regulations introduced in 2013. Heather asked for confirmation that the pilots were for research purposes only as some people may consider the numbers involved to be large scale. Kees informed the meeting that the research had been completed and that the vessels were now participating in the monitoring programme. Heather asked if there had been a focus on potential positives but thought there may also be negative effects and these should also be identified. Kees thought this to be a good point he welcomed changes in some of the wording of the future research agenda.
- 5.7 Peter Breckling asked if fishers could increase the power of the pulse beyond the legal limit. Kees informed the group that increasing the voltage does not increase the catch. Increased voltage levels will induce a coma in the fish preventing them from jumping and being caught. Black box improvements could be made but as the optimum level for catching fish was below the legal limit there was no benefit in monitoring all vessels. Peter thought that some people catching shrimp thought they could increase efficiency by exceeding voltage limits. He thought that we needed to monitor the situation and not rely on software only. Kees said that the government welcomed any evidence available and encouraged sharing of information.
- 5.8 Peter Breckling asked if a formal public consultation been arranged. Kees informed the group that there was not a formal public consultation, it was limited to NSAC, NGOs and science at a steering group level. He thought that there may be too much of a Dutch focus and not enough involvement from other countries. Jerry Percy agreed with this from a UK perspective a wider group was needed. Small scale fishermen had not been aware of what was going on, it was a development that potentially had a wide impact. Now they were aware they needed to take on board the international aspect. Kees acknowledged that they could have been more proactive but hoped that we could now catch up and exchange views. Peter Breckling highlighted the need to consider how the consultation and process and exchange of information could be optimised. He thought that the government thought that groups have the information they require, this is not always the case.

6.0 Science and Knowledge.

- 6.1 Marscha Rasenberg of IMARES gave a presentation. This was based on the questions that had been submitted by the group members.

1. What monitoring systems are in place for discards and data collection?

Starting in April 2015 they will extend the discards programme to get a comprehensive view of the entire Dutch fleet. They want to extend the number of vessels in survey and want more activity from ongoing surveys.



2. Why is the entire fleet not involved in self-sampling?

It is not all involved due to the practicalities of time and effort. The group were concerned that not all 84 vessels in a pilot project had been used for research although all had been used for monitoring. Marscha responded by explaining that self-sampling is an intensive way of gathering information, it needs very intensive communication and 100 percent coverage does not always give the best sample. The best research and results tend to come from a tight well managed group. Irene Kingma was concerned that the government was using the rational of science for issuing licences but not using them all. Peter Breckling noted that sub sampling is a normal technique.

3. How much sampling is needed for discard monitoring? Are 5 observed trips enough?

They will use a combination of self-sampling for day and night over time of one week and monitor pulse technique at same time to see any differences. They will compare catches of pulse v's beam trawl to compare selectivity through seasons of vessels fishing side by side. If required they increase to 12 observed vessels with the rest self-sampling. Observers will look at damage to fish as well as discard rates. Monitoring will start in April 2015.

4. Does the research consider the impact on biomass?

They are doing some study in lab conditions. Starfish studied no reaction with razor clam and crab presenting some reaction. There is visible reaction from some species but the conclusion was that there is little impact on biomass with no significant increase in mortality. Early results show that pulse gear has a reduced penetration depth for sediment. More information was available on the Benthis website. <http://www.benthis.eu/en/benthis.htm> . There was no research ongoing for impact on plankton but this could be included in the research agenda if people consider it important.

5. What is the impact of Pulse fishing on cod?

There have been 3 laboratory studies. Results of one study found 50-70% of marketable cod showed injury and junior cod none. The study of June 2013 found no impact and final study in October 2014 4.5% injury. The group thought that it would be good to know how this compared to Beam trawling. It was agreed that this would be put into the next field study.

6. Will they be studying the amount of dead fish left behind?

They will be doing long term field testing in 3 areas and one closed area before and after to assess impact of different type of fishing. This had been done in the Benthis study and they want to scale this up in new project. This will be part of new tender which will be issued by the Dutch Government in April for work to start in June. It might not be IMARES that do the study as other establishments are interested in the work.



7. Will there be further research on the impact on species with high survival rates for example skates and rays?

ILVO are working on this, exposure studies on dogfish showed that they all survived. There is an ongoing study to examine if exposure to pulse influences their searching for food behaviour. To date results have found no difference in behaviour. Irene Kingma questioned if the dog fish was the best species to use as they have very high survival rates.

- 6.2 Irene Kingma noted that not all the NGO questions had been included. Peter Breckling replied that there was still a need to raise more questions it was not possible to clarify all questions during the meeting but there was still the opportunity to include further questions. We had been very optimistic to try to get all answers in one short meeting. To monitor future research it would be useful to have a benchmarking workshop. Interest groups should indicate their interest in a benchmark workshop to raise specific questions. If this was supported we would suggest it to the government. As an interim stage between now and further meetings Peter asked group members to detail further questions in writing, these would be included into our advice.
- 6.3 Henrik Lund asked what kind of mesh size was used for pulse. Multiple mesh sizes had been used in the trial; 80,100,120mm to see differences. He asked if the experiment would use traditional methods on one side of the vessel and an alternative on other. He was informed that this was not possible on twin rig, can only do one trawl with and one without. Henrik thought that this would depend on the vessel speed, there was no point in trawling with anything other than 80mm. There was a need to agree what the main goal of the science was.
- 6.4 Jerry Percy mentioned that there was an important socio economic impact that should be noted. Changing fresh water levels had stopped sole coming into the Thames estuary and these were swept up by pulse at the detriment of small scale fishers. Other considerations included a significantly depressed market for sole, caused by pulse sole fishing making traditional fishing in the south north sea financial unviable.
- 6.5 Jerry also highlighted the need for technical specification within the trials. He was of the opinion that pulse trawlers travelling at a slower speed could stun small fish and increase mortality rate it could also drive larger fish towards the net. There was a need to consider speed of trawl as it will have an impact on results. He mentioned concerns regarding razor clam fishing with electricity operating in Natura 2000 sites. A report done on elasmobranchs had reported that electric pulse could reflect a distress signal, attracts the species to an area. Salinity would also need to be considered as pulse impact many vary according to salinity. He would put all these concerns in writing and submit via the NSAC secretariat. Kees thanked him for his input stating that it was helpful to have this information to put into his tender document.
- 6.6 Peter Breckling asked if they would include non-commercial species in damage assessment studies. Marscha confirmed that all species would be assessed. Peter gave an example of mussels where in early stages of the lifecycle they will not settle if they experience adverse conditions. He asked of



the scientists would be able to replicate these conditions in the lab. It was through that this would also relate to shrimp.

6.7 Heather Hamilton expressed concern that given the limited knowledge of the technique the shrimp examples, included studies in Natura 2000 areas. She would be looking into the legal aspects of this, as appropriate assessment needs to be undertaken before pulse trawling can take place in Natura 2000 areas. Pim Visser thought that within Natura 2000 law, there was agreement to use the most innovative techniques as these are considered less detrimental than beam trawl with beam being phased out. It would be preferred if industry and environmental organisations get together to agree an approach rather than take the issue to court. This year appropriate assessments and renewal of agreements were ongoing. The agreement was based on replacement of beam by pulse trawling by 2016. There would be a new agreement from 2016. It was agreed that further investigation was required, an over view of each type of different fishery.

6.8 Antony Viera still had more questions about the levels of discard for plaice and sole. He would seek further clarification.

7.0 Development of NSAC Advice

7.1 The group developed the draft paper which is attached in appendix 1. The amended paper would be presented to the Executive Committee for discussion at the meeting on 11th March.

7.2 It was agreed that the list of questions (Appendix 1 to the draft paper) would need further consideration and group members should review, add final questions and return to the rapporteur as soon as possible.

8.0 Any Other Business

8.1 There was no further business. The chair thanked all participants for their contribution.

Actions

Action	Responsible
1. Further questions to be sent to the secretariat for inclusion on the spreadsheet of questions and comments. (6.2)	NSAC Members Secretariat
2. Questions to be sent to Dutch Ministry and IMARES	Secretariat
3. Present the updated paper at the NSAC Executive Committee meeting 11 th March	Peter Breckling Secretariat



Attending

Name	Organisation
Derk Jan Berends	Nederlandse Vissersbond
Peter Breckling	Deutscher Fischerei Verband
Emiel Brouckaert	Rederscentrale
Lorna Duguid	NSAC
Heather Hamilton	Client Earth
Tim Haasnoot	Wageningen University
Irene Kingma	Dutch Elasmobranch Society
Marloes Kraan	IMARES
Henrik Lund	Danish Fishermen
Geert Meun	Visned
Jeremy Percy	NUTFA
Mascha Rasenberg	IMARES
Durk Wieger Van Tuinen	Nederlandse Vissersbond
Remko Verspui	Sportvisserij Nederland
Kees Verbogt	Dutch Ministry of Economic Affairs
Antony Viera	CPNMEM
Pim Visser	Visned
Jan Willem Wijnstroom	EAA
Inger Wilms	CVO

