



## Bijlage G. Werkplan Bedrijfssurvey voor WKFLAT 2009

Floor Quirijns, Wageningen IMARES

The Dutch flatfish fishing industry will carry out an industry survey in close cooperation with Wageningen IMARES. This is a request to the WKFLAT to consider the relevance of this industry survey for stock assessment of North Sea plaice. There are no data yet, but based on the foreseen work plan (this document) it might be possible to assess the feasibility of using the results in stock assessments or in discussions on fisheries management.

### Objective

#### 1. A correction factor for the catch composition in the beam Trawl Survey (BTS)

The main objective of the survey is to compare catch compositions between the research vessel(s) during the Beam Trawl Survey (BTS) and to see which part of the catch is seen in the one survey and not in the other. All species and length classes will be considered in this comparison of catch compositions, but the main focus will be on commercial species. The comparison will result in a correction factor for a selection of species (and size class).

#### 2. Time series of an industry survey index for commercial species

The second objective is to develop a time series of an industry survey index, derived from annual monitoring. Preferably this index will be used as a tuning series in the stock assessments.

### Methodology

Every year, during the BTS, a commercial vessel will fish close to the Dutch research vessel Tridens (and maybe also Isis). IMARES staff will be onboard the commercial vessels to process the catch in the exact same way as is done onboard the research vessel. The BTS lasts for 4-5 weeks. It is not yet

clear if there will be funding to organize an industry survey for this entire period of time. It might be necessary to reduce the length of the industry survey to 1 or 2 weeks.

### Questions for the WKFLAT

- Will the information gathered in this industry survey (if collected according to plan) be useful in assessing the developments in the plaice stock?
- Can the results be used as a tuning series in stock assessment for plaice?
- If the WKFLAT is not the group to ask about these issues, where should we go with these kind of questions?

# Bijlage H. Terugmelding van de ICES-WKFLAT 2009

Dutch Industrial Survey (Presented by Paula den Hartog, Dutch Fisheries Organisation)

The Dutch flatfish fishing industry will carry out an industry survey in close cooperation with IMARES. This is a request to the WKFLAT to consider the relevance of this industry survey for stock assessment of North Sea plaice. Based on this working plan it might be possible to assess the feasibility of using the results in future stock assessments or in discussions on fisheries management.

## **Objectives**

1. A correction factor for the catch composition in the Beam Trawl Survey (BTS)

The main objective of the survey is to compare catch compositions between the research vessel(s) during the BTS. All species and length classes will be considered in this comparison of catch compositions, but the main focus will be on commercial species. The comparison will result in a correction factor for a selection of species (and size class).

2. Time series of an industry survey index for commercial species

The second objective is to develop a time series of an industry survey index, derived from annual monitoring. Preferably this index will be used as a tuning series in the stock assessments.

## **Methodology**

Every year, during the BTS, a commercial vessel will fish close to the Dutch research vessel Tridens (and maybe also Isis). IMARES staff will be onboard the commercial vessels to process the catch in the exact same way as is done onboard the research vessel. The BTS lasts for 4-5 weeks. It is not yet clear if there will be funding to organize an industry survey for this entire period of time. It might be necessary to reduce the length of the industry survey to 1 or 2 weeks.

## **Recommendations**

Carefully evaluate the objectives of the program, because objective 1 and 2 may disagree with each other. Estimating a correction factor for the catch composition in the Beam Trawl Survey (objective 1) requires fishing side by side while setting up a time series (objective 2) would benefit most from coverage of different regions and times of the year. When estimating differences in catchability, gear efficiency of the commercial vessels could be a representation of the current state of the art fishing gear. However, when creating a tuning index, gear efficiency should be constant, or at least accurately estimated in an experimental setting. Irrespective of the objectives this survey should provide new insights and improve the communication between fishermen and fishery scientists.

# Bijlage I. Notitie voor WKFLAT 2010

Floor Quirijns (IMARES, Wageningen UR)

In close cooperation with: Ingeborg de Boois and Stijn Bierman (IMARES, Wageningen UR), Paula den Hartog (Dutch Fisheries Productboard), Wim de Boer and Geert Meun (fisheries federation) and Henk Offringa (Ministry of Agriculture, Nature and Food Quality, LNV).

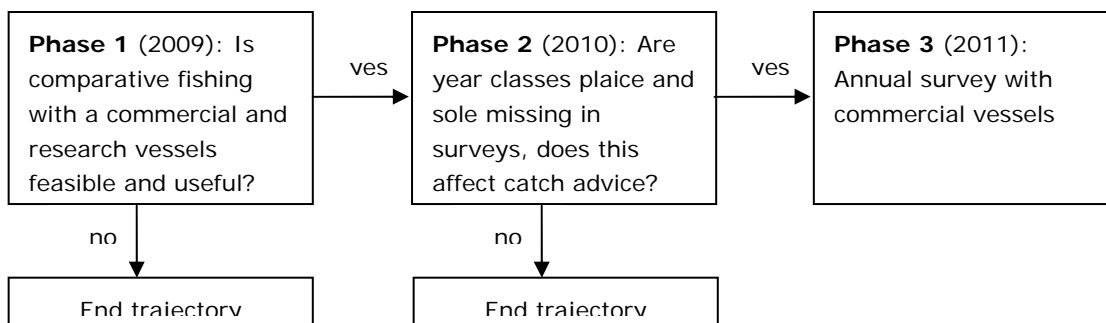
In 2009 a trajectory towards an industry survey was started in a close cooperation between the Dutch flatfish fishing industry, IMARES and the Dutch ministry of LNV. This is a request to the WKFLAT to consider the relevance of this work for stock assessment of North Sea sole. There are some preliminary data and a work plan which we can give you in order to assess the feasibility of using the results in stock assessments or in discussions on fisheries management.

## Objective

The aim of the trajectory towards the industry survey is to decide whether a survey with commercial vessels on the North Sea can provide extra information which can improve management of sole and plaice.

## The Trajectory

The following figure shows a schematic overview of the trajectory:



We are currently at the end of Phase 1. A work plan was created for comparative fishing and for an industry survey. This was done with input from national (IMARES) and international scientists (WKFLAT 2009) scientists and from fisher's representatives. The trajectory was thoroughly discussed with scientists, managers and fishers to get their feedback and support. At the end of phase one, there was a test for feasibility of comparative fishing, in which some preliminary data were collected.

Phase 2 would comprise of a larger scale comparison of length composition of sole and plaice between research vessels and commercial vessels. The newly collected data will be added to the data collected in phase, which result in a dataset based on which we can decide if specific length classes are missing in the research survey. The next step is to determine whether these missing

length classes in the research survey lead to problems in stock assessment for plaice and sole. If this is the case, we could decide to proceed with an annual industry survey.

Soon, in March 2010, we have to decide whether we will continue with phase 2. The feedback of WKFLAT 2010 on sole might help us making the decision whether we should continue or not.

## Methodology

Comparative fishing (Phase 1): during the BTS, a commercial vessel has been fishing side-by-side with the Dutch research vessel Tridens and Isis for one week. IMARES staff was onboard the commercial vessel to process the catch in the exact same way as is done onboard the research vessel. The length composition of plaice and sole was determined and compared between the different type of vessels. The main focus of this pilot week was to test feasibility of side-by-side fishing and the working methods on deck. The test was carried out in the German Bight.

Comparative fishing (Phase 2): after feasibility testing, extra data will probably be required to be able to make statements on the actual differences in length composition of plaice and sole between research vessels and commercial vessels. The same methods will be used in phase 1, for as long as it takes to gather sufficient data and in the appropriate areas.

Industry Survey (Phase 3): If phase 3 is set up, this means that phase 1 and 2 showed that there are significant differences in length compositions between research vessels and commercial vessels. It probably also means that it was assumed that these differences are causing problems in the stock assessment for plaice and sole. The objective of the industry is to develop a time series of an industry survey index, derived from annual monitoring, providing valuable data for fisheries management. Preferably this index will be used as a tuning series in the stock assessments.

## Results of Phase 1

- A work plan was agreed between scientists and fisher's representatives
- Comparative fishing is feasible
- Some data were collected. It was investigated whether these data were suitable to compare length compositions (see figure below).
- A power analyses showed that twice as much data would be needed to assess whether the small differences in length composition found are significant. However, this does not say anything about whether these differences are relevant for stock assessments.

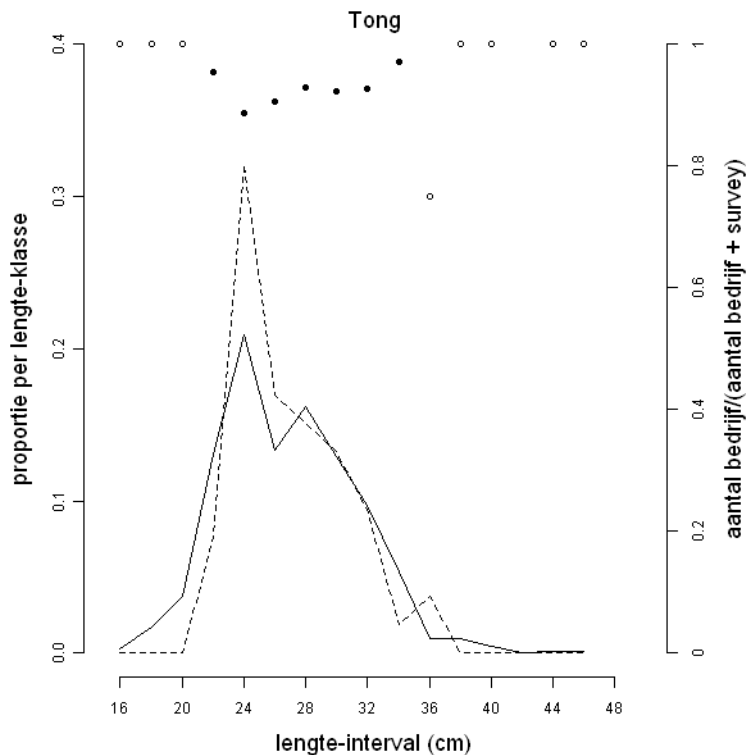


Figure: Length composition of sole in the research vessel (dotted line) and the commercial vessel (drawn line). The x-axis shows the length classes by cm. The left y-axis shows the proportion of a cm-class compared to the total catch. The circles above show the proportion between the number per cm-class in the commercial vessel compared to the total number per cm-class in all vessels. The open circles mean that there are very few fish found of these length classes, which makes the result more uncertain.

## Questions for the WKFLAT

- Does WKFLAT consider the approach in this trajectory useful?
- Looking at the results of Phase 1, would WKFLAT recommend continuing with Phase 2 and if yes: are there any specific recommendations on how to carry out the larger scale comparison?
- Will the information gathered in the industry survey (if collected according to plan described for Phase 3) be useful in assessing the developments in the sole stock? Can the results be used as a tuning series in stock assessment for sole?
- Does the WKFLAT have any ideas on whether missing length classes could cause problems in stock assessment of sole?

