Executive summary

The second meeting in the ICES Study Group on Turned 90° Codend Selectivity, focusing on Baltic Cod Selectivity (SGTCOD) was held from 31 August – 3 September 2010 in Hirtshals, Denmark. Originally the meeting was planned for 11–14 May at IMR in Reykjavik, Iceland. However, because of volcano activity on Iceland during spring it was necessary to postpone the meeting at the last minute. The meeting was then re-scheduled to August/September. The re-scheduled meeting was hosted by DTU AQUA and was attended by eight participants from three different nations.

The Study Group chaired by Bent Herrmann and Waldemar Moderhak will run for a period from 2009–2011. The objectives for the three year run of the group are as follows:

- Evaluate the effect of turning diamond netting by 90° (T90) on codend selectivity;
- Improve knowledge of the size selection processes in T90 codends compared to T0 codends (normal direction of diamond netting);
- Attempt to quantify the magnitudes of the effects of different factors (construction, generic netting properties, stock specific morphology, catch composition);
- Develop a guide on T90 codend constructions with respect to size selection properties and optimal construction and;
- Review available data on fish survival and in particular cod escaping from T90 codends.

These objectives were planned to be reached by combining field experiments, laboratory experiments with nettings, laboratory experiments with fish morphology specific on Baltic cod and theoretical approaches (structural mechanics and computer simulations).

The meeting included a two days workshop on analysis of selectivity data using both new and historical case data for Baltic cod and other data of relevance for the work of the group. This provided a forum for a detailed revisit to some of the old results and interpreting them in a new context. An important objective for the meeting was to review and discuss the results from the new research carried out since the group’s first meeting based on actions agreed during the first meeting. A number of presentations were therefore given on the new experimental data and the analysis of these. A first scientific paper based on some of these new data on Baltic cod demonstrated the importance of considering the number of meshes in the codend circumference for the size selection of cod in T0 and T90 codends. Comparing these results with results from another set of new data further demonstrated that the effect of turning netting (from T0 to T90) is very dependent on netting twine characteristics. Based on acknowledgement of this a new experiment to in a systematic way study the effect of twine characteristics on size selection of Baltic cod in T0 and T90 codends was proposed during the meeting as a new action for the group. From January 2010 has the mesh regulation for the fishery targeting Baltic cod changed. Results for size selection from new experimental fishing with T90 and BACOMA codends complying with the new regulation were also presented at the meeting. The analysis indicated increased signature of a dual selection process in the BACOMA codend probably resulting from increased unbalance between the window mesh size and the mesh size in the lower diamond mesh panel. A clear dual selection signature could lead to high selection range and could potentially lead to high discard rates or considerable loss of
fish of legal size through codend size selection. To be able to investigate selective properties linked to survival rates of escapists it was proposed as a future action to investigate and compare when during the fishing process Baltic cod escape from the T90 codend and to investigate if this pattern is different from what take place in the other legal design (BACOMA). Besides the new experimental data for size selection of Baltic cod in T0 and T90 codends new data for size selection of cod from T90 codends applied in other fisheries was also presented at the meeting; these included data from Norway and Denmark. The meeting also revealed that the planned data collection of morphology of Baltic Sea Cod had also been carried out in accordance with the planned schedule from the first meeting. However, analysis of these data still remains to be carried out. Overall, it was concluded that good progress has been made towards achievement of the final goals for the work of the group. It may however be difficult to complete the work within the three year life frame for the study group.

The report includes a short description of the main findings and the identified new actions necessary to help achieving the final objectives.